

CRANFIELD UNIVERSITY

BRIDGET JUNIPER

EVALUATION OF A NOVEL APPROACH TO MEASURING  
WELL-BEING IN THE WORKPLACE

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Evaluation of a novel approach to measuring well-being in the workplace

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## **Abstract**

The well-being of employees is an important issue. Researchers, policy makers and organisations are directing more resource into this field as the link between the health of people and their performance in the workplace becomes increasingly understood.

This research programme examines how employee well-being can be measured.

Having the right tools to successfully appraise well-being at the outset is judged to be imperative where any research or organisational programme to bring about change is under consideration. A review of existing methods indicates that the current provision of scales to assess the well-being of workers is limited and the construction techniques used in their development may be improved upon. At the core of this study is the testing of a new measurement framework which seeks to address these deficiencies.

This innovative approach is taken from one established practice used to assess the well-being of patients using health related quality of life instruments.

Three organisations participated in the study; a call centre operation, a police force and a county-based library service. Using qualitative and quantitative methodologies, three pilot questionnaires were constructed using Impact Analysis; an established procedure deployed in health related quality of life settings. Basic findings from each case study were analysed against conventional construction methods and against existing employee well-being scales. Results were also examined in respect of how they compared with the wider literature on employee well-being.

The Impact Analysis method was critically appraised. Although weaknesses in respect of some of the qualitative phases of analyses were noted, the overall notion of transferring the practice of Impact Analysis to an occupational setting was assessed as cautiously encouraging. While this scale construction method lacks the statistical elegance of factor analytical methods, provisional indications suggest potential benefits in content validity over extant occupational scales where the assessment of a study population's *own* experiences are critical to any well-being evaluation strategy.

Based on the findings, a new operational definition for employee well-being is posited. A new, working model is also proposed. This emphasises for the first time, the need for specificity when researchers and organisations are seeking to evaluate a multi-dimensional, subjective construct that is employee well-being.

Limitations regarding the study are noted. This means that the findings should be treated as tentative rather than conclusive. Nevertheless, it is hoped that this study will inject new thinking on how employee well-being may be evaluated using an alternative approach. By doing so, it is ventured that research communities and employers alike may take up the methods described in this study to conduct assessment programmes that could benefit not just the study teams or the employers, but importantly, the workers themselves.

Key words: well-being, employee, measurement, health, evaluation, quality of life, assessment, quality of work life

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## Abbreviations

Abbreviation	Meaning
ADV	Advancement Domain
ANOVA	Analysis of Variance
AQLQ	Asthma Quality of Life Questionnaire
ASCO	Australian Standard of Occupational Classification
ASSET	A Shortened Stress Evaluation Tool
BCQ	Breast Cancer Chemotherapy Questionnaire
CAW	Control at Work Factor
CBI	Confederation of British Industry
CCA	Call Centre Agent
CHG	Change Factor
CHL	Challenge Factor
CID	Criminal Investigation Department
CIPD	Chartered Institute of Personnel and Development
CMV	Common Method Variance
DCP	Disciplinary Factor
DTI	Department of Trade and Industry
DWP	Department for Work and Pensions
EWB	Employee Well-Being
FA	Factor Analysis
FAC	Workplace Facilities Domain/Factor
GHQ	General Health Questionnaire
GHQ-12	General Health Questionnaire - 12
GNL	General Factor
GWB	General Well-Being Factor
HR	Human Resource
HRQL	Health Related Quality of Life
HSE	Health and Safety Executive
HWI	Home Work Interface Domain/Factor
IA	Impact Analysis
IBD	Inflammatory Bowel Disease
IBDQ	Inflammatory Bowel Disease Questionnaire
IES	Institute for Employment Studies
IGP	Item Generation Phase
IOD	Institute of Directors
IPA	Interpretative Phenomenological Analysis
IRP	Item Reduction Phase
IT	Information Technology
JCQ	Job Content Questionnaire
JCS	Job and Career Satisfaction Factor
JOB	Job Domain
KHQ	King's Health Questionnaire
LIS	Library and Information Services
LSD	Least Significant Difference

<b>Abbreviation</b>	<b>Meaning</b>
MBI	Maslach Burnout Inventory
MGR	Manager Factor
MID	Minimal Important Difference
ORG	Organisational Domain/Factor
PAY	Pay Factor
PCA	Principal Components Analysis
PCSO	Police Community Support Officer
PDHS	Police Daily Hassles Scale
PHY	Physical Health Domain/Factor
PSI	Police Stress Inventory
PSQ – Op	Operational Police Stress Questionnaire
PSQ – Org	Organisational Police Stress Questionnaire
PSQ 36	Police Stress Questionnaire 36
PSY	Psychological Health Domain/Factor
PUHS	Police Daily Uplifts Scale
PWB	Psychological Well-Being
PWC	PricewaterhouseCoopers LLP
QCCA	Qualified Call Centre Agent
QLQ –C30	Quality of Life Questionnaire – Cancer 30
QOL	Quality of Life
QoWL	Quality of Work Life
QWL	Quality of Work Life
REL	Interpersonal Relationships Domain/Factor
RLE	Role Factor
RQLQ	Rhinoconjunctivitis and Rhinitis Quality of Life Questionnaire
RST	Rest Factor
SAW	Stress at Work Factor
SF-36	Medical Outcomes Survey Short Form 36
SGRQ	St George's Respiratory Questionnaire
SIP	Sickness Impact Profile
SOSMI	Surveillance of Occupational Stress and Mental Illness System
SSI	Situational Stress Questionnaire
SWB	Subjective Well-Being
URL	Uniform Resource Locator
USR	User Factor
WCS	Working Conditions Factor
WL	Workload Domain/Factor
WRQoL	Work Related Quality of Life
WRWB	Work Related Well-Being
WWB	Workplace Well-Being

“Work is about a search for daily meaning as well as daily bread, for recognition as well as cash, for astonishment rather than torpor, in short, for a sort of life rather than a Monday through Friday sort of dying.”

Terkel (1972)



# **Chapter 1 Introduction**

## ***1.1 Purpose of the Research***

The subject of this thesis is the well-being of employees. In particular it is about how well-being in the workplace is measured. A number of weaknesses in existing measurement practices are identified. The aim of this research programme is to seek to address these inadequacies through the testing of a questionnaire construction framework borrowed from established methods deployed in clinical environments. The study examines the performance of this applied approach against the scale development process conventionally employed in occupational circles and considers how the findings may contribute to theoretical and practical perspectives in the field.

This study is important on a number of counts and can be summarised in three ways. Firstly, interest in employee well-being (EWB) is rising amongst the academic community, policy makers and organisations themselves. For the policy makers, this increase in attention is largely driven by the rising costs associated with impaired health in the working population. Secondly, there is a growing awareness that work can impact negatively on employees; not only does this have a detrimental effect on their own wellness but it can 'spill over' into other areas of people's lives with potentially serious consequences. Thirdly, there are clear weaknesses in the current approaches used for evaluating the well-being of workplace populations which has important implications for measurement validity and the likely effectiveness of any subsequent well-being programmes.

By testing a new approach to evaluating EWB that is broader in its reach and based on established clinical measurement principles, an alternative option for assessment is offered which may potentially advance research in this field and importantly, benefit the employees as well as their employers.

## ***1.2 Overview of Chapters***

This thesis comprises nine chapters plus references and appendices. Building on this first chapter, Chapter 2 examines the literature surrounding EWB and its evaluation which leads to the justification for testing an alternative method used in clinical practice. Chapter 3 describes the methodology and materials necessary to conduct the study while Chapters 4 – 7 set out the findings from the three organisations that participated. Discussion of these results, how they fit with the current literature and conclusions that may be drawn in respect of the study question are presented in Chapter 8. Finally, Chapter 9 explores the possible contributions that this study offers to EWB theory and practice. Research limitations and opportunities for future work are also considered.

## **Chapter 2      Literature Review**

### ***2.1 Introduction***

This chapter introduces the notion of employee well-being and how it may be measured. First, the reasons for the rising interest in employee well-being are examined. This is followed by an examination of the various conceptual models for employee well-being and the range of assessments currently available to organisations wishing to empirically evaluate the well-being of their workers. Potential gaps in the provision of such assessments are noted. These weaknesses are highlighted further when they are balanced against efforts employed in the clinical sector to evaluate patient well-being (health related quality of life). The skill and proficiency amassed from measuring well-being in the clinical sector and how this may be applied to the occupational sector is considered and constitutes the justification for the present study. The chapter concludes with the overall study question and its key aims and objectives.

### ***2.2 The Interest in Employee Well-Being***

Interest in EWB is rising (Robertson and Cooper, 2010; Danna and Griffin, 1999). This increase in attention reflects the growing importance being attached to it in government and employer circles. According to Cox and Jackson (2006), the increase in interest is being driven by a shift in the developed world from a manufacturing economy to one which is more service-based that brings with it a change in the types of threat to health that employees encounter. Rather than dealing with conventional workplace accidents and injuries, governments and employers alike are having to

grapple with other, more subtle problems. These stem from hazards such as shift work and psychosocial risks which are more multi-factorial in nature and consequently demand different types of intervention to those traditionally offered (Cox and Jackson, 2006). This view is endorsed by Sparks et al. (2001) who add that information technology, diversification of the workforce, globalization, continual restructuring and changes in contract agreements present additional considerations in respect of the health and wellness of a workforce. A growth in materialism is also considered to be a factor. Some commentators maintain that the material needs of the household have risen such that both parents in a home often have to work longer and harder, thereby creating problems of balance between work, family and life satisfaction (Guest, 2002; Cooper and Robertson, 2001; Hobson and Beach, 2000).

In their synthesis of the literature trained on health and well-being in the workplace, Danna and Griffin (1999) consider how work experiences affect the individuals themselves. Firstly, there is the way in which work impacts the physical and psychological health of employees while they are at work and how this can 'spill over' into non-work domains. Secondly, there is a growing awareness of how other elements in the workplace may be risk factors (for example, harassment and bullying) and thirdly, Danna and Griffin (1999) point out how impaired well-being can lead to more serious health complaints which inevitably lead to lower performance. More recent studies have confirmed associations between job conditions and serious illness (for example Kuper and Marmot, 2003; Sparks et al., 2001). Robertson and Cooper (2010) go so far as to claim that low psychological well-being brought on by work is a major health risk to workers.



These changes in the nature of occupational health issues have resulted in increased sickness absence rates according to the Department for Work and Pensions (DWP) (DWP, 2005) and it is the associated costs to the public purse that have caught the attention of policy makers and encouraged them to revise their vision of health and well-being in the workplace (Tehrani et al., 2007). Added to this is the increased prevalence of lifestyle conditions, such as obesity, which carry consequences for EWB, overlaid by an ageing workforce that is requiring workers to remain within the workplace for longer to meet changing dependency ratios (Tehrani et al., 2007; Cox and Jackson, 2006).

The costs to the state and the employer are sizable. Absence due to sickness costs approximately £12 billion per year (DWP, 2005). The number of people who claim incapacity benefits in the UK has risen from 3% in the 1960s to 7% in 2006 (Dewe and Kompier, 2008). The UK's Health and Safety Executive (HSE) claim that self-reported, work-related stress, depression and anxiety accounted for 11.4m lost working days in Britain in 2008/9 (HSE, 2009) and the Confederation of British Industry (CBI) (CBI, 2005) is predicting that work-related stress will become industry's biggest enemy in the first half of the 21st Century. This is hardly encouraging news for policy makers, organisations or the employees that serve them.

In response to this, the Health Work and Well-Being cross-government initiative was launched in 2005 with the express intent of improving the well-being of working age people in the UK. The government also appointed the country's first national director for health and work for working-age people and commissioned a number of reports on

EWB to support policy for a healthier and more productive workforce. The most notable of these are *'Working for a healthier tomorrow. Dame Carol Black's Review of the health of Britain's working age population'* (Black, 2008), *'Foresight Mental Capital and Wellbeing Project. Wellbeing and work; Future challenges'* (Dewe and Kompier, 2008) and *'Is work good for your health and well-being?'* (Waddell and Burton, 2006).

Not surprisingly, employers are also showing more interest in the well-being of their workforce. In 2006, the Institute of Directors (IoD) published a director's guide entitled *'Wellbeing at Work'* which provides advice on workplace wellness to boost performance (IOD, 2006). Like policy makers, employers are keen to see levels of sickness absence drop and productivity levels improve. One of the ways in which organisations are approaching this is to offer various wellness initiatives to their employee ranks. According to a recent Chartered Institute of Personnel and Development (CIPD) survey, 42% of employers indicated that they had a well-being strategy or similar in place, representing an increase of 26% on the previous year (Chartered Institute of Personnel and Development (CIPD), 2007). The most commonly provided well-being initiatives offered to staff included access to counselling services, smoking cessation initiatives, employee assistance programmes, subsidised gym memberships, health screening and healthy eating options in staff canteens (Chartered Institute of Personnel and Development (CIPD), 2007). These findings are substantiated by a more recent report which found that the most frequent types of health promotion comprised gym membership discounts, executive screening, care-giver support, sponsored sport activity, immunizations, biometric health screenings and cycle-to-work schemes (Buck Consultants, 2009). The same report also

confirmed that respondent organisations considered that the main reasons behind the provision of such initiatives were linked to absence reduction and productivity improvement (Buck Consultants, 2009).

The increase in EWB interest expressed by policymakers and organisations is also reflected in the volume of articles that consider this subject in the academic literature. By way of illustration, a search of the keywords 'employee well-being' on the Scopus database (Elsevier B.V., Amsterdam, The Netherlands) revealed a total of 34 studies published between 1990 – 2010 compared to one published in the preceding 20 year period. Additionally, the first work and well-being conference of its kind was hosted in February 2010 where 190 scientists and practitioners from over 30 countries came together to focus expressly on research relating to employee well-being (Schulte and Vainio, 2010).

However, the assumption expressed by policy makers and employers that there exists a clear link between EWB and performance does not always receive the same endorsement in academic circles. Cox and Jackson (2006) observe that the relationship between well-being and organisational output is led more by intuition than research; to date, findings have been more indicative than confirmatory.

Some studies have established a link between EWB and worker productivity. Instances include the investigations by Wright and his colleagues who refer to their work as the '*Happy-Productive Worker Thesis*'; Wright et al. (2007) established an association between EWB and supervisory performance ratings and Wright and Bonnett (2007) found a link between well-being, job satisfaction and voluntary turnover where the

former was reported to moderate the relationship between job satisfaction and job separation. Other studies report similar associations. A study by Donald et al. (2005), for instance, indicated that psychological well-being, commitment from the organisation to the employee, and resources were predictors of performance, while physical health, individual work stressors (with the exception of resources), and commitment from the employee to the organization were less important.

A recent study that looked at the relationship between workplace wellness programmes and performance also presents supporting evidence. A systematic review of UK case studies on behalf of the Health Work and Well-Being cross-government initiative, by PricewaterhouseCoopers LLP (PWC) (PWC, 2008) suggested that most of the 55 wellness programmes it examined, delivered bottom-line benefits such as reductions in sickness absence and attrition. However, it should be noted that the report's authors relied, in part, on the views of the corporations rather than any independent evaluation of programme impact and the findings should therefore be treated as suggestive rather than conclusive.

Nonetheless, some commentators sound a more cautionary note although they tend to dwell more on the seeming lack of robust evidence available rather than reporting unequivocal proof that no such links between well-being and occupational performance exist. For example, on the fundamental assertion that work impacts employee health, Ganster and Schaubroeck (1991) found a lack of convincing evidence that job stressors impair health although they do concede that the indirect evidence is strongly suggestive that such an effect exists. Daniels and Harris (2000) suggest that a

casual association between well-being and job performance is weak and call for more detailed models to be developed. Further, reviews by Briner (1997), Murphy (1984) and Newman and Beehr (1979) point out the paucity of scientific data to support the effectiveness of stress management initiatives and argue for a more evidence-based approach to EWB management practices. On the economic aspects, Cox and Jackson (2006) refer to the limited number of reliable studies available that assess the financial benefits of EWB, a point reiterated by PWC (2008) which observes that there is no clear cut business case that indicates wellness programmes have a direct fiscal effect on boosting revenue.

Thus, it can be seen that the views on EWB held by government, employers and academics are not always in agreement. Generally, the research community confirms that associations between organisational well-being and performance are likely to exist but scientific studies to verify such relations are limited in number, scope and application.

While most people have a vague, intuitive sense of what is meant by EWB (McDowell, 2006), the academic community has failed to arrive at one acceptable definition as noted by Cox and Jackson (2006), Martel and Dupuis (2006) and Danna and Griffin (1999). Different sources employ diverse definitions of EWB which can be problematic when trying to synthesize the literature. Moreover, Wright and Cropanzano (2007) and Martel and Dupuis (2006) both remark that progress on the study of EWB has been impeded because of the lack of consensus surrounding well-being concepts amongst the research community.

Given the alleged importance of EWB to policy makers, employers and workers alike, this seems surprising. To examine this point further, a review of the various definitions associated with occupational well-being follows.

### ***2.3 Employee Well-Being – Definitions and Concepts***

One of the reasons why scholars are unable to agree on one guiding definition of EWB may be owed to the abundance of terms and expressions used by researchers when they refer to EWB or some such similar concept. For example, Van Laar et al. (2007), Sirgy et al. (2001), Warr et al. (1979) and Lawler (1975) refer to Quality of Work Life (QWL) or Quality of Working Life (QoWL). Van Laar et al. (2007) also discuss Work Related Quality of Life (WRQoL). Page and Vella-Brodrick (2009) report on workplace well-being (WWB) and employee mental health while Wright and his colleagues (for example Wright and Cropanzano, 2007) refer to psychological well-being (PWB) in their studies. Authors tend to switch between EWB and these other phrases thereby implying that there are no meaningful differences between the various terms. For instance, Van Laar et al. (2007) state that QoWL is conceptually similar to EWB and Sirgy et al. (2001) claim that the term QWL refers to the well-being of employees.

Some of the more recent models for EWB put forward in the literature are presented below. These seek to provide an illustrative indication of current thinking rather than an exhaustive account. The frameworks selected are those which identify intrinsic workplace components that are deemed to make up EWB since the main focus of this present study is to consider those elements of people's jobs that are inherent in the task that they perform, which are thought to impact on their general well-being.

At its most general level, well-being is considered subjective and multi-dimensional. For example, Waddell and Burton (2006) consider well-being to be a subjective, multi-element state which considers physical, material, social, emotional, developmental and activity dimensions. Similarly, Dewe and Kompier (2008) view mental well-being as a *'a dynamic state in which the individual is able to develop their potential, work productively and creatively, build strong relationships with others, and contribute to their community. It is enhanced when an individual is able to fulfill their personal and social goals and achieve a sense of purpose in society'* (p. 12).

Moving on to the occupational literature, Wright and his colleagues (for example Wright and Bonett, 2007; Wright et al., 2007; Wright and Cropanzano, 2000) base their definition of well-being on the views of self-described happiness (or subjective well-being) presented by Diener (1999) and therefore characterize it as subjective, a balance between positive and negative emotions and a global evaluation. Importantly, Wright and his colleagues do not relate their understanding of EWB to a particular context such as the workplace. Rather, they consider EWB to be a working person's summation of their life as a whole.

For specific work-related definitions, EWB used to be viewed as another term for job satisfaction. Sheppard (1975), for example, suggests that subjective job satisfaction is central to EWB and argues that it can be assessed with just one simple frequency question such as *'How much of the time are you satisfied with your job?'* In the same year as Sheppard (1975), Lawler (1975) proposes that job satisfaction is an important component of QWL but acknowledges that measures of stress that are present in the

workplace should also be factored in. Later, Lawler (1982) adds that physical health is an important component of EWB. Two years on, Mirvis and Lawler (1984) claim that EWB is associated with a safe working environment, equitable wages, equal employment opportunities and career progression.

These views conflict with those of Seashore (1975) and Trist and Westley (1981) who dispute the use of job satisfaction as a measure, claiming instead that objective work conditions and workers' demographic status and personalities account for EWB in the main.

Warr et al. (1979) also support the subjective basis for EWB but claim that it is made up of more than just satisfaction with the job. They maintain that EWB comprises a range of psychological factors that encompass work and non-work considerations; work involvement, intrinsic job motivation, higher order need strength, perceived intrinsic job characteristics, job satisfaction, life satisfaction, happiness and self-rated anxiety. In his later work on occupational well-being, Warr (1994) presents what has become known as the 'vitamin model'. This builds on his earlier work (Warr, 1990; Warr et al., 1979) and lists nine conceptual workplace features that he considers significant to EWB. According to the model, the presence of each feature is important to EWB but their effects on mental health will vary according to level increases much like the impact of vitamins on physical health. The nine aspects (vitamins) are presented below (Table 2.1):



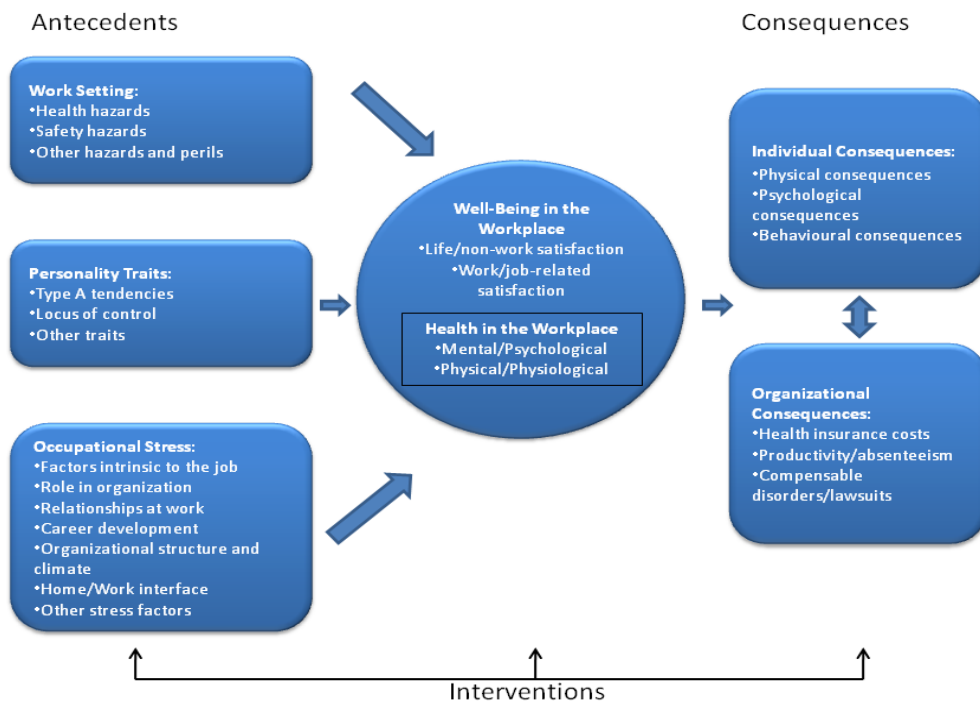
**Table 2.1 Environmental Foundations of Employee Mental Health (Warr, 1994)**

	Category
1.	<b>Opportunity for control:</b> discretion, decision latitude, independence, autonomy, job control, self-determination, personal control, absence of close supervision, participation in decision making, absence of routinization
2.	<b>Opportunity for skill use;</b> skill utilization, utilization of valued abilities, application of skills and abilities, required skills
3.	<b>Externally generated goals:</b> job demands, task demands, quantitative or qualitative work-load, environmental demands, structural imperatives in a job, time structure, time demands, role responsibility, time pressure at work, required concentration, conflicting demands, role conflict, job-induced goals, normative requirements
4.	<b>Variety:</b> variation in job content and location, non-repetitive work, varied roles and responsibilities, skill variety, number of different job operations
5.	<b>Environmental clarity:</b> (a) information about the consequences of behaviour, availability of feedback, task feedback; (b) information about the future, absence of job future ambiguity, absence of job insecurity, low uncertainty about the future; (c) information about required behaviour, low role ambiguity, clarity of role requirements
6.	<b>Availability of money:</b> income level, amount of pay, moderate/high standard of living, absence of poverty, material resources
7.	<b>Physical security:</b> absence of danger, low physical risk, good working conditions, ergonomically adequate equipment, adequate health and safety conditions, safe levels of temperature and noise, absence of continuous heavy lifting
8.	<b>Opportunity for interpersonal contact:</b> (a) quantity of interaction, absence of isolation, friendship opportunities, contact with others, social density, adequate privacy; (b) quality of interaction, good relationships with others, social support, co-worker support, emotional support, instrumental support, good communications
9.	<b>Valued social position:</b> (a) cultural evaluations of status, social rank, occupational prestige or social stratification; (b) more localized social evaluations of in-company status or job importance; (c) personal evaluations of task significance, valued role incumbency, meaningfulness of job, or self-respect from the job

According to Warr (1994), all ‘vitamins’ are necessary for EWB but some (for example (3) and (5)), are toxic at high levels and can therefore be detrimental to workers’ well-being. Others, such as (6) and (9), are not considered damaging to well-being at high levels (Warr, 1994). Warr later updates this model to include three additional considerations: supportive supervision, career outlook and equity (Warr, 2007). This body of work by Warr (2007, 1994) to identify environmental sources of EWB is consistent with the claims of Black (2008) and Waddell and Burton (2006) who maintain that the nature of the work itself must be taken into consideration when evaluating the health and well-being of a workforce as well as more obvious medical conditions such as musculo-skeletal disorders and dietary habits.

The definition of EWB from Kiernan and Knutson (1990) offers a different perspective. In their view, EWB (or QWL as they term it) is confined to the workplace and is different for every worker; *'QWL is an individual's interpretation of his/her role in the workplace and in the interaction of that role with the expectations of others. The quality of one's work life is individually determined, designed and evaluated. A quality of work life means something different to each and every individual, and is likely to vary according to the individual's age, career stage, and/or position in the industry'* (p. 102).

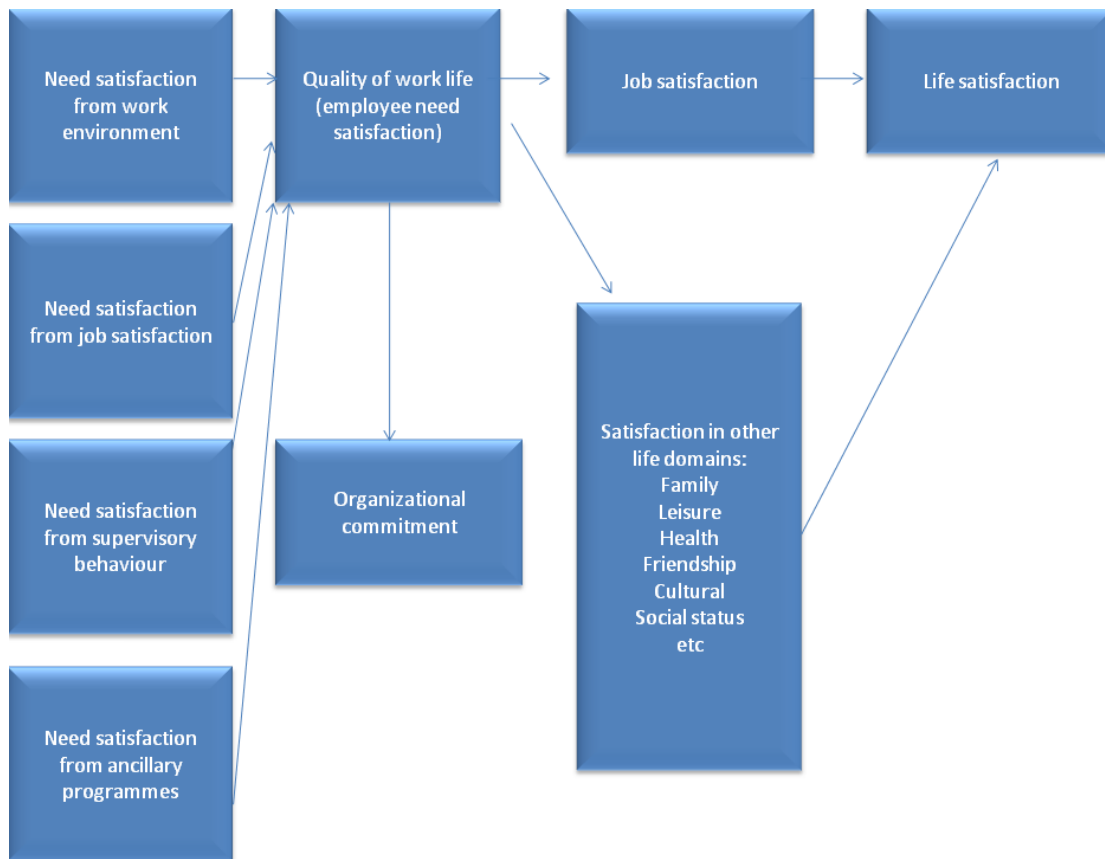
The view that EWB is not simply a proxy for job satisfaction is further endorsed by Danna and Griffin's (1999) comprehensive synthesis of health and well-being in the workplace. These practitioners offer a broader framework for EWB which draws on both work *and* non-work satisfactions enjoyed by employees blended together with indicators of general physical health. From a definitional standpoint, Danna and Griffin (1999) posit that health and well-being can refer to both the physical health of employees as well as their mental and psychological state. Danna and Griffin (1999) also offer a health and well-being organisational framework for the workplace (Figure 2.1). They identify three main precursors of EWB (the work setting, personality traits and occupational stress) and two main consequences of EWB; for the individual these are physical, psychological and behavioural and for the organisation these are health insurance costs, production/absenteeism and compensable disorders/lawsuits (Danna and Griffin, 1999). Their framework reflects categories of stress put forward by Cooper and Marshall (1978) although the authors note that this usage is more representative than declarative (Danna and Griffin, 1999).



**Figure 2.1 Framework for Organizing and Directing Future Theory, Research and Practice Regarding Health and Well-Being in the Workplace (Danna and Griffin, 1999)**

Sirgy et al. (2001) take this a step further. Drawing on need-satisfaction (for example Herzberg, 1965; Maslow, 1943) and spillover theory (for example Leiter and Durup, 1996), Sirgy et al. (2001) assert that EWB can be defined as *‘employee satisfaction with a variety of needs through resources, activities, and outcomes stemming from participation in the workplace’* (p. 242). Later, Sirgy (2006) advances his thoughts on the meaning of EWB further by asserting that EWB *‘is a state of life satisfaction, happiness, and subjective well-being directly related to job satisfaction. In other words, we are not focusing on job satisfaction per se but life satisfaction, happiness, or subjective well-being directly derived from job satisfaction or the work life domain’* (p. 8). Unlike Danna and Griffin (1999), these perspectives proposed by Sirgy and his colleagues suggest that EWB should embrace only those experiences arising directly

from the workplace that impact on job satisfaction and satisfaction with non-work domains such as family life and leisure time (Sirgy, 2006; Sirgy et al., 2001). Figure 2.2 depicts their model.



**Figure 2.2 Antecedents and Consequences of QWL (Sirgy et al., 2001)**

Frustrated with perceived theoretical deficiencies surrounding EWB, Martel and Dupuis (2006) propose another definition, which, in their view, allows the construct to be properly operationalised and measured. Interestingly, they reference the same challenges faced by their academic colleagues theorising on how QOL relates to health problems, highlighting that some patients with a given illness enjoy a better QOL than other patients with the same condition (Martel and Dupuis, 2006). Based on the earlier work by Dupuis et al. (1989) on QOL, the authors maintain that *'Quality of Work Life, at*

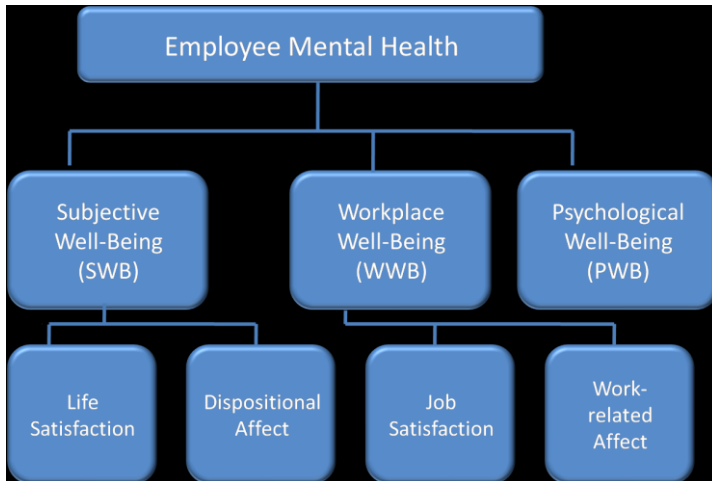
*a given time, corresponds to a condition experienced by the individual in his or her dynamic pursuit of his or hierarchically organised goals within work domains where the reduction of the gap separating the individual from these goals is reflected by a positive impact on the individual's general quality of life, organisational performance, and consequently the overall functioning of society' (p. 355).*

Similar to the majority of earlier definitions, this viewpoint emphasizes the dynamic, subjective nature of EWB. Martel and Dupuis (2006) also concur with Sirgy et al. (2006, 2001) and Danna and Griffin (1999) that there is a potential link between work and non-work domains. However, they pursue a theoretical model that considers the individual's perceived gap between their ideal situation at work and where they are currently that does not take into account the effect of other non-work factors such as those proposed by Danna and Griffin (1999).

Van Laar et al.'s (2007) findings a year later return the EWB debate to earlier form by broadly endorsing the views of Danna and Griffin (1999). Van Laar et al. (2007) note that QoWL should be '*...seen as the way in which work is good for you in the widest context in which an employee would evaluate their job'* (p. 325) thus further supporting previously held views that both work and non-work factors could affect how a worker approaches and is influenced at work. Importantly, Van Laar et al. (2007) assert that QoWL can be a combination of both factors originating from within the workplace and factors originating from outside of it.

Most recently, Page and Vella-Brodrick (2009) propose another EWB model which is based heavily on earlier literature concerned with subjective well-being (Diener, 1984)

and psychological well-being (Ryff, 1989). Figure 2.3 shows Page and Vella-Brodrick's (2009) model.



**Figure 2.3 Model of Employee Mental Health (Page and Vella-Brodrick, 2009)**

Again, this latest EWB model is based on the subjective views of workers. In some respects, therefore, the authors agree with earlier views that EWB is best defined through subjective satisfaction with work and non-work aspects (Page and Vella-Brodrick, 2009). Their claims that EWB comprises subjective well-being (SWB) and psychological well-being (PWB) as well as that relating specifically to work (WWB) parallel those of Van Laar et al. (2007) and Warr et al. (1979) noted earlier.

Based on the more contemporary definitions explored above, the limited consensus surrounding what is meant by EWB is confirmed. Generally, there is agreement that EWB is multi-dimensional and it is dynamic and subjective. After this, accordance between researchers falls away. In the eyes of Wright and his colleagues (for example Wright and Bonett, 2007; Wright et al., 2007; Wright and Cropanzano, 2000), EWB constitutes a worker's affective outlook of his/her life overall that disregards specific references to work. This contrasts with others who hold that EWB should incorporate

an evaluation of favourability that workers attach to various factors associated with the workplace although the exact elements that should be considered remain open to debate. For example, Sirgy et al. (2001) claim that only experiences stemming from the workplace should be included while Van Laar et al. (2007) and Danna and Griffin (1999) are of the view that non-work dimensions should also be factored into the equation.

An overview of the various scholarly contributions on what is understood by EWB is presented in Table 2.2. In summary, across the more contemporary literature, there exists general agreement that EWB is dynamic, subjective in nature, multi-dimensional and it is different conceptually to job satisfaction. Also, EWB refers to a psychological state. There remain mixed views on the workplace aspects that it embraces, its relationship with non-work domains, and how wider experiences of general well-being and physical health may be associated with the concept. The nomenclature surrounding EWB continues to be diverse.

**Table 2.2 Summary of EWB Definitions and Concepts**

<i>Author(s)</i>	Objective criteria only?	Subjective?	Equal to job satisfaction?	Psychological health elements?	Physical health elements?	Includes work domain?	Includes non-work domains?	Includes impact on non-work domains?
<i>Lawler 1975, 1982</i>		✓	✓		✓	✓		
<i>Seashore 1978</i>	✓			✓	✓	✓		
<i>Sheppard 1975</i>		✓	✓					
<i>Warr et al. 1979</i>		✓		✓		✓	✓	
<i>Trist and Westley 1981</i>	✓							
<i>Kiernan and Knutson 1990</i>		✓						
<i>Wright et al. (eg 2007)</i>		✓		✓			✓	
<i>Danna and Griffin 1999</i>		✓		✓	✓	✓	✓	✓
<i>Sirgy et al. 2001</i>		✓		✓		✓	✓	✓
<i>Martel and Dupuis 2006</i>		✓				✓		✓
<i>Van Laar et al. 2007</i>		✓		✓			✓	✓
<i>Page and Vella-Brodrick 2009</i>		✓		✓		✓	✓	



### 2.3.1 ***Employee Well-Being versus Employee Stress***

As Rick et al. (2001) observe, there exists a voluminous amount of literature dedicated to the causes of organisational stress and its effects. Some of this literature uses the terms 'stress' and 'well-being' synonymously (for example Antón, 2009; Michael et al., 2009), inferring that the two terms describe the same state. To avoid confusion, it is important to note briefly the difference between them.

As might be expected, there are many definitions of stress (Palmore, 2006) but one that is widely referred to is that offered by the HSE which considers stress as *'the adverse reaction people have to excessive pressure or other types of demand placed on them at work'* (HSE, 2009). This definition describes a specific psychological state which comes about as a direct consequence of something else and therefore does not share agreement with the majority of EWB definitions explored previously which are much broader in their meaning and reach.

Work-related stress can therefore be seen as a dimension of EWB. According to Dewe and Kompier (2008), workplace stress is viewed as a threat to EWB rather than synonymous with it. Van Laar et al. (2007) consider it a separate and discrete component of the wider EWB picture. This standpoint is also consistent with that of Danna and Griffin (1999) who list occupational stressors as one element of their health and well-being framework (Figure 2.1). Therefore, to be consistent with the mainstream EWB literature and for the purposes of this present programme, it is reasoned that work-related stress and EWB are not one of the same; instead, stress stemming from the workplace is but one dimension of the wider well-being construct.

This would seem to find favour with Brief and Atieh (1987). These authors assert that job-related stress *per se* is of modest negative consequence and urge more research into investigating the impact of job strains on well-being. For them, the crucial question is '*what sorts of job conditions do people perceive and label as stressful and which have they difficulty coping with to the extent that their well-being in life is impaired?*' (p. 117).

### 2.3.2 **Employee Well-Being versus Employee Engagement**

There are also instances in the literature where the terms 'employee engagement' and 'employee well-being' are treated as one and the same. For example, in their review of well-being in the workplace, Harter et al. (2002) performed a meta-analysis of data drawn from the Gallup Workplace Audit (Gallup Q12) (Buckingham and Coffman, 1999), an established measure to evaluate employee engagement, and make inferences regarding EWB. As with employee stress (Section 2.3.1), the differences between the two need to be addressed and are best explained by Robertson and Cooper (2010) who consider that employee engagement describes positive employee behaviour that is of direct interest to the organisation owing to the benefits it is likely to deliver operationally. In contrast, EWB encompasses a much broader concept that is likely to be more important to the employees. According to these authors (Robertson and Cooper, 2010), EWB could be a '*critically important factor in supporting high levels of engagement*' (p. 329).

## **2.4 Measuring Employee Well-Being**

So far, it is established that EWB is dynamic, subjective in nature, multi-dimensional and different conceptually to job satisfaction, work-related stress and employee engagement. For any employer wishing to improve the well-being status of its workforce, this presents a potentially complex set of factors to consider. To help operationalise a programme, some enterprises may first wish to evaluate the well-being of their workforces so they are better able to shape and develop plans that will address any troublesome issues effectively. The same may also be true of researchers wishing to investigate EWB.

This practice of first evaluating EWB is certainly endorsed by Briner (1997) who urges employers to pursue a comprehensive approach to measurement prior to developing any EWB programmes. In their discussion paper on work and well-being, Schulte and Vainio (2010) also underline the requirement of conducting research on which factors affect the risk to well-being. Following this theme, an appraisal of the options readily available to UK organisations (or researchers) who wish to assess EWB follows.

### **2.4.1 Employee Well-Being Assessments**

Questionnaires are the most common method of data collection in field research (Stone, 1978) and employee studies are no exception. The review by Hinkin (1995) of scale development practices in the study of organisations notes that hundreds of questionnaires have been created over the past few decades in the name of furthering understanding between workers and their behaviours. To distil the choice of scale

down to those available to organisations wanting to evaluate the well-being of their employees, a number of criteria are proposed.

Firstly, if it is accepted that EWB is subjective and it is the views of the employees that count, the use of *self-report* questionnaires is the preferred mode of measurement and should be a clear condition for option selection. As Levi (1992) notes, '*the individual's subjective assessment is the only valid measure of well-being available, even though it may not coincide with the objective views of others*' (p.201).

The second criterion centres on the most recent literature that suggests EWB comprises both work and non-work dimensions (for example Page and Vella-Brodrick, 2009; Van Laar et al., 2007; Sirgy et al., 2001) and therefore requires that the scope of the questions contained within an assessment feature both work and non-work aspects of EWB.

The third condition deemed to be important, stipulates that an assessment should be able to collect EWB diagnostic data associated directly with workplace traits such as those identified by Warr (1994) (Table 2.1) that will provide organisations with practical, evidence-based results on which management teams may take action. As an example, EWB data that identify issues relating to supervisor behaviour will alert an employer to address these in any subsequent well-being programme.

The fourth criterion requires that the assessment must be straightforward and short. According to Schmitt and Stults (1986), keeping a measure short, minimises response bias caused by tedium and monotony. Lengthy questionnaires have also been shown

to discourage potential subjects from responding (Burchell and Marsh, 1992). Further, on the grounds of cost and convenience, it is posited that a short, parsimonious scale is likely to be more attractive to employers wishing to conduct a well-being assessment of their personnel.

If these criteria are applied to validated questionnaires that have been developed to purposefully and specifically evaluate EWB as described, the available choices that are open to employers are surprisingly limited in number. In fact, the total number is three.

In date order (starting with the most recent), these are as follows: Van Laar et al.'s Work-Related Quality of Life Scale (WRQoL) (2007) and Sirgy et al.'s Quality of Work Life measure (2001). A Shortened Stress Evaluation Tool (ASSET) (Faragher et al., 2004) is also included; although it was originally designed to evaluate work-related stress rather than EWB, it is reported on frequently in the literature (for example Donald et al., 2005; Johnson et al., 2005) and is widely used by employers seeking to assess the well-being of their staff. The general approach advocated by the developers behind ASSET is also referenced by Danna and Griffin (1999) in their model of EWB (Figure 2.1).

By way of clarification, the Health and Well-Being (HWB) Assessment created by Mills (2005) and Warr's (1990) instruments to measure job-related and non-job mental health, while appearing at first, to meet the necessary criteria, are excluded from further analysis owing to the fact that they omit direct reference to workplace

characteristics. The instrument developed by Martel and Dupuis (2006) is considered too complex for employers to deploy easily and conveniently.

The 23-item WRQoL scale developed by Van Laar et al. (2007) assesses EWB across six factors; Job and Career Satisfaction (JCS), General Well-Being (GWB), Home-Work Interface (HWI), Stress at Work (SAW), Control at Work (CAW) and Working Conditions (WCS). Respondents are asked to what extent they agree or disagree with statements using a 5-point Likert-type scale. Details of how the authors compute the WRQoL respondent scores are not published.

ASSET (Faragher et al., 2004) is referred to by its developers as *'the market leading well-being survey tool'* (Robertson Cooper Ltd, 2010) and is longer than the WRQoL scale (Van Laar et al., 2007) or QWL measure (Sirgy et al., 2001) with 86 questions. It includes 37 questions concerning workers' perceptions of their job using a 6-point 'Strongly Agree – Strongly Disagree' response format. In addition, there are 9 questions regarding the respondent's attitude towards the organisation that use the same response system as the workers' perceptions section and 17 questions seeking frequency data on psychological health states (for example mood swings or feeling angry) and physical health states (for example headaches, muscular tensions/aches and pains) using a 4-point 'Never – Often' choice range (Faragher et al., 2004). ASSET scores are computed by analysing the average factor scores.

The QWL measure described by Sirgy et al. (2001) comprises 16 items designed to evaluate employees' satisfaction with seven major needs arising from the workplace (Health and Safety, Economic and Family, Social, Esteem, Actualization, Knowledge and

Aesthetic). Originally, subjects were asked to respond to questions using a 7-point scale ranging from 'Very Untrue' to 'Very True' (Sirgy et al., 2001). These response options to statements have been revised so that they now comprise five options ranging from 'Very False' to 'Very True' (Lee et al., 2007). QWL scores are the summation of the average values across each of the seven needs (Sirgy et al., 2001).

The prime focus of this present study is to evaluate an alternative approach to scale construction for measuring EWB. It is therefore appropriate to examine in more detail, the main development stages for each of the scales identified so that an informed comparison between existing approaches and the one proposed herewith may be made.

#### 2.4.2 ***Development of Current EWB Assessments***

For the WRQoL scale (Van Laar et al., 2007), 200 items from past staff satisfaction, QWL and psychological health scales were drawn up by the developers to reflect a broad definition of quality of work life (QoWL). These items were then adjudicated on by six panelists comprising an occupational health researcher, two human resource (HR) staff, two trade union officials and one clinical psychologist. The panelists met on three occasions to review the list of items and removed any they considered to be theoretically or practically irrelevant, ambiguous or repetitious. Experts also appraised the list for content validity to ensure it comprised QoWL variables pertaining to work and the home-work interface as well as theoretically relevant non-work issues.

The reduced list of 61 items was presented in a questionnaire. A total of 953 employees from a healthcare setting completed the questions by indicating how much

they agreed or disagreed with each statement. Van Laar et al. (2007) used factor analysis to reduce the number of variables and identify the underlying constructs (or factors) for their instrument.

Van Laar et al. (2007) eliminated items with a loading of less than 0.5 on any factor initially. Seven factors were established. However, the seventh factor containing three items was dropped on the basis that it showed unacceptably low internal reliability based on Cronbach's alpha ( $\alpha$ ) (Cronbach, 1951) and lacked theoretical meaning. This reduced the number of questions to 24 distributed across six factors (Van Laar et al., 2007). Owing to poor loading, one further item was deleted following confirmatory factor analysis. This confirmed the final number of questions for the WRQoL scale at 23 items distributed across six factors (Van Laar et al., 2007). Confirmatory factor analysis established a model that showed adequate fit. Internal reliability of the composite scale and each sub-scale was assessed using Cronbachs' Alpha ( $\alpha$ ) and found to be acceptable (Van Laar et al., 2007).

Table 2.3 shows the WRQoL factors and the number of items assigned to each. The factor structure for the WRQoL scale was confirmed again when the WRQoL questionnaire was tested with 2136 employees in the Higher Education sector (Edwards et al., 2009). Goodness-of-fit statistics, high correlations and strong factor loadings were found to be similar to the findings reported by Van Laar et al. (2007). No studies to further confirm the scale's validity have been published. A copy of the complete WRQoL scale question set may be found in the Appendix A, A.1.



**Table 2.3 WRQoL Scale - Factors and Items (Van Laar et al. 2007)**

<b>WRQoL Factor</b>	<b>Number of Items</b>
Job and Career Satisfaction (JCS)	6
General Well-Being (GWB)	6
Home-Work Interface (HWI)	3
Stress at Work (SAW)	2
Control at Work (CAW)	3
Working Conditions (WCS)	3

ASSET was deliberately developed to be a short, generic questionnaire that could be used by employers to screen their workforce initially for work-related stress problems (Faragher et al., 2004). As noted earlier, ASSET comprises 86 questions plus additional biographical and lifestyle aspects of enquiry (Table 2.4). The items were initially generated by two of the authors who were well acquainted with the literature on workplace stressors. These variables were then tested with a panel of occupational health practitioners and then evaluated by a sample of 2552 workers drawn from a mix of public and private sector organisations. Data were subjected to an exploratory factor analysis and internal reliability was assessed using  $\alpha$ . The findings identified seven factors within the '*Perceptions of your Job*' section. A number of items were reallocated to different factors to address concerns over face validity and six additional items were added to augment four factors with unacceptably low values for  $\alpha$ . One item that failed to correlate meaningfully with other items, was defined as a single item 'factor'. An exploratory factor analysis revealed two factors in the '*Attitudes towards your organisation*' section. Again, two extra items were added to improve the internal reliability properties of one factor. The third section of ASSET, '*Your health*', also yielded two factors; physical and psychological health. A final set of questions sought additional information on general health status (Faragher et al., 2004).

Based on the results, a second empirical study was performed, where the revised version of ASSET was completed by 6644 new respondents working in a large public sector organisation in the UK (Faragher et al., 2004). The results confirmed the scale's earlier factor structure and internal reliability. Owing to reasons of copyright, a copy of the ASSET questionnaire cannot be made available in this thesis.

**Table 2.4 ASSET Factor Structure (Faragher et al. 2004)**

<b>ASSET Section</b>	<b>ASSET Factor</b>	<b>Number of Items</b>
Perceptions of your job	Work relationships	8
	Your job	8
	Overload	4
	Control	4
	Job Security	4
	Resources and communications	4
	Work-life balance	4
	Pay and benefits	1
Attitudes towards your Organisation	Perceived commitment of organisation to employee	5
	Perceived commitment of employee to organisation	4
<b>Additional Sections</b>		
Your health	Physical health	6
	Psychological health	11
	General health	6

Sirgy et al.'s (2001) QWL measure is theoretically based and, as described earlier, draws on need satisfaction and spillover theory. The items originate from Porter's Need Satisfaction Questionnaire (1961) and Sirgy and his colleagues' conceptualisation of QWL. The study to validate the elements within the measure is comprehensive. The final assessment comprises 16 variables, which, according to Sirgy et al. (2001), reflect the seven basic needs that employees bring to work and are met through the work environment, job requirements, supervisory behaviour and ancillary programmes. It is Sirgy et al.'s (2001) contention that people's QWL is determined by the extent to which these needs are met through their work. Latterly, these have been

categorised as low order or high order needs (Lee et al., 2007). Table 2.5 lists the seven low order and high order QWL needs.

**Table 2.5 QWL Measure (Lee et al. 2008, Sirgy et al. 2001)**

Order	QWL Needs	Number of Items
Low Order Needs	Health and Safety needs	3
	Economic and family needs	3
Higher Order Needs	Social needs	2
	Esteem needs	2
	Actualisation needs	2
	Knowledge needs	2
	Aesthetic needs	2

Factor analysis was used to confirm underlying constructs and internal reliability was examined using  $\alpha$  (Sirgy et al., 2001). The subsequent study by Lee et al. (2007) largely supports the construct and predictive validity of the measure. A copy of the complete QWL measure may be found in Appendix A, A.2.

### 2.4.3 **Comparison of Current EWB Scales**

A comparison of the WRQoL scale (Van Laar et al., 2007), ASSET (Faragher et al., 2004) and the QWL measure (Sirgy et al., 2001) reveals more differences than similarities.

The similarities may be summarised as follows. Initial selection of variables for all three scales was based on established EWB models together with the developers' own views and those of researchers active in this field. All three scales are multi-dimensional and the same statistical approaches (factor analysis and Cronbach's Alpha) were used to confirm instrument structure and internal consistency/reliability.

However, the differences between the scales seem more profound. At a basic level, the number of questions differs widely and inevitably, account for some of the disparities. The style of questions also vary; Van Laar et al. (2007) offer a mix of

positively and negatively phrased items while Faragher et al. (2004) use negative questioning for the 37 questions in the '*Perceptions of your Job*' section and positive questioning in the '*Attitudes towards your Organisation*' section. Sirgy et al. (2001) use only a positive line of enquiry.

Each scale uses multi-response options although these vary between instruments as described earlier (Section 2.4.1). Only ASSET requires respondents to base their answers on their experiences over the past three months. The other two scales do not stipulate a timeframe.

The extent of overlap between all three scales is limited. For example, each instrument includes questions on work-life balance and feeling appreciated by others in the workplace. There is also crossover between the WRQoL scale and the QWL measure on opportunities to use abilities although no comparable questions exist within ASSET. Similarly, the QWL measure and ASSET include questions on pay but this subject is not covered in the WRQoL scale. The notion of creativity examined by Sirgy et al. (2001) is not evident in either of the other instruments.

Workers' physical health status only features in ASSET (Faragher et al., 2004). Unlike the previous sections in the questionnaire, these questions (and those relating to psychological health) are context free and therefore avoid any direct link to the work experience.

All of Sirgy et al.'s (2001) 16 items are job specific while Van Laar et al. (2007) employ both work-related questions (for example '*I have a clear set of goals that allow me to*

*do my job*') and generic questions (for example *'I am satisfied with my life'*) in their WRQoL scale.

#### 2.4.4 **Current EWB Scale Validity**

As part of their development, it is also necessary to consider the validity of the three measures. The American Psychological Association (1995) states that scales should demonstrate content validity (the adequacy with which the measure assesses the domain of interest), criterion validity (the adequate relationship between the new measure and another independent measure), construct validity (the adequacy of the measure's relationship to the underlying attributes it purporting to assess) and internal consistency (the homogeneity of items). The need for these main forms of validity is also stressed by Rick et al. (2001) and Oppenheim (1992).

In terms of work to validate these instruments, the authors of the QWL measure report the most data to support its construct validity (Lee et al., 2007; Sirgy et al., 2001). The construct validity of ASSET's psychological health sub-scale has been confirmed (Johnson and Cooper, 2003). Strong correlations between ASSET's 'Your job' factor and the Job Satisfaction Scale (Warr, 1990) are also reported although full data analyses have not been published (Faragher et al., 2004; Cartwright and Cooper, 2002). Van Laar et al. (2007) claim that their WRQoL development methods have successfully met the HSE check list for scale reliability, validity and factor structure (Rick et al., 2001).

All three scales have published data on internal consistency reliability. However, none of the developers of the three scales cites studies to confirm reproducibility (the ability

to produce similar results in a stable population) or responsiveness (the ability to measure change over time). This observation is consistent with the extensive review of workplace psychosocial measures conducted by Rick et al. (2001), who found almost no evidence for test-retest reliability (reproducibility) or test-retest sensitivity (responsiveness).

Finally, applications for the instruments should be examined. So far, the WRQoL scale has been validated for use within healthcare and higher education populations only which therefore restricts the ability to generalise findings to other workplace sectors (Edwards et al., 2009; Van Laar et al., 2007). This contrasts with ASSET (Faragher et al., 2004) and the QWL measure (Sirgy et al. 2001) which have both been constructed to be deployed across a range of different enterprises and industries.

## ***2.5 Reflections on Existing EWB Assessment Scales***

Based on this review of existing EWB self-report questionnaires, the following observations are made:

- The choice of validated assessments that are practical, easy to deploy, consider EWB to be multi-dimensional and take into account both work and non-work domains is limited to three. Of these, one (ASSET) was originally developed to assess work-related stress.
- The content of these assessments appears to be based more on the views and opinions of the developers and fellow academics rather than actual current day experiences of employees under investigation. This appears to be a constraint; if

EWB is subjective, as most scholars agree, there is a case for suggesting that the views of workers themselves should be considered as part of the scale construction process.

- Certainly, for the QWL measure (Sirgy et al., 2001), the content may be out of date since it is based partly on Porter's Need Satisfaction Questionnaire (1961) developed some 50 years earlier. Tinsley and Heesacker (1983) maintain that theoretical models pertaining to EWB can become obsolete within 10 years owing to changes in the workplace such as flexible working arrangements.
- None of the response formats employed, permit respondents to express the level of *importance* they attach to their experiences. Instead, the response choices permit employees only to indicate the extent to which they agree/disagree with statements regarding work (Van Laar et al., 2007; Faragher et al., 2004) or whether they consider the statements to be true/false (Sirgy et al., 2001). This would seem to be a further limitation as alighted on by Kiernan and Knutson (1990) (Section 2.3); if EWB is dynamic and subjective, the personal weighting that workers attribute to elements of their job experience could be a key consideration that current assessments appear to overlook. This point is reiterated by Costanza et al. (2007) who note that any measurement strategy should identify how *well* a need is met and assess the *importance* of that need to the respondent in terms of their well-being.
- All of the assessments are broad brush in their content. Certainly for ASSET (Faragher et al., 2004) and the QWL measure (Sirgy et al., 2001), this enables the

examination of differences between different sectors. However, in view of the complex nature of EWB (for example Kiernan and Knutson, 1990), significant differences between industries may exist that could have a keen bearing on the relevance of questions deployed. None of the authors consider potential differences in EWB variables between sectors as part of their scale construction methodologies. As Ellis and Pompli (2002) note, EWB might vary between groups of workers. This observation may constitute another weakness in existing approaches to evaluating EWB; it is possible that these generic approaches offered by the WRQoL scale (Van Laar et al., 2007), ASSET (Faragher et al., 2004) and the QWL measure (Sirgy et al., 2001) may be insufficiently sensitive to the particular well-being needs of specific employee cohorts and therefore fail to pick up certain aspects of EWB deemed important to workers.

- Confirmation of the psychometric soundness (validity) of the three scales appears patchy. While the developers (Van Laar et al., 2007; Faragher et al., 2004; Sirgy et al., 2001) all report aspects of instrument validity, none document evidence relating to reproducibility or responsiveness.

If the above points suggest some deficiencies, what are the alternative options available to those wishing to evaluate EWB? One option is to use a battery of different work-based scales. In her work on EWB, Baptiste (2008) deploys three previously developed questionnaires to explore employee commitment, job satisfaction and work-life balance satisfaction. Daniels' (2000) study of affective well-being at work involves nine different scales that are drawn from an assortment of established



questionnaires to evaluate job characteristics, job competence, negative affectivity and positive affectivity plus three scales that were designed specifically for the study. Another option is to use assessments that are context free. This is the strategy employed by Wright and his colleagues in their work on EWB (for example Wright and Bonett, 2007; Wright et al., 2007; Wright and Cropanzano, 2000) who deploy the eight-item Index of Psychological Health (Berkman, 1971) in their studies.

These alternative choices also present some likely drawbacks. While the approach described by Baptiste (2008) and Daniels (2000) may be appropriate for academic study, the use of combination scales may not be so suitable for employers requiring a measure that is practical and simple to deploy. Creating non-validated questionnaires for the purposes of a particular study (for example Daniels 2000) also raises methodological concerns. Further, using context free well-being scales such as the Index of Psychological Health (Berkman, 1971), may provide an indication of EWB levels within a workforce but will fail to supply empirical insights into those aspects of the workplace environment that may serve to influence EWB. For an employer that wishes to take action to enhance EWB, this may be a limitation; only by collecting diagnostic data on the dimensions of the job that link to EWB, can a management team make informed choices on how best to bring about improvements.

In view of these reflections, it is apparent that there is insufficient choice in pragmatic EWB assessments currently available. This observation is substantiated by Rick et al. (2001) who note that almost all psychosocial measures have been constructed for research purposes rather than as practical organisational tools.

Moreover, there exist some potential shortcomings with the options that are on offer as discussed earlier in this chapter (Section 2.5). This may be partly explained by the fact that EWB is a relatively young field - a theme highlighted by Robertson and Cooper (2010) who suggest that the measurement of EWB is still in its relative infancy and call for more empirical work to provide a foundation to enable more theoretical and practical advancements to be made. Others are not so understanding. Briner (2005), for example, criticises the lack of progress surrounding well-being at work, blaming researchers for being too pre-occupied with the general study of workplace stress to the detriment of more specific investigations into the different kinds of feelings and emotions experienced at work.

It would therefore seem appropriate to consider alternative methodologies applied in other areas of research that might be applied to EWB that could offer more choice to scholars and organisations active in the field. This echoes the views of Loscocco and Roschelle (1991) who conclude in their extensive review of EWB that a frustrating number of organisational psychologists duplicate studies unnecessarily and call for them to embrace theories and methods from other disciplines that will enhance understanding in this field. Rick et al. (2001) are also disparaging of the lack of variety in the type of workplace scales developed and used. Like Loscocco and Roschelle (1991), Rick et al. (2001) also appeal for new and innovative types of measures and methods that could draw on forms of assessment from other fields.

It is this proposition, namely that another discipline could contribute meaningfully to the debate surrounding EWB, which provides the central theme for the present body of research. This notion is explored in greater detail in the next section.

## **2.6 Health Related Quality of Life**

Well-being has obvious links with health. The World Health Organisation's (1948) definition of health incorporates a clear reference to well-being: *'Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity'*. Indeed, improving patients' well-being is identified as one of the three primary reasons for healthcare treatment, the other two being to prevent mortality and reduce the probability of future morbidity (Guyatt et al., 1986).

In view of this close association, it makes sense to investigate how health professionals evaluate the well-being of patients during the course of their clinical duties, and if appropriate, consider how their learnings may be transferred to well-being in the workplace.

A search across activity in the clinical sector, introduces the concept of Health Related Quality of Life (HRQL) questionnaires which are developed for the express purpose of evaluating, empirically, the overall impact of disease on the daily life and well-being of patients (for example Jones, 2001). As medicine has progressed, emphasis has shifted away from mere survival to a prolonging of life which has stimulated a growing interest in how disease impacts patients' ability to perform day to day activities and their quality of life (McDowell, 2006). There has also been recognition that prolonging life

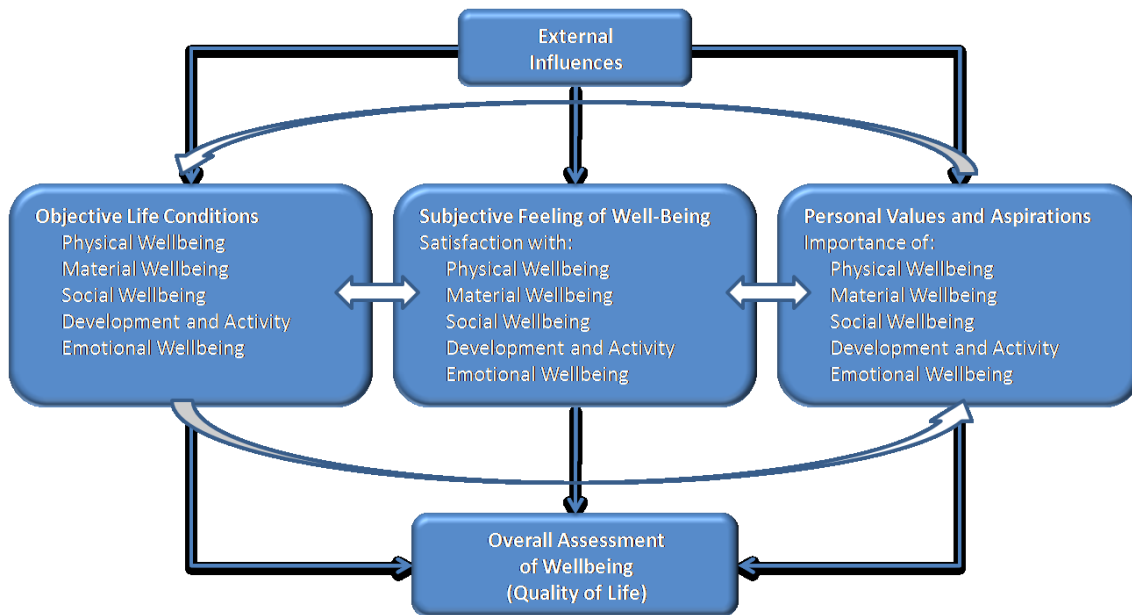
may not always be in the best interests of the patient; patients want to live not merely survive. With these changes, has come the requirement for new health indicators which has led to the evolution of HRQL scales (McDowell, 2006).

In view of these occurrences, it is fitting to examine how patient well-being is measured using HRQL scales and consider whether this approach may be applied to the well-being of employees within an organisational context.

### 2.6.1 **HRQL – Definitions and Concepts**

At a very general level, academics who study quality of life (QOL) share similar views to those involved in general well-being research. Felce & Perry (1995) bring together a number of converging conceptual models to offer an overall model of QOL which bears a close resemblance to those posited by Page and Vella-Brodrick (2009), Dewe and Kompier (2008) and Waddell and Burton (2006). According to Felce and Perry (1995), QOL encompasses '*...objective descriptors and subjective evaluations of physical, material, social and emotional wellbeing, together with the extent of personal development and purposeful activity, all weighted by a personal set of values*' (p. 60).

Figure 2.4 presents the Felce and Perry (1995) model.



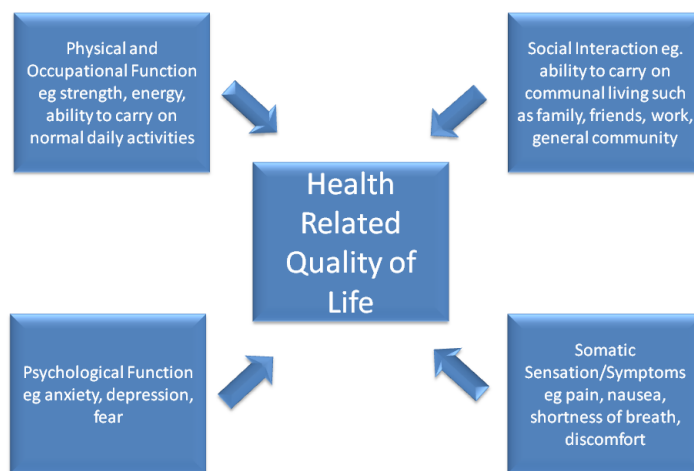
**Figure 2.4 A Model for Quality of Life (Felce and Perry 1995)**

Schipper et al. (1996) state that HRQL can be defined as *‘the functional effects of an illness and its consequent therapy upon a patient, as perceived by the patient’* (p. 16).

Schipper et al.’s (1996) definition emphasises the effects of disease (and any treatment) on well-being as judged by the patients themselves. A second definition put forward by Juniper (2005) stresses the relationship between health and its impact on patients’ overall well-being. She defines HRQL as *‘the part of a person’s overall quality of life that is primarily determined by the person’s health status and which can be influenced by clinical interventions’* (p. 194). Like Schipper et al. (1996), this second definition stresses the subjectivity of HRQL and also the direction of impairment; it is the impact of health (or disease) on overall well-being that is of clinical interest.

Juniper (2005) also emphasises that HRQL measurement should only concern itself with items that can be modified by an intervention such as a drug, therapy or medical device.

Schipper et al. (1996) maintain that four basic components of HRQL exist: physical and occupational function, social interaction, psychological function and somatic sensation (or symptoms) although the significance of each of these will vary according to the disease in question. Figure 2.5 illustrates the components of HRQL according to Schipper et al. (1996).



**Figure 2.5 Health Related Quality of Life (Schipper et al. 1996)**

Comparisons between the conceptual understanding surrounding EWB and HRQL can be made. There is general agreement between the two that it is the subjective views of the employees (for example Danna and Griffin, 1999) or patients (for example Schipper et al., 1996) that prevail. There is also agreement that EWB and HRQL are multi-dimensional. However, joint consensus on the dimensions that go to make up each is less clear. HRQL practitioners consistently view the concept as the way in which a disease impacts the well-being of a patient. This contrasts sharply with the wide range of different theoretical frameworks surrounding EWB (Table 2.2)

Only the views of Sirgy et al. (2001) fit with HRQL definitions; just as Schipper et al. (1996) and Juniper (2005) consider how HRQL relates to patients' perceptions of how their disease impacts wider dimensions of well-being (beyond the disease itself), Sirgy et al. (2001) adopt the same stance in respect of employees' perceptions of how their work impacts well-being beyond the workplace. All other conceptual opinions concerning EWB cite other elements of the construct that do not stem directly from the job (for example Page and Vella-Brodrick, 2009).

Juniper (2005) also highlights that only modifiable elements of HRQL may fall within her definition. This introduces a practical element to HRQL measurement strategy by omitting those aspects of a disease that cannot be altered through clinical intervention. No equivalent qualifier exists within the occupational well-being literature.

### 2.6.2 ***HRQL – Clinical Application***

Change in patient HRQL has become a criterion for success in many clinical trials (Schipper et al., 1996). This is based on the wide recognition that the overall results arising from a clinical intervention are best described in a way that is concordant with the views of both the health professionals and the patients themselves.

It is generally accepted that clinicians and other observers may misjudge patients' well-being based on observation only (Fayers and Machin, 2007). The priorities of each side are different; clinicians tend to focus on hard physiological outcomes in their bid to prevent mortality and reduce morbidity whereas patients are more concerned with their ability to carry out day-to-day activities, that is, their quality of life and well-being

(Juniper, 2005; Schipper et al., 1996). Moreover, correlations between other clinical assessments and patients' own assessment of their HRQL have been shown to be weak and therefore patient experiences cannot be imputed from clinical variables only (Guyatt et al., 1993; Juniper et al., 1993). It is also held that an important contributor to poor patient compliance with treatment pathways may be a discrepancy between the treatment goals of the clinician and those of the patient (Juniper, 2005).

Data that track HRQL over time can make up part of a pharmaceutical company's application for a new drug license. New pharmacological compounds under trial for chronic obstructive pulmonary disease (COPD) in Europe, for example, are required to incorporate a symptomatic measure, such as an HRQL scale, as a co-primary end point as well as a physiological, hard measure such as the forced expiratory volume in one second (FEV<sub>1</sub>) (Jones, 2001).

### 2.6.3 ***HRQL Assessments***

Against this background, the HRQL academic community maintains that the best way to gauge patients' levels of well-being is to ask them directly through the use of validated HRQL questionnaires. By being able to assess accurately the impact of disease on well-being from the patient's perspective, it is more likely that the goals of an intervention will be better aligned to the needs of the patients and the evaluation of interventions undergoing trial will be more effective (Schipper et al., 1996). It also follows that there will be greater adherence to treatment regimens, in regular clinical practice, if the goals of the patient are also established and taken into account using HRQL questionnaires (Juniper, 2005). In short, HRQL scales support evidence-based



medicine – the clinical practice of aiming to apply the best available evidence gained from scientific method to medical decision making (for example Sackett et al., 1996). As authors such as McDowell (2006) and Jones (2001) observe, the use of HRQL instruments are similar to a detailed, properly conducted clinical consultation although the outcome is in the form of a standardised measure that can be applied for scientific purposes, rather than a clinical impression.

The whole premise of an HRQL instrument is that it records how patients consider their own well-being has been impacted by their ill-health. Schipper et al. (1996) state that HRQL is '*intensely patient-centred*' (p.11). Clinicians, carers or family members may complete these instruments on behalf of patients although, generally, it is recognised that data are most salient when patients themselves respond directly to questions concerning their HRQL (Aaronson, 1989).

HRQL instruments can be generic or they can be developed to evaluate the well-being of patients with particular medical conditions. Generic health profiles can be used for all medical conditions and have the advantage that they can be used to make direct comparisons between different disease groups (Guyatt et al., 1993). Examples of such scales include the Medical Outcomes Survey Short Form 36 (SF-36) (Stewart et al., 1988) and the Sickness Impact Profile (SIP) (Bergner and Bobbitt, 1981). The SF-36, for instance, consists of 36 variables spread across eight separate domains and requires patients to signal the impact of their condition on the quality of life and well-being (Stewart et al., 1988). The domains are physical functioning, role-physical, bodily pain, general health, vitality, social functioning, role-emotional and mental health.

While these generic questionnaires can be used across a range of medical conditions, their generalist content means that they may be unable to identify problems that are specific to a particular medical condition (Kelleher et al., 1997). Linked to this lack of sensitivity, is the likelihood that generic instruments will be unable to detect small but clinically meaningful changes (Guyatt et al., 1986). This issue of sensitivity becomes especially significant when an HRQL scale is being used as an evaluative instrument to detect change over time during the course of a clinical trial (Guyatt et al., 1986).

Specific HRQL scales include all functional impairments considered most important to patients in a particular sub-category. As Juniper et al. (1996) note, the instrument may be specific to a particular disease, function, age group or other aspect of interest to the investigator. Mostly, specific HRQL instruments focus on particular diseases. They recognize that different disease conditions may affect different day to day functions and therefore lead to different quality of life problems for patients (Guyatt et al., 1986). These instruments are better able to focus on aspects of health status that are most relevant to patients who are impacted and are more responsive to change in health status over time (Guyatt et al., 1993; Guyatt et al., 1986).

An example of a disease-specific questionnaire is the standardised Asthma Quality of Life Questionnaire (AQLQ) which comprises 32 questions asking patients to rate their experience of how their asthma impacts their quality of life across four different domains; symptoms, activity limitation, emotional function and environmental stimuli (Juniper et al., 1999).

Generally, HRQL questionnaires are developed using sophisticated, rigorous methodologies (Jones et al., 1991). Because of the central role that they play in clinical evaluation practices, these instruments undergo extensive tests to determine such aspects as content validity, construct validity, criterion validity, reproducibility and responsiveness (Juniper et al., 1996; Guyatt et al., 1986).

#### 2.6.4 ***Additional Comparisons between EWB and HRQL***

Overall, both EWB and HRQL disciplines view the measurement of well-being as a good thing that will benefit the parties involved. For EWB, assessment is often seen as an effective forerunner to shaping and delivering occupational initiatives that are relevant to the needs of workers, often in a bid to improve performance (Buck Consultants, 2009). The same is true of HRQL evaluation where the application is either to help appraise the performance of a trial intervention designed to improve enhance the well-being of patients, or it is to aid the clinical practitioner in identifying a treatment regimen that best matches the needs of the patient. Both disciplines also report poor statistical correlations between hard (objective) endpoints and the subjective views of respondents. Just as HRQL methodologists observe underwhelming associations between clinical status and patient HRQL (for example Juniper et al., 2004), Danna and Griffin (1999) point out that correlations between self-reported, subjective measures show only weak relationships with end-point indicators such as heart rate and blood pressure.

Notwithstanding the differences in definition, similarities between the sub-groupings used in EWB and HRQL assessments are also evident. For example, the WRQoL scale

(Van Laar et al., 2007) includes factors that describe both workplace characteristics (symptoms of work), for example 'Control at Work' and effects (impacts of work), for example 'Home-Work Interface' (Table 2.3). These can be compared to the '*Symptoms*' (characteristics of disease) and '*Activity limitation*' (impacts of disease) domains presented in a HRQL scale such as the AQLQ (Juniper et al., 1999).

A marked difference between the two approaches is the emphasis placed on the requirement to robustly evaluate patient well-being within the HRQL community. This is to be expected given the regulatory role of HRQL data as determinants of the successful (or unsuccessful) passage of interventions through their various clinical trial phases.

Another key difference between EWB and HRQL measurement lies in the wide choice of generic and specific validated instruments available to clinicians and HRQL researchers compared to the limited number of EWB scales identified herein (Van Laar et al., 2007; Faragher et al., 2004; Sirgy et al., 2001), which are all generic in their content. This observation, in the context of HRQL practices, prompts further reservations over the ability of generic scales to capture effectively the EWB issues experienced by diverse groups of workers.

What emerges from this review is that the HRQL discipline is seemingly more sophisticated and advanced in its thinking and application than its occupational cousin. As it is further along in its evolutionary path, HRQL may offer an alternative measurement framework to those active in the occupational sector wishing to evaluate EWB.

In order to advance this suggestion further, it is important to understand the methodological frameworks that support the development of HRQL questionnaires. This will help to evaluate the potential contribution to current EWB measurement theory and practice that HRQL scales may present.

### 2.6.5 ***HRQL Instrument Development***

The cornerstone of the HRQL measurement process is to ask the patients themselves how they perceive their quality of life and well-being have been impacted by their condition (for example Aaronson, 1989). Generally, respondents are required to answer questions only in relation to their medical condition.

Although there are variations in the methodological framework, there are typically two main phases that underpin initial scale development (Juniper et al., 1996; Guyatt et al., 1986). First, is the Item Generation Phase (IGP), where all possible associations between the disease and quality of life are identified. The aim of the next phase, the Item Reduction Phase (IRP), is to reduce the number of items generated in the earlier phase to those that the majority of targeted patients find most important to their general well-being. This then forms the basis for the identification of sub-scales that make up the final instrument. For HRQL scale construction, this can be achieved through a data analytic technique such as factor analysis (FA). FA is considered by the majority of observers to be the most commonly used analytical method for data reduction in questionnaire development (Ford et al., 1986) and allows for a set of observed variables to be condensed to a more parsimonious number through the identification of underlying constructs (for example Stewart et al., 1988). FA was the

method used for the construction of the three existing EWB scales identified earlier (Van Laar et al., 2007; Faragher et al., 2004; Sirgy et al., 2001).

The use of FA in HRQL measurement has met with criticism from some commentators. According to Fayers et al. (1998) and Fayers and Hand (1997), results based on FA may be misleading. These authors maintain that, unlike traditional psychometric instruments that are commonly developed using factor analytical techniques and comprise effect indicators (for example anxiety), HRQL scales contain both effect indicators and causal indicators. Fayers et al. (1998) and Fayers and Hand (1997) claim that these latter indicators may cause a drop in HRQL for those patients experiencing them but the reverse relationship need not automatically apply; a poor level of HRQL need not mean that the patient suffers from that causal symptom. The argument follows that FA modelling could therefore be flawed for HRQL applications because it implicitly assumes that factors are composed of effect indicators only and changes in HRQL are likely to be reflected in corresponding changes across *all* scale items. Fayers and Hand (1997) conclude '*Factor analysis is largely irrelevant as a method of scale validation for those QOL instruments that contain causal indicators, and should only be used with items which are effect indicators*' (p. 139).

Also emphasized by these commentators is the need for breadth of coverage in HRQL scale development in order to ensure that all important, HRQL-impairing symptoms and effects are included. Fayers and Hand (1997) note that a lack of correlation with other items (as happens with FA) does not provide sufficient grounds for excluding ones that are considered important by the patient populations and urge instrument

methodologists to ask patients '*Which of these issues have caused the greatest impact on your QOL?*' (p. 148).

To illustrate this point, Fayers et al. (1998) direct attention to the work of HRQL methodologists, Juniper et al. (1997), who conducted a direct comparison between one factor analytical procedure and an alternative method for scale item selection known as Clinical Impact (or Impact Analysis). The authors conclude that the different approaches lead to discernibly different instruments which have inevitable implications for research findings and their interpretation (Juniper et al., 1997). One 'advantage' of Impact Analysis (IA) over FA is that 'orphan' items can still be included in the final instrument; even though they do not have a strong, mathematical association with other factors, health-related items that are perceived by patients to have a high impact on their overall well-being may still be included for evaluative purposes (Juniper et al., 1997).

The Impact Analysis (IA) approach is consistent with a methodological framework for clinical indices known as 'clinical sensibility' (Feinstein, 1987). This term refers to 'enlightened common sense' which Feinstein (1987) describes as a mix of ordinary common sense plus a reasonable knowledge of pathophysiology and clinical reality. Dimensions of clinical sensibility to aid evaluation of a particular index include: (1) purpose and framework; (2) overt format (3) face validity (4) content validity and (5) ease of usage (Feinstein, 1987).

Using the Impact Analysis (IA) approach, patients are invited to identify those items they have experienced as a result of their illness and attribute an importance score to

each on a Likert-type scale ranging, for example, from 'extremely important' to 'not at all important'. Results are expressed as frequency (the proportion of patients who experienced the particular item) and importance (the mean importance attached to each item). Items are primarily selected for the final questionnaire using the impact score (the product of frequency and importance) and then grouped into domains based on clinical experience and findings described in established instruments (Juniper et al., 1996; Guyatt et al., 1986). Results are analysed directly from the scores recorded and are expressed as the average score per item for each of the domains. An overall quality of life score is computed from the mean scores of all of the items (for example Juniper et al., 1993).

The IA method contrasts appreciably with existing EWB scale construction, where respondents only indicate how much they agree/disagree with statements (Van Laar et al., 2007; Faragher et al., 2004) or whether they consider the statements to be true/false (Sirgy et al., 2001). How this approach offers potential for occupational EWB studies is examined further in the following section.

## ***2.7 Rationale for Study***

This literature review has sought to explore current thinking on the definition and measurement of EWB. It is apparent that there are inconsistencies in what is understood by the term EWB and its constituent parts. This carries consequences for how it may be assessed.

Employers wishing to establish the well-being of their workers currently have three validated instruments to choose from if they wish to deploy a practical, self-report



questionnaire that yields data on work and non-work aspects associated with EWB; the WRQoL scale (Van Laar et al., 2007), ASSET (Faragher et al., 2004) and the QWL measure (Sirgy et al., 2001). Of these, only the WRQoL scale and the QWL measure have been developed to specifically evaluate EWB (Van Laar et al., 2007; Sirgy et al., 2001).

Reservations regarding these existing scales have been noted (Section 2.5). The more recent literature confirms that EWB is subjective (for example Page and Vella-Brodrick, 2009; Danna and Griffin, 1999; Warr et al., 1979). By implication, this suggests that it is the views of employees themselves that should best form the basis of any measurement strategy. However, the initial item pools for the WRQoL scale (Van Laar et al., 2007), ASSET (Faragher et al., 2004) and the QWL measure (Sirgy et al., 2001) were determined by the authors based on their own views and those of previous researchers rather than input from employees directly. Some content may also be out of date (Tinsley and Heesacker, 1983).

With all three instruments (Van Laar et al., 2007; Faragher et al., 2004; Sirgy et al., 2001), content is generic. While this allows researchers to compare and contrast EWB across different employee populations, there could be important differences between employee sectors that are not captured owing to low levels of specificity within the question sets provided. This could have implications for the interpretation of EWB findings and any interventions stemming from them. It may also have a negative effect on a scale's responsiveness.

Another possible limitation centres on the use of FA in the construction of the three scales. Van Laar et al. (2007) and Faragher et al. (2004) reduce the number of items using FA and all three developers (Van Laar et al., 2007; Faragher et al., 2004; Sirgy et al., 2001) use FA to confirm the underlying dimensions of their respective instruments. The application of FA in the measurement of well-being (or QOL) has been challenged by Fayers et al. (1998) and Fayers and Hand (1997) who argue that it is an inappropriate method for instrument construction when both causal and effect indicators are being appraised. Instead, they maintain that the key determinant for item selection should be what is considered to be most important to the study population rather than mathematical linkages and explained variance.

In consideration of these potential deficiencies, there is justification for testing an alternative approach to measure EWB. This proposed approach is IA (Juniper et al., 1996; Guyatt et al., 1986). As described earlier (Section 2.6.5), IA is an established approach that has been developed to systematically assess and track the HRQL and well-being of patients in a clinical setting. It is a discipline that may offer ways to address the potential shortcomings arising from existing EWB scales. In summary, IA places the subjective views of the respondents at the centre of the process (for example Schipper et al., 1996); it draws directly on the experiences of the population under examination at the outset and factors in the relative importance that subjects place on each of these, as part of the item confirmation process (Juniper et al., 1996; Guyatt et al., 1986). Moreover, IA promotes a possible alternative to FA that addresses the concerns expressed by commentators such as Fayers et al. (1998). Testing an approach borrowed from another discipline also fits well with calls from Briner (1997)

and Loscocco and Roschelle (1991) for a more innovative and enlightened approach in the quest to extend understanding of well-being in the workplace.

Based on the alleged weaknesses associated with existing approaches for measuring well-being in the workplace and the related practices documented in the clinical arena, there is clear merit in examining how the IA approach may be applied to measuring well-being in employee populations. Just as HRQL instruments are able to determine how disease impacts general well-being, it appears feasible to suggest that similar instruments could be developed to assess how people's jobs impair general well-being using the same IA-based framework.

The precedent of applying existing clinical methods to the workplace has already been set. The General Health Questionnaire (GHQ) (Goldberg and Williams, 1988) for example, originally developed to detect minor psychiatric disorders among respondents in community settings, has been used as an indicator of mental health in occupational studies (Banks et al., 1980).

A small, feasibility study to test the IA approach in the workplace has already been conducted (Juniper et al., 2009). Based on a sample population of 126 employees, item-selection using IA was compared with item-selection using FA. Analyses showed that the two approaches resulted in notably different questionnaires (Juniper et al., 2009).

The fundamental tenet of the current research is therefore to build on this earlier study to investigate, more rigorously, whether the IA methodology can contribute meaningful insights to current opinion on and measurement of EWB.

Section 2.2 examined the progressive importance of EWB and the costs that are associated with it from the standpoint of the state, the employer and the worker (for example Black, 2008; DWP 2005; Danna and Griffin, 1999). In consideration of the emphasis that is now being placed on EWB, it is of concern that the academic research available to support this field appears to be relatively immature and fragmented. This seems to be especially so in respect of how EWB may be evaluated. The seeming lack of refined measurement proficiency may account for the limited progress generally and the apparently patchy, scientific evidence linking EWB with performance and the provision of wellness programmes that some authors have observed (for example Cox and Jackson, 2006; Daniels and Harris, 2000; Briner, 1997; Ganster and Schaubroeck, 1991).

The present study aims to explore and potentially address the noted shortcomings in EWB measurement currently. In particular, it is hoped that this research programme may lay foundations for a new approach to defining and evaluating EWB that could pave the way for more sophisticated investigations into this important area of study.

## ***2.8 Study Question***

The overall study question for this present research is as follows:

“Can Impact Analysis be applied to the workplace to provide meaningful insights into employee well-being and how it may be measured?”

The study question is broken down into five sub-questions as follows:

1. What does this novel application of Impact Analysis disclose about EWB and how it may be measured?
2. How does Impact Analysis perform against Factor Analysis as a scale construction method?
3. Based on the Impact Analysis approach to item selection, does EWB comprise the same constructs and themes across different sectors or do notable differences exist?
4. How do the outputs from questions 1 – 3 above contribute to current theoretical perspectives surrounding the measurement of EWB?
5. How do the outputs from questions 1 -3 above contribute to current practical perspectives surrounding the measurement and management of EWB within organisations?

### 2.8.1 ***Study Aims and Objectives***

The overall aim of the proposed research is to evaluate an alternative methodology to measuring employee well-being based on Impact Analysis.

In order to answer the study questions set out above, the specific research objectives are as follows:

- Using Impact Analysis, develop pilot WRWB instruments for three separate organisations representing different occupational sectors.
- Conduct a Factor Analysis for each data set to compare findings with those derived from Impact Analysis.
- Compare data from the three instruments to identify any recurring themes and noteworthy differences that will advance the debate on EWB and its underlying constructs.
- Compare study findings with the three EWB instruments currently available to evaluate the advantages and disadvantages of the different approaches.

### 2.8.2 ***Employee Well-Being Definition***

For this study, the definition of EWB is adapted from the term applied by HRQL questionnaire developer, Juniper (2005). It is also consistent with the definition used in the smaller pilot study described earlier (Juniper et al., 2009).

It is referred to as ‘work related well-being’ (WRWB) which is described as:

*‘that part of an employee’s overall well-being that they perceive to be determined primarily by work and can be influenced by workplace interventions.’*

## **Chapter 3      Research Methodology**

### ***3.1 Introduction***

The following chapter sets out the details of the research methodology undertaken to support this thesis. It describes the case study approach and the primary purpose of the three pilot assessments. Details of each of the procedural processes required to develop the scales using the IA construction process and an accepted FA approach are provided. The necessary statistical analyses to address the study questions presented in the previous chapter (Section 2.8) are also explained.

### ***3.2 Research Design and Methods***

Set out in the sections below are a description of the protocols employed. A critical evaluation of both the IA and FA methods used may be found in the Discussion (Chapter 8).

#### ***3.2.1 Ethical Approval***

Ethical approval to conduct the study was obtained from the Cranfield University School of Management Ethics Committee (Appendix B, B.5).

#### ***3.2.2 Case Study Approach and Sample Size***

The research was based on three case studies drawn from different occupational sectors. This approach was driven by the need to address the main study question (Section 2.8). Namely, it would allow IA to be compared with FA on three separate occasions thus providing sufficient opportunity to assess the relative performance of IA in different settings. Additionally, the EWB findings could be compared cross-sector to determine the existence of any notable themes or differences.

Key inclusion criteria for participating organisations were three-fold. The organisation had to have an employee population in excess of 800 based in the UK. Next, it was necessary for target employees to have web access at their place of work since the research protocol required them to complete an online assessment. Finally, it was important that the selected organisations were drawn from different occupational sectors so that diverse experiences of WRWB could be explored and contrasted.

This study population size of 800 was based on the need to meet adequate sample numbers required for IA and FA construction methods. Developers of HRQL instruments using IA recommend the recruitment of at least 100 subjects for the IRP in order to safeguard measurement properties (Juniper et al., 1996; Guyatt et al., 1986). As examples, the AQLQ (Juniper et al., 1992) enrolled 150 subjects for this phase of the research while the Inflammatory Bowel Disease Questionnaire (IBDQ) (Guyatt et al., 1989a) and the Chronic Heart Failure Questionnaire (Guyatt et al., 1989b) involved 97 and 88 patients respectively. This number is low compared to recommendations for FA sample sizes. In his review of scale development practices, Hinkin (1995) suggests a minimum number of 150 respondents. Rick et al. (2001), in their appraisal of psychosocial measures, argue that the sample size for FA should exceed four times the number of items in a scale *or* 100, whichever is the greater. This latter guidance suggests a potentially larger sample size than either Guyatt et al. (1986), Juniper et al. (1996) or Hinkin (1995) suggest. As a compromise, a target sample population of 800 was proposed. This figure lay at the higher end of a spectrum ranging between 100 (as recommended by HRQL experts) and an estimated requirement of 400 respondents



should 100 items be generated (as recommended by Rick at al. (2001) while still allowing for a low response rate of 50%.

Potential participants were identified and approaches were made using an outline proposal summarizing the research and outputs (Appendix B, B.1). Where interest was indicated, a follow up meeting was held with senior executives within the organisation to discuss the study in detail. Once confirmation to take part had been received, a detailed plan of all activities associated with the research was drawn up so that necessary arrangements could be made to permit the work to be executed in a timely, effective and professional manner.

### ***3.3 Primary Purpose of Assessments***

Before confirming the methodology for the current research, it was important to establish the primary development principles of the pilot scales that were to be created since this would define the most appropriate protocol to be followed.

Consistent with HRQL scales using IA (for example Juniper et al., 1992), the scales were developed to meet the following criteria:

1. Items must reflect areas of WRWB that were important to employees within each participating organisation (content validity)
2. The scales should be relatively short and simple for respondents to complete
3. Summary scales should be amenable to statistical analyses

Additionally, it was decided that the EWB scales to be developed should be constructed with both discriminative (the ability to be able to distinguish differences

between groups at a point in time) and evaluative properties (the ability to measure the magnitude of longitudinal change over time) in mind. Discriminative properties require that a questionnaire has adequate reliability and cross-sectional validity (Juniper et al., 1993). Evaluative properties require that a questionnaire has adequate responsiveness and longitudinal validity (Juniper et al., 1993). Both these aspects of validity are important within the HRQL questionnaire setting where it is necessary to determine impaired health between patients and/or detect clinically significant changes in health where the benefits of pharmacological interventions are being assessed (Jones, 2001). These same properties were judged to be valuable in an occupational environment, where it would be beneficial to discriminate between the WRWB levels of different employees at a point in time as well as be able to assess meaningful changes in people's well-being that could arise as a consequence of a workplace intervention.

Similarly, it was important that the pilot scales were valid, that is, they measured subjective aspects of WRWB that they purported to. While work to validate the measurement properties of the three pilot assessments lies outside the scope of this present research, the way in which this would be achieved is described in Section 9.5.

### ***3.4 Item Generation Phase***

The field research element of the study replicated the approach of HRQL scale developers who use IA (Juniper et al., 1996; Guyatt et al., 1986). The first phase is termed the IGP.

The aim of the IGP was to compile an exhaustive list of well-being variables that fitted with the stated WRWB definition; those items perceived by employees to be primarily determined by their work and modifiable through employer actions (Section 2.8.2). Only variables that were judged to have an adverse effect on well-being were collected. This was consistent with the approach of HRQL developers (Juniper et al., 1996; Guyatt et al., 1986) where the primary aim is to establish the degree to which a disease impacts negatively on a patient's quality of life. The IGP comprised three primary sources; focus group discussions with employees, individual interviews with professional personnel and a literature search.

#### 3.4.1 ***Focus Group Discussions***

In total, at least eight facilitated focus groups per organisation were held, each attended by some 10 employees. This number was based on recommendations by Guyatt et al. (1986) and Juniper et al. (1996) who maintain that 50-100 patients for this stage of HRQL scale development is required. The aim of each focus group was to record possible WRWB variables contributed by employees directly.

Mostly, focus groups were recruited by inviting employees to volunteer. The inclusion and exclusion criteria for participation were as follows;

Inclusion criteria:

- Currently employed by the organisation either in a part-time or full-time capacity
- Employed with the organisation for at least three months

Exclusion criteria:

- Working as a contractor in the organisation

A short summary of the study and what was required of focus group participants was circulated to staff (Appendix B, B.2). Workers who met the criteria and were interested in taking part in the discussions were asked to put their names forward. Significant efforts were made to ensure all roles and levels of employee were represented adequately. A sufficient spread of different geographic locations was also heeded.

Depending on actual job descriptions, some focus groups combined different roles and levels. With others, roles were kept separate to prevent more junior representatives feeling potentially inhibited from sharing their experiences in the presence of more senior colleagues. Decisions on optimal combinations of roles within focus groups were made in consultation with senior HR personnel within each organisation.

Attendees were sent an email confirming their focus group details (Appendix B, B.3).

Focus group discussions were semi-structured. The overall aim was to encourage attendees to share their views and experiences of how their existing jobs had impacted their well-being. If employees were not forthcoming in their views, contributions were prompted by asking them how they considered their work might affect particular areas of their well-being such as physical and psychological health and home life needs.

Meticulous care was taken to avoid asking leading questions or volunteer information from previous interactions that might influence contributions from the present group.

To support discussions, an interview guide was devised (Appendix B, B.4). This was

used to help structure the dialogue and ensure that all areas of interest were covered by each group in a uniform and consistent manner. All comments contributed by participants were recorded in detailed notes.

Each focus group lasted approximately 45 minutes. Contributions made by participants were noted. It was emphasised at the beginning of each meeting, that all input was confidential and non-attributable.

If, after the final focus group for each organisation was completed, it was considered that new issues were still being identified, further focus groups were arranged so that additional items could be captured. This process was repeated until it was deemed all possible WRWB variables relating to the participating organisation had been captured and saturation had been reached.

#### 3.4.2 ***Professional Personnel Interviews***

Consistent with HRQL practices, a series of semi-structured interviews with at least five professional personnel within each participant organisation were also held. These were drawn from senior management executives, HR and occupational health teams.

The main aim of each interview was to ask each individual to volunteer information on what they considered to be the WRWB issues pertaining to their own situations and their respective workforces, based on their observations and professional experience.

Where possible, interviews were held in person. Where a face-to-face meeting was not practical, the discussion took place by telephone at a pre-arranged time. The same

interview guide used for the focus groups was utilised to ensure consistency of approach (Appendix B, B.4).

All items identified in the IGP were put forward to the next stage of development, the IRP. In order to conform to the WRWB definition (Section 2.8.2), care was taken to include only those attributes that employers could influence through a workplace intervention. Further, non-responsive items were inappropriate for an evaluative instrument (Juniper et al., 1996). Decisions to include or exclude items on this basis were made in consultation with senior managers in each organisation.

### 3.4.3 ***Literature Search***

A systematic search across peer-reviewed journals in the social science and health sector was conducted using the Scopus database (Elsevier B.V., Amsterdam, The Netherlands). Combinations of the following phrases, together with descriptors of the participating organisation's sector, were used in the search: 'employee well-being', 'staff survey', 'quality of working life', 'workplace quality of life', 'employee health assessment', 'employee health and productivity' and 'measurement'. Websites hosted by relevant trade bodies and interest groups such as the CIPD, HSE, the Work Foundation, the Institute for Employment Studies (IES) and the DWP were also reviewed using the same search words. The search engines, Google (Google Inc., California, US) and Google Scholar (Google Inc., California, US), were studied. Previous findings regarding staff wellness and satisfaction, supplied by the organisations themselves were also appraised.

### **3.5 Item Reduction Phase**

The purpose of the IRP was to reduce the number of variables gathered in the IGP to a more manageable number that represented empirically those items that the majority of employees considered to be most important to their general well-being. Data for this reduction process were collected using an IRP Questionnaire and was consistent the HRQL IA practices (for example Guyatt et al., 1989a).

#### **3.5.1 Questionnaire Design**

The IRP Questionnaire contained two sections. The first section introduced the Questionnaire and included a number of socio-demographic questions requiring information on aspects such as role and location so that potential differences between sub-groups could be investigated. Also included in this section was a clear statement regarding the confidential nature of the study.

The second section of the Questionnaire was made up of all items identified in the IGP. The phrasing of the items contributed in the focus groups reflected the exact expressions recorded in the earlier phase so that respondents could relate to the issues described. Similarly, items were not listed in any order by virtue of any pre-conceived grouping. Instead, they were randomly presented to help eliminate bias. Possible response bias was further minimised by avoiding the use of questions which were leading (that is, they could suggest to the respondent that a certain answer was expected), double-barreled or contained double-negatives (McNamara, 2005).

At the start of the second section, the Questionnaire asked respondents to consider each of the WRWB items listed and indicate which of them, if any, they had

experienced over the past year and how important and bothersome they had found them to their overall well-being. The recall period of one year was selected in order to accommodate work-related activities such as holidays and performance appraisals that could be experienced by employees relatively infrequently. This is notably different to HRQL instruments which use shorter recall periods since symptoms and issues associated with health conditions are usually experienced much more frequently than some of the possible problems related to WRWB. HRQL scale developers are advised to modify the time according to study or disease under investigation (Juniper et al., 1996). For example, Juniper et al. (1992) used a recall period of two weeks for the development of the AQLQ.

The Questionnaire emphasised that respondents should answer the questions only in relation to their work-related experiences and were reminded of this at the start of each new page. This was to ensure that subjects responded only in the context of their work and the impact that they judged this to have. As with earlier HRQL scales, a Likert-type scale was chosen for response options (Likert, 1932). Subjects were asked to consider each item and select one response from a 6-point scale as follows:

- *0 = No, I did not experience this problem at work*

*Yes, I did experience this problem at work and this is how important and bothersome it was to my overall well-being:*

- *1 = Not at all*
- *2 = A bit*
- *3 = Moderately*
- *4 = Very*
- *5 = Extremely*



The text for response options was deliberately phrased in this way to allow for the subjectiveness of well-being to be captured on two levels; frequency (how often subjects experienced an item) and importance (the importance they attributed to it). Consistent with HRQL scales, the Questionnaire used numerical and verbal anchors for response options to aid comprehension (Streiner and Norman, 1989a). The number of response options selected was based on previous HRQL construction protocols.

A 'free-text' box was also included at the end of the IRP Questionnaire. This facility invited respondents to record any other work-related problems they had experienced that had not been listed already, that they considered detrimental to their overall well-being. It is important to note that this feature is absent from earlier HRQL scale development guidance (Juniper et al., 1996; Guyatt et al., 1986). However, it was considered an important addition to the present investigation since any supplementary input from employees could uncover other notable WRWB issues experienced by subjects that were not already captured in the Questionnaire. This capability would contribute towards the content validity of the finalised pilot instrument.

The period for completion for each organisation was three weeks to accommodate standard holiday absences of two weeks.

The Questionnaire was created in an electronic format so that it could be completed online by employees. Again, this approach marked a departure from HRQL methods where traditional paper-based assessments were used (Juniper et al., 1996; Guyatt et al., 1986). It was envisaged that this online configuration would be considered more

convenient by employees and would therefore encourage response rates. Moreover, subjects were unable to submit their responses if they had not completed *all* questions, thus eliminating potential problems associated with missing data.

The online design was developed with the assistance of Wasted Media Ltd (West Sussex, UK) who had experience of designing online assessments and associated data management programming. During the design phase, care was taken with formatting to avoid splitting questions across different pages to support the need for a simple to use questionnaire. Additionally, it was important that all response options were always visible at the top of each page even if the respondent was answering a question at the base of the screen. Scrolling was considered unacceptable since it was thought this might introduce bias. As far as possible, listed items were positioned at equal intervals to each other so that each item appeared visually equal to all other items. Graphics were kept to a minimum, again to avoid bias.

Once the Questionnaire had been created for each organisation, pilot testing was carried out to ensure that the instructions were clearly understood by potential users and the functionality was sufficiently easy to navigate and comprehend. Five people from the participating companies who were unfamiliar with the research, were invited to complete the pilot version and feed back any comments regarding ease of use and comprehension. Based on comments and suggestions for improvement, amendments to the design and text were made and then serially tested on a further five people to ensure no further modifications were required.

### 3.5.2 **Questionnaire Deployment**

Once the Questionnaire's design and content had been finalised, an email containing an online link was circulated to all employees. The email, sent from the research sponsor in the participant organisation, explained the employee well-being research being undertaken and what outputs could be expected. Employees were invited to click directly on the link embedded within the email, which took them to the online IRP Questionnaire directly. Response rates were additionally supported with posters in staff common rooms and other corporate communications. Reminder emails were issued during the completion period to encourage take-up. On the appointed end-date, the Questionnaire was closed to employees and the data were locked down.

Data relating to respondent completions were recorded in an Excel database (Microsoft Corporation, Seattle, US). Data were then imported to the statistics software programme, Statistica (Statsoft Inc, Oklahoma, USA), for further analyses.

### 3.5.3 **Descriptive Statistics**

A basic frequency table presenting the number of subjects from each role sub-category was generated. This was necessary in order to appraise the composition of the respondent cohort and compare it to the general make up of the wider study population.

### 3.5.4 **Kendall's Tau Correlations**

The first analysis performed was to establish whether the variables identified in the IGP were sufficiently relevant to all roles within the participating organisation. This would determine whether one questionnaire could be constructed for all roles within

each case study. To ascertain this, the non-parametric measure, Kendall's Tau ( $\tau$ ) correlation coefficient (Kendall, 1938) was used to assess the association between two ranked quantities. In this case, the association under scrutiny was the agreement in impact score rankings between different roles. If rankings for items across each role were significantly correlated ( $p < 0.05$ ) it was deemed appropriate to create one questionnaire for all employees within the participating organisation. A  $\tau$  coefficient value of 0 would indicate that impact score rankings were totally independent of each other. Interestingly, the use of  $\tau$  is not reported by HRQL scale developers. Instead they appear to inspect potential differences in sub-group rank orders by eye only (for example Juniper et al., 1992) or not at all (for example Guyatt et al., 1989a). For the purposes of this current study, it was judged appropriate to include  $\tau$  as an additional statistical test.

### 3.5.5 ***Impact Scores***

Impact scores for each variable were calculated, based on the proportion of subjects that positively identified items (frequency) and the mean importance they attributed to each item. The mean importance score for each item was calculated using the values from 1 - 5 provided in the Questionnaire response options. Items were then selected based on their overall impact score, that is, the product of frequency and importance. The impact score approach identified not only those items that were experienced by a large proportion of people but also those that were experienced by a lesser number who considered them to be highly important and bothersome to their overall well-being (Juniper et al., 1996; Guyatt et al., 1986).

### 3.5.6 *Item Reduction – Impact Analysis*

Data collected from each case study were analysed using the principles of IA. The basis of IA provides that items selected for the final instrument are those that have the most *impact* on the population under investigation (Juniper et al., 1996; Guyatt et al., 1986).

Impact scores for each variable were examined. Generally, items were selected for inclusion in the final questionnaire if their impact score exceeded a certain threshold (cut-point). The threshold value varied with each case study. No rationale for the selection of specific cut-points used by HRQL scale developers is offered in the literature, other than a general requirement to select items chosen most frequently and rated most important by subjects and a minimum number of items per domain (for example Juniper et al., 1996; Guyatt et al., 1986).

The choice of threshold was dependent on the need to limit the final list of items to a manageable, economical number for future deployments of the questionnaire (Juniper et al., 1992; Juniper and Guyatt, 1991). Consultations were held with the participant employers regarding the optimal time to complete a questionnaire. Collectively, it was agreed that 7-8 minutes was an appropriate time limit for completing the finalised questionnaire by other organisations in the future. This was based on the premise that there needed to be a fine balance between collating enough detailed data on EWB to be of value, staff being discouraged from taking part because there were too many questions to answer and putting off potential future employers because of 'lost' productivity time. Pilot testing indicated that a time limit of 7-8 minutes required that the finalised questionnaire should not extend beyond 50 questions in length. This

limit of 50 questions was considerably larger than many existing HRQL instruments. For example, the standardised version of the AQLQ (Juniper et al., 1999) and the IBDQ (Guyatt et al., 1989a) both comprise 32 questions. However, for employee cohorts, it was considered more important to heed the views of the employers than be guided by the length of earlier HRQL scales which were designed for subjects with a specific illness and where, appropriately, 'patient burden' was a determining factor.

Items that met or exceeded the impact score threshold were then examined using Pearson's correlation coefficient ( $r$ ) to identify potential duplications. Eliminating repetitious items would add to the parsimony of the scale and is an important consideration for discriminative instruments (Juniper et al., 1996). Strong correlations between items were confirmed if  $r$  exceeded 0.7. Items that appeared to be measuring the same impairment, for example, fatigue and tiredness, and were highly correlated ( $r > 0.7$ ) were either combined or the item with the lowest impact score was discarded (Juniper et al., 1996).

The remaining highest scoring variables were inspected and categorized into domains. Domains are clusters of questions that appear to be measuring the same construct. According to Juniper et al. (1996), the easiest way to establish domains is to review the items and group them based on common sense, clinical experience and domains described in earlier studies. This approach was followed in the present study. If ambiguity on choice of domain arose, the correlations of items where there was uncertainty were compared with those that fell clearly into a particular sub-group (Juniper et al., 1996). Care was also taken to ensure that each domain contained a

minimum of three items as recommended by Guyatt et al. (1993) in order to decrease the variability in responses and to reduce the impact of any idiosyncratic responses to certain questions.

The finalised items were examined for content validity. Content validity seeks to establish that the content covers all possible components of the construct in sufficient detail (for example Rick et al., 2001; Dijkers, 1999). As noted earlier (Section 3.5.1 ), a free text facility was included in the IRP Questionnaire to enhance content validity. Free text responses were appraised to establish whether new themes, not already represented in the current list, were evident. If examination suggested that new items were being recorded, these were then quantified by frequency of mention. It was decided *a priori*, that any new items referenced by over 10% of the total number of free text responses contributed would be added to the final questionnaire.

To help examine the final instrument's reliability, internal consistency was assessed using Cronbach's alpha coefficient ( $\alpha$ ) (Cronbach, 1951).  $\alpha$  considers the intercorrelation among items within a sub-scale and provides an indication of how well each domain measures a single underlying construct. Acceptable levels of  $\alpha$  are considered to be values exceeding 0.7 (Rick et al., 2001; Hinkin, 1995).

### 3.5.7 ***Item Reduction – Factor Analysis***

One of the key objectives of the present study was to compare IA with data analytical techniques in respect of evaluating employee well-being (Section 2.8). The same data collected from the Questionnaire that were subjected to IA were therefore also

analysed using the principles of FA so that comparisons between the performance of the two approaches could be made.

Generally, FA refers to a variety of statistical techniques used to deal with large numbers of variables (items) more efficiently. The objective is to explain most of the covariability among a number of observable random variables in terms of a smaller number of unobservable latent factors (Fabrigar et al., 1999). FA is applied to a single set of variables where the aim is to discover which variables in the dataset form coherent subsets that are relatively independent of each other (Tabachnick and Fidell, 2007). Variables that correlate well with one another but are largely independent of other subsets of variables are combined into factors. By using factor analytic procedures, large numbers of observed variables can be condensed into a smaller set of dimensions with a minimum loss of information. Where there exist large numbers of potential variables for possible inclusion in a scale, this offers parsimonious advantages.

There are two major types of FA; exploratory and confirmatory. The FA techniques employed herein were exploratory since the focus of interest was to describe and summarise data to consolidate variables and generate hypotheses about underlying processes. Confirmatory factor analytic procedures, in contrast, are performed to test a theory regarding latent structures.

FA techniques vary widely according to the preferences and study aims of the individual researcher. The exploratory FA procedure employed in this present study followed that described by Juniper et al. (1997) who set out, in their study to compare



directly IA and FA as ways to develop an HRQL instrument. To avoid possible criticisms regarding their FA methods, the authors collaborated with two separate developers, Hyland et al. (1991) and Marks et al. (1992), who had published details of two asthma HRQL instruments developed using factor analytical procedures. Juniper et al. (1997) were therefore able to determine an appropriate FA strategy that would elicit results that could be meaningfully compared with the authors' own asthma HRQL instrument derived using IA (Juniper et al., 1992) that represented an established and reasonable strategy for FA. These considerations, the fact that the study focused on evaluating well-being and the direct relevance this bore to the aims of the current study, provided the justification for adopting the same FA method that is described below.

Firstly, those items that were identified by fewer than 40% of subjects were discarded to help address possible bias in the data. Items showing item-total correlations of less than 0.4 were also eliminated since these were shown to lack consistency with the rest of the scale items. Remaining item-item correlations were examined using Pearson's correlation coefficient ( $r$ ). If items were considered to be measuring the same impairment and were highly correlated with one another ( $r > 0.7$ ), the item with the lowest item-total correlation was removed. Next, a principal component analysis (PCA), which included all the remaining items was carried out, and those items with a loading of less than 0.4 on the first factor were removed as recommended by Juniper et al. (1997). To identify interpretable factors, the principal components were subjected to a varimax rotation which seeks to maximise loadings within a column as far as possible.

To help inform decisions on extracting the optimal number of factors for each case study dataset, eigenvalues that met the conventional value of 1.00 or greater were considered (Rick et al., 2001). This is known as the Kaiser-Guttman method (Kaiser, 1970; Kaiser, 1960; Guttman, 1954). Eigenvalues represent the variance accounted for by each underlying factor. They are not represented by percentages but scores which when aggregated, equal the number of items. A 30-item scale will theoretically have 30 possible underlying factors. Each factor will have an eigenvalue that indicates the amount of variation in the items accounted for by that factor. As an example, if the first factor has an eigenvalue of 10.00, that factor is explaining  $(10/30) \times 100$  (33%) of the variation, other factors will have smaller eigenvalues with some values less than 1.00.

Cattell's scree plot (1966), which graphically presents eigenvalues in a simple line plot, was also examined. According to Cattell (1966), the place on the plot where the smooth decrease in eigenvalues appears to level off, denotes the most appropriate number of factors to be retained (to the right of this point is viewed as 'factorial scree'). One of the disadvantages associated with the scree plot centres on the subjective judgement on the part of the researcher to select the appropriate point in the graph (for example Wilson and Cooper, 2008; Tabachnick and Fidell, 2007; Kim and Mueller, 1978).

For this study, the number of eigenvalues greater than 1.00 was the primary determinant for the number of factors to be selected. As Tabachnick and Fidell (2007) note, this approach represents an accepted 'rule of thumb' method that provides an

adequate estimate for exploratory purposes. Child (2006) also points out that Cattell (1966) has suggested that the Kaiser-Guttman method is most reliable when the number of items range between 20 and 50 – a figure broadly consistent with the anticipated number of variables for this present research. An examination of eigenvalues to help confirm factor retention was also consistent with the methods described by Juniper et al. (1997).

The next stage was to interpret the factors in order to understand the underlying dimension that unified the group of variables loading on to it. Choice of cut-point for loading is a matter of researcher preference. According to Tabachnick and Fidell (2007), only variables with loadings generally exceeding 0.32 are interpretable. The guiding principle for selecting a cut-off point was that the pattern of loadings indicated an interpretable factor (Rick et al., 2001). Ultimately, a decision on the number of factors and their composition rested on what made the most practical sense within the theoretical framework explored. Once a decision on the most appropriate cut-point had been reached, each factor was assigned a name to characterize its constituent items.

Post-rotation, factors were examined for the degree of variance explained. Ideally, all included factors should account for at least 70% of variance amongst items (Rick et al., 2001). However, in practice, a factor structure accounting for more than 50% is considered acceptable (Rick et al., 2001). Items that loaded satisfactorily on more than one factor were removed from the lower factor(s). Those items that did not load satisfactorily on any of the confirmed factors, were rejected.

As with the IA method described earlier (Section 3.5.6), data distribution for factors was examined and Cronbach's alpha coefficient ( $\alpha$ ) was used to assess internal consistency.

### **3.6 Case Study Well-Being Findings**

Basic data findings specific to each participating organisation were explored. These additional analyses were performed on the IA-derived dataset and then repeated on the FA-derived dataset. These analyses were pertinent to the main study question (Section 2.8); they permitted a comparison of the findings with existing EWB literature with respect to how it may be defined and understood and a comparison of the IA and FA findings would also contribute to the critical evaluation of IA as a viable scale construction methodology for the workplace.

To achieve this, all '0' values recorded for confirmed items were replaced with a '1' value so that a value of '1' denoted that a subject 'Did not experience' the item *or* that it was 'Not at all a problem'. It was decided that this consolidation of the two values would be acceptable since their meaning was similar in the context of being able to explore the findings further and consider how they may contribute to the wider debate on EWB for the purposes of this study. It is important to stipulate that this amendment of data was only carried out for the purposes of this study and it would be highly unlikely that this would be repeated in any future studies that evaluated the well-being of employees. This step therefore modified the data so that variable and domain/factor mean importance scores would range from 1-5 (where 1 = Did not experience/Not at all a problem and 5 = Extremely important and bothersome). WRWB

findings were analysed from the amended scores and expressed as mean scores per item for each domain (range 1-5). Overall WRWB scores were based on the average score of all items within the pilot scale.

Mean importance scores, standard deviation and skewness for domains (or factors) were examined. Sub-scales were ranked according to mean importance and a repeated measures analysis of variance (ANOVA) (where the selected domains or factors were the dependant variables) investigated any significant differences ( $p < 0.05$ ) between domains (or factors) and roles and any interactions between them. Residuals were tested for normality by examining probability plots and the significance of pair-wise comparisons between domains and roles in an ANOVA setting were examined using Fisher's Least Significant Difference (LSD) test ( $p < 0.05$ ).

### **3.7 Within-Case Study Comparisons**

Comparisons between the IA and FA results within each case study were conducted.

These comprised three separate analyses which are described below.

#### **3.7.1 Item Selection Comparison**

Firstly, domains and factors for each case study were reviewed to establish where the main similarities and differences existed. As well as establishing those items that were selected by both methods, those items selected only by IA and only by FA were also listed and their respective impact scores were noted. The generation of these tables allowed a direct comparison of item selection using IA and FA techniques and provided the opportunity to examine items which were either selected or rejected within the

context of their individual impact scores. The 10 highest scoring items selected by IA and FA were tabulated.

### 3.7.2 **Chi-Square Test**

The second analyses used the nonparametric *Chi-Square* test to ascertain whether any statistically significant relationships between the IA-derived items and FA-derived items existed. Observed frequency data relating to the number of items selected by both approaches, the number of items selected only by one of the approaches and the number of items rejected by each were entered into a 2x2 contingency table for a *Chi-Square* test. A statistically significant relationship between the choices of item by both methodologies would be established if the *Chi-Square* value was shown to be significant ( $p < 0.05$ ).

### 3.7.3 **T-Test**

A comparison of the IA mean importance scores and the FA mean importance scores for each case study was made using a two-tailed *t*-test for independent variables with separate variance estimates where necessary. This would evaluate whether a significant difference ( $p < 0.05$ ) between the two sets of mean scores derived from IA and FA existed.

### 3.7.4 **Bland Altman Method**

Finally, the two methods were compared using the Bland Altman method (Bland and Altman, 1986). This is an established method used by medical researchers to compare two methods of measurement to determine whether these two methods can be used interchangeably or the new method can replace the established one. In most of these

situations, the 'true' value of the measured quantity is unknown. Bland and Altman (1986) argue that the use of a correlation coefficient ( $r$ ) to compare data collected from two measurement approaches is inappropriate;  $r$  may indicate that data sets arising from the two methods are related but a high correlation does not necessarily imply that the two methods agree. To address this, Bland and Altman (1986) propose the use of a graphical method (known as a Bland and Altman plot) and argue that if the new method agrees sufficiently well with the old, the old may be replaced. The Bland-Altman method calculates the mean difference between two methods of measurement (the 'bias'), and 95% limits of agreement of the mean difference (2 SD). It is expected that the 95% limits include 95% of the differences between the two measurement methods.

Using the data collected in this current research, the IA and FA approach were compared for each case study using the Bland Altman method (1986) as follows.

First, a visual appraisal of the domains and factors was made to identify those that appeared to describe the same areas of WRWB. For each domain that shared commonality with a factor a new spreadsheet was created that listed the values for each method where each row pertained to the same subject. The difference between IA and FA values for each subject was calculated (the value determined by IA minus the value determined by FA). From this, the overall mean difference ('bias') and the 95% limits of agreement (2 SD) were established. The mean of the methods for each participant was also determined. In addition, confidence intervals (95%) for the mean difference were calculated to determine if the bias was significantly different to zero. The graphical presentation of the difference against the mean showing the 95% limits

of agreement on a Bland and Altman plot (1986) allow a visual judgement of how well the methods of IA and FA measurement agreed. The smaller the range between these two limits (within the context of values used in this study) the better the agreement between IA and FA as measurement strategies.

### **3.8 Additional Analyses - Cross-Case Study Comparisons**

As well as considering differences elicited from IA and FA within each case study, additional analyses to examine differences between case study datasets were performed.

#### **3.8.1 Comparison of Well-Being Levels**

A one-way ANOVA was used to compare any statistically significant differences ( $p < 0.05$ ) between the mean importance scores resulting from IA and FA across the three sectors. Residuals were tested for normality and the significance of pair-wise comparisons between sub-groups was examined using Fisher's LSD test ( $p < 0.05$ ).

To perform this, the mean importance values (1-5) for each item selected using IA for each case study were stacked in a separate spreadsheet. The grouping variable was occupational sector and a one-way ANOVA was performed. The process was repeated for findings resulting from FA. These analyses would determine whether one of the sample populations showed materially different levels of EWB compared to the other two and provide important input into the discussion surrounding EWB measurement. Further, the results would indicate whether these findings were consistent across both



IA and FA methodologies, thus further aiding the evaluation of their respective item selection capabilities in relation to the study question (Section 2.8).



## **Chapter 4      Results – Call Centre Case Study**

### ***4.1 Introduction***

This chapter presents the findings from the first in three case studies. It draws on data collected from employees working in a call centre environment. Firstly, the sector is examined in the context of the health and well-being of workers employed in this type of work and then the data collected from the study and subsequent analyses are presented. The chapter ends with interim observations relating specifically to the call centre findings and how they fit with extant literature in this sector. Further discussion on the potential implications stemming from these results and their fit with the wider literature on EWB can be found in Chapter 8.

### ***4.2 Case Study Context***

#### ***4.2.1 Overview of Sector***

The call centre sector in the UK has expanded by 250% since 1995 and growth is forecast to continue (Market and Business Development, 2009; Department of Trade and Industry, 2004). This explosion in the use of call centres had been driven by customer demand for convenient, out of hours access to goods and services combined with a corporate need to cut costs by centralising and standardising operations (Akroyd et al., 2006). Recent estimates put the figure for those employed in UK call centre roles at approximately 850,000 across some 6000 sites (Akroyd et al., 2006)

Within the context of EWB, call centre environments represent a challenge owing to their reputation for being unpleasant places to work (Holman, 2002). Various referred to as ‘electronic sweatshops’ and ‘human battery farms’ (Ferne and Metcalf,

1998; Schlesinger and Heskett, 1991), call centres have earned an unenviable image for dull, repetitive, low skilled work that is heavily scripted and monitored (Holman, 2003). Added to this is the notion of 'emotional labour' which references the intense personal contact between call handlers and callers where the former are required to present themselves as permanently well-disposed to the latter irrespective of any private misgivings they may be harbouring (Schlesinger and Heskett, 1991).

Perhaps unsurprisingly, sickness absence and staff turnover levels in call centres are 11% and 21% respectively (Merchants, 2006). This compares unfavourably with average figures for all occupations, currently estimated at 3.5% for sickness absence and 17.3% for attrition (CIPD, 2009).

The combined characteristics of unusual working conditions and poor attendance have caught the attention of the academic community. In the last 10 years, a number of researchers have examined health aspects of call centre staff (for example Akroyd et al., 2006; Taylor et al., 2003; Holman, 2002). Generally, scholarly studies have taken the form of self-report questionnaires to evaluate people's views on specific aspects of call centre work together with data relating to their general health state using generic scales. For example, Holman's (2002) work on call centre well-being examined the relationship between job design, performance monitoring, HR practices and team leader support using Warr's (1990) well-being scales and Warr et al.'s (1979) job satisfaction scale. Similarly, Holdsworth and Cartwright's (2003) survey on stress, Wegge et al.'s (2006) study of burnout and other health complaints and McGuire and

McLaren's (2009) assessment of the impact of the physical environment all used questionnaires previously developed for generic occupational use.

No studies, have sought to look at the work-related well-being of call centre workers as proposed in the present study; that is, how call centre workers themselves perceive their well-being to be influenced primarily by their work environment.

Furthermore, call centre studies have mostly relied on rather long and onerous questionnaires which, for practical reasons, are difficult to repeat. For example, Sprigg et al. (2003) used 20 sub-scales totaling 23 pages of questions while Holman (2002) and Deery et al. (2002) deployed 13 and 15 sub-scales respectively.

Given these observations, it was anticipated that the present study would help extend academic and organisational understanding by investigating the totality of WRWB within call centres using the IA methodological framework.

#### 4.2.2 ***Case Study Background***

The participant organisation was a nationally based operation with 34 separate call centre sites. It employed approximately 3,000 staff, of which 2,300 were involved directly in call centre activity, principally handling in-bound calls from members of the public seeking advice and information on health. The service was available to callers 24 hours a day, 365 days a year.

Three main roles existed within the call centre; call centre agents (CCA), qualified call centre agents (QCCAs) and team leaders. CCAs were required to field calls initially and prioritise callers' requirements. If appropriate, callers were referred on to QCCAs.

Based on an assessment of their callers' status, QCCAs provided callers with triage, medication advice and health information, according to need. Team leaders were charged with supervising, monitoring and supporting their teams to maximise performance.

The job descriptions of CCAs and QCCAs appeared to match closely the observations of previous call centre research commentators (for example Akroyd et al., 2006; Taylor et al., 2003; Holman, 2002); both roles were heavily supported by computer software to support their decisions on the best course of action for callers and performance was monitored using sophisticated surveillance systems that evaluated productivity against pre-determined targets. Even by call centre norms (Merchants, 2006), absence and turnover estimates were high at 14% and 25% respectively.

#### 4.2.3 ***Scope of Research***

The study limited its scope to the experiences of CCAs, QCCAs and team leaders since these were the roles most impacted by call centre workplace characteristics as catalogued by researchers such as Holman (2002) and Taylor and Bain (1999). In the interests of practical considerations, a late decision was taken by the management team to restrict the study to eight call centres spread across the South East and East Midlands. These centres offered a potential study population of 550 potential participants which was 31% smaller than the optimal sample size requirement of 800 (Section 3.2.2). Given the advanced nature of the discussions to conduct the study and the expectations set with staff, the decision was taken to still proceed with the research.

### **4.3 Item Generation Phase**

A total of 84 CCAs, QCCAs and team leaders attended eight focus groups. Participants were invited to contribute their views on how they perceived their well-being had been impacted by their call centre work. On the advice of the employer, discussions with agents and team leaders were kept separate as it was thought the former may be less candid in the presence of their line managers. Five groups were made up of CCAs and QCCAs, while the remaining three were attended by team leaders. Care was taken to ensure that attendees represented a sufficient mix of age and experience. Focus groups were hosted at five different call centre sites to ensure a variety of locations took part in the IGP.

Additionally, interviews were held with 11 senior managers, HR and clinical professionals whose views and experiences were relevant to the study. These comprised the national HR director, a regional occupational health physician, two regional directors, a regional operations director, two regional HR directors and four call centre supervisors. Six interviews were held in person; the remainder was conducted by telephone.

Past literature was reviewed for potential items. This included a search of peer-review journals and sector specific media. Findings from the organisation's staff satisfaction survey from the previous year were also appraised.

In total, the IGP yielded 102 possible WRWB items. Each item was listed in the IRP Questionnaire. In addition to the 102 dependent variables, the Questionnaire included two socio-demographic questions regarding respondents' call centre location and the

role that they performed. Once created, the draft version of the Questionnaire was tested with five potential respondents who were unfamiliar with the research to ensure the instructions, questions and navigation were clear.

In total, the Questionnaire took approximately 12-14 minutes to complete. Employees were allocated extra time during their shift to complete the Questionnaire so that their performance targets were not impacted negatively. Reminder email notices from the regional directors were issued to encourage completion rates and posters were placed in common areas to remind people of the initiative. Union officials were kept abreast of plans and were asked to support the study through their own communications with members. Employees were given a period of three weeks to complete the assessment.

#### ***4.4 Results - Overall***

A total of 377 completed Questionnaires were returned. This represented a response rate of 69%. 119 free text responses were also contributed (Appendix C, C.2). A review of the free text responses yielded no new WRWB themes not already covered in the Questionnaire that were recorded by more than 10% of all contributions received.

An examination of findings overall showed that frequency scores ranged from 0.96 to 0.49; mean importance scores ranged from 3.83 to 1.42 and impact scores (the product of frequency and importance) ranged from 3.62 to 0.75. The results relating to impact scores are explored in further detail below. A breakdown of responses by role is set out in Table 4.1. The proportional percentage response rate was approximately representative of the wider call centre workforce.



**Table 4.1 Frequency Rates by Role for Call Centre Study**

Role	Count	Cumulative - Count	Percent	Cumulative - Percent
Team Leader	45	45	11.94	11.94
QCCA	199	244	52.79	64.72
CCA	133	377	35.28	100.00

#### 4.4.1 *Impact Scores*

The 20 highest ranking impact scores, *prior* to item reduction, are presented in Table

4.2. A record of all frequency, importance and impact scores for the Call Centre cohort

may be found in Appendix C, C.1.

**Table 4.2 Top 20 Call Centre Impact Scores Prior to Item Reduction**

Rank	Question	Frequency*	Mean.Imp±	ImpactΔ
1.	Perceiving the organisation to be more target led than patient led	0.94	3.83	3.62
2.	Having to read your emails during your break times or before/after your shift	0.93	3.82	3.56
3.	Having to book holiday so far in advance	0.95	3.70	3.53
4.	Ability to plan ahead with friends and family is restricted because of the rostering system	0.96	3.65	3.49
5.	Plans with family and friends being affected by the shift system	0.96	3.54	3.40
6.	Finding it difficult to swap shifts	0.94	3.45	3.24
7.	Having insufficient time to familiarise yourself adequately with new policies and procedures	0.94	3.36	3.17
8.	Poor air conditioning (either too cold or too hot)	0.92	3.38	3.10
9.	Experiencing frustration because of the rostering system	0.92	3.29	3.01
10.	Having a limited social life because of the shifts that you work	0.91	3.31	3.01
11.	Finding it difficult to attend regular courses/classes outside of work because of the shift system	0.90	3.33	2.99
12.	Not having enough team meetings to discuss issues and ideas	0.90	3.31	2.97
13.	Finding it difficult to arrange weekends off	0.90	3.29	2.96
14.	Not having enough team meetings so you know what is going on	0.91	3.22	2.94
15.	Lacking adequate control over your choice of shift	0.92	3.18	2.92

Rank	Question	Frequency*	Mean.Imp±	ImpactΔ
16.	Always feeling tired because of shift patterns	0.92	3.09	2.84
17.	Eating at 'unconventional' meal times because of the way your breaks are organised	0.91	3.13	2.84
18.	Having disturbed sleep patterns because of your shifts	0.90	3.14	2.83
19.	Not being involved or consulted on decisions that affect you	0.91	3.09	2.82
20.	Having insufficient opportunities for social interaction with your colleagues	0.89	3.17	2.81

*\*proportion of subjects reporting item as bothersome*  
*± mean importance score in subjects who reported item as bothersome (maximum = 5)*  
*Δfrequency x mean importance (maximum = 5)*

#### 4.4.2 Importance Score Comparisons by Role

Impact scores for each variable were ranked by role (Appendix C, C.3) and Kendall Tau ( $\tau$ ) correlations were examined (Table 4.3). The rankings for each role were significantly correlated ( $p < 0.05$ ) with the other two and it was therefore deemed appropriate to construct one questionnaire for all three roles in the call centre operation.

**Table 4.3 Kendall Tau Correlations for Call Centre Roles**

Role	Team Leader	QCCA	CCA
Team Leader	1.00		
QCCA	0.38*	1.00	
CCA	0.43*	0.71*	1.00

\*  $p < 0.05$

### 4.5 Results – Impact Analysis

#### 4.5.1 Item Reduction

Impact scores were closely scrutinized. Typically, items with impact scores exceeding 2.00 were selected for inclusion in the instrument. A threshold of 2.00 was selected as this signified a notable degree of impairment and, importantly, accommodated the

requirement to develop a scale that would take future respondents 7-8 minutes to complete (approximately 50 items).

35 items were deleted based on impact scores of less than 2.00 (Appendix C, C.4.1). Item-item correlations for remaining variables were then examined and, as a result, 24 further items were eliminated ( $r > 0.7$ ) (Appendix C, C.4.2). One other item ('Having a different desk space each time you come to work') was also discarded; on reflection and in consultation with the organisation's management team, it was deemed a workplace factor that the employer was unable to modify for practical reasons and therefore did not fit with the WRWB definition. It would also detract from the scale's evaluative properties. Another item regarding taking allocated breaks was reinstated; although its impact score overall (1.32) was less than the threshold of 2.00, those in team leader roles perceived this to have a high impact on their overall well-being, ranking it second highest out of all 102 attributes with a score of 3.24 (Appendix C, C.3).

#### 4.5.2 **Domain Selection**

Remaining variables totalled 43 and were studied at length to identify common sub-categories. Text for some variables was shortened or amended to reflect a wider meaning if the item had been combined with another (eg 'Always feeling tired/run down because of shift patterns).

Analysis appeared to identify an optimal structure of eight domains. Choice of domain was informed by earlier occupational and clinical well-being research. The two largest domains, both comprising eight items, were Home Work Interface (HWI) and Job (JOB).

Respectively, these described how people's work impacted on home life needs and how specific aspects of work were considered troublesome to employees' well-being. The Organisational domain (ORG) described how wider organisational practices impacted on needs. Items referring to how people considered their work impacted on health were grouped either into the Physical Health (PHY) or Psychological Health (PSY) domains. Interpersonal Relationships (REL) considered associations between colleagues. Advancement (ADV) described training and promotion needs and Workplace Facilities (FAC) captured perceptions relating to built environmental needs such as accommodation and amenities. Table 4.4 presents the finalised domains and groupings of variables for the call centre study using IA.

**Table 4.4 Finalised Domains and Variables for Call Centre Study**

<b>Home Work Interface (HWI)</b>	<b>Job (JOB)</b>	<b>Organisational (ORG)</b>	<b>Physical Health (PHY)</b>	<b>Interpersonal Relationships (REL)</b>	<b>Psychological Health (PSY)</b>	<b>Advancement (ADV)</b>	<b>Workplace Facilities (FAC)</b>
Having to book holiday far in advance	Having to read emails during your breaks or before/after your shift	Perceiving the organisation to be more target led than patient led	Always feeling tired/run down because of shift patterns	Not having enough team meetings so you can discuss what is going on	Experiencing frustration because of the rostering system	Having insufficient opportunities for promotion	Poor air conditioning (either too cold or too hot)
Plans with family and friends being affected by the shift system	Having insufficient time to familiarise yourself adequately with new policies and procedures	Not being involved in decisions that affect you	Eating at 'unconventional' meal times because of the way breaks are organised	Having insufficient opportunities for social interaction with your colleagues	Experiencing high levels of stress because of your targets	Only seeming to receive feedback when you could have done something better	Having adequate facilities that allow you to eat healthily during your shift
Finding it difficult to swap shifts	Lacking enough time to recover from a difficult call before having to answer another one	Believing that senior management don't appreciate the work that you do	Feeling stiff because of the long spells you have to sit	Being unable to support your colleagues as much as you would like	Experiencing high stress/feeling drained because of the calls you have to deal with	Having inadequate training to allow you to do your job effectively	Working in poor quality accommodation eg rest area, work station, kitchen
Finding it difficult to attend regular courses/classes outside of work because of the shift system	Having to do a job where there is little variation/challenge	Receiving poor communications on things that matter to you at work	Putting on weight because you are not eating healthy food at work	Not feeling part of a real team			
Being unable to get into a routine because your shifts are so varied	Being unable to confer with your team colleagues about advice to callers	Being overwhelmed by the amount of organisational change	Being unable to concentrate properly at work because of shifts	Feeling you can't off-load to anyone at work about issues that are important to you			
Having to work a twilight shift immediately before a day off	Lacking feedback from callers on how you helped them	Being unclear about the overall strategy and plans for the organisation	Being unable to take your allocated breaks because of the workload				
Having insufficient family-friendly policies in place	Feeling unable to use your professional discretion/experience as much as you would like to	Working somewhere where there isn't much of a buzz					
Having to split days off	Believing that you are inadequately paid for the job that you do						

### 4.5.3 *Internal Reliability*

Internal reliability was calculated using Cronbach's Alpha coefficient ( $\alpha$ ). For each sub scale,  $\alpha$  ranged from 0.87 to 0.63 (Table 4.5). The coefficient values indicated that there was sufficient internal consistency between items within each sub-scale other than the FAC domain ( $\alpha = 0.63$ ) (Rick et al., 2001).

**Table 4.5 Internal Reliability for Call Centre Domains**

<b>Domain (number of items)</b>	<b>Cronbach's Alpha <math>\alpha</math></b>
<b>ORG (7)</b>	0.87
<b>HWI (8)</b>	0.86
<b>REL (5)</b>	0.85
<b>JOB(8)</b>	0.80
<b>PHY (6)</b>	0.75
<b>PSY(3)</b>	0.73
<b>ADV (3)</b>	0.70
<b>FAC(3)</b>	0.63

### 4.5.4 *Well-Being Indications for Call Centre Population based on Impact Analysis*

Data were amended so that all '0' values were altered to a value of '1' as described in the Methodology (Section 3.6). Domain means ranged from 2.98 to 2.51. Analyses indicated that, overall, the impact of work on people's lives outside of the workplace (HWI) was perceived to be most troublesome (mean = 2.98) and the impact of work on their physical health (mean = 2.43), least so. Table 4.6 presents the ranked domains and data distribution. Overall, the well-being score for the call centre sample was 2.75.

**Table 4.6 Ranked Domains for Call Centre Population**

Domain	Mean*	Std. Dev.	Skewness
HWI	2.98	1.03	0.05
JOB	2.84	0.92	0.13
FAC	2.76	1.09	0.19
ORG	2.73	1.05	0.34
PSY	2.68	1.06	0.33
REL	2.64	1.07	0.35
ADV	2.61	1.15	0.32
PHY	2.51	0.82	0.27
<b>Overall</b>	2.75	1.40	0.28

\* mean 1-5

A repeated measures ANOVA indicated that there were significant effects of call centre domains and roles (F values sig.  $p < .05$ ). Interactions between domains and roles were also significant (Table 4.7). Residuals were checked as described in the Methodology (Section 3.6) in order for the ANOVA to be valid and indicated that the data were approximately normally distributed (Appendix C, C.4.3).

**Table 4.7 Repeated Measures ANOVA for Call Centre Roles and Domains**

Effects	Sum of squares	Degrees of freedom	Mean square	F value	P
Role	92.35	2	46.18	8.823	0.000***
Error (within roles)	1957.50	374	5.23		
Domain	34.57	7	4.94	11.788	0.000***
Interaction between domain and role	31.87	14	2.28	5.433	0.000***
Error (within individuals)	1096.80	2618	0.42		

\*\*\*  $p < 0.001$

Table 4.8 compares the mean importance scores for each call centre domain using Fisher’s LSD Test and shows significant differences ( $p < 0.05$ ) between the majority of them. The mean importance scores for each domain are provided in the column headers. Values in the body of Table 4.8 show  $p$  values for pair-wise comparisons of domains.

The table indicates that, overall, staff found HWI needs had a significantly worse effect on their well-being than all other dimensions. By comparison, the impact of work on their physical health (PHY) needs was perceived by staff to be significantly less of a problem than all other aspects.

**Table 4.8 Fisher’s LSD Test for Call Centre Domains**

DOMAIN	1 - 2.61	2 - 2.98	3 - 2.64	4 - 2.84	5 - 2.73	6 - 2.51	7 - 2.68	8 - 2.76
1 ADV								
2 HWI	0.000***							
3 REL	0.502	0.000***						
4 JOB	0.000***	0.004**	0.000***					
5 ORG	0.008**	0.000***	0.048*	0.017*				
6 PHY	0.037*	0.000***	0.006**	0.000***	0.000***			
7 PSY	0.143	0.000***	0.429	0.000***	0.236	0.000386***		
8 FAC	0.001**	0.000***	0.013*	0.060	0.615	0.000000***	0.091	

\* $p < 0.05$  \*\* $p < 0.01$  \*\*\* $p < 0.001$

Meaningful differences between roles were also investigated. Again, using Fisher’s LSD test, the well-being of team leaders was found to be significantly better ( $p < 0.05$ ) than both other roles (Table 4.9). Differences between QCCA and CCA roles were not significant. The mean importance scores for each domain are shown in the column headers. Values in the body of Table 4.9 show  $p$  values for pair-wise comparisons of roles.

**Table 4.9 Fisher’s LSD Test for Call Centre Roles**

Role	Mean importance score value for each role		
	1 - 2.28	2 - 2.82	3 - 2.72
1 Team Leader			
2 QCCA	0.000***		
3 CCA	0.001**	0.283	

\*\* $p < 0.01$  \*\*\* $p < 0.001$



## **4.6 Results –Factor Analysis**

### **4.6.1 Item Reduction**

The item 'Having a different desk space each time you come to work' was deleted from further analysis for reasons set out in a preceding section (Section 4.5.1). Data were examined to determine any variables that were identified by less than 40% of respondents. Results indicated that all items were identified by at least 60% of participants. Item-total ( $r < 0.4$ ) and item-item ( $r > 0.7$ ) correlations were appraised. Four items showed item-total correlations of less than 0.4 and were excluded from further analysis (Appendix C, C.5.1). Item-item correlations ( $r > 0.7$ ) removed a further 25 items (Appendix C, C.5.2).

A principal components analysis (PCA) of the remaining 72 items resulted in one more being eliminated owing to its loading on the first factor being less than 0.4 (*'Being unable to get a proper break because you have to attend to admin matters during your off-line time'*). The residual 71 variables were then put forward for FA using a varimax rotation.

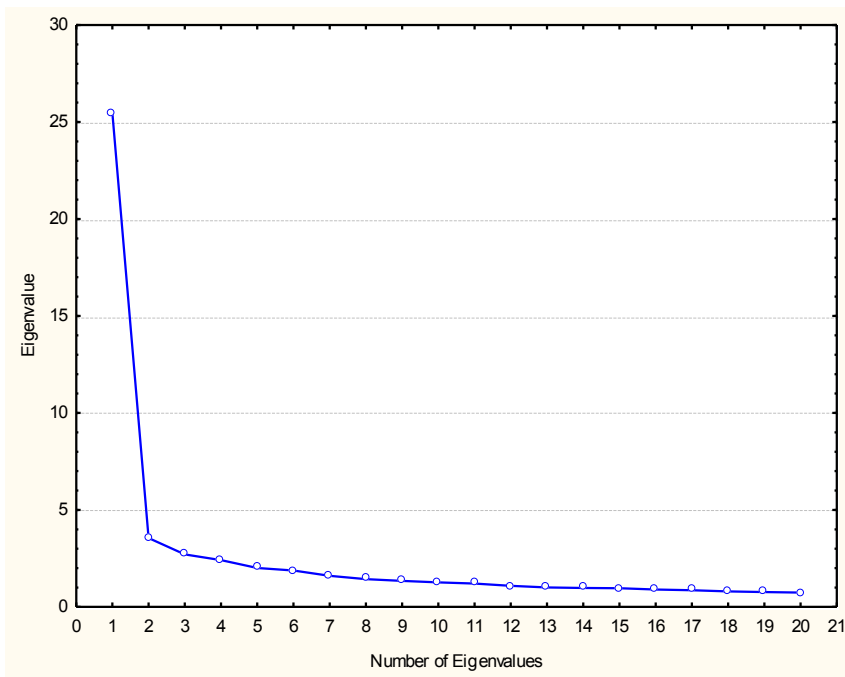
### **4.6.2 Factor Extraction**

Eigenvalues greater than 1.00 were examined (Table 4.10) and indicated a maximum of 13 factors.

**Table 4.10 Eigenvalues > 1.00 for Call Centre Factor Analysis**

Factor	Eigenvalue	% Total - variance	Cumulative Eigenvalue	Cumulative - %
1	25.48	35.39	25.48	35.39
2	3.55	4.94	29.04	40.33
3	2.70	3.76	31.74	44.08
4	2.41	3.35	34.15	47.44
5	2.01	2.79	36.16	50.23
6	1.88	2.61	38.04	52.83
7	1.60	2.23	39.64	55.06
8	1.43	1.99	41.07	57.05
9	1.34	1.86	42.41	58.91
10	1.27	1.76	43.68	60.67
11	1.21	1.68	44.89	62.34
12	1.09	1.51	45.97	63.85
13	1.00	1.39	46.98	65.24

Cattell's Scree Plot (Figure 4.1) was also studied to help inform the optimal number of factors for extraction.



**Figure 4.1 Cattell's Scree Plot - Call Centre Study**

As described in the Methodology (Section 3.5.7), an examination of eigenvalues greater than 1.00 was the primary consideration for the number of factors to be retained. Several options with less and more factors were considered in combination with different cut-points for factor loadings. An 8 factor extraction with a threshold

loading greater than 0.5 was decided upon since this presented a solution that was most readily interpretable even though the number of eigenvalues exceeding 1.00 was 13. One item (*'Always feeling tired because of shift patterns'*) loaded on both Factor Two (0.62) and Factor Six (0.51) and was therefore removed from the lower factor. Total variance explained was 57% with Factor One accounting for 35% of variability. 30 items that failed to load satisfactorily on any of the 8 factors were discarded. Table 4.11 shows the factor structure and distribution of the final 41 items. The make-up of each factor was reviewed so that appropriate descriptors could be ascribed to each.

The first factor mostly measured interpersonal relationships and was assigned the label 'Interpersonal Relationships' (REL). The second factor, 'Home Work Interface' (HWI) described aspects of the shift system and impact on home life while the third factor, 'Organisational' (ORG) generally referenced organisational and workload facets. Factor Four was allocated the name 'Food' (FOOD) since its four items all referenced issues relating to meals. The fifth factor, 'Manager' (MGR) looked at the impact of the line manager and 'Psychological Health' described Factor Six. Factors Seven and Eight were small with only two items apiece, focussing on the provision of lighting/rest areas and job challenge respectively. They were assigned the corresponding names; 'Workplace Facilities' (FAC) and 'Challenge' (CHL).

**Table 4.11 Varimax Rotation with 8 Factors for Call Centre Study (loading cut off >.05)**

	<b>Factor 1 – Interpersonal Relationships (REL)</b>	<b>Factor 2 – Home Work Interface (HWI)</b>	<b>Factor 3 – Organisational (ORG)</b>	<b>Factor 4 – Food (FOOD)</b>	<b>Factor 5 – Manager (MGR)</b>	<b>Factor 6 – Psychological Health (PSY)</b>	<b>Factor 7 – Facilities (FAC)</b>	<b>Factor 8 – Challenge (CHL)</b>
	Lacking enough time to recover from a difficult call before having to answer another one	Being unable to get into a routine because your shifts are so varied	Being overwhelmed by the amount of organisational change	Having unhealthy food and snacks while on shift because they are quick to eat	Lacking praise and recognition by your line manager	Feeling weepy and tearful because of your work	Having poor lighting at your station	Not feeling sufficiently challenged by your work
	Having insufficient opportunities for social interaction with your colleagues	Lacking adequate control over your choice of shift	Being unclear about the overall strategy and plans for the organisation	Putting on weight because you are not eating healthy food at work	Feeling under valued for your contribution by your immediate line manager	Feeling emotionally drained from your work	Having inadequate rest areas	Having to do a job where there is little variation
	Not feeling part of a real team	Experiencing frustration because of the rostering system	Receiving poor communications on things that matter to you at work	Having insufficient time to prepare and eat a proper meal during a shift	Having insufficient feedback on your performance so you know how you are doing	Experiencing high levels of stress because of your high workload		
	Being unable to support your colleagues as much as you would like to	Having a body clock that is impacted negatively by rotas	Having too many work demands to be effective in your role	Eating at 'unconventional' meal times because of the way your breaks are organised	Having unclear objectives to work towards as part of your development	Being unable to concentrate properly at work because you are tired		
	Being unable to take breaks with your colleagues	Finding it difficult to attend regular courses/classes outside of work because of the shift system	Not being consulted enough on work matters that impact you directly	Having inadequate facilities to buy/prepare healthy food and drinks during your shift		Feeling depressed because of the cumulative fatigue from shifts		
	Feeling lonely while you are at work	Having to work a twilight shift immediately before a day off	Feeling like you lack control and empowerment because of your targets					
	Having to read your emails during your break times or before/after your shift	Having to split days off						

	<b>Factor 1 – Interpersonal Relationships (REL)</b>	<b>Factor 2 – Home Work Interface (HWI)</b>	<b>Factor 3 – Organisational (ORG)</b>	<b>Factor 4 – Food (FOOD)</b>	<b>Factor 5 – Manager (MGR)</b>	<b>Factor 6 – Psychological Health (PSY)</b>	<b>Factor 7 – Facilities (FAC)</b>	<b>Factor 8 – Challenge (CHL)</b>
	Feeling you can't off-load to anyone at work about issues that are important to you	Having a limited social life because of the shifts that you work						
		Always feeling tired because of shift patterns						
% of variance explained	35.39%	4.94%	3.76%	3.35%	2.79%	2.61%	2.23%	1.99%
Eigenvalues	25.48	3.56	2.70	2.41	2.01	1.88	1.60	1.43

#### 4.6.3 *Internal Reliability*

Internal reliability was assessed using Cronbach's Alpha coefficient ( $\alpha$ ); values ranged from 0.90 to 0.63 for each sub-scale (Table 4.12) and indicated that the internal consistency of all factors, with the exception of FAC ( $\alpha = 0.63$ ), was acceptable (Rick et al., 2001).

**Table 4.12 Internal Reliability Call Centre Study – Factor Analysis**

<b>Factor (number of items)</b>	<b>Cronbach's Alpha <math>\alpha</math></b>
HWI (9)	0.90
REL (8)	0.89
ORG (6)	0.88
PSY(5)	0.88
FOOD (5)	0.84
CHL (2)	0.82
MGR (4)	0.82
FAC(2)	0.63

#### 4.6.4 *Well-Being Indications for Call Centre Population based on Factor Analysis*

Data were revised so that all '0' values were altered to '1'. Table 4.13 ranks mean values for all eight factors. Standard deviation values and skewness are also shown. The table indicates that the HWI factor (mean = 2.87) was considered to be most detrimental to people's WRWB while issues regarding facilities (FAC) were perceived to be least damaging (mean = 1.88). Overall, the well-being score for the call centre sample was 2.50.

**Table 4.13 Ranked Factors for Call Centre Study**

Factor	Mean *	Std.Dev.	Skewness
<b>HWI</b>	2.87	1.09	0.13
<b>REL</b>	2.69	1.02	0.32
<b>FOOD</b>	2.65	1.01	0.13
<b>CHLG</b>	2.53	1.30	0.53
<b>ORG</b>	2.51	1.08	0.55
<b>PSY</b>	2.03	0.96	1.07
<b>MGR</b>	2.00	1.04	1.04
<b>FAC</b>	1.88	1.01	1.04
<b>Overall</b>	2.50	1.35	0.54

\* Range 1-5

A repeated measures ANOVA indicated that significant differences (F values sig.  $p < 0.5$ ) existed between factors and roles and the interactions between them (Table 4.14). Residuals were checked and showed that the data were approximately normally distributed (Appendix C, C.5.3).

**Table 4.14 Repeated Measures ANOVA for Call Centre Roles and Factors**

Effects	Sum of squares	Degrees of freedom	Mean square	F value	$p$
<b>Role</b>	63.62	2	31.81	6.820	0.001**
<b>Error (within roles)</b>	1744.38	374	4.66		
<b>Factor</b>	215.54	7	30.79	51.864	0.000***
<b>Interaction between factor and role</b>	62.18	14	4.44	7.481	0.000***
<b>Error (within individuals)</b>	1554.31	2618	0.59		

\*\*  $p < 0.01$  \*\*\*  $p < 0.001$

Table 4.15 compares the mean importance scores for each factor using Fisher's LSD Test and depicts significant differences ( $p < .05$ ) between most of them. Mean importance scores are shown in the header columns and values in the body of the table show  $p$  values for pair-wise comparisons of factors. The analysis indicated that respondents considered HWI needs to have the most harmful impact on their well-being compared to all other factors and this finding was significant. At the other end of the spectrum, staff perceived issues to do with facilities (FAC) to be significantly less detrimental to well-being than the remaining seven factors.

**Table 4.15 Fisher's LSD Test for Call Centre Factors**

FACTOR	1 - 2.69	2 - 2.87	3 - 2.51	4 - 2.65	5 - 2.00	6 - 2.03	7 - 1.88	8 - 2.53
1 REL								
2 HWI	0.001**							
3 ORG	0.001**	0.000***						
4 FOOD	0.481	0.000***	0.012*					
5 MGR	0.000***	0.000***	0.000***	0.000***				
6 PSY	0.000***	0.000***	0.000***	0.000***	0.653			
7 FAC	0.000***	0.000***	0.000***	0.000***	0.038*	0.015*		
8 CHL	0.005**	0.000***	0.688	0.035*	0.000***	0.000***	0.000***	

\*  $p < 0.05$  \*\*  $p < 0.01$  \*\*\*  $p < 0.001$

Further analysis using Fisher’s LSD Test contrasted factor scores for the three roles (Table 4.16). Team leaders were shown to have significantly better levels of well-being than their call centre subordinates. No differences between CCAs and QCCAs were detected. The mean importance scores for each role are shown in the column headers and the values in the body of Table 4.16 show  $p$  values for pair-wise comparisons of roles.

**Table 4.16 Comparison of Call Centre Roles using Fisher’s LSD Test**

Role	Mean importance score value for each role		
	1 - 2.00	2 - 2.46	3 - 2.44
1 Team Leader			
2 QCCA	0.000***		
3 CCA	0.000***	0.839	

\*\*\* $p < 0.001$

### **4.7 Item Selection – Comparison of Two Approaches**

Having confirmed items using IA (n = 43) and FA (n = 41) selection methods, a comparison of which were common to each was made. Results showed that 22 items were common to each scale (Table 4.17).

**Table 4.17 Items Common to Impact Analysis and Factor Analysis Selection - Call Centre Study**

Item
1. Always feeling tired because of shift patterns?
2. Being overwhelmed by the amount of organisational change
3. Being unable to concentrate properly at work because you are tired
4. Being unable to get into a routine because your shifts are so varied
5. Being unable to support your colleagues as much as you would like to



Item
6. Being unclear about the overall strategy and plans for the organisation
7. Eating at 'unconventional' meal times because of the way your breaks are organised
8. Experiencing frustration because of the rostering system
9. Feeling emotionally drained from your work
10. Feeling you can't off-load to anyone at work about issues that are important to you
11. Finding it difficult to attend regular courses/classes outside of work because of the shift system
12. Having inadequate facilities to buy/prepare healthy food and drinks during your shift
13. Having inadequate rest areas
14. Having insufficient opportunities for social interaction with your colleagues
15. Having to do a job where there is little variation
16. Having to read your emails during your break times or before/after your shift
17. Having to split days off
18. Having to work a twilight shift immediately before a day off
19. Lacking enough time to recover from a difficult call before having to answer another one
20. Not feeling part of a real team
21. Putting on weight because you are not eating healthy food at work
22. Receiving poor communications on things that matter to you at work

The remaining 21 (49%) variables only selected by IA are shown in Table 4.18.

**Table 4.18 Items Selected by Impact Analysis Only – Call Centre Study**

Item	Impact Score
1. Perceiving the organisation to be more target led than patient led	3.62
2. Having to book holiday far in advance	3.53
3. Plans with family and friends being affected by the shift system	3.40
4. Finding it difficult to swap shifts	3.24
5. Having insufficient time to familiarise yourself adequately with new policies and procedures	3.17
6. Poor air conditioning (either too cold or too hot)	3.10
7. Not having enough team meetings so you can discuss what is going on	2.94
8. Not being involved in decisions that affect you	2.82
9. Feeling stiff because of the long spells you have to sit	2.73
10. Experiencing high levels of stress because of your targets	2.68
11. Having insufficient opportunities for promotion	2.60
12. Believing that senior management don't appreciate the work that you do	2.58
13. Being unable to confer with your team colleagues about advice to callers	2.53
14. Lacking feedback from callers on how you helped them	2.49
15. Only seeming to receive feedback when you could have done something better	2.44
16. Feeling unable to use your professional discretion as much as you would like to	2.42
17. Having insufficient family-friendly policies in place	2.39
18. Believing that you are inadequately paid for the job that you do	2.27
19. Having inadequate training to allow you to do your job effectively	2.25
20. Working somewhere where there isn't much of a buzz	2.08
21. Being unable to take your allocated breaks because of the workload	1.32

The 19 (44%) items only chosen using FA are listed in Table 4.19.

**Table 4.19 Items Selected by Factor Analysis Only – Call Centre Study**

Item	Impact Score
1. Having a limited social life because of the shifts that you work	3.01
2. Lacking adequate control over your choice of shift	2.92
3. Having insufficient time to prepare and eat a proper meal during a shift	2.73
4. Being unable to take breaks with your colleagues	2.69
5. Having a body clock that is impacted negatively by rotas	2.65
6. Not being consulted enough on work matters that impact you directly	2.65
7. Having unhealthy food and snacks while on shift because they are quick to eat	2.60
8. Feeling like you lack control and empowerment because of your targets	2.58
9. Not feeling sufficiently challenged by your work	2.19
10. Experiencing high levels of stress because of your high workload	1.97
11. Having too many work demands to be effective in your role	1.92
12. Having unclear objectives to work towards as part of your development	1.88
13. Feeling lonely while you are at work	1.86
14. Feeling depressed because of the cumulative fatigue from shifts	1.67
15. Lacking praise and recognition by your line manager	1.66
16. Feeling under-valued for your contribution by your immediate line manager	1.63
17. Having poor lighting at your station	1.50
18. Having insufficient feedback on your performance so you know how you are doing	1.28
19. Feeling weepy and tearful because of your work	1.23

In order to inform comparisons between the two approaches further, the 10 highest mean importance scores (range 1-5) determined by IA and FA were also examined (Table 4.20).

**Table 4.20 Comparison of 10 Highest Scoring Items by IA and FA - Call Centre Study**

Rank	Items – Impact Analysis	Mean Importance Score (1-5)	Items – Factor Analysis	Mean Importance Score (1-5)
1.	Perceiving the organisation to be more target led than patient led	3.67	Having to read your emails during your break times or before/after your shift	3.63
2.	Having to read your emails during your breaks or before/after your shift	3.63	Having a limited social life because of the shifts that you work	3.10
3.	Having to book holiday far in advance	3.58	Experiencing frustration because of the rostering system	3.10
4.	Plans with family and friends being affected by the shift system	3.44	Finding it difficult to attend regular courses/classes outside of work because of the shift system	3.09
5.	Finding it difficult to swap shifts	3.30	Lacking adequate control over your choice of shift	3.00
6.	Having insufficient time to familiarise yourself adequately with new policies and procedures	3.23	Eating at 'unconventional' meal times because of the way your breaks are organised	2.93
7.	Poor air conditioning (either too cold or too hot)	3.18	Always feeling tired because of shift patterns	2.92

Rank	Items – Impact Analysis	Mean Importance Score (1-5)	Items – Factor Analysis	Mean Importance Score (1-5)
8.	Experiencing frustration because of the rostering system	3.10	Having insufficient opportunities for social interaction with your colleagues	2.92
9.	Finding it difficult to attend regular courses/classes outside of work because of the shift system	3.09	Being unable to get into a routine because your shifts are so varied	2.87
10.	Not having enough team meetings so you can discuss what is going on	3.03	Lacking enough time to recover from a difficult call before having to answer another one	2.86

#### 4.7.1 *Chi-Square Test*

The nonparametric *Chi-Square* test was used to determine whether a relationship between the IA-derived items and FA-derived items existed. Observed frequency data relating to the number of items selected by both approaches, the number of items selected only by one of the approaches and the number of items rejected by both were entered into a 2x2 contingency table (Table 4.21) so that a *Chi-square* test could be performed.

Methodological approach	IA – selected items (expected values)	IA – non selected items (expected values)	Total
FA – selected items	22 (17.28)	19 (23.72)	41
FA – non selected items	21 (25.72)	40 (35.28)	61
Total	43	59	102

**Table 4.21 2x2 Table – Observed Values Call Centre Study**

The *Chi-Square* value of 3.72 was not statistically significant ( $p = 0.0538$ ) and therefore indicated that the null hypothesis, that no difference between the number of items selected by either method existed, should be accepted (Table 4.22).

**Table 4.22 Chi-Square Test - Call Centre Study**

	IA – selected items	IA- non selected items	Row - Totals
FA – selected items	22	19	41
Percent of total	21.569%	18.63%	40.20%
FA – non selected items	21	40	61
Percent of total	20.588%	39.22%	59.80%
Column totals	43	59	102
Percent of total	42.157%	57.84%	
Chi-square (df=1)	3.72	$p = .0538$	

#### 4.7.2 *T-Test for Independent Samples*

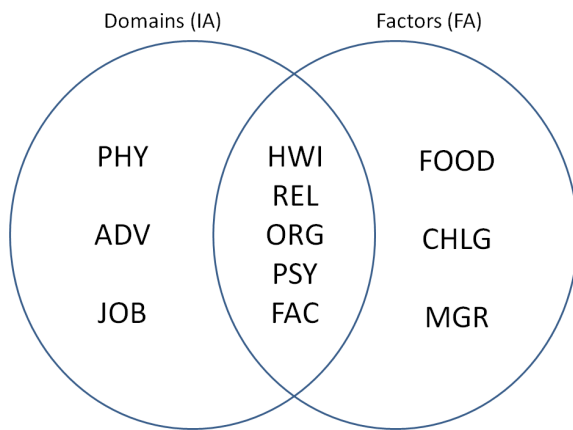
A *t*-test for independent variables was used to test the null hypothesis that there was no difference between the mean importance score of the items selected by IA (mean = 2.75) and the mean importance score of the items selected by FA (mean = 2.50). The findings from the *t*-test are presented in Table 4.23 and indicated that the null hypothesis should be rejected ( $p < 0.05$ ). In this case, the overall mean score for the IA-derived items was significantly higher than that recorded for the FA-derived set of items.

**Table 4.23 T-Test for Independent Samples - Call Centre Study**

Group 1 : Mean – IA items	Group 1: IA Std. Deviation	Group 2: Mean – FA items	Group 2: FA Std. Deviation	<i>t</i> -value	<i>p</i>	Degrees of freedom
2.75	0.42	2.50	0.44	-2.59	0.01	82

#### 4.7.3 *Bland and Altman Plots*

To further compare the two methods, the content of selected domains and factors were examined to establish where there existed general agreement between the different elements. Figure 4.2 Call Centre Study - Comparison of Domains and Factors provides a visual approximation of where there appeared to be agreement and disagreement between domains and factors selected.



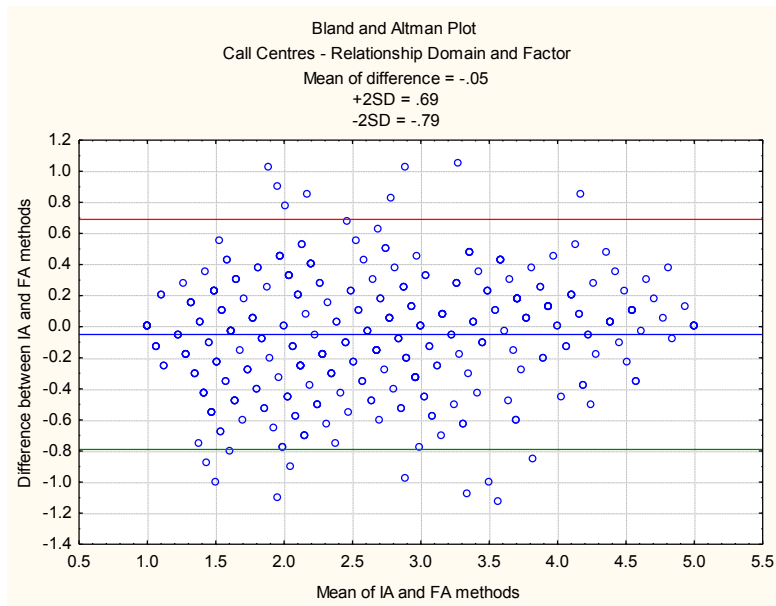
**Figure 4.2 Call Centre Study - Comparison of Domains and Factors**

To further investigate agreement between the two methods, Bland and Altman plots (Section 3.7.4) were produced for the five domains/factors in Figure 4.2 where there appeared to be commonality.

**Table 4.24 Call Centre Study - Difference between Relationships Domain and Factor**

Variable	Relationships				
	Valid N	Mean	Confidence -95.00%	Confidence 95.00%	SD
Difference between IA and FA methods	377	-0.05	-0.09	-0.02	0.37

Table 4.24 indicates that the mean difference (bias) between the two methods was - 0.05 and the IA method gave a significantly lower value for Relationship issues compared to FA. The Bland and Altman plot (Figure 4.3) shows that the 95% limits of agreement ranged from 0.69 to -0.79 which, within the context of the findings, represented a wide variation between the two methods.



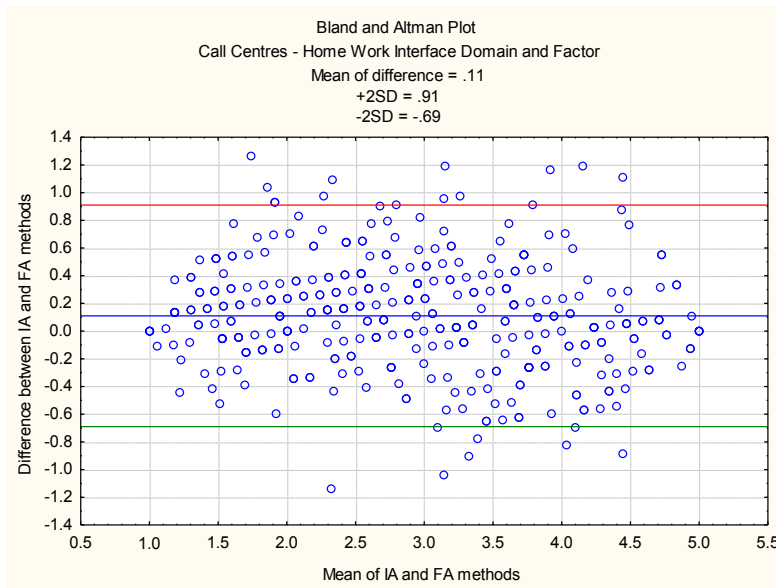
**Figure 4.3 Call Centre Study – Bland and Altman Plot for Relationships**

Table 4.25 shows that the mean difference (bias) between the two methods for HWI was 0.11 and an examination of the 95% confidence intervals indicated that IA provided a significantly higher value for HWI concerns than FA.

**Table 4.25 Call Centre Study - Difference between Home Work Interface Domain and Factor**

Variable	Home Work Interface				
	Valid N	Mean	Confidence -95.00%	Confidence 95.00%	SD
Difference between IA and FA methods	377	0.11	0.07	0.15	0.40

Again, the levels of agreement in the Bland and Altman plot for HWI (Figure 4.4) were wide, indicating a large amount of variation in values arising from each method.

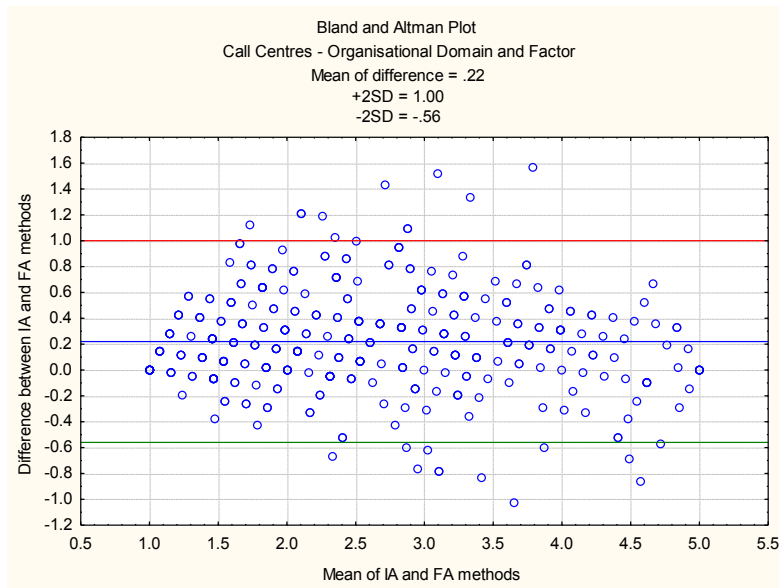


**Figure 4.4 Call Centre Study - Bland and Altman Plot for Home Work Interface**

Table 4.26 indicates that the mean difference (bias) between IA and FA methods of evaluating ORG issues was 0.22. The 95% confidence intervals showed that the IA evaluation of this dimension was significantly higher than that determined using FA. The limits of agreement were large within the context of the study findings, indicating a large amount of variation between the two methods (Figure 4.5).

**Table 4.26 Call Centre Study - Difference between Organisational Domain and Factor**

Variable	Organisational				
	Valid N	Mean	Confidence -95.00%	Confidence 95.00%	SD
Difference between IA and FA methods	377	0.22	0.18	0.26	0.39



**Figure 4.5 Call Centre Study - Difference between Organisational Domain and Factor**

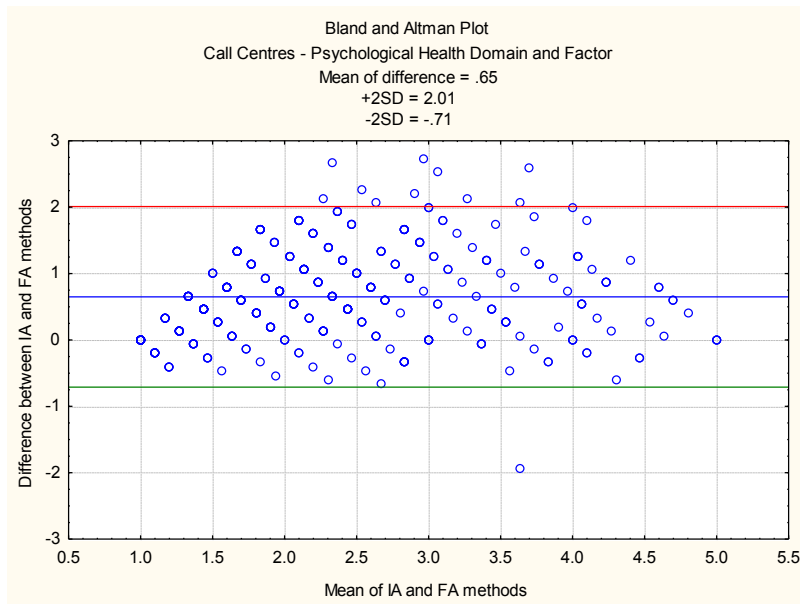
For the PSY domain and factor, Table 4.27 shows that IA gave a significantly higher value than the IA method.

**Table 4.27 Call Centre Study - Bland and Altman Plot for Psychological Health**

Variable	Psychological Health				
	Valid N	Mean	Confidence -95.00%	Confidence 95.00%	SD
Difference between IA and FA methods	377	0.65	0.58	0.72	0.68

The Bland and Altman plot (Figure 4.6) shows that the limits of agreement for the two methods were broad, again signifying a wide amount of discrepancy between IA and FA.





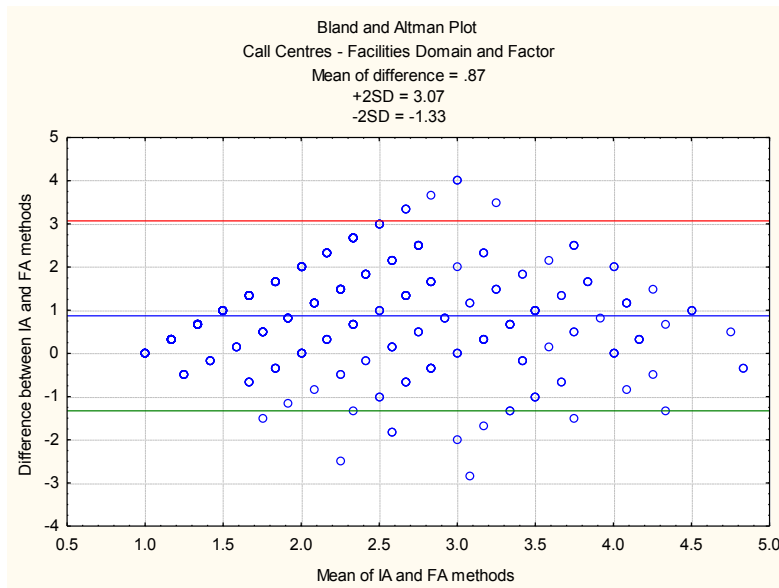
**Figure 4.6 Call Centre Study - Bland and Altman Plot for Psychological Health**

The final Bland and Altman plot for the call centre study compared measurement of the FAC domain and factor. The findings showed that the mean difference between the two methods was 0.87 and IA provided a significantly higher value for this area of WRWB compared to FA (Table 4.28).

**Table 4.28 Call Centre Study - Difference between Facilities Domain and Factor**

Variable	Facilities				
	Valid N	Mean	Confidence -95.00%	Confidence 95.00%	SD
Difference between IA and FA methods	377	0.87	0.76	0.98	1.10

The Bland and Altman plot (Figure 4.7) showed that the 95% limits of agreement were wide proportionately, indicating that there was little agreement between the two methods in respect of measuring FAC concerns.



**Figure 4.7 Call Centre Study - Bland and Altman Plot for Facilities**

## **4.8 Interim Observations**

This section considers some of the key themes arising from the call centre results.

### **4.8.1 Overview of Results**

The overall sample population was smaller than the guidelines stipulated for reasons explained in Section 4.2.3. The number of people that attended the focus groups and took part in the IRP met with IA HRQL recommendations (Juniper et al., 1996; Guyatt et al., 1986). However the IRP respondent numbers (n = 377) fell slightly short of the minimum quantity for FA advised by Rick et al. (2001). This is discussed further in Section 8.2.4.

Generally, those approached to take part in the IGP were keen to be involved. Call centre workers appeared to welcome the opportunity to share their views and

experiences on their WRWB and discussions scheduled to last for 45 minutes often overran by 15-30 minutes in order to allow all participants the opportunity to contribute.

The number and type of items produced in the IGP and confirmed in the IRP are discussed in more detail in Chapter 8.

Looking at the results as a whole, the findings suggest that the well-being of these call centre staff comprised a wide range of different dimensions that described how work impacted on both work and non-work needs. If all domains and factors resulting from this case study were pooled it would seem reasonable to suggest that work-related well-being for call centre staff is a multi-dimensional construct that draws on elements related to the work itself, advancement, relationships with colleagues, the wider organisation, workplace facilities, management, psychological health, physical health and home life. The high scoring findings that related to HWI issues support the views of earlier authors who have noted the growing problems associated with workers having to balance work and family responsibilities (Guest, 2002; Cooper and Robertson, 2001; Hobson and Beach, 2000).

Content validity was shown to be acceptable. A comparison of the 119 free text contributions with the 102 items generated in the initial phase suggested that the question set did not need to be supplemented with additional items. All free text comments added more colour and depth of understanding to the WRWB of call centre employees, rather than identified new areas for examination that were commonly experienced by call centre respondents.

#### 4.8.2 ***Comparisons between Methodologies***

An examination of the outputs from the IA and FA methodologies indicates that they delivered results that shared more likenesses than differences. On the simple metrics, both approaches identified an equal number of domains (or factors) and were similar in length. All sub-scales demonstrated acceptable internal reliability (Table 4.5 and Table 4.12) with the exception of the FAC domain and factor which both showed the same  $\alpha$  value of 0.63 and were therefore slightly below the recommended reliability value of 0.7 (Rick et al., 2001; Hinkin, 1995).

While only 22 items were common to each approach (Table 4.17), a closer inspection of sub-groups showed that there was a respectable amount of agreement between the IA and FA results. Five out of the eight domains and factors shared the same name (HWI, REL, ORG, PSY AND FAC). Although there was some discrepancy in content, the HWI, REL and ORG domains were in broad agreement with their factor-derived counterparts. There was less agreement between the respective FAC and PSY groupings although, conceptually, general meaning remained similar.

The Bland and Altman plots that were generated for these domains and factors (Section 4.7.3) indicated that, generally, the IA method tended to award a higher value to the domains when compared to their FA counterparts. While the bias calculations were often close to zero, the plots showed that the 95% limits of agreement were all unacceptably wide within the context of overall values and therefore signified that agreement between the two methods was low. For example, the mean importance value for the REL domain was 2.64 (Table 4.6) and 2.69 for the REL factor (Table 4.13).

However, the limits of agreement ranged from -0.79 to 0.69 (1.48), representing 56% of the REL domain score and 55% of the REL factor score. The limits of agreement for the FAC Bland and Altman plot (Figure 4.7) were much higher, ranging from 3.07 to -1.33 (4.40) against the FAC domain score of 2.76 (Table 4.4) and FAC factor score of 1.88 (Table 4.13). This high discrepancy can be explained by the lack of agreement between items contained within each (Table 4.4 and Table 4.11).

The FOOD and CHL factors featured in the IA domains but their visibility was less obvious. For example, elements of the FOOD factor presented in the PHY and FAC domains and Factor Eight (CHL) was subsumed within the JOB domain (Table 4.4 and Table 4.11).

The two key differences between domains and factors were the lack of items referencing line managers in the IA selection process and the lack of items referencing advancement in FA. One explanation for this may be that ADV and MGR represent two sides of the same coin given there is an implicit link between the four items listed in the MGR factor (Table 4.11) and training and development opportunities.

Notwithstanding these points of agreement, considerable differences between the IA and FA item selection methods are also evident.

Observations over the make up of the factors are offered. Most appeared to measure one construct clearly and this is supported by the  $\alpha$  values for the majority of sub-scales (Table 4.12). For example, the FOOD factor focused keenly on the provision of food at call centres ( $\alpha = 0.84$ ). However, the REL factor mostly looked at social

interaction but, curiously, it also included two items that seemed to have no bearing on collective activity (*'Lacking enough time to recover from a difficult call before having to answer another one'* and *'Having to read emails during your break times of before/after your shift'*). With the IA approach, this potential to apparently jumble diverse elements within one domain is unlikely, since they are derived from a close inspection of what seems most plausible based on face content rather than mathematical correlations. The small size of two of the factors (FAC and CHL) is also noted (Table 4.11). Again, this issue does not arise within IA, as there is *a priori* requirement to ensure the minimum size of any domain was three variables (Section 3.5.6).

Even when allowances are made for items that generally describe the same concept even though they are not exact replications, four items with impact scores greater than 3.00 selected using IA were not represented in the confirmed FA listings (Table 4.18). These included the variable with the highest impact score *'Perceiving the organisation to be more target led than patient led'* (Table 4.2). Equally, FA-derived items included 10 that were below the 2.00 impact score threshold used for IA item reduction (Table 4.19). A comparison of the 10 highest scoring items from IA and FA highlights these differences further (Table 4.20).

The IA process also appeared to generate a wider breadth of well-being issues associated with call centre work. For example, areas such as pay, promotion, holiday and air conditioning were confirmed using IA but lacked any reference in the finalised FA findings. Again, this difference may be explained by item selection through the use

of a correlational matrix (FA) rather than the perceived impact of a wide range of individual items (IA).

Finally, results from the FA showed that Factor One (REL) contributed 35% of the total variance explained (Table 4.11). This implies that those variables highly weighted within this factor were important in terms of their discriminatory influence on people's WRWB. It is worth noting however, that other variables presenting in lower factors were perceived to have a high impact on WRWB by those completing the Questionnaire. For example, all items that weighted highly on Factor Four (FOOD) showed impact scores between 2.84 and 2.25 although the percentage of variance explained by this factor was only 3.35%. This point is revisited in the main Discussion (Chapter 8).

#### 4.8.3 *Performance of Assessments*

So far, discussion regarding similarities and differences between the two item selection methods has been theoretical. Of clear interest also, is how these divergent approaches may translate into interpretable (albeit hypothetical at this stage) findings on the well-being of a call centre population.

A *t*-test for independent samples showed that staff recorded significantly worse levels of well-being using the IA question set (Table 4.23). This may be explained by virtue of IA deliberately selecting those items that were most detrimental to well-being and therefore delivered higher scores.

The HWI domain and HWI factor both ranked as the construct that most impaired people's well-being (Table 4.6. and Table 4.13). This finding denoted that shift work arrangements in this call centre operation were perceived to be highly bothersome irrespective of method used. However, after this, agreement between sub-scale rankings diminished considerably. For example, REL, which was comparable in content across both methods, ranked as the second highest scoring factor under FA, while it was graded sixth using IA (Table 4.6. and Table 4.13).

It can be seen that the different approaches lead to two sets of findings which are appreciably different in a number of respects. This carries practical implications for those interested in the well-being of call centre staff. While both sets of results identified HWI as an obvious area for improvement, an employer using FA-derived findings is likely to pursue a different path to that of a call centre operation founding any action on the IA-derived findings. For example, based on current findings, the former could be well-advised to consider how it may improve opportunities for social interaction (REL) and issues relating to meals (FOOD). This could be quite different from the latter who, based on the evidence, might be more inclined to consider how particular aspects of people's jobs (JOB) may be enhanced and also look at ways to improve air-conditioning and accommodation (FAC). This potential to act differently depending on whether IA and FA is used, is made more acute when the 10 highest scoring items are compared and appraised (Table 4.20).

Interestingly, both approaches concurred that significant discrepancies existed between team leaders and the two junior roles (Table 4.9 and Table 4.16).



A brief comparison with previous call centre literature regarding well-being within call centres is also commented on. The confirmed groupings in the present study correspond with aspects of call centre work reported in earlier studies such as the monitoring against pre-defined targets and the heavily scripted, repetitious nature of the work (for example Holman, 2003). However, appreciable differences also exist.

Of particular note is that the highest scoring elements associated with HWI in this present study, only appear to be referenced in the study by Holdsworth and Cartwright (2003) who, even then, fail to highlight the issue as especially striking. The same seems to be true of the Interpersonal Relationship (REL) domain and factor. While the current data suggest this is an important aspect of call centre well-being, only Fisher et al. (2007) capture analogous information using the Job Characteristics Inventory (Sims et al., 1976) which includes questions on 'Friendship Opportunities'. Similarly, the present study establishes the importance of workplace facilities (FAC) which only a minority of academics reference (McGuire and McLaren, 2009; Sprigg et al., 2003; Taylor et al., 2003). Of these, only Sprigg et al. (2003) consider both facilities *and* food provision. Interestingly, Holman (2003) acknowledges that the physical environment may be a source of poor health in call centres but concedes that the literature failed to find any study that examined this area.

In summary, this chapter has presented the WRWB findings from a call centre study population using two different methodologies. The learnings indicate that, irrespective of the approach, the well-being of call centre employees appears to comprise a wide range of different elements, some of which have not been documented in earlier

studies. Overall, there appears to be more agreement than disagreement between the two sets of sub-scales. Nonetheless, there are seemingly keen differences in the treatment of key variables which could lead to substantially diverse impressions of the most important aspects of WRWB which has potential implications for those assessing it and those tasked with introducing plans to enhance it.

## **Chapter 5 Results – Police Force Study**

### **5.1 Introduction**

This chapter presents the findings from the second in the series of three case studies. The data centre on findings from officers and staff working within a police force. Results on well-being using Impact Analysis (IA) and Factor Analysis (FA) are reported. Interim observations relating specifically to the police findings and how they fit with extant literature in the enforcement sector are offered at the end. The possible implications arising from these results and their place within the wider employee well-being field are discussed in Chapter 8.

### **5.2 Case Study Context**

#### **5.2.1 Overview of Sector**

There is a widely held view that police work is highly stressful. Through their work, police officers are expected to deal with traumatic events as well as being exposed regularly to dangers such as gun crime or having to face the unknown (Collins and Gibbs, 2003; Biggam et al., 1997). Policing is one of the top three occupations most often referred to by medical professionals in the Surveillance of Occupational Stress and Mental Illness system (SOSMI) (Collins and Gibbs, 2003) and Axelbred and Valle (1978) go so far as to claim that police work is the most psychologically dangerous job in the world. However, as Biggam et al. (1997) note, there is little evidence available to substantiate this view.

There is an abundance of self-report questionnaires reported in the literature that describe and evaluate aspects of police work which are detrimental to health.

Examples include the Police Stress Questionnaire 36 (PSQ 36) (Biggam et al., 1997), the Operational and Organizational Police Stress Questionnaires (PSQ-Op and PSQ-Org) (McCreary and Thompson, 2006), the Police Stressors and Felt Stress Inventory (Brown and Campbell, 1991), the Situational Stress Inventory (SSI) (Gudjonsson and Adlam, 1985), the Police Stress Inventory (PSI) (Lawrence, 1984) and the Police Stress Survey (Spielberger et al., 1981). As their names denote, these scales all focus on occupational stressors within the law enforcement sector. The exception is Hart et al.'s (1993) Police Daily Hassles Scale (PDHS) and Police Daily Uplifts Scale (PDUS) which were constructed to evaluate the minor daily experiences in police life that are salient to wider aspects of well-being rather than stress *per se*. Generally, these studies find that organisational stressors such as administrative duties and shift work are considered by officers to be a greater source of strain than operational aspects such as direct dealings with death and violence (for example Collins and Gibbs, 2003; Biggam et al., 1997; Brown and Campbell, 1991; Gudjonsson and Adlam, 1985; Spielberger et al., 1981; Kroes et al., 1974).

Of interest to this present study is the methodologies used to develop these existing police scales. Apart from the PDHS and PDUS (Hart et al., 1993), no police stress scale seeks intelligence on frequency of exposure to an occurrence *and* its perceived severity as part of the item selection process. Variables are mostly initially generated from previous research findings and discussions with officers and experts about their experiences. For the PSQ 36 (Biggam et al., 1997), the PSQ-Op and PSQ-Org (McCreary and Thompson, 2006), the SSI (Gudjonsson and Adlam, 1985) and the PSI (Lawrence, 1984), this process represents the full extent of questionnaire development. For

others, namely the Police Stress Survey (Spielberger et al., 1981) and the Police Stressors and Felt Stress Inventory (Brown and Campbell, 1991), researchers invited expert panels to eliminate variables they considered to be unimportant. The possible repercussion of this approach is that variables considered to be high in impact by police workers themselves may be excluded from a scale because they are not held in similar regard by the developers or the small teams they chose to consult with.

Concerns about some of the evaluation approaches have been raised. Both Biggam et al. (1997) and Gudjonsson and Adlam (1985) register unease that studies often ask officers to rate the stressfulness of events without capturing data on actual exposure. Authors such as McCreary and Thompson (2006), Biggam et al. (1997) and Gudjonsson and Adlam (1983) have sought to address this limitation by either seeking data on frequency (Biggam et al., 1997) or data on the amount of stress experienced by certain events (for example McCreary and Thompson, 2006; Gudjonsson and Adlam, 1985) as part of their evaluation studies. None however, factor frequency and importance (ie impact) into scale construction.

The well-being of officers, as defined in this programme, has not been documented previously. While the work by Hart et al. (1993) seems to be close in terms of methodological intent the authors' PDHS and PUDS include those aspects that are also in the line of police duty, for example '*Dealing with abused children*'. Realistically, these types of variables cannot be modified by the employer and therefore represent a notable difference to the present research and its definition of WRWB (Section 2.8.2).

Furthermore, all studies to date have only considered the status of serving officers. As approximately 40% of a force is made up of civilians, and the performance of a force is somewhat reliant upon this population, the present research examined the viability of developing *one* pilot assessment that could embrace the well-being issues of both officers *and* staff. As a result, it is expected that this current research will help progress scholarly understanding of police work and how it impacts both officers and civilian personnel serving in a force.

### 5.2.2 **Case Study Background**

The participant case study was a medium-sized county police force based outside the London metropolitan area. It employed some 2070 people of which nearly 60% were officers. Roles varied greatly across both officer and staff ranks. Typically, officers started out patrolling neighbourhoods but could then specialise in other roles such as CID (Criminal Investigation Department), firearms, road policing, dog work and sexual offence protection. Staff roles also encompassed a variety of different activities ranging from call handling through to forensic work, preparing case papers for prosecution and corporate service roles such as finance, HR and IT. The force also employed 60 Police Community Support Officers (PCSOs) who mainly patrolled the streets and attended incidents. Their role was to support the activities of officers although they did not have warrants to arrest and were prohibited from carrying handcuffs or a baton.

At the time of the study, the force was in quite advanced merger discussions with a neighbouring force.

### 5.2.3 *Scope of Research*

The scope of the study encompassed all roles within the police force including civilian staff and PCSOs.

## 5.3 *Item Generation Phase*

A comprehensive list of all possible WRWB issues was generated through a series of semi-structured interviews with 64 individuals including 32 officers and 27 staff representing a wide range of directorates, departments and responsibilities.

Discussions were also held with the Chief Constable, the force Medical Advisor and representatives from Occupational Health, Welfare and HR. A union official was also consulted. All discussions were held in person with the exception of the conversation with the Chief Constable which was conducted by telephone. Because a focus group format could have been criticised for taking officers off the street away from their community duties, discussions were held with individuals during their break times at the police headquarters, its two main stations and one rural station. Previous literature was reviewed for potential items. This included a search of peer-review journals and sector specific media. The force's most recent staff satisfaction survey was also appraised.

The item pool resulted in a total of 64 possible variables associated with WRWB in the police.

Each of the 64 items was listed in the IRP Questionnaire. Also included were a number of socio-demographic questions regarding gender, role, directorate/division and

location. The draft Questionnaire was pilot tested with five individuals within the force to ensure the content and navigation were clear. In total, the Questionnaire took approximately 9 minutes to complete. Force-wide email notices from the HR team were issued to encourage completion rates and details were placed on the force's intranet home page with a link through to the assessment site. Union officials were informed of plans and were asked to endorse the study through their own communications with members. Police and staff were given a period of three weeks to complete the assessment.

#### ***5.4 Results - Overall***

Completed IRP Questionnaires totalled 822. Responses represented 38% of the total force population and the proportional frequencies for each role were broadly reflective of the force's overall composition (Table 5.1).

159 free text responses were also contributed (Appendix D, D.2). These were checked against the 64 variables and no additional areas of WRWB were identified that were experienced by more than 10% of total contributions fielded. A breakdown of responses by role is shown in Table 5.1. Overall, frequency scores ranged from 0.86 – 0.51 and mean importance scores ranged from 2.99 – 1.72. Impact scores ranged between 2.42 and 0.88.



**Table 5.1 Frequency Rates by Role for Police Study**

	Count	Cumulative - Count	Percent	Cumulative - Percent
<b>Police staff</b>	383	383	46.59	46.59
<b>Other</b>	24	407	2.92	49.51
<b>Police officer</b>	372	779	45.26	94.77
<b>PCSO</b>	43	822	5.23	100.00

### 5.4.1 *Impact Scores*

The 20 highest ranking impact scores *prior* to item reduction, are presented in Table

5.2.

**Table 5.2 Top 20 Police Force Impact Scores Prior to Item Reduction**

Rank	Question	Frequency*	Mean.Imp±	ImpactΔ
1.	Feeling overwhelmed by the amount of organisational change within the force	0.86	2.81	2.42
2.	Believing that senior officers and managers don't appreciate the challenges you face in your role	0.78	2.99	2.32
3.	Believing that your promotion opportunities in the force are limited	0.77	2.98	2.31
4.	Being concerned about how your job may change in the future	0.86	2.69	2.31
5.	Believing that opportunities to develop your career are limited within the force	0.77	2.96	2.28
6.	Feeling frustrated by the paperwork involved with your job	0.80	2.82	2.25
7.	Feeling undervalued for your contribution by the wider force	0.79	2.82	2.22
8.	Feeling under pressure to attend work when you are unwell	0.72	2.92	2.09
9.	Always feeling physically tired because of the hours you work	0.79	2.65	2.08
10.	Having to work unsociable hours that impact on family and friends	0.72	2.90	2.08
11.	Being unable to take restful breaks during your working day	0.73	2.82	2.05
12.	Having a poor diet because of the job that you do	0.68	2.97	2.03
13.	Experiencing high levels of stress because of your workload	0.79	2.56	2.02
14.	Receiving inadequate communications on issues that matter to you	0.79	2.55	2.01
15.	Having a poor quality work environment eg cramped accommodation	0.74	2.67	1.99
16.	Lacking adequate facilities at your workplace eg canteen, showers	0.70	2.71	1.90
17.	Constantly feeling under pressure from work, even on days off	0.74	2.56	1.90
18.	Lacking a clear career development plan	0.73	2.61	1.89
19.	Having a job that disrupts your private life	0.73	2.57	1.87

Rank	Question	Frequency*	Mean.Imp±	ImpactΔ
20.	Having too many work demands to be effective in your role	0.74	2.46	1.81
* = proportion of workers reporting item as bothersome ± = mean importance score in subjects who reported item as bothersome Δ = frequency x mean importance (maximum = 5)				

#### 5.4.2 *Impact Score Comparisons by Role*

Impact scores for each variable were ranked by role (Appendix D, D.3) and Kendall Tau ( $\tau$ ) correlations were examined. The 24 assessments contributed by those who identified their role as 'Other' were eliminated from this analysis since their positions were unclear and could confound findings. Calculations showed that the rankings for each role were significantly correlated ( $p < 0.05$ ) with the other two and it was therefore deemed appropriate to construct one questionnaire for police officers, police staff and PCSOs (Table 5.3).

**Table 5.3 Kendall Tau Correlations for Police Roles**

Role	Police staff	Police officer	PCSO
Police staff	1.00		
Police officer	0.28*	1.00	
PCSO	0.37*	0.30*	1.00
* $p < 0.05$			

### 5.5 *Results – Impact Analysis*

#### 5.5.1 *Item Reduction*

Impact scores were closely scrutinised. Typically, items with impact scores exceeding 1.20 were selected for inclusion in the instrument. A threshold of 1.20 was selected as this signified a notable degree of impairment and, importantly, accommodated the need to develop a scale that would take future respondents 7-8 minutes to complete (approximately 50 items).

12 items were eliminated owing to impact scores of less than 1.20 (Appendix D, D.4.1). However, two variables were subsequently reinstated ('Regularly having to come to work on your rest days' and 'Not having a clear understanding of your main work priorities') because of their noticeably high impact scores (both 1.50) amongst the officer cohort (Appendix D, D.3).

Examination of item-item correlations resulted in seven further items being discarded ( $r > 0.7$ ) (Appendix D, D.4.2). Two of the remaining items referred to similar aspects of tiredness resulting in the variable with the lowest impact score being omitted. The final number of variables stood at 46.

### 5.5.2 **Domain Selection**

The remaining 46 variables were carefully considered for shared themes that could translate into potential domains. Choice of domain was informed by earlier occupational and clinical well-being research. After extensive deliberation it was decided to divide the items across nine apparently different sub-groups. The choice and number of domains decided upon appeared to classify the range of selected variables in the most efficient manner. The Advancement (ADV) domain described the impact of training and development needs on well-being while Home Work Interface (HWI) considered the impact of work on private life needs. Specific aspects of the job were categorised into the Job (JOB) domain. Organisational (ORG) considerations looked at the wider aspects of the force such as changes in structure and operations. The Physical Health (PHY) and Psychological Health (PSY) domains represented impact on people's physical and mental health needs respectively. Variables relating to the

impact of interpersonal relationship needs at work were grouped into the Relationships (REL) domain. Issues to do with Workload (WL) described workload problems and finally, matters arising from the physical work environment were grouped into the Facilities (FAC) domain. Each domain together with its constituent items is presented in Table 5.4.

**Table 5.4 Finalised Domains and Variables for Police Case Study**

<b>Physical Health (PHY)</b>	<b>Job (JOB)</b>	<b>Organisational (ORG)</b>	<b>Advancement (ADV)</b>	<b>Psychological Health (PSY)</b>	<b>Home Work Interface (HWI)</b>	<b>Interpersonal Relationships (REL)</b>	<b>Workload (WL)</b>	<b>Workplace Facilities (FAC)</b>
Having a poor diet because of the job that you do?	Not having the right equipment to enable you to do your job properly?	Feeling overwhelmed by the amount of organisational change within the force?	Believing that your promotion opportunities in the force are limited?	Feeling under pressure to attend work when you are unwell?	Having to work unsociable hours that impact on family and friends?	Not feeling valued for your work by your line manager?	Being unable to take restful breaks during your working day due to workload?	Having a poor quality work environment eg cramped accommodation?
Always feeling physically tired because of the hours you work?	Not being paid overtime?	Believing that senior officers and managers don't appreciate the challenges you face in your role?	Having an unsatisfactory performance appraisal system?	Experiencing high levels of stress because of your work?	Finding it difficult to book leave because of under-resourcing?	Reporting to someone who lacks the skills to manage effectively?	Having too many work demands to be effective in your role?	Lacking adequate facilities at your workplace eg canteen, showers?
Being unable to improve/maintain physical fitness because of your job?	Lacking sufficient flexibility over working times and patterns?	Being concerned about how your job may change in the future?	Having insufficient training on the technical skills required for your work?	Experiencing persistent low moods because of your work?	Having holiday plans disrupted because of your work?	Not feeling part of a real team?	Having to work extended hours because of your workload eg late nights?	Having inadequate facilities for rest during your working day?
Not being able to sleep well because of work worries?	Believing that your overall compensation package is inadequate?	Feeling undervalued for your contribution by the wider force?	Receiving insufficient training on softer skills eg people management	Feeling frustrated by the amount of paperwork involved with your job?	Regularly having to come to work on your rest days?	Lacking a real sense of camaraderie with your team?		
Experiencing musculo-skeletal problems because of your work eg back complaints?	Having a job where there is little day-to-day variation?	Receiving inadequate communications on issues that matter to you?	Not feeling sufficiently challenged by your job?	Feeling demoralised because of your work?				
Putting on weight because of your job?	Not having a clear understanding of your main work priorities?	Being concerned about losing your job because of organisational changes?						
Experiencing neural problems because of your work eg headaches?	Lacking control over your priorities at work?	Experiencing high levels of stress because of organisational changes?						
Experiencing gastro-intestinal problems because of your work eg stomach complaints?								

### 5.5.3 *Internal Reliability*

Internal reliability was calculated using Cronbach's Alpha coefficient ( $\alpha$ ). Alpha values for each sub-scale ranged from 0.87 to 0.74 (Table 5.5), thereby indicating that internal consistency for each domain was adequate (Rick et al., 2001).

**Table 5.5 Internal Reliability for Police Domains**

<b>Domain (number of items)</b>	<b>Cronbach's Alpha <math>\alpha</math></b>
PHY (8)	0.87
ORG (7)	0.86
PSY (5)	0.84
HWI (4)	0.83
REL (4)	0.80
WL(3)	0.80
JOB (7)	0.78
FAC (3)	0.76
ADV (5)	0.74

### 5.5.4 *Well-Being Indications for Call Centre Population based on Impact Analysis*

Data were altered so that all '0' values were changed to a value of '1'. Analysis showed that, overall, people serving in the force perceived issues relating to organisational practice (ORG) to be most bothersome to their well-being. By comparison, they considered aspects relating to their actual jobs (JOB) to be least damaging to their general health and wellness. Table 5.6 presents the domains ranked by mean importance together with standard deviation and skewness measures. The well-being level for the force overall was 2.04.

**Table 5.6 Ranked Domains for Police Force**

Domain	Mean*	Std. Dev.	Skewness
ORG	2.32	0.96	0.59
PSY	2.22	1.01	0.77
FAC	2.18	1.13	0.74
WL	2.10	1.05	0.81
PHY	2.05	0.86	0.87
ADV	2.02	0.86	0.90
HWI	1.92	0.95	1.06
REL	1.81	0.93	1.27
JOB	1.79	0.71	1.08
Overall	2.04	1.25	1.05

\* Mean range 1-5

A repeated measures ANOVA indicated that there were significant effects of police force domains and roles ( $F$  values sig.  $p < .05$ ). Interactions between domains and roles were also significant (Table 5.7). Residuals were checked in order for the ANOVA to be valid and indicated that the data were approximately normally distributed (Appendix D, D.4.3). As before, the 24 individuals who identified their role as ‘Other’ were omitted from these analyses.

**Table 5.7 Repeated Measures ANOVA for Police Roles and Domains**

Effects	Sum of squares	Degrees of Freedom	Mean square	F value	$p$
Role	355.68	2	177.84	41.146	0.00**
Error (within roles)	3436.08	795	4.32		
Domain	72.67	8	9.08	23.031	0.00**
Interaction between domain and role	176.59	16	11.04	27.982	0.00**
Error (within individuals)	2508.62	6360	0.39		

\*\*  $p < 0.01$

Table 5.8 compares the mean importance scores for each domain using Fisher’s LSD Test and depicts significant differences ( $p < 0.05$ ) between many of them. The mean importance scores for each domain are provided in the column headers. Values in the body of Table 5.8 show  $p$  values for pair-wise comparisons of domains. Based on the data, experiences in respect of the ORG domain, were considered to be significantly

more adverse to workers' well-being than any of the other eight dimensions. By the same token, aspects of the actual job (JOB) were perceived to be least problematic compared to all other dimensions with the exception of the PSY domain.

**Table 5.8 Fisher's LSD Test for Police Domains**

Domain	1 - 1.92	2 - 2.05	3 - 1.81	4 - 2.02	5 - 2.22	6 - 1.79	7 - 2.10	8 - 2.32	9 - 2.18
1 HWI									
2 PHY	0.000***								
3 REL	0.001**	0.000***							
4 ADV	0.002**	0.423	0.000***						
5 PSY	0.000***	0.000***	0.000***	0.000***					
6 JOB	0.000***	0.000***	0.370	0.000***	0.000***				
7 WL	0.000***	0.091	0.000***	0.013*	0.000***	0.000***			
8 ORG	0.000***	0.000***	0.000***	0.000***	0.001**	0.000***	0.000***		
9 FAC	0.000***	0.000***	0.000***	0.000***	0.280	0.000***	0.009**	0.000***	

\* $p < 0.05$  \*\* $p < 0.01$  \*\*\* $p < 0.001$

Differences between roles were examined further. Fisher's LSD test showed that the WRWB of officers (mean = 2.30) was significantly worse than that of civilian staff (mean = 1.84) and PCSOs (mean = 2.03) (Table 5.9). No material differences between civilian staff and PCSOs were found. The mean importance scores for each role are provided in the column headers. Values in the body of Table 5.9 show  $p$  values for pair-wise comparisons of roles.

**Table 5.9 Comparison of Police Roles using Fisher's LSD Test**

Role	Mean importance score value for each role		
	1 - 1.84	2 - 2.30	3 - 2.03
1 Police staff			
2 Police officer	0.000***		
3 PCSO	0.088	0.017*	

\*  $p < 0.05$  \*\*\*  $p < 0.001$

## 5.6 Results –Factor Analysis

### 5.6.1 Item Reduction

Of the 64 variables in the original item pool, none were identified by fewer than 40% of respondents. Two items showed item-total values of less than 0.40 and were



discarded (*'Not feeling sufficiently challenged by your job'* and *'Being concerned about losing your job because of organisational changes'*). An inspection of item-item correlations ( $r > 0.7$ ) was conducted and nine further variables were omitted (Appendix D, D.5.1). The remaining 53 items were included in a principal components analysis. No items showed a loading of less than 0.40 on the first factor and therefore all 53 items were put forward for factor analysis using a varimax rotation.

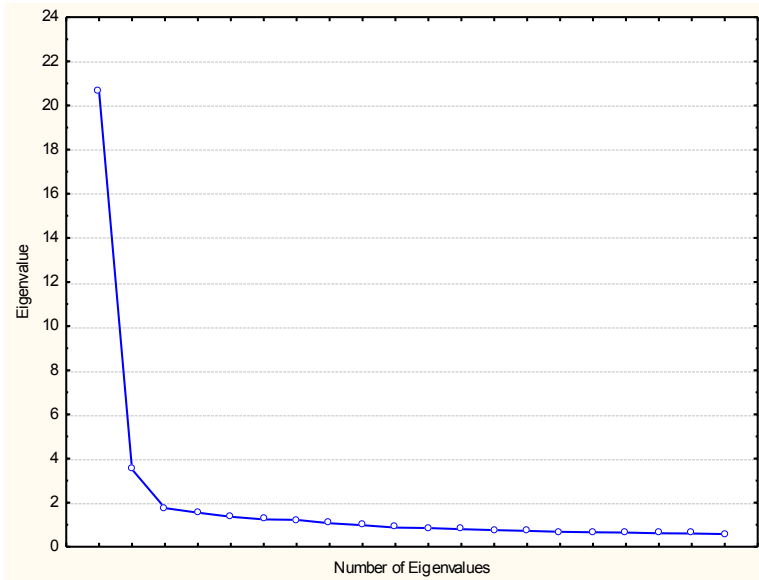
### 5.6.2 **Factor Extraction**

An examination of Eigenvalues greater than 1.00 suggested an 8 factor solution (Table 5.10).

**Table 5.10 Eigenvalues > 1.00 for Police Force Factor Analysis**

	<b>Eigenvalue</b>	<b>% Total - variance</b>	<b>Cumulative - Eigenvalue</b>	<b>Cumulative - %</b>
<b>1</b>	20.65	38.96	20.65	38.96
<b>2</b>	3.51	6.62	24.16	45.58
<b>3</b>	1.76	3.31	25.91	48.90
<b>4</b>	1.55	2.92	27.46	51.82
<b>5</b>	1.36	2.57	28.83	54.39
<b>6</b>	1.24	2.35	30.07	56.74
<b>7</b>	1.22	2.30	31.29	59.03
<b>8</b>	1.07	2.02	32.36	61.05

Cattell's Scree Plot was also studied to help inform the optimal number of factors to be retained (Figure 5.1).



**Figure 5.1 Cattell's Scree Plot - Police Study**

Several options with less or more factors were considered in combination with different cut-points for factor loadings. Using the number of eigenvalues that exceeded 1.00 as the key criterion (Section 3.5.7), analysis suggested that an 8 factor extraction with a threshold loading greater than 0.5 offered the solution that appeared the most logical and interpretable. 16 items that did not load satisfactorily onto any of the 8 factors were discarded. Table 5.11 confirms the factor structure and distribution of the final 37 items. Total variance explained was 61% with Factor One accounting for 39% of variability.

The content of each of the eight factors was inspected so that descriptors could be assigned to each. The first factor was the largest with 11 items and mostly included items that related to rest and recovery and was therefore labelled Rest (RST). The second factor chiefly reflected workplace relationships and career prospects and was called Manager (MGR) since it was held that most of the items could be tracked back

to the actions of the individual's immediate supervisor. Factor Three considered workload issues and was termed Workload (WL). The fourth and fifth factors looked at physical health and organisational change and were named Physical Health (PHY) and Change (CHG) respectively. Factor Six was termed Pay (PAY) since it only comprised one item relating to overtime. Similarly, Factor Seven was given the name Disciplinary (DCP) to describe its single variable that referenced disciplinary proceedings. The final factor, with two items, covered job variation and meaning and was labelled Challenge (CHL).

**Table 5.11 Varimax Rotation with 8 Factors for Police (loading cut off >.05)**

	<b>Factor 1 – Rest (RST)</b>	<b>Factor 2 – Manager (MGR)</b>	<b>Factor 3 – Workload (WL)</b>	<b>Factor 4 – Physical Health (PHY)</b>	<b>Factor 5 – Change (CHG)</b>	<b>Factor 6 – Pay (PAY)</b>	<b>Factor 7 – Disciplinary (DCP)</b>	<b>Factor 8 – Challenge (CHL)</b>
	Lacking enough sleep because of your work patterns eg shifts	Not feeling valued for your work by your line manager	Having to work during your days off because of your workload	Experiencing neural problems because of your work eg headaches	Being concerned about how your job may change in the future	Not being paid overtime	Worrying about the potential impact of disciplinary proceedings	Having a job where there is little day-to-day variation
	Finding it difficult to book leave because of under-resourcing	Reporting to someone who lacks the skills to manage effectively	Having to work extended hours because of your workload eg late nights	Putting on weight because of your job	Experiencing high levels of stress because of organisational changes			Believing that your work is not contributing to anything very meaningful
	Having a poor diet because of the job that you do	Not feeling part of a real team	Feeling frustrated by the paperwork involved with your job	Experiencing gastro-intestinal problems because of your work eg stomach complaints	Feeling overwhelmed by the amount of organisational change within the force			
	Having a job that disrupts your private life	Not feeling really supported by your immediate team	Not being able to sleep well because of work worries	Experiencing musculo-skeletal problems because of your work eg back complaints				
	Always feeling physically tired because of the hours you work	Not feeling able to confide in someone at work	Regularly lacking the ability to concentrate because of your workload					
	Having inadequate facilities for rest during your working day	Having an unsatisfactory performance appraisal system	Lacking control over your priorities at work					
	Regularly having to come to work on your rest days	Being bullied by others within the force						
	Lacking sufficient flexibility over working times and patterns	Receiving inadequate communications on issues that matter to you						

	<b>Factor 1 – Rest (RST)</b>	<b>Factor 2 – Manager (MGR)</b>	<b>Factor 3 – Workload (WL)</b>	<b>Factor 4 – Physical Health (PHY)</b>	<b>Factor 5 – Change (CHG)</b>	<b>Factor 6 – Pay (PAY)</b>	<b>Factor 7 – Disciplinary (DCP)</b>	<b>Factor 8 – Challenge (CHL)</b>
	Having holiday plans disrupted because of your work	Lacking a clear career development plan						
	Lacking adequate facilities at your workplace eg canteen, showers							
	Being unable to take restful breaks during your working day							
<b>% variance explained</b>	38.96	6.62	3.31	2.92	2.57	2.34	2.30	2.02
<b>Eigenvalues</b>	20.65	3.51	1.76	1.55	1.36	1.24	1.21	1.07

### 5.6.3 *Internal Reliability*

Internal reliability was assessed using Cronbach's Alpha coefficient ( $\alpha$ ). Alpha values for six sub-scales ranged from 0.92 – 0.63 indicated that internal consistency was adequate for all factors apart from CHL where  $\alpha$  was slightly below the required threshold (Rick et al., 2001). With only one variable belonging to each, it was not possible to calculate  $\alpha$  values for the PAY and DCP factors (Table 5.12).

**Table 5.12 Internal Reliability Police Study – Factor Analysis**

<b>Factor (number of items)</b>	<b>Cronbach's Alpha <math>\alpha</math></b>
<b>RST (11)</b>	.92
<b>MGR(9)</b>	.88
<b>WL (6)</b>	.86
<b>CHG (3)</b>	.82
<b>PHY (4)</b>	.76
<b>CHL (2)</b>	.63
<b>PAY (1)</b>	-
<b>DCP (1)</b>	-

### 5.6.4 *Well-Being Indications for Call Centre Population based on Factor Analysis*

Data were revised so that all '0' responses were altered to '1'. Table 5.13 ranks the mean values for all eight factors and suggested that, overall, people perceived that organisational changes (CHG) within the force were most detrimental to their well-being. Worry over disciplinary proceedings (DCP) was perceived to be least troublesome. The overall WRWB score for the force was 1.94.

**Table 5.13 Ranked Factors for Police Study**

Factor	Mean*	Std. Dev.	Skewness
CHG	2.34	1.11	0.68
RST	2.02	0.91	0.95
WL	1.95	0.85	0.98
PHY	1.91	0.88	1.08
PAY	1.88	1.29	1.24
MGR	1.84	0.82	1.25
CHL	1.57	0.82	1.59
DCP	1.52	1.01	2.09
<b>Overall</b>	1.94	1.19	1.23
* Range 1-5			

A repeated measures ANOVA indicated that significant differences ( $p < 0.5$ ) existed between factors and roles and the interactions between them (Table 5.14). Residuals were checked and indicated that data were approximately normally distributed (Appendix D, D.5.2). As before, the 24 respondents who identified their role as ‘Other’ were eliminated from analyses.

**Table 5.14 Repeated Measures ANOVA for Police Roles and Factors**

	Sum of squares	Degrees of freedom	Mean square	F value	P
<b>Role</b>	242.987	2	121.494	37.918	0.000***
<b>Error (within roles)</b>	2547.281	795	3.204		
<b>Factor</b>	103.064	7	14.723	25.730	0.000***
<b>Interaction between factor and role</b>	134.568	14	9.612	16.798	0.000***
<b>Error (within individuals)</b>	3184.406	5565	0.572		
*** $p < 0.001$					

Table 5.15 compares the mean importance scores for each factor using Fisher’s LSD Test and depicts significant differences ( $p < 0.05$ ) between some of them. The mean importance scores for each role are shown in the column headers and the values in the body of Table 5.15 show  $p$  values for pair-wise comparisons of roles. The findings showed that, overall, people serving in the force found that issues to do with organisational change (CHG) were significantly more detrimental to their well-being than the other seven factors.

**Table 5.15 Fisher's LSD Test for Police Factors**

FACTOR	Mean importance score value for each factor							
	1 - 2.02	2 - 1.84	3 - 1.95	4 - 1.91	5 - 2.34	6 - 1.88	7 - 1.52	8 - 1.57
1 RST								
2 MGR	0.000***							
3 WL	0.053	0.006**						
4 PHY	0.003**	0.100	0.291					
5 CHG	0.000***	0.000***	0.000***	0.000***				
6 PAY	0.000***	0.356	0.075	0.469	0.000***			
7 DCP	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***		
8 CHL	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.172	

\*  $p < 0.05$  \*\*  $p < 0.01$  \*\*\*  $p < 0.001$

Further analysis compared the mean importance factors scores for the three roles of officer, staff and PCSO (Table 5.16). Fisher’s LSD Test showed that statistically significant differences existed between staff and officers and between staff and PCSOs. No significant differences between officers and PCSOs were observed. The mean importance scores for each role are shown in the column headers and the values in the body of Table 5.16 show  $p$  values for pair-wise comparisons of roles.

**Table 5.16 Comparison of Police Roles using Fisher’s LSD Test**

Role	Mean importance score value for each role		
	1 - 1.69	2 - 2.08	3 - 2.05
1 Police staff			
2 Police officer	0.000***		
3 PCSO	0.000***	0.745	

\*\*\*  $p < 0.001$

### 5.7 Item Reduction – Comparison of Two Approaches

46 variables were selected from the original item pool (n=64) using IA. This compares to 37 variables confirmed using FA as the item reduction method. 27 items were common to each (Table 5.17).

**Table 5.17 Items Common to Impact Analysis and Factor Analysis Selection - Police Study**

Item
1. Always feeling physically tired because of the hours you work
2. Being concerned about how your job may change in the future
3. Being unable to take restful breaks during your working day



Item
4. Experiencing gastro-intestinal problems because of your work eg stomach complaints
5. Experiencing high levels of stress because of organisational changes
6. Experiencing musculo-skeletal problems because of your work eg back complaints
7. Experiencing neural problems because of your work eg headaches
8. Feeling frustrated by the paperwork involved with your job
9. Feeling overwhelmed by the amount of organisational change within the force
10. Finding it difficult to book leave because of under-resourcing
11. Having a job where there is little day-to-day variation
12. Having a poor diet because of the job that you do
13. Having an unsatisfactory performance appraisal system
14. Having holiday plans disrupted because of your work
15. Having inadequate facilities for rest during your working day
16. Having to work extended hours because of your workload eg late nights
17. Lacking adequate facilities at your workplace eg canteen, showers
18. Lacking control over your priorities at work
19. Lacking sufficient flexibility over working times and patterns
20. Not being able to sleep well because of work worries
21. Not being paid overtime
22. Not feeling part of a real team
23. Not feeling valued for your work by your line manager
24. Putting on weight because of your job
25. Receiving inadequate communications on issues that matter to you
26. Regularly having to come to work on your rest days
27. Reporting to someone who lacks the skills to manage effectively

The remaining 19 variables (41%) which were selected only by IA appear in Table 5.18.

**Table 5.18 Items Selected by Impact Analysis Only – Police Study**

Item	Impact Score
1. Believing that senior officers and managers don't appreciate the challenges you face in your role	2.32
2. Believing that your promotion opportunities in the force are limited	2.31
3. Feeling undervalued for your contribution by the wider force	2.22
4. Feeling under pressure to attend work when you are unwell	2.09
5. Having to work unsociable hours that impact on family and friends	2.08
6. Experiencing high levels of stress because of your work	2.02
7. Having a poor quality work environment eg cramped accommodation	1.99
8. Having too many work demands to be effective in your role	1.81
9. Being unable to improve/maintain physical fitness because of your job	1.78
10. Being concerned about losing your job because of organisational changes	1.75
11. Experiencing persistent low moods because of your work	1.74
12. Feeling demoralised because of your work	1.71
13. Not having the right equipment to enable you to do your job properly	1.66
14. Having insufficient training on the technical skills required for your work	1.65
15. Receiving insufficient training on softer skills eg people management	1.59
16. Believing that your overall compensation package is inadequate	1.51
17. Not feeling sufficiently challenged by your job	1.46
18. Lacking a real sense of camaraderie with your team	1.24
19. Not having a clear understanding of your main work priorities	1.14

The 10 items (27%) which were only chosen using FA are listed in Table 5.19.

**Table 5.19 Items Selected by Factor Analysis Only – Police Study**

Variable	Impact Score
1. Lacking a clear career development plan	1.89
2. Regularly lacking the ability to concentrate because of your workload	1.54
3. Lacking enough sleep because of your work patterns eg shifts	1.42
4. Having a job where there is little day-to-day variation	1.25
5. Not feeling really supported by your immediate team	1.20
6. Believing that your work is not contributing to anything very meaningful	1.17
7. Not feeling able to confide in someone at work	1.17
8. Worrying about the potential impact of disciplinary proceedings	1.08
9. Having to work during your days off because of your workload	1.07
10. Being bullied by others within the force	0.92

In order to aid comparisons between the two approaches further, the 10 items with the highest mean importance scores (range 1-5) determined by IA and FA were also examined (Table 5.20).

**Table 5.20 Comparison of 10 Highest Scoring Items by IA and FA - Police Study**

Rank	Items – Impact Analysis	Mean Importance Score (1-5)	Items – Factor Analysis	Mean Importance Score (1-5)
11.	Feeling overwhelmed by the amount of organisational change within the force	2.56	Feeling overwhelmed by the amount of organisational change within the force	2.56
12.	Believing that senior officers and managers don't appreciate the challenges you face in your role	2.54	Feeling frustrated by the paperwork involved with your job	2.45
13.	Believing that your promotion opportunities in the force are limited	2.54	Being concerned about how your job may change in the future	2.45
14.	Feeling frustrated by the amount of paperwork involved with your job	2.45	Having a poor diet because of the job that you do	2.34
15.	Being concerned about how your job may change in the future	2.45	Being unable to take restful breaks during your working day	2.32
16.	Feeling undervalued for your contribution by the wider force	2.44	Always feeling physically tired because of the hours you work	2.29
17.	Feeling under pressure to attend work when you are unwell	2.38	Receiving inadequate communications on issues that matter to you	2.22
18.	Having to work unsociable hours that impact on family and friends	2.36	Lacking adequate facilities at your workplace eg canteen, showers	2.20
19.	Having a poor diet because of the job that you do	2.34	Lacking a clear career development plan	2.17
20.	Being unable to take restful breaks during the day due to workload	2.32	Having a job that disrupts your private life	2.14

### 5.7.1 *Chi-Square Test*

The non-parametric *Chi-Square* test was used to determine whether a relationship between the choice of IA-derived items and FA-derived items existed. Observed

frequency data relating to the number of items selected by both approaches, the number of items selected only by one of the approaches and the number of items rejected by both were entered into a 2x2 contingency table (Table 5.21) so that a *Chi-Square* test could be performed.

**Table 5.21 2x2 Table – Observed Values Police Study**

Methodological approach	IA – selected items (expected values)	IA – non selected items (expected values)	Total
FA – selected items	27 (26.53)	10 (10.40)	37
FA – non selected items	19 (19.41)	8 (7.59)	27
<b>Total</b>	46	18	64

The *Chi-Square* value of 0.05 was not statistically significant ( $p = 0.8191$ ) and therefore indicated that the null hypothesis that no difference between the number of items selected using IA or FA existed, should be accepted (Table 5.22).

**Table 5.22 Chi-Square Test - Police Study**

	IA – selected items	IA – non selected items	Row – Totals
FA – selected items	27	10	37
Percent of total	42.19%	15.63%	57.81%
FA – non-selected items	19	8	27
Percent of total	29.69%	12.50%	42.19%
Column totals	46	18	64
Percent of total	71.88%	28.13%	
Chi-square (df=1)	.05	$p = .8191$	

### 5.7.2 *T-Test for Independent Samples*

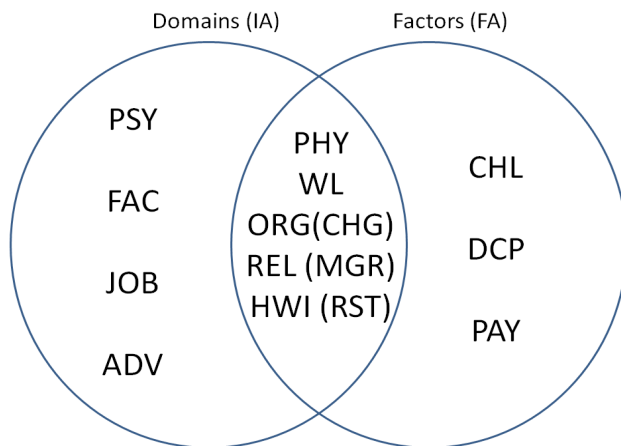
A *t*-test for independent variables tested the null hypothesis that there was no difference between the mean importance scores of the police items selected by IA (mean = 2.04) and the mean importance scores of the items selected by FA (mean = 1.94). Results from the *t*-test (Table 5.23) indicated that the null hypothesis should not be rejected ( $p < 0.05$ ); for this set of results, the overall mean scores for the IA-derived items were equal to those recorded for the FA-derived set of items.

**Table 5.23 T-Test for Independent Samples - Police Study**

Group 1: Mean – IA items	Group 1: IA Std Deviation	Group 2: Mean – FA items	Group 2: FA Std Deviation	t-value	p	Degrees of freedom
2.04	0.28	1.94	0.31	1.68	0.10	81

### 5.7.3 *Bland and Altman Plots*

To further compare the two methods, the content of selected domains and factors were examined to establish where there existed general agreement between the different elements. Figure 5.2 provides a visual approximation of where there appeared to be agreement and disagreement between domains and factors selected. The factors in brackets denote those where there existed broad concurrence with the adjacent domain.



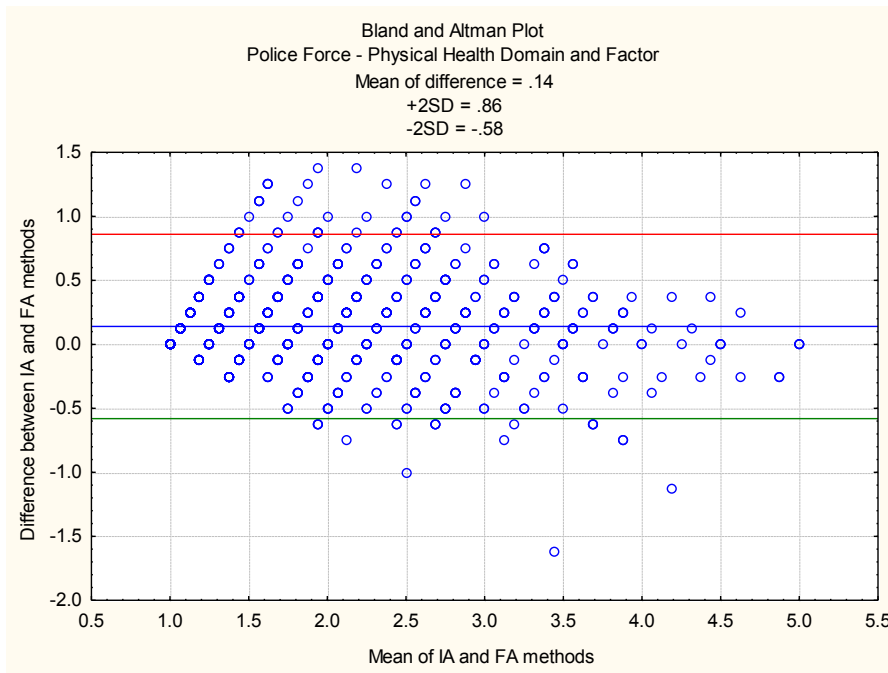
**Figure 5.2 Police Force Study - Comparison of Domain and Factors**

To further investigate agreement between the two methods, Bland and Altman plots (Section 3.7.4) were produced for the five domains/factors in Figure 5.2 where there appeared to be commonality.

**Table 5.24 Police Force Study - Difference between Physical Health Domain and Factor**

Variable	Physical Health				
	Valid N	Mean	Confidence -95.00%	Confidence 95.00%	SD
Difference between IA and FA methods	822	0.14	0.11	0.16	0.36

Table 5.24 shows that the mean difference (bias) between the IA and FA approaches was 0.14. This indicated that the IA method scored PHY issues significantly higher than those items selected for PHY using FA. The Bland and Altman plot (Figure 5.3) indicates that the 95% limits of agreement were broad within the context of the total range of values which suggests little agreement between the two methods of measurement.



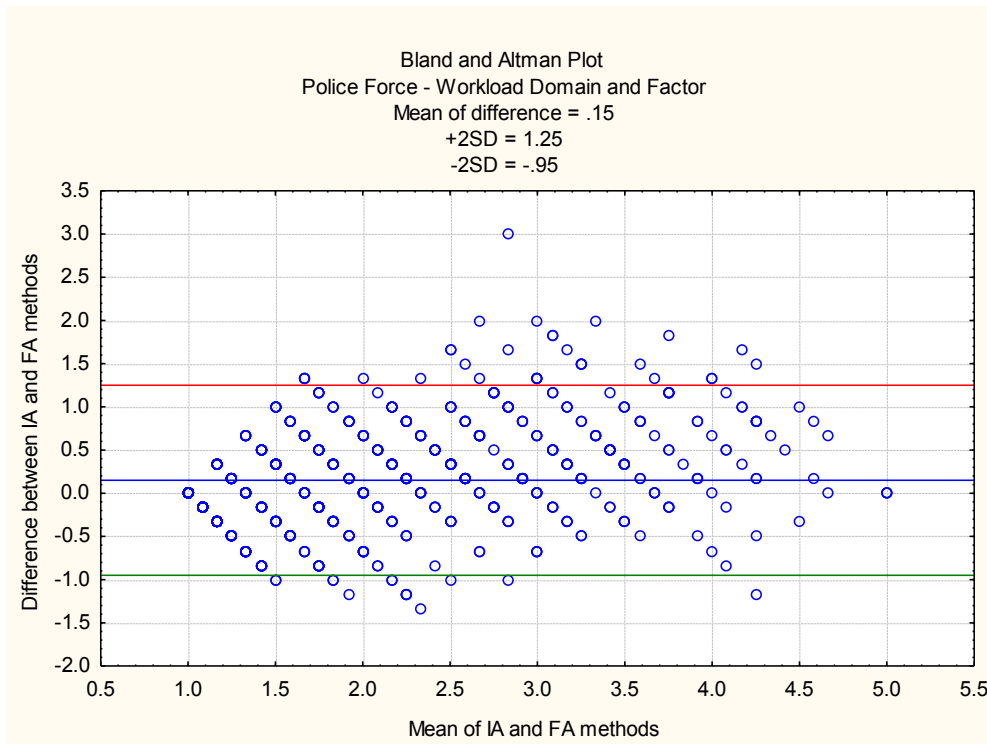
**Figure 5.3 Police Force Study - Bland and Altman Plot for Physical Health**

An examination of the two approaches in respect of WL load issues showed that IA valued these significantly higher than FA (Table 5.25).

**Table 5.25 Police Force Study - Difference between Workload Domain and Factor**

Variable	Workload				
	Valid N	Mean	Confidence -95.00%	Confidence 95.00%	SD
Difference between IA and FA methods	822	0.15	0.12	0.19	0.55

The Bland and Altman plot for WL (Figure 5.4) showed that limits of agreement were wide indicating poor levels of agreement between the IA and FA methods.



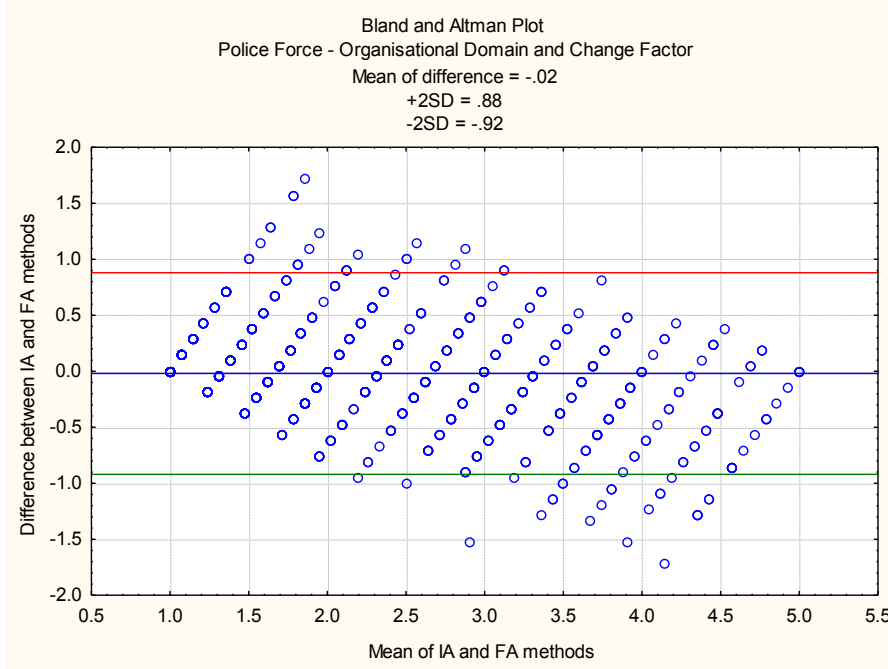
**Figure 5.4 Police Force Study - Bland and Altman Plot for Workload**

An inspection of the mean difference between IA and FA methods for the ORG domain and CHG factor showed no significant difference between either approach.

Notwithstanding this, the related Bland and Altman plot (Figure 5.5) showed a wide spread between the 95% limits of agreement which showed that the degree of agreement between IA and FA for these constructs was low.

**Table 5.26 Police Force Study - Difference between Organisational Domain and Change Factor**

Variable	Organisational Domain and Change Factor				
	Valid N	Mean	Confidence -95.00%	Confidence 95.00%	SD
Difference between IA and FA methods	822	-0.02	-0.05	0.01	0.45

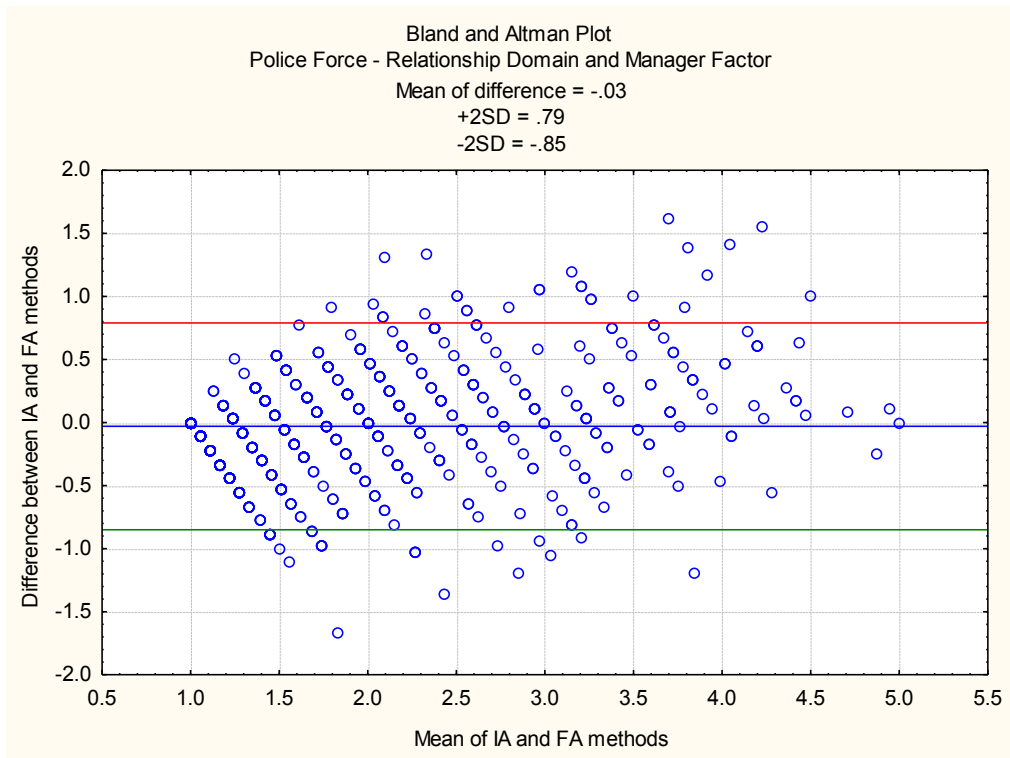


**Figure 5.5 Police Force Study - Bland and Altman Plot for Organisational Domain and Change Factor**

A comparison of methods for the REL domain and MGR factor again indicated that bias was small (Table 5.27). However, the resulting Bland and Altman plot (Figure 5.6) shows the a large amount of variation in the findings arising from the two methods.

**Table 5.27 Police Force Study - Difference between Relationship Domain and Manager Factor**

Variable	Relationship Domain and Manager Factor				
	Valid N	Mean	Confidence -95.00%	Confidence 95.00%	SD
Difference between IA and FA methods	822	-0.03	-0.06	-0.00	0.41



**Figure 5.6 Police Force Study - Bland and Altman Plot for Relationship Domain and Manager Factor**

The final comparison in measurement ability considered the HWI domain and RST factor. The difference between methods indicated that IA valued these aspects significantly higher than FA (Table 5.28).

**Table 5.28 Police Force Study - Difference between Home Work Interface Domain and Rest Factor**

Variable	Home Work Interface Domain and Rest Factor				
	Valid N	Mean	Confidence -95.00%	Confidence 95.00%	SD
Difference between IA and FA methods	822	-0.10	-0.13	-0.07	0.43

The Bland and Altman plot (Figure 5.7) again showed that the limits of agreement were large in relation to the scale values therefore signifying a large amount of variation between the two approaches for these aspects of WRWB.



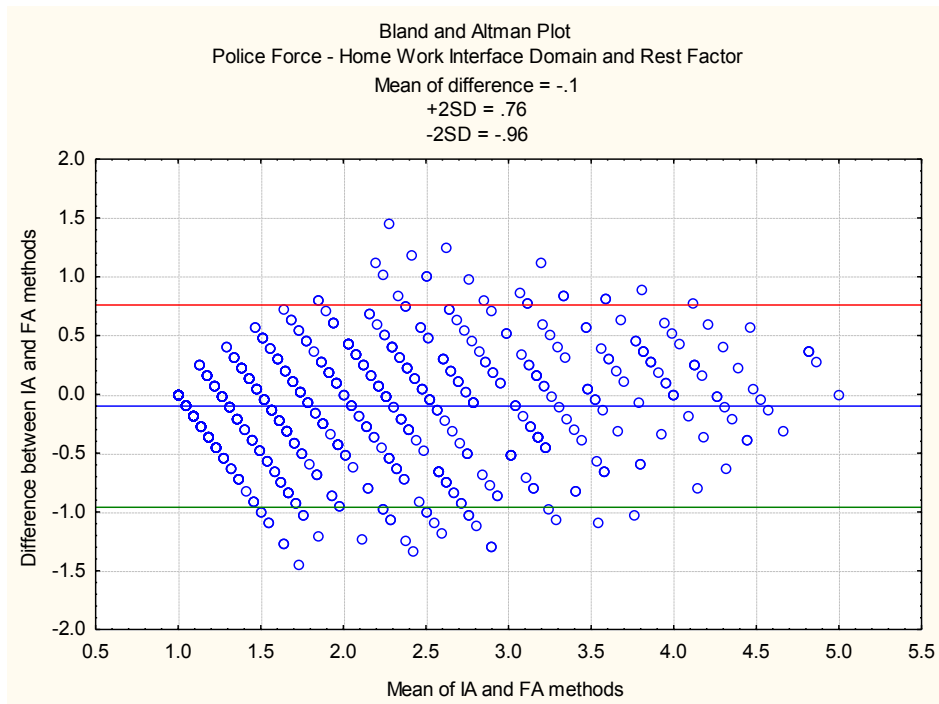


Figure 5.7 Police Force Study - Bland and Altman Plot for Home Work Interface and Rest Factor

## 5.8 Interim Observations

This section reviews the key themes emerging from the police study findings and how they relate to existing literature in the law enforcement sector. A broader examination of the findings may be found in Chapter 8.

### 5.8.1 Overview of Results

Because of the potential sensitivities attached to attending focus groups to support the IGP, discussions with police workers took place in their communal areas such as the staff canteens. As people were there to take a break from their duties, they were asked initially if they would like to take part in a discussion and were given every opportunity to decline the invitation if they thought that it might compromise their rest time or were generally disinclined to participate. A letter from the sponsor of the

research was shown to people if they wanted more formal documentation about the study and its authorisation. In the event, all the people who were approached to take part, did so. They appeared to welcome the opportunity to speak about their experiences of working in the police. No participant asked for formal documentation on the research project.

The total number of variables ( $n = 64$ ) resulting from the IGP seemed to be low given the amount of literature that focuses on police work and its impact on stress (for example McCreary and Thompson, 2006; Biggam et al., 1997; Brown and Campbell, 1991; Gudjonsson and Adlam, 1985; Lawrence, 1984; Spielberger et al., 1981; Kroes et al., 1974). It should be emphasised that discussions with individuals later in the item generation process only confirmed what had already been expressed by earlier participants and it was judged that no new variables would be identified from additional interactions. There may be two reasons for the seemingly low number of items. Firstly, if aspects of police work which cannot be modified (for example exposure to death and violence) are discounted as they are in the present study, then the item list may be reduced considerably. Secondly, people who join the police may expect to encounter particular challenges by virtue of working within law enforcement which may then temper their perceptions on WRWB. This notion is explored further in the main Discussion (Chapter 8).

The number of police officers, staff and PCSOs who responded to the assessment ( $n=822$ ) was pleasing and exceeded the minimum sample size requirements stipulated in the study design (Section 3.2.2). Although the sample size was acceptable, the

overall response of 38% was disappointing. According to the force's HR team, this response rate should be viewed positively since completion numbers for the force's annual satisfaction survey were considerably lower at 30%.

The different domains and factors identified in the findings suggest that the well-being of those working for the police, either as officers or staff, comprises a wide range of different components. These included elements such as the impact of organisational change in the force, workload, facilities, career advancement and workplace relationships together with aspects such as the affects on physical and psychological health.

A comparison of the 64 items and the 159 free text contributions denoted that content validity was acceptable. A total of eight free text comments specifically referenced the IT provision within the force. While this was covered generally by the question on the provision of equipment (*'Not having the right equipment to enable you to do your job properly'*), it may be appropriate to add an extra item relating to this particular aspect in any future study.

### 5.8.2 ***Comparisons between Methodologies***

A review of the output from the IA and FA methodologies in respect of the confirmed items signifies more agreement than disagreement. All sub-scales (with the exception of the CHL factor) showed adequate internal reliability (Table 5.5 and Table 5.12) (Rick et al., 2001; Hinkin, 1995) and the confirmed IA and FA item lists exhibited more variables in common with each other (Table 5.17) than variables that were different (Table 5.18 and Table 5.19). While the number of domains (n = 9) and factors (n = 8)

were unequal, there was considerable agreement between the conceptual content across five of them (Table 5.4 and Table 5.11); as their names suggested, the PHY and WL domains showed a keen likeness to the PHY and WL factors respectively. Parts of the ORG domain bore clear resemblance to the CHG factor and the REL domain shared some commonality with the MGR factor. Additionally, all of the HWI domain items were represented in the RST factor.

The Bland and Altman plots that were generated for these domains and factors (Section 5.7.3) indicated a mixed impression when comparing IA and FA. For example, a comparison of the mean differences (bias) and their respective confidence intervals, showed that IA rated PHY and WL aspects higher than FA but rated ORG and HWI concerns lower. However, all plots showed that the 95% limits of agreement were unacceptably wide within the context of overall values and therefore signified that agreement between the two methods was consistently low. For example, the mean importance value for the WL domain for the police force was 2.10 (Table 5.6) and the limits of agreement was 1.25 to -0.95, representing 95% of the WL domain score.

Elements from the FAC, JOB and ADV domains were bundled up in the largest factor, the RST factor. The most striking difference resided with the PSY domain; only one of its five constituent items (*'Feeling frustrated by the amount of paperwork involved in your job'*) appeared in the FA-derived list, within the WL factor.

The make up of the police factors also merits comment. Most of the factors each appeared to be measuring an underlying construct and this was supported by the Cronbach alpha ( $\alpha$ ) values for each sub-scale (Table 5.12). The RST, MGR, WL, PHY,

CHG and CHL multi-item factors were all relatively easy to interpret into meaningful observations for the status of police WRWB. The remaining PAY and DCP factors were also straightforward to understand since they contained only one item each.

In total, the eight factors accounted for 61% of variance which is considered acceptable (Rick et al., 2001). The first factor (RST), comprising 11 items, accounted for some 39% of explained variance which inferred that the lower factors were less important when evaluating the well-being of a police population. It is worth noting therefore, that the fifth factor (CHG - 2.57% explained variance) included the highest scoring item (*'Being concerned about how your job may change in the future'*) and the fourth highest scoring item (*'Feeling overwhelmed by the amount of organisational change'*) by impact score (Table 5.2). These observations are discussed further in Chapter 8.

Following on from this, Table 5.18 indicates that the IA list of confirmed items included 18 variables that were not selected by FA. Even when adjustments were made for other items in the FA list which roughly described those selected by IA, there remained 11 items with impact scores greater than 1.20 that found no place in the FA results. The majority of these referred to PSY and ADV concerns. For example, the item *'Believing that your promotion opportunities in the force are limited'* had no approximate opposite in the FA-derived list and was the third highest scoring item overall by impact score (2.31). In comparison, Table 5.19 shows that 50% of the FA-only items had impact scores below the nominated cut-point of 1.20 and included some which were perceived to be of only minimal importance. For example, *'Being*

*bullied by others within the force'*, with an impact score of 0.92, ranked 63<sup>rd</sup> overall (Appendix D, D.1).

The size of domains and factors ranged considerably. Domains had items numbering between 8 – 3 (Table 5.5) while factors showed items comprising between 11 – 1 items (Table 5.12).

The breadth of issues covered by IA and FA were similar in number but not always in content. As well as the areas covered by both IA and FA, IA also highlighted training and equipment issues that did not feature in the FA findings. In the same way, FA identified issues to do with disciplinary proceedings and bullying behaviour, both of which were omitted from further analysis using IA techniques. For example, the item referring to disciplinary proceedings was ranked 60<sup>th</sup> by impact score overall (Appendix D, D.1) and 53<sup>rd</sup> for officers (Appendix D, D.3) indicating its relatively low importance in respect of WRWB.

### 5.8.3 ***Performance of Assessments***

So far, discussion regarding the two item selection methods has been limited to theory. Given the aims of this study, it is also important to consider how these two approaches may offer potentially meaningful insights into the well-being of a police force population and how the findings compare with current literature.

A *t*-test for independent samples showed that workers recorded equivalent levels of overall well-being using either question set (Table 5.23). Because the IA items were selected on impact score, a higher well-being score from the IA-selected items might

have been anticipated. However, with 27 items common to each procedure, the *t*-test outcome is not so surprising.

Both the IA and FA approaches concurred that the impact of organisational change within the force was perceived by people to be the most damaging aspect of their WRWB. Using IA, the ORG domain ranked highest (Table 5.6) and accorded with the top position of the CHG factor within the FA set of results (Table 5.13). After this, agreement between the two data sets is less clear. The second highest scoring domain, PSY, had no obvious FA equivalent. Likewise, the second highest scoring factor (RST), corresponded most closely with the HWI domain which ranked seventh in Table 5.6. Therefore, aside from agreement on organisational change issues, an inspection of the ranked domains gives rise to an impression of police well-being that is substantially different to one based on ranked factors.

While agreement between ranked domains and factors may be limited, a comparison of the 10 highest items by either IA or FA shows more consistency (Table 5.20) with six items describing (either exactly or approximately), the same WRWB problems. By either method, *'Feeling overwhelmed by the amount of organisational change within the force'* was the highest scoring item overall.

Both approaches identified that the well-being of police officers was significantly worse than those of their civilian colleagues. Interestingly, the IA data set also confirmed a significant difference between officers and PCSOs (Table 5.9). This contrasts with the FA results which found no disparity between officers and PCSOs but did establish a significant difference between staff and PCSOs (Table 5.15).

Notwithstanding the imposed WRWB definition which automatically omits a proportion of possible, operational variables pertaining to danger and crime, there is considerable overlap with current literature on police health. However, no existing police stress scale contains the breadth and range of non-operational dimensions highlighted in the present study. For example, the PSQ 36 (Biggam et al., 1997) lacks questions on training, physical health or psychological health and the PSQ-Op and PSQ-Org (McCreary and Thompson, 2006) are deficient in variables relating to advancement or the physical workplace. This may be explained by the meaning of WRWB which embraces far more aspects of police work than just those that are stress-related. Hart et al.'s (1993) 86-item PDHS and 50-item PDUS also lack variables on change and physical health other than eating. This seems surprising given the authors' stated focus on the everyday work experiences of officers.

As noted earlier, the majority of police scales lack frequency and severity information on individual items as part of their construction frameworks (for example Brown and Campbell, 1991; Spielberger et al., 1981). Rather, there is an tacit assumption by developers that exposure automatically leads to an adverse, stressful response (Biggam et al., 1997; Gudjonsson and Adlam, 1985). As Biggham et al. (1997) point out, some police events may be perceived positively because of the sense of challenge and degree of satisfaction they offer. The IA methodology addresses this concern directly; it captures data about the level of importance respondents associate with attributes they have had direct experience of which provides the principle basis for item selection. By comparison, FA is not able to offer this same ability to identify those variables that police experience as most harmful to their health and wellness.



On a range of 1-5, the well-being scores for officers by either method (IA = 2.30 and FA = 2.08) lend support to the views of earlier commentators (Collins and Gibbs, 2003; Biggam et al., 1997; Hart et al., 1993; Brown and Campbell, 1991) that claims by Axelbred and Valle (1978) are exaggerated. If the work of police is as ominous as Axelbred and Valle assert, one might expect higher impact scores than those recorded herein (Table 5.2).

Of note also is the broad agreement on items for officers, PCSOs and staff. Although rankings vary (Appendix D, D.3), the present data suggest that one questionnaire could be appropriate for all those working within a police force. Being able to deploy a single questionnaire across an entire police force should be a benefit to a senior leadership team. By being able to compare and rank findings across *all* sections of a force using a uniform scale, management teams are more likely to make better informed, evidence-based decisions on appropriate, efficient and integrated programmes that meet the needs of officers and staff alike.

In summary, these results suggest that the well-being of officers, staff and PSCOs comprises a number of different elements that extend beyond the current literature. While both methodological frameworks identify organisational issues as the most troublesome aspect of work-related well-being for police workers and the overall well-being scores generated by each are equal in value, there is considerable divergence across the other dimensions and the relative importance apportioned to each. It is conceivable that the IA methodology may provide an alternative option for those researchers who are keen to overcome the possible shortcomings of previous study

methods by allowing them to quantify the actual exposure of officers to certain job demands as well as evaluate the negative association they attach to each one.

## **Chapter 6 Results - Library Services Study**

### **6.1 Introduction**

This chapter sets out the findings from the third and final case study in this present research. The data are drawn from employees working in a county-based, public library service in Southern England. Results using Impact Analysis (IA) and Factor Analysis (FA) are described. Initial comments and observations relating specifically to the library cohort and how the findings compare to scholarly literature in the field are included. The wider possible implications of the results in the context of defining and assessing EWB are explored further in Chapter 8.

### **6.2 Case Study Context**

#### **6.2.1 Overview of Sector**

Academic interest in the health and wellness of library workers is patchy. Mostly, research is confined to the identification of potential stressors or levels of burnout (defined as a syndrome involving emotional exhaustion, depersonalisation, and reduced personal accomplishment (Haack et al., 1984)). The majority of studies are North American (for example Affleck, 1996; Schneider, 1991; Bunge, 1987) and based on a variety of categories including academic libraries, special libraries such as those situated in scientific and corporate institutions as well as public concerns.

The populist view holds that libraries are calm and peaceful places to work (Schneider, 1991). This might have been the case some 50 years ago but the landscape of libraries has changed and the literature tends to counter the impression that librarian work is universally restful and tranquil.

A study of stress across some 850 employees working in a range of different library settings cites a number of stressors including work overload/underload, skills shortage, dealing with library users, poor recognition, inadequate management, low quality workspace and limited career opportunities (Bunge, 1987). Schneider's (1991) research on occupational stress amongst 100 public library staff concurs with many of the findings reported by Bunge (1987). Schneider (1991) notes that issues particularly to do with organisational climate (for example management behaviour and morale levels) were the main antecedents of workplace stress in libraries. Remaining library literature that considers stress is opinion-led rather than empirical in its approach (for example Burke et al., 2009; Topper, 2007; Bold, 1982) and is not considered further in this thesis.

The degree of burnout in librarians has also attracted the interest of a number of researchers. Library burnout studies have all used generic scales to assess employee burnout (for example Togia, 2005; Affleck, 1996; Birch et al., 1986; Haack et al., 1984; Smith et al., 1984). Using questionnaires such as the Maslach Burnout Inventory (MBI) (Maslach and Jackson, 1981), Haack et al. (1984) and Smith et al. (1984) report high levels of burnout among research/college and public libraries respectively while Smith and Nielsen's (1984) study of corporate librarians suggests that respondents do not experience serious burnout "very often or very intensely". These discrepancies may be explained by the different types of library taking part.

Contrasting with studies on stress and burnout in libraries is a study by de Lange et al. (2001) who investigated the perceived physical work demands of 36 library workers.

Their findings indicate a hierarchy of work tasks with photocopying perceived to be the least demanding and packing/moving items rated by respondents as most demanding. Interestingly, no library-related tasks were identified as 'hard' or 'extremely hard' in the hierarchical rankings (de Lange et al., 2001).

Given the key aims of the present study, it is also worth appraising the methodological approach employed by researchers active in the library sector. Bunge's (1987) findings were founded on contributions from library workers attending stress management workshops who were asked to name aspects of their work that were stressful. These statements were then grouped into categories and ranked by the author according to frequency of mention (Bunge, 1987).

Schneider (1991) and de Lange et al. (2001) are the only authors to have constructed library-specific scales for their research studies. Schneider (1991) used a selection of library stressors that were based on lengthy (1-2 hours) one-to-one interviews with some 32 library staff. No explanation on the final item selection process for the 58-item questionnaire is offered by the author (Schneider, 1991). Participants were asked to respond to items using a 5-point Likert-scale ranging from *strongly agree* to *strongly disagree*. Data were factor analysed into five factors; job content, organisational climate, workload, relationships with colleagues and relationships with supervisors (Schneider, 1991). Library task variables chosen by de Lange et al. (2001) were based on workplace interviews, duty statements from participating libraries and the Australian Standard of Occupational Classification (ASCO). The 12 items were then rated using Borg's Rating of Perceived Exertion Scale (Borg, 1998).

Based on this review of extant literature, it seems reasonable to surmise that scholarly assessment of health and well-being within the library sector is narrow both in the number of rigorous, empirical studies and the range of issues that it seeks to examine. To date, studies have been confined to the investigation of potential stressors, levels of stress and burnout and an identification of library tasks that are physically demanding. These limitations echo the views of Fisher (1990) who conducted a review of library-based stress and burnout studies and concluded that there is a shortage of well designed, empirical investigations that deliver a conclusive and consistent picture. Moreover, he disputes the use of generic burnout scales by challenging whether the types of questions are necessarily applicable to a library setting (Fisher, 1990).

Returning to the aims of the current study, it is appropriate to note that no studies to date have considered the wider construct of employee well-being. Nor have any previous investigations sought to identify, systematically and comprehensively, those aspects of library employment that are most widespread and important to workers in this sector. Large scale UK-based studies are conspicuous by their absence. It is therefore hoped that this present research will help to address these apparent shortcomings by identifying those aspects of work that are most prevalent and important to the overall well-being of a large cohort of public library workers in the UK.

### 6.2.2 ***Case Study Background***

The Library and Information Service (LIS) that participated in the study was a county council service based in Southern England. The core role of the service was to provide

free, open access to information for the public in a safe, neutral environment at the heart of which was a desire to encourage users to benefit from the pleasures of reading. The library service ran a sizeable operation. It managed 51 public libraries and two Discovery Centres; a recently developed concept to provide a wider variety of community-based services in addition to the traditional library service. The service also operated two prison libraries and 28 mobile library facilities which delivered and collected books to schools, rural areas and housebound residents. As well as offering a wide selection of reference and fiction books, the service loaned out CDs, DVDs and electronic games. Some 577 computers with internet access were also offered to library visitors. Nearly 800 employees worked for the library service. The majority of these were deployed in front-line services in libraries and mobile functions. The remainder provided support in the shape of general support to library staff, outreach services, administration and management. Many staff had been with the service for a long time (over 30 years' service) with the age profile weighted towards people over 50 years old. The majority of employees were female.

At the time of the study, the library service was facing some challenging issues. The advent of the new media age meant that the traditional library model was under threat. Growth in availability of on-line services, mobile technology, e-books, media downloading, access to cheap books and social networking had led to a steady and significant drop in the number of library visitors and number of items issued. Added to this, was the impact of a new pay structure, increased cost of utilities, rising refurbishment costs and a decline in income from fines and charges which all amounted to a financial model that was becoming increasingly unsustainable

To help address this, a service-wide re-organisation had taken place six months prior to the study which involved a large-scale redundancy programme. Additionally, a new, integrated library management IT system, 'Spydus', which automated many traditional library functions, had been recently introduced into libraries to enhance service levels and reduce unnecessary overhead.

### **6.2.3 *Scope of Research***

The study design covered the experiences of all those working within the LIS. This included front line roles such as library assistants, officers and supervisors as well as mobile drivers and those based at the service's headquarters who were engaged in activities such as stock control, procurement and management.

## **6.3 *Item Generation Phase***

A comprehensive list of all possible WRWB issues was generated through a series of semi-structured interviews with 70 individuals from the service. These included 56 discussions held at six libraries across the county. The remainder were located at the service's head office. A wide range of roles and different size libraries were represented and the union representative was kept informed of progress. Participants included library assistants, officers, supervisors and service managers. Five mobile library drivers and van drivers also took part in the IGP. Additionally, discussions were held with the head of the council directorate, the LIS head of service, the HR and training managers, the health and safety manager and the county council's head of occupational health. Discussion formats were a mix of focus groups and individual meetings. Choice of format depended on the service population in question and what



best accommodated their work commitments. Previous literature was reviewed for potential items. This included a search of peer-review journals and sector specific media. The county council's most recent staff satisfaction survey was also reviewed.

The item pool resulted in a total of 71 possible variables associated with WRWB in the LIS. Each of the 71 items was listed in the IRP Questionnaire. Also included were a number of socio-demographic questions that sought details on role, location, grade and length of service. The draft Questionnaire was piloted with five LIS employees to ensure the content and instructions were clear. In total, the Questionnaire took approximately 10 minutes to complete. Email notices with the URL link embedded were issued to all service staff from the head of service to support completion of the Questionnaire. Details were placed on the LIS intranet home page with a link through to the assessment site. Poster notices were displayed in library rest areas to remind people of the study and encourage response levels. Staff were given a period of three weeks to complete the assessment.

## **6.4 Results - Overall**

A total of 466 completed Questionnaires were returned which represented a 58% response rate. A breakdown of proportional responses by role is shown in Table 6.1 and was broadly representative of the library service population.

Free text responses were also received from 139 employees (Appendix E, E.2). A review of the free text responses yielded no new, commonly held WRWB themes that were not already covered in the Questionnaire.

**Table 6.1 Frequency Rates by Role for Library Study**

Role	Count	Cumulative - Count	Percent	Cumulative - Percent
Other	61	61	13.09	13.09
Library Assistant	138	199	29.61	42.70
Library Officer	21	220	4.51	47.21
Library Supervisor or Assistant Supervisor	72	292	15.45	62.66
Service Development Officer	17	309	3.65	66.31
Library or Group Manager	23	332	4.94	71.24
Mobile Driver	9	341	1.93	73.18
Senior Assistant or Information Officer	122	463	26.18	99.36
Van Driver	3	466	0.64	100.00

### 6.4.1 *Impact Scores*

A record of the highest 20 items ranked by impact score, *prior* to item reduction, are presented in Table 6.2. An examination of findings overall showed that frequency scores ranged from 0.93 to 0.37; mean importance scores ranged from 3.58 to 1.43 and impact scores (the product of frequency and importance) ranged from 3.32 to 0.53. Details for all 71 variables may be found in the Appendix E, E.1.

**Table 6.2 Top 20 Impact Scores Prior to Item Reduction**

Rank	Question	Frequency*	Mean.Imp±	ImpactΔ
1.	Feeling frustrated with the Library Service's Spydus system	0.93	3.58	3.32
2.	Poor air-conditioning at work (either too hot or too cold)	0.90	3.40	3.06
3.	Believing that the public service offered by libraries is of a reduced quality	0.85	3.37	2.88
4.	Being uncertain about how your job may change in the future	0.88	3.11	2.73
5.	Worrying how changes in the Library Service may impact your job	0.88	3.01	2.65
6.	Being overwhelmed by the amount of organisational change within the Library Service	0.86	2.98	2.55
7.	Being unclear about the Library Service's future plans	0.84	2.88	2.41
8.	Feeling uncomfortable with how the Library Service is diversifying its public offering	0.83	2.84	2.36
9.	Believing that Library Management Team do not appreciate the challenges that you face	0.76	3.01	2.29
10.	Feeling frustrated because of your work	0.79	2.80	2.22
11.	Feeling overwhelmed by the volume of work	0.79	2.78	2.18
12.	Feeling stressed because of your work	0.79	2.76	2.18
13.	Having too many demands on your time to be effective in your job	0.79	2.78	2.18

Rank	Question	Frequency*	Mean.Imp±	ImpactΔ
14.	Not feeling appreciated by the wider County Council senior team	0.73	2.95	2.17
15.	Thinking that your career prospects are limited	0.72	2.99	2.15
16.	Having an unsatisfactory remuneration and reward package	0.72	2.90	2.09
17.	Not being consulted on decisions that impact your work	0.76	2.72	2.08
18.	Always feeling physically tired because of your work	0.75	2.71	2.03
19.	Feeling undervalued by those in other parts of the Library Service	0.72	2.75	1.97
20.	Lacking the necessary skills to meet the changing needs of library users eg PC queries	0.76	2.57	1.94

\* = proportion of workers reporting item as bothersome  
± = mean importance score in subjects who reported item as bothersome  
Δ = frequency x mean importance (maximum = 5)

#### 6.4.2 *Impact Score Comparisons by Role*

Impact scores for each variable were ranked by role (Appendix E, E.3) and Kendall Tau ( $\tau$ ) correlations were examined. Assessments completed by those who identified their role as 'Other' (n = 61) were eliminated from this analysis since their positions were unclear and could confound results. The rankings for each of the remaining eight roles (n = 405) were significantly correlated ( $p < 0.05$ ) with each other aside from the relationship between van drivers and library and group managers ( $p = 0.10$ ) (Table 6.3). Given that only three van drivers completed the assessment and their role was not viewed by management as core to the overall service, it was deemed appropriate to construct one questionnaire for all those working in the LIS.

**Table 6.3 Kendall Tau Correlations for Library Roles**

Role	Library Asst	Library Officer	Library S'visor or Asst S'visor	Service Dvlpt Officer	Library or Group Mgr	Mobile Driver	Senior Asst or Info. Officer	Van Driver
Library Assistant	1.00							
Library Officer	0.62*	1.00						
Library Supervisor or Assistant Supervisor	0.65*	0.66*	1.00					
Service Development Officer	0.38*	0.58*	0.51*	1.00				
Library or Group Manager	0.31*	0.41*	0.52*	0.47*	1.00			
Mobile Driver	0.55*	0.52*	0.52*	0.35*	0.31*	1.00		
Senior Assistant or Information Officer	0.83*	0.63*	0.70*	0.39*	0.34*	0.56*	1.00	
Van Driver	0.32*	0.21*	0.28*	0.20*	0.10	0.38*	0.29*	1.00

\*  $p < 0.05$

## **6.5 Results – Impact Analysis**

### **6.5.1 Item Reduction**

Impact scores were examined closely. Typically, items with impact scores exceeding 1.00 were selected for inclusion in the final instrument. A threshold of 1.00 was selected as this signified a degree of impairment and, importantly, accommodated the need to develop a scale that would take future respondents 7-8 minutes to complete (approximately 50 items).

Nine items were eliminated owing to impact scores of less than 1.00 (Appendix E, E.4.1). A question relating to commuting ('Having a regularly difficult journey to and from work') was also deleted; with hindsight the employer reasoned that this was an

issue it was unable to address this and it therefore failed to fit with the stated definition for WRWB (Section 2.8.2).

Examination of remaining item-item correlations resulted in 19 further items being discarded ( $r > 0.7$ ) (Appendix E, E.4.2). The final number of variables was therefore confirmed at 42.

### 6.5.2 **Domain Selection**

After careful and extensive consideration, the 42 items were divided into eight domains that appeared to describe different elements of well-being. Choice of sub-category was informed by earlier occupational and clinical well-being research together with the learnings arising from the previous two case study datasets (Chapter 4 and Chapter 5).

The largest domain was Organisational (ORG) and described issues associated with organisational change and the wider library and council bodies. The second largest domain was linked to training and development and was therefore labelled Advancement (ADV). The Job domain (JOB) captured issues relating to specific aspects of library work while the Physical Health (PHY) and Psychological Health (PSY) sub-groups were linked to how work impacted on people's physical and mental health respectively. Issues with people's line manager and colleagues were grouped into the Interpersonal Relationships (REL) domain and perceived problems with workload were categorized into the Workload (WL) domain. The Facilities (FAC) domain considered well-being issues associated with the provision of amenities such as air conditioning

and rest areas. The eight domains and their respective items for the library service are presented in Table 6.4.

**Table 6.4 Finalised Domains and Variables for Library Service**

<b>Organisational (ORG)</b>	<b>Advancement (ADV)</b>	<b>Job (JOB)</b>	<b>Physical Health (PHY)</b>	<b>Interpersonal Relationships (REL)</b>	<b>Workload (WL)</b>	<b>Workplace Facilities (FAC)</b>	<b>Psychological Health (PSY)</b>
Receiving poor communications from Library Management Team	Thinking that your career prospects are limited	Lacking flexibility over your working times and patterns	Always feeling physically tired because of your work	Believing that your immediate line manager lacks the necessary skills to bring the best out in you	Having to work long hours that regularly impact your home life	Poor air-conditioning at work (either too hot or too cold)	Feeling threatened by some members of the public
Being unclear about the Library Service's future plans	Having to perform duties at work which are beyond your skill set	Not believing that you are offering a valuable service to the community	Developing musculo-skeletal problems eg back problems because of your work	Not being encouraged by your manager to use your initiative at work	Having to miss your breaks during the day because of your workload	Having poor lighting at work	Feeling stressed because of your work
Feeling uncomfortable with how the Library Service is diversifying its public offering	Lacking adequate training to enable you to do your job effectively	Having an unsatisfactory remuneration and reward package	Experiencing problems with your legs and feet because of your work	Not feeling supported by your immediate line manager	Being unable to take time off in lieu, owed to you	Having poor quality staff facilities eg kitchen, rest areas	Feeling frustrated because of your work
Not feeling appreciated by the wider County Council senior team	Having an inadequate performance appraisal system	Being unclear about your role and priorities at work	Having potential RSI (repetitive strain injury) problems because of your work	Not having enough team meetings	Feeling overwhelmed by the volume of work	Having poor quality working accommodation	
Being overwhelmed by the amount of organisational change within the Library Service	Lacking the necessary skills to meet the changing needs of library users eg PC queries	Feeling frustrated with the Library Service's Spydus system	Experiencing headaches because of your work	Not feeling supported by your team at work	Being unable to cope with the number of work-related emails you receive		
Believing that Library Management Team do not appreciate the challenges that you face	Not having the necessary training to advance your career						
Receiving poor communications from the wider County Council community	Being unclear on your performance objectives						
Worrying how changes in the Library Service may impact your job							

### 6.5.3 *Internal Reliability*

Internal reliability was calculated using Cronbach's Alpha coefficient ( $\alpha$ ). For each sub scale,  $\alpha$  ranged from 0.92 to 0.72 (Table 6.5). The coefficient values indicated that there was sufficient internal consistency between items within each sub-scale (Rick et al., 2001; Hinkin, 1995).

**Table 6.5 Internal Reliability for Library Service Domains**

<b>Domain (number of items)</b>	<b>Cronbach's Alpha <math>\alpha</math></b>
<b>ORG(8)</b>	0.92
<b>ADV (7)</b>	0.85
<b>REL (5)</b>	0.85
<b>WL (5)</b>	0.84
<b>PHY (5)</b>	0.81
<b>PSY (3)</b>	0.74
<b>FAC (4)</b>	0.74
<b>JOB (5)</b>	0.72

### 6.5.4 *Well-Being Indications for Library Population based on Impact Analysis*

Data were revised so that all '0' values were altered to a value of '1'. Domain mean values ranged from 2.45 to 1.67 (Table 6.6). Analyses indicated that, overall, the organisational (ORG) elements of library work were perceived to impact people's well-being the most (mean = 2.45). People's relationships at work (REL) were viewed as least troublesome to their levels of well-being (mean = 1.67). The overall mean score for WRWB within the library service was 2.06.



**Table 6.6 Ranked Domains for Library Service**

	Mean*	Std. Dev.	Skewness
<b>ORG</b>	2.45	1.06	0.50
<b>PSY</b>	2.22	0.96	0.66
<b>FAC</b>	2.17	0.89	0.80
<b>JOB</b>	2.17	0.81	0.65
<b>WL</b>	1.96	0.90	1.09
<b>ADV</b>	1.91	0.82	1.04
<b>PHY</b>	1.87	0.82	1.25
<b>REL</b>	1.67	0.80	1.52
<b>Overall</b>	2.06	0.45	1.06

\* mean 1-5

A repeated measures ANOVA (Table 6.7) indicated that there were significant effects of library service domains and roles ( $F$  values sig.  $p < 0.05$ ). Interactions between domains and roles were also significant. Those subjects that identified themselves as ‘Other’ ( $n = 61$ ) were omitted from analysis as their role was unclear. Mobile drivers ( $n = 9$ ) and van drivers ( $n = 3$ ) were also excluded owing to small sample sizes. Residuals were checked in order for the ANOVA to be valid and indicated that the data were approximately normally distributed (Appendix E, E.4.3).

**Table 6.7 Repeated Measures ANOVA for Library Service Roles and Domains**

Effects	Sum of squares	Degrees of freedom	Mean square	F value	$p$
<b>Role</b>	100.941	5	20.188	5.366	0.000***
<b>Error (within roles)</b>	1455.932	387	3.762		
<b>Domain</b>	112.886	7	16.127	53.024	0.000***
<b>Interaction between domain and role</b>	75.795	35	2.166	7.120	0.000***
<b>Error (within individuals)</b>	823.902	2709	0.304		

\*\*\*  $p < 0.001$

Table 6.8 compares the mean importance scores for each domain using Fisher’s LSD Test and identifies significant differences ( $p < 0.05$ ) between a number of them. The mean importance scores for each domain are provided in the column headers. Values in the body of Table 6.8 show  $p$  values for pair-wise comparisons of domains. The data showed that the issues associated with the ORG domain had a significantly worse

effect on library employee well-being than all other aspects. By comparison, issues relating to the REL domain had significantly lower impact on well-being than all other aspects.

**Table 6.8 Fisher's LSD Test for Library Service Domains**

DOMAIN	1 – 1.91	2 – 1.67	3 – 2.45	4 – 1.96	5 – 1.87	6 – 2.22	7 – 2.17	8 – 2.17
1 ADV								
2 REL	0.000***							
3 ORG	0.000***	0.000***						
4 WL	0.185	0.000***	0.000***					
5 PHY	0.275	0.000***	0.000***	0.016*				
6 PSY	0.000***	0.000***	0.000***	0.000***	0.000***			
7 JOB	0.000***	0.000***	0.000***	0.000***	0.000***	0.227		
8 FAC	0.000***	0.000***	0.000***	0.000***	0.000***	0.259	0.937	

\* $p < 0.05$  \*\*\* $p < 0.001$

Material differences between the six main library roles were also investigated using Fisher's LSD test. Table 6.9 presents the results and shows that statistically significant differences between the six role categories were limited. For example, the WRWB of library assistants differed significantly from library officers, library supervisors/assistant supervisors and service development officers while the WRWB of library or group managers was only significantly different to senior assistants/information officers. Service development officers only differed from library assistants in perceived levels of well-being. The mean importance scores for each role are reported in the column headers. Values in the body of Table 6.9 show  $p$  values for pair-wise comparisons of roles.

**Table 6.9 Comparison of Library Service Roles using Fisher’s LSD Test**

Role	Mean importance value for each role					
	1 – 1.90	2 – 2.38	3 – 2.03	4 – 2.35	5 – 2.04	6 – 2.25
1 Library Assistant						
2 Library Officer	0.003**					
3 Library or Group Manager	0.398	0.086				
4 Library Supervisor or Assistant Supervisor	0.000***	0.850	0.049*			
5 Senior Assistant or Information Officer	0.106	0.032*	0.962	0.002**		
6 Service Development Officer	0.047*	0.546	0.315	0.579	0.230	

\* $p < 0.05$  \*\* $p < 0.01$  \*\*\* $p < 0.001$

## 6.6 Results –Factor Analysis

### 6.6.1 Item Reduction

The variable regarding subjects’ journeys to and from work was omitted from any further analysis for the reasons set out in Section 6.5.1. Out of the 70 remaining variables in the original item pool, one was identified positively by only 37% of respondents and was therefore deleted (*‘Being interrupted/likely to be interrupted by work matters while on holiday’*). Similarly, one item showed an item-total correlation of less than 0.40 and was discarded (*‘Having poor quality staff facilities eg kitchen, rest areas’*). As described in the Methodology (Section 3.5.7), item-item correlations ( $r > 0.7$ ) were inspected and 19 additional variables were eliminated (Appendix E, E.5.1). The residual 49 items were included in a principal components analysis. No items loaded less than 0.40 on the first factor and consequently all 49 items were put forward for factor analysis using a varimax rotation.

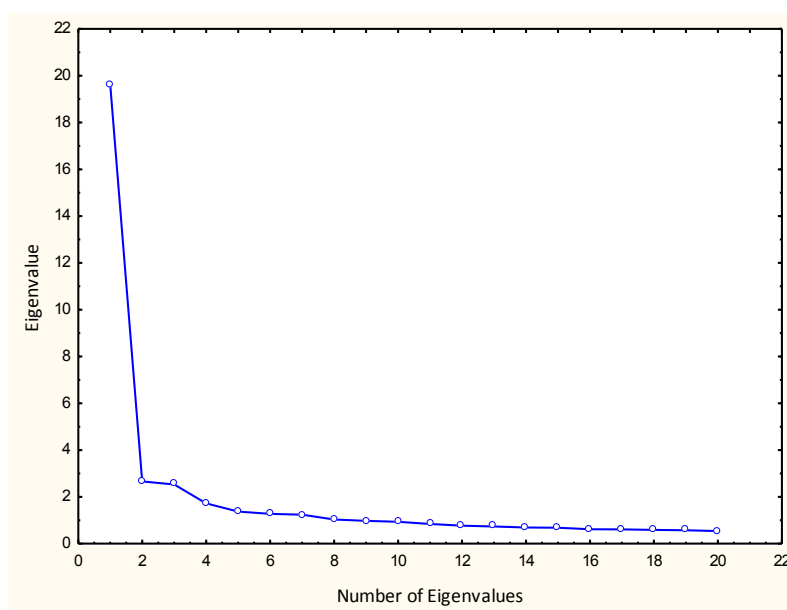
### 6.6.2 Factor Extraction

An examination of Eigenvalues exceeding 1.00 indicated an 8 factor solution (Table 6.10).

**Table 6.10 Eigenvalues > 1.00 for Library Service Factor Analysis**

	Eigenvalue	% Total - variance	Cumulative - Eigenvalue	Cumulative - %
1	19.62	40.04	19.62	40.04
2	2.66	5.42	22.28	45.47
3	2.53	5.17	24.81	50.63
4	1.72	3.52	26.53	54.15
5	1.37	2.80	27.91	56.95
6	1.27	2.60	29.18	59.55
7	1.24	2.53	30.42	62.08
8	1.03	2.11	31.45	64.19

Cattell's Scree Plot was also reviewed to help inform the optimal number of factors to be retained (Figure 6.1).



**Figure 6.1 Cattell's Scree Plot - Library Service**

Several options with less and more factors were considered in combination with different cut-points for factor loadings. Based principally on the number of eigenvalues greater than 1.00 (Section 3.5.7), analyses suggested that an 8 factor extraction with a threshold loading of more than 0.5 offered the solution that was most interpretable and made the most practical sense. Total variance explained was 64% with Factor 1

accounting for 40% of variability. The loadings for 11 items did not exceed the 0.5 threshold on any of the 8 factors and were therefore discarded.

The content of the eight factors was studied carefully so that appropriate names could be nominated. Factor One, the largest factor with 13 items, encompassed many different aspects ranging from organisational change through to emotions, pay, workload and career prospects. It was therefore named General (GNL). Factor Two mostly described attributes associated with workload and was therefore labelled Workload (WL). The third factor was called Manager (MGR) on account of the majority of items linking to the actions of the line manager. Factor Four was ascribed the label Physical Health (PHY) owing to the fact that all three of its items related to physical health problems. The next factor – Challenge (CHL), only comprised two items that were both associated with perceived challenge at work. The sixth factor was mainly made up of variables linked to the provision of amenities and was named Facilities (FAC). The last two factors comprised two items each; the seventh factor described elements of the role and was therefore assigned the label of Role (RLE) while the eighth and final factor contained two items that both referred to the impact of library users and was therefore called User (USR). Table 6.11 confirms the factor structure and distribution of the final 38 items.

**Table 6.11 Varimax Rotation with 8 Factors for Library Service (loading cut off >.05)**

	<b>Factor 1 – General (GNL)</b>	<b>Factor 2 – Workload (WL)</b>	<b>Factor 3 – Manager (MGR)</b>	<b>Factor 4 – Physical Health (PHY)</b>	<b>Factor 5 – Challenge (CHL)</b>	<b>Factor 6 – Facilities (FAC)</b>	<b>Factor 7 – Role (RLE)</b>	<b>Factor 8 – User (USR)</b>
	Believing that the public service offered by libraries is of a reduced quality	Having to work long hours that regularly impact your home life	Receiving poor communications from your line manager on issues that are important to you	Having potential RSI (repetitive strain injury) problems because of your work	Being bored at work	Having poor quality working accommodation	Being unclear about your role and priorities at work	Lacking the necessary skills to meet the changing needs of library users eg PC queries
	Being unclear about the Library Service's future plans	Being unable to make plans with friends and family because of unpredictable working hours	Believing that your immediate line manager lacks the necessary skills to bring the best out in you	Developing musculo-skeletal problems eg back problems because of your work	Not having enough variety in your day to day work	Poor air-conditioning at work (either too hot or too cold)	Feeling isolated and lonely at work	Feeling threatened by some members of the public
	Being overwhelmed by the amount of organisational change within the Library Service	Being unable to take time off in lieu, owed to you	Not being encouraged by your manager to use your initiative at work	Experiencing problems with your legs and feet because of your work		Having poor lighting at work		
	Being uncertain about how your job may change in the future	Having to miss your breaks during the day because of your workload	Having an inadequate performance appraisal system			Experiencing headaches because of your work		
	Feeling uncomfortable with how the Library Service is diversifying its public offering	Being unable to cope with the number of work-related emails you receive	Receiving poor communications from Library Management Team					
	Believing that Library Management Team do not appreciate the challenges that you face	Regularly being asked to work different hours	Not having enough team meetings					
	Feeling frustrated with the Library Service's Spydus system							

	<b>Factor 1 – General (GNL)</b>	<b>Factor 2 – Workload (WL)</b>	<b>Factor 3 – Manager (MGR)</b>	<b>Factor 4 – Physical Health (PHY)</b>	<b>Factor 5 – Challenge (CHL)</b>	<b>Factor 6 – Facilities (FAC)</b>	<b>Factor 7 – Role (RLE)</b>	<b>Factor 8 – User (USR)</b>
	Feeling demotivated and demoralised because of your work							
	Not believing that you are offering a valuable service to the community							
	Thinking that your career prospects are limited							
	Feeling that you are not really making a worthwhile difference in your job							
	Having too many demands on your time to be effective in your job							
	Having an unsatisfactory remuneration and reward package							
% of variance explained	40%	5.42%	5.17%	3.52%	2.80%	2.60%	2.53%	2.11%
Eigenvalues	19.62	2.66	2.53	1.72	1.37	1.27	1.24	1.03

### 6.6.3 *Internal Reliability*

Internal reliability was assessed using Cronbach's Alpha coefficient ( $\alpha$ ). Alpha values for the eight sub-scales ranged from 0.94 – 0.58 (Table 6.12). Values for the RLE and USR factors were below the acceptable coefficient value of 0.7 (Rick et al., 2001; Hinkin, 1995).

**Table 6.12 Internal Reliability Library Service – Factor Analysis**

<b>Factor Name (number of items)</b>	<b>Cronbach's Alpha <math>\alpha</math></b>
<b>GNL (13)</b>	0.94
<b>WL (6)</b>	0.85
<b>MGR (6)</b>	0.88
<b>PHY (3)</b>	0.80
<b>CHL (2)</b>	0.84
<b>FAC (4)</b>	0.74
<b>RLE (2)</b>	0.65
<b>USR (2)</b>	0.58

### 6.6.4 *Well-Being Indications for Library Population based on Factor Analysis*

Consistent with the research protocol (Section 3.6), data were revised so that all '0' values were altered to '1'. Table 6.13 ranks the mean values for all eight factors and suggests that, overall, people found the attributes associated with change, career and pay (GNL) to be the most troublesome to their overall well-being. Concerns over the lack of variety in the work were perceived to be least problematic (CHL). The overall WRWB score for the library service was 2.02.



**Table 6.13 Ranked Factors for Library Service**

Factor	Mean	Std.Dev.	Skewness
GNL	2.47	0.98	0.42
FAC	2.24	0.87	0.58
MGR	2.14	0.98	1.30
USR	2.01	0.92	0.74
WL	1.71	0.71	1.25
PHY	1.70	0.90	1.55
RLE	1.56	0.80	2.02
CHL	1.32	0.72	2.88
Overall	2.02	0.53	0.79

A repeated measures ANOVA indicated that there were significant effects of factors and roles (F values sig.  $p < 0.05$ ) and interactions between them (Table 6.14). Those that identified themselves as ‘Other’ (n = 61) were omitted from analysis since their role was unclear. Mobile drivers (n = 9) and van drivers (n = 3) were also excluded owing to small sample sizes. Residuals were checked and showed that the data were approximately normally distributed (Appendix E, E.5.2).

**Table 6.14 Repeated Measures ANOVA for Library Service Roles and Factors**

Effect	Sum of squares	Degrees of freedom	Mean square	F value	p
Role	40.695	5	8.139	2.719	0.020*
Error (within roles)	1158.220	387	2.993		
Factor	232.890	7	33.270	83.990	0.000***
Interaction between factor and role	106.066	35	3.030	7.650	0.000***
Error (within individuals)	1073.082	2709	0.396		

\* $p < 0.05$  \*\*\* $p < 0.001$

Table 6.15 compares the mean importance scores for each library service factor using Fisher’s LSD Test and shows significant differences ( $p < 0.05$ ) between some of them. The results confirmed that the attributes associated with issues such as change, pay and career (GNL) had a more adverse impact on well-being than any other factor. Elements relating to the challenge offered by jobs (CHL) had the least negative effect on people’s well-being. The mean importance scores for each factor are shown in the

column headers. The values in the body of Table 6.15 show  $p$  values for pair-wise comparisons of each factor.

**Table 6.15 Fisher's LSD Test for Library Service Factors**

Factor	1 - 2.47	2 - 1.71	3 - 2.14	4 - 1.70	5 - 1.32	6 - 2.24	7 - 1.56	8 - 2.01
1 GNL								
2 WL	0.000***							
3 MGR	0.000***	0.000***						
4 PHY	0.000***	0.908	0.000***					
5 CHL	0.000***	0.000***	0.000***	0.000***				
6 FAC	0.000***	0.000***	0.014*	0.000***	0.000***			
7 RLE	0.000***	0.001**	0.000***	0.002**	0.000***	0.000***		
8 USR	0.000***	0.000***	0.003**	0.000***	0.000***	0.000***	0.000***	

\* $p < 0.05$  \*\* $p < 0.01$  \*\*\* $p < 0.001$

Further analysis using Fisher's LSD Test contrasted factor scores for the six main roles within the library service (Table 6.16). Only library assistants showed that their WRWB was significantly different (better) than that of library officers and library supervisors/assistant supervisors. No other meaningful well-being differences between roles were observed. The values in the body of Table 6.16 show  $p$  values for pair-wise comparisons of roles. Mean importance scores for each role are presented in the column headers.

**Table 6.16 Comparison of Library Service Roles using Fisher's LSD Test**

Role	Mean importance score value for each role					
	1 - 1.80	2 - 2.12	3 - 2.08	4 - 2.04	5 - 1.81	6 - 1.93
1. Library Assistant						
2. Library Officer	0.027*					
3. Library Supervisor or Assistant Supervisor	0.002**	0.774				
4. Service Development Officer	0.130	0.688	0.824			
5. Library or Group Manager	0.961	0.092	0.067	0.237		
6. Senior Assistant or Information Officer	0.111	0.172	0.091	0.460	0.410	

\* $p < 0.05$  \*\* $p < 0.01$  \*\*\* $p < 0.001$

## 6.7 Item Reduction – Comparison of Two Approaches

A total of 42 variables were selected from the original item pool using IA. This compares to 38 variables confirmed using FA as the basis for item selection. The number of items that were common to each was 27 (Table 6.17).

**Table 6.17 Items Common to Impact Analysis and Factor Analysis Selection - Library Service**

Item
1. Being overwhelmed by the amount of organisational change within the Library Service?
2. Being unable to cope with the number of work-related emails you receive?
3. Being unable to take time off in lieu, owed to you?
4. Being unclear about the Library Service's future plans?
5. Being unclear about your role and priorities at work
6. Believing that Library Management Team do not appreciate the challenges that you face
7. Believing that your immediate line manager lacks the necessary skills to bring the best out in you
8. Developing musculo-skeletal problems eg back problems because of your work
9. Experiencing headaches because of your work
10. Experiencing problems with your legs and feet because of your work
11. Feeling frustrated with the Library Service's Spydus system
12. Feeling threatened by some members of the public
13. Feeling uncomfortable with how the Library Service is diversifying its public offering
14. Having an inadequate performance appraisal system
15. Having an unsatisfactory remuneration and reward package
16. Having poor lighting at work
17. Having poor quality working accommodation
18. Having potential RSI (repetitive strain injury) problems because of your work
19. Having to miss your breaks during the day because of your workload
20. Having to work hours that regularly impact your home life
21. Lacking the necessary skills to meet the changing needs of library users eg PC queries
22. Not being encouraged by your manager to use your initiative at work
23. Not believing that you are offering a valuable service to the community
24. Not having enough team meetings
25. Poor air-conditioning at work (either too hot or too cold)
26. Receiving poor communications from Library Management Team
27. Thinking that your career prospects are limited

The remaining 15 variables (36%) which were selected only by IA appear in Table 6.18.

**Table 6.18 Items Selected by Impact Analysis Only - Library Service**

Item	Impact Score
1. Worrying how changes in the Library Service may impact your job	2.65
2. Feeling frustrated because of your work	2.22
3. Feeling overwhelmed by the volume of work	2.18
4. Feeling stressed because of your work	2.18
5. Not feeling appreciated by the wider County Council senior team	2.17
6. Always feeling physically tired because of your work	2.03

Item	Impact Score
7. Lacking adequate training to enable you to do your job effectively	1.77
8. Receiving poor communications from the wider County Council community	1.59
9. Not having the necessary training to advance your career	1.45
10. Having to perform duties at work which are beyond your skill set	1.32
11. Having poor quality staff facilities eg kitchen, rest areas	1.28
12. Not feeling supported by your immediate line manager	1.26
13. Being unclear on your performance objectives	1.17
14. Lacking flexibility over your working times and patterns	1.16
15. Not feeling supported by your team at work	1.11

The 11 items (29%) that were chosen only using FA are listed in Table 6.19.

**Table 6.19 Items Selected by Factor Analysis Only - Library Service**

Item	Impact Score
1. Believing that the public service offered by libraries is of a reduced quality	2.88
2. Being uncertain about how your job may change in the future	2.73
3. Having too many demands on your time to be effective in your job	2.18
4. Feeling demotivated and demoralised because of your work	1.85
5. Feeling that you are not really making a worthwhile difference in your job	1.59
6. Receiving poor communications from your line manager on issues that are important to you	1.39
7. Feeling isolated and lonely at work	0.84
8. Not having enough variety in your day to day work	0.79
9. Regularly being asked to work different hours	0.79
10. Being bored at work	0.77
11. Being unable to make plans with friends and family because of unpredictable working hours	0.76

In order to aid comparisons between the two approaches, the 10 items with the highest mean importance scores (range 1-5) determined by IA and FA were also examined (Table 6.20).

**Table 6.20 Comparison of 10 Highest Scoring Items by IA and FA – Library Service**

Rank	Items – Impact Analysis	Mean Importance Score (1-5)	Items – Factor Analysis	Mean Importance Score (1-5)
21.	Feeling frustrated with the Library Service's Spydus system	3.39	Feeling frustrated with the Library Service's Spydus system	3.39
22.	Poor air-conditioning at work (either too hot or too cold)	3.16	Poor air-conditioning at work (either too hot or too cold)	3.16
23.	Worrying how changes in the Library Service may impact your job	2.77	Believing that the public service offered by libraries is of a reduced quality	3.03
24.	Being overwhelmed by the amount of organisational change within the Library Service	2.70	Being uncertain about how your job may change in the future	2.85

Rank	Items – Impact Analysis	Mean Importance Score (1-5)	Items – Factor Analysis	Mean Importance Score (1-5)
25.	Being unclear about the Library Service's future plans	2.58	Being overwhelmed by the amount of organisational change within the Library Service	2.70
26.	Feeling uncomfortable with how the Library Service is diversifying its public offering	2.53	Being unclear about the Library Service's future plans	2.58
27.	Believing that Library Management Team do not appreciate the challenges that you face	2.53	Feeling uncomfortable with how the Library Service is diversifying its public offering	2.53
28.	Not feeling appreciated by the wider County Council senior team	2.43	Believing that Library Management Team do not appreciate the challenges that you face	2.53
29.	Thinking that your career prospects are limited	2.43	Thinking that your career prospects are limited	2.43
30.	Feeling frustrated because of your work	2.43	Having too many demands on your time to be effective in your job	2.39

### 6.7.1 *Chi-Square Test*

The non-parametric *Chi-Square* test was used to determine whether a relationship between the choice of IA-selected items and FA-selected items existed. Observed frequency data relating to the number of items selected by each approach, the number of items selected only by one of the approaches and the number of items rejected by both were recorded in a 2x2 contingency table so that the *Chi-Square* test could be performed (Table 6.21).

**Table 6.21 2x2 Table - Observed Values Library Service**

Methodological approach	IA – selected items (expected values)	IA – non selected items (expected values)	Total
FA – selected items	27 (22.48)	11 (15.52)	38
FA – non selected items	15 (19.52)	18 (13.48)	33
Total	42	29	71

The *Chi-Square* value of 4.79 was found to be statistically significant ( $p = 0.0286$ ) and therefore indicated that the null hypothesis that no significant difference between the number of items selected by each method existed, should be rejected (Table 6.22).

**Table 6.22 Chi-Square Test - Library Study**

	IA – selected items	IA – non-selected items	Row - Totals
<b>FA – selected items</b>	27	11	38
<b>Percent of total</b>	38.03%	15.49%	53.52%
<b>FA – non-selected items</b>	15	18	33
<b>Percent of total</b>	21.13%	25.35%	46.48%
<b>Column totals</b>	42	29	71
<b>Percent of total</b>	59.16%	40.85%	
<b>Chi-square (df=1)</b>	4.79	$p = .0286$	

### 6.7.2 *T-Test for Independent Samples*

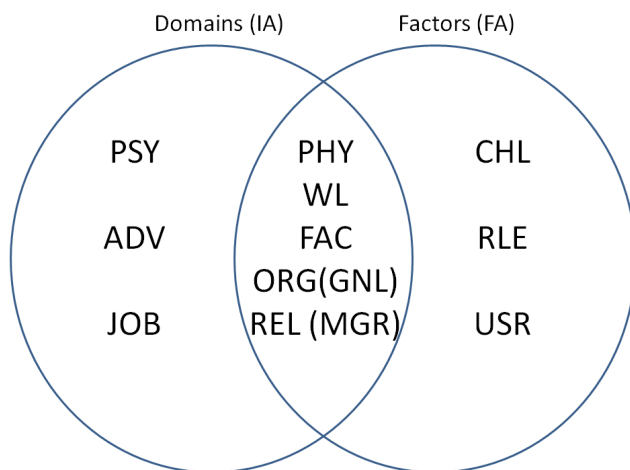
A *t*-test for independent variables tested the null hypothesis that there was no difference ( $p < 0.05$ ) between the mean importance scores derived from IA (mean = 2.06) and FA (mean = 2.02). Table 6.23 sets out the findings from the *t*-test and showed that the null hypothesis should not be rejected. For these findings, the overall mean score arising from the IA approach was equal to the overall mean score arising from the FA approach.

**Table 6.23 T-Test for Independent Samples - Library Service**

Group 1: Mean – IA items	Group 1: IA Std Deviation	Group 2: Mean – FA items	Group 2: FA Std Deviation	t-value	<i>p</i>	Degrees of freedom
2.06	0.45	2.02	0.53	-0.36	0.72	78

### 6.7.3 *Bland and Altman Plots*

The domains and factors arising from the analysis were visually assessed to ascertain those where commonality appeared to exist. The factors in brackets denote those where there existed broad concurrence with the adjacent domain. Overall, the PHY, WL, FAC, ORG and REL domains showed broad agreement with five of the factors (Figure 6.2).



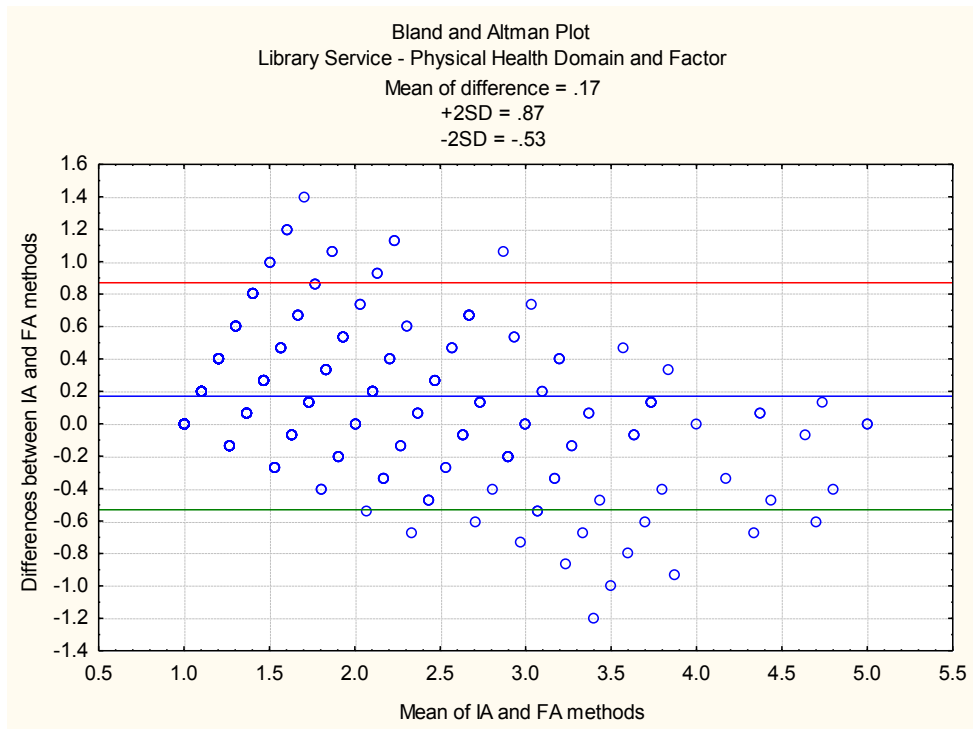
**Figure 6.2 Library Services Study - Comparison of Domains and Factors**

To further investigate agreement between the two methods, Bland and Altman plots (Section 3.7.4) were produced for these five areas.

**Table 6.24 Library Services Study - Difference between Physical Health Domain and Factor**

Variable	Physical Health				
	Valid N	Mean	Confidence -95.00%	Confidence 95.00%	SD
Differences between IA and FA methods	466	0.17	0.14	0.20	0.35

Table 6.24 shows that IA calculated PHY elements at a significantly higher value than FA. This was also the case for WL (Table 6.25). By comparison IA values were significantly lower for the FAC (Table 6.26) and REL/MGR (Table 6.28) evaluations.



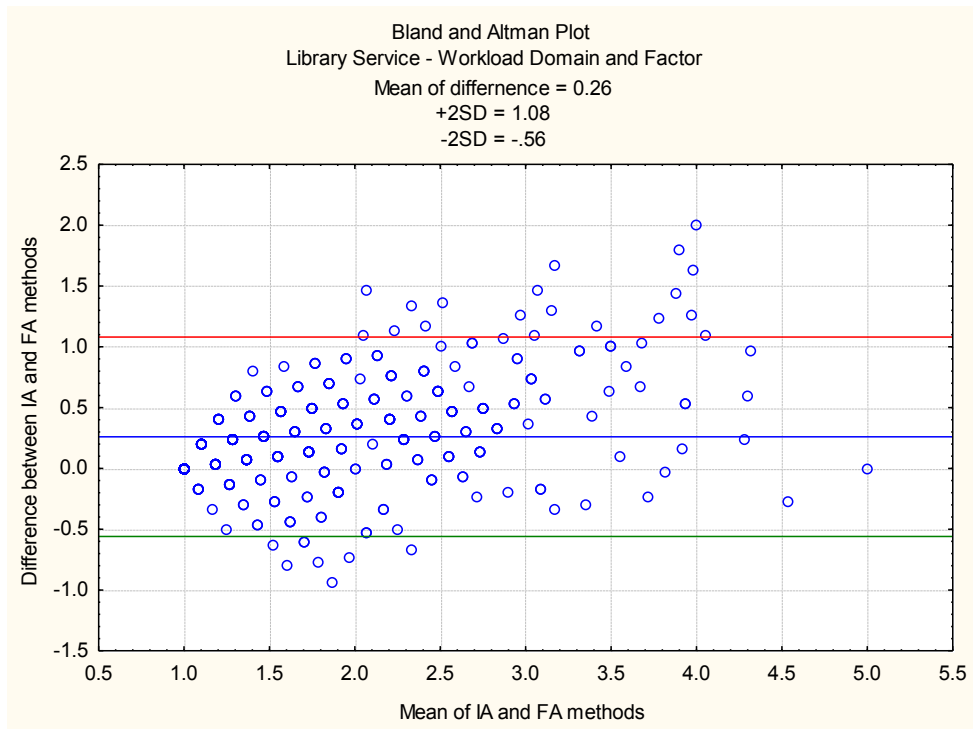
**Figure 6.3 Library Services Study - Bland and Altman Plot for Physical Health**

The limits of agreement for the PHY domain and factor were relatively large (1.4), indicating little agreement in measurement across both methods.

**Table 6.25 Library Services Study - Difference between Workload Domain and Factor**

Variable	Workload				
	Valid N	Mean	Confidence -95.00%	Confidence 95.00%	SD
Difference between IA and FA methods	466	0.26	0.22	0.29	0.41



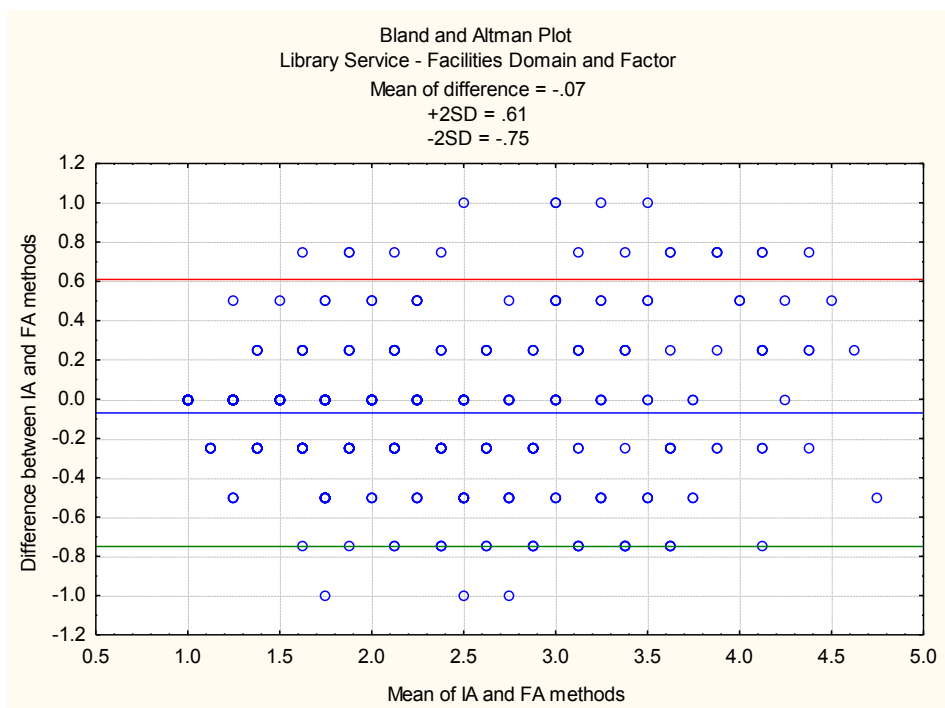


**Figure 6.4 Library Services Study - Bland and Altman Plot for Workload**

Again, the limits of agreement for Workload were broad, showing that the level of agreement between IA and FA was low (Figure 6.4).

**Table 6.26 Library Service Study - Difference between Facilities Domain and Factor**

Variable	Facilities				
	Valid N	Mean	Confidence -95.00%	Confidence 95.00%	SD
Difference between IA and FA methods	466	-0.07	-0.098	-0.036	0.34

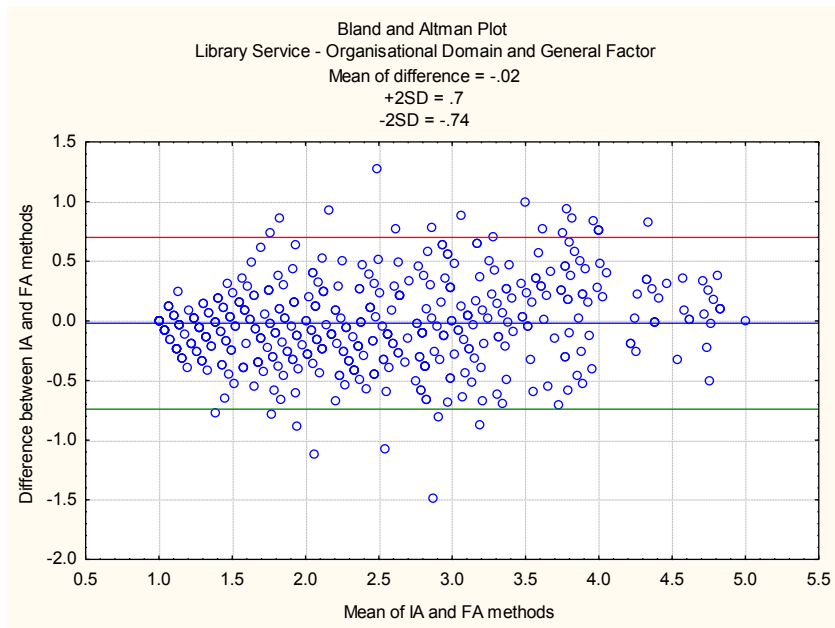


**Figure 6.5 Library Services Study - Bland and Altman Plot for Facilities**

This trend of broad limits of agreement was evident in the remaining Bland and Altman plots. While the bias was not significantly different to zero for the ORG domain and GNL factor, the plot's limits of agreement were between 0.7 and -0.74 (Figure 6.6). Examination of the REL domain and MGR factor showed a wider range of 1.72 (Figure 6.7).

**Table 6.27 Library Services Study - Difference between Organisational Domain and General Factor**

Variable	Organisational domain and General factor				
	Valid N	Mean	Confidence -95.00%	Confidence 95.00%	SD
Difference between IA and FA methods	466	-0.02	-0.06	0.01	0.36



**Figure 6.6 Library Services Study - Bland and Altman Plot for Organisational Domain and General Factor**

**Table 6.28 Library Services Study - Difference between Relationship Domain and Manager Factor**

Variable	Relationship domain and Manager factor				
	Valid N	Mean	Confidence -95.00%	Confidence 95.00%	SD
Difference between IA and FA methods	466	-0.46	-0.50	-0.43	0.43

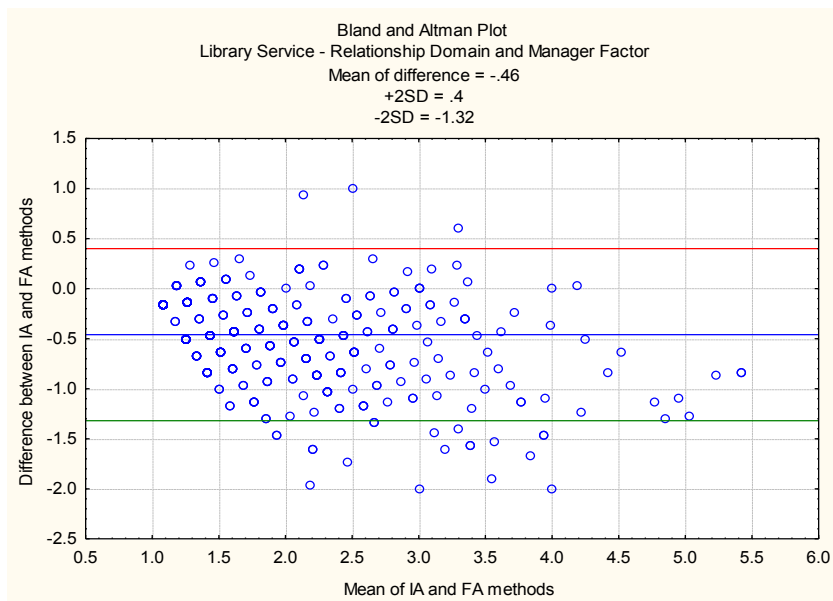


Figure 6.7 Library Services Study - Bland and Altman Plot for Relationship Domain and Manager Factor

## 6.8 Interim Observations

This section considers the main themes stemming from the LIS case study and how they relate to existing literature that considers the library sector.

### 6.8.1 Overview of Results

The discussions with the LIS employees that formed part of the IGP were a mix of pre-arranged focus groups and private, one-to-one conversations that took place in different libraries or at the LIS headquarters. One discussion with a mobile library driver was held over the telephone. All other conversations were conducted in person. All those who participated, did so on a voluntary basis. Interestingly, one of the county's smallest libraries approached to take part in this initial phase, declined the invitation. The reasons for this reticence are unclear.

The total number of variables collected in the Item Generation Phase was 71. It was deemed that this represented a sufficiently comprehensive list of potential WRWB variables - a notion that was borne out by the additional 139 free text responses (Appendix E, E.2) which only added colour to the issues already captured rather than identifying new areas of well-being. A comparison of the 71 variables with the 139 free text responses indicated adequate content validity.

The IRP yielded 466 completed Questionnaires which exceeded the pre-determined, minimum sample size requirements for the study (Section 3.2.2). While a 58% response rate may be considered disappointing by some research standards, the LIS management viewed the take up rate positively since the most recent staff satisfaction survey only generated a return rate of 40% from the library workforce.

A review of the domains and factors resulting from IA and FA for this cohort suggests that the WRWB of library employees comprises a wide range of elements. Collectively and in no particular order, these include issues relating to organisational change, the perceptions of management, career needs, physical and psychological health matters, workplace relationships, workplace amenity provision, interface with users, reward levels and workload.

How do these findings compare generally with the library literature concerned with health and wellness? Certainly, the themes arising from this present study show substantial overlap with the three main empirical studies published. For example, the study by Bunge (1987) on sources of stress for public service librarians cited problems with patrons, workload, feelings of inadequacy, lack of positive feedback, physical

environment and scheduling that all share agreement with some of the domains and factors established herein. Likewise, Schneider's (1991) stress-related factors all concur with the current findings as far as they go. Both the PHY domain and PHY factor resonate with Lange et al.'s (2001) study to explore physical strain in a library setting although this present research focuses on the outcomes, such as repetitive strain injury (RSI) or musculoskeletal complaints, instead of the specific causes.

While there are clear areas of agreement with prior literature, the present findings also highlight some notable digressions. None of the existing studies present such an extensive range of issues as has been established through the current research. For example, references to problems relating to organisational change, physical health and advancement opportunities are absent from Bunge's (1987) study. Schneider (1991) omits questions on organisational change, advancement prospects and physical health and variables that reference the physical workplace are also missing from her 58-item scale. These differences may be viewed as considerable shortcomings especially in view of the importance placed on organisational change issues (Table 6.8, Table 6.15 and Table 6.20) by the LIS employees in the current study.

With the bulk of empirical studies in the library sector focussing on stress and burnout, more items relating to these areas might have been expected. In the event, none of the variables collected during the IGP cited burnout and no workers referenced burnout throughout the 139 free text contributions (Appendix E, E.2). In this respect, the findings conflict with Smith et al.'s (1984) claims regarding the high levels of burnout among public reference librarians.

Only one item referenced stress directly which generated an impact score of 2.18 and ranked 12<sup>th</sup> overall (Table 6.2) although 18 staff made reference to work-related stress in the free text contributions, many of which were associated with organisational change initiatives. The IA analyses showed that the ORG and PSY domains scored 2.45 and 2.22 respectively and were perceived by staff to be relatively more important to their well-being than most other domains (Table 6.8). Notwithstanding this, domain mean importance scores of less than 3 (range 1-5) infer that impact on well-being is only slight/moderate. These findings therefore suggest that perceived stress levels are not alarmingly high but are significant, relative to other domains. Consequently, these results lend some agreement to earlier stress-focused studies (Schneider, 1991; Bunge, 1987) albeit that they are deficient in some respects (for example, the impact of organisational change).

### 6.8.2 ***Comparisons between Methodologies***

With 27 items common to the IA and FA derived question sets (Table 6.17), it is not surprising that there existed a large degree of agreement between the items selected by each of the methodologies and the resultant domains and factors. This observation is supported by the *Chi-Square* test which found a significant relationship between the two sets of items selected by both IA and FA (Table 6.22). As their names suggest, the PHY, WL, REL and FAC domains (Table 6.4) were generally comparable to their PHY, WL, MGR and FAC factor counterparts (Table 6.11). There was also some agreement between the ORG domain and the GNL factor. After this, parallels between the two sets of sub-groups fell away. The PSY, ADV and JOB domains did not have obvious

factor equivalents and neither of the items in the CHL factor featured in the IA-derived list.

The Bland and Altman plots used to explore the amount of agreement between IA and FA methods for the five notionally similar domains and factors (Section 6.7.3)

consistently confirmed an unacceptably large amount of variability in the data and therefore indicated that the approaches were not measuring the same phenomena.

While the bias calculations were close to zero, the limits of agreement were too wide within the context of the values used in the study. For example, the ORG domain

scored 2.45 (Table 6.6) and the GNL factor scored 2.47 (Table 6.13). However, the

limits of agreement for the corresponding Bland and Altman plot (Figure 6.6) shows

that they ranged from 0.7 to -0.74 representing 59% and 58% of the domain and factor values respectively. This discrepancy can be explained by the poor level of agreement

between items in the ORG domain and GNL factor.

Table 6.5 indicates that the internal reliability ( $\alpha$ ) for each of the domains was

acceptable. However, two of the factors - RLE and USR - showed inadequate internal reliability (Table 6.12). The FA approach also gave rise to some puzzling classifications.

While the majority of factors lent themselves to clear and meaningful interpretation,

the first factor (GNL) carried 13 assorted items that do not appear to be linked to one underlying construct (Table 6.11) but instead, portrayed an array of facets associated

with WRWB.

The GNL factor accounted for 40% of the total 64% variance explained and included

the highest and second highest scoring items by impact score (*'Feeling frustrated with*



*the Library Service's Spydus System'* and *'Believing that the public service offered by libraries is of a reduce quality'*). Interestingly, Factor Two (WL) included two highly weighted variables which ranked 65<sup>th</sup> and 69<sup>th</sup> by impact score and the sixth factor (FAC) (2.60% variability) contained the second highest ranking item by impact score (*'Poor air-conditioning at work (either too hot or too cold)'*). These observations are discussed further in Chapter 8.

Of the 15 items that were only selected using IA (Table 6.18), only 30% (n = 5) had an approximate corresponding counterpart in the FA list (Table 6.19). This demonstrated that the IA selection method gave rise to 10 aspects of WRWB that were considered to be relatively important (impact score > 1.00), which were not replicated in any way by the FA methodology. Similarly, 5 out of the 11 items listed in Table 6.19 showed impact scores of less than 1.00, thereby demonstrating quantitatively their comparative redundancy in terms of impact on WRWB overall.

While the number of domains and factors determined in this case study are equal in number (n=8) and there is satisfactory agreement in content across five of them, the detailed differences described above, permit the respective methods to present quite diverse impressions when examining the WRWB of the library service employees. The implications of this are discussed in the next section.

### 6.8.3 ***Performance of Assessments***

One of the aims of the present study is to consider how the outputs from the two item-selection methodologies may potentially compare with each other when assessing the well-being of employees from a practical perspective. The *t*-test for

independent variables (Table 6.23) indicates that the overall well-being scores arrived at by either method are the same. However, a closer inspection of the rankings by domain and factor presents a somewhat different picture.

IA finds that organisational (ORG) aspects blight workers' well-being more than any other aspects (Table 6.6). Using FA, Table 6.13 shows that the GNL factor ranks highest. While the GNL factor comprises some elements that are common to the ORG domain, it also contains other items relating to pay, emotions, prospects and workload that may confuse the picture. The PSY domain, which ranks second in importance (Table 6.6), does not feature as a stand-alone factor. Least troublesome to LIS employees' well-being is the REL domain according to the IA findings (Table 6.6). However, according to the ranked factor scores in Table 6.13, relationship issues are represented by the Manager (MGR) factor which is positioned as third most important overall. Issues represented by the ADV or JOB domains are not obviously detectable in the FA-derived findings. The same can be said of the CHL and RLE factors.

While a comparison of ranked domains and factors gives rise to discernibly different impressions of library service well-being, an examination of the 10 highest scoring items by each system presents more uniformity. Table 6.20 shows a high degree of agreement between rankings using IA and FA. Notably, the two highest items that reference the new library system and air conditioning are the same. The ninth highest scoring items regarding career prospects also show equivalence (Table 6.20).

In terms of the WRWB of the various roles performed within the LIS, both approaches find that Library Assistants perceive their WRWB to be significantly better than Library

Officers and Library Supervisors/Assistant Supervisors (Table 6.7 and Table 6.14). IA finds other differences between additional role categories (Table 6.7).

In summary, these findings present a more comprehensive range of elements associated with health and wellness in library work than has been documented in previous studies. They add an extra dimension to current literature by establishing the prevalence and magnitude of additional aspects of library work in respect of employee well-being. These additional elements put into perspective earlier claims on stress and burnout and suggest that these conditions are not as widespread as some authors (for example Schneider, 1991; Bunge, 1987) have alleged previously. Additionally, this study proposes a hierarchical ranking of work-related issues based on perceived importance that is absent from earlier literature (for example Bunge, 1987).

The results also offer a response to the main criticisms of earlier studies expressed by Fisher (1990); the study is a sizeable, empirically-led study of people working in UK public libraries which establishes those variables that are most relevant to library workers using a systematic, quantitative approach. Fisher's concerns regarding the relevancy of generic scales to a library setting are upheld.

A rudimentary comparison of the IA and FA methodologies reveals apparently noteworthy differences in the selection and rankings of domains and factors although there is clear agreement between the overall well-being scores derived from each and between the 10 most important individual items.



## **Chapter 7      Results - Additional Analyses**

### ***7.1 Introduction***

The previous three chapters report the results arising from each of the case studies taking part in the current research. This last results chapter documents a final set of analyses which seek to investigate the differences in well-being levels reported by each of the occupational groups to determine if the WRWB of one group is apparently better or worse than any other and whether this is consistent across both the IA and FA methodological frameworks. The results are discussed in Chapter 8.

### ***7.2 Comparison of Well-Being Levels across Case Studies***

As described in the Methodology (Section 3.8.1) a one-way ANOVA was used to compare the mean importance scores resulting from IA across the three sectors to establish whether the mean importance values for different sector groups were statistically different ( $p < 0.05$ ) from each other. The process was repeated for mean importance scores resulting from FA.

#### ***7.2.1 Impact Analysis Comparison***

Mean importance values (1-5) derived from IA for each occupational group were stacked in a separate spreadsheet (Appendix F, F.1). A one-way ANOVA examined the differences between the three sectors and indicated that significant differences (F value sig.  $p < 0.05$ ) existed (Table 7.1). Residuals were examined in order for the ANOVA to be valid and indicated that data were approximately normally distributed (Appendix F, F.1).

**Table 7.1 One way ANOVA of IA Results by Case Study**

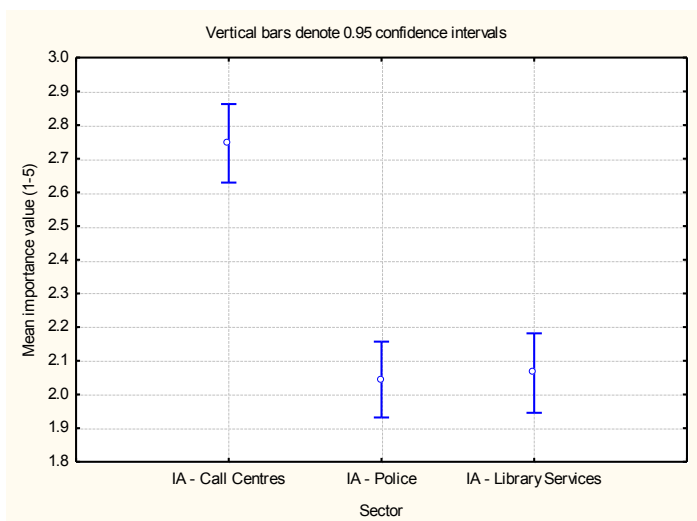
	Sum of squares	Degrees of freedom	Mean square	F value	<i>p</i>
<b>Sector</b>	13.8479	2	6.9240	46.495	0.000***
<b>Error</b>	19.0618	128	0.1489		
*** <i>p</i> <0.001					

Based on the data collected, Fisher’s LSD Test showed that those within the call centre case study experienced apparently significantly worse WRWB than those working in the police force or library services (Table 7.2). No difference between police force and library services workers was detected. The mean importance scores (range 1-5) for each sector are provided in the column headers. Values in the body of Table 7.2 show *p* values for pair-wise comparisons of sectors.

**Table 7.2 Fisher's LSD Test for IA Mean Importance Scores by Sector**

Method - Sector		Mean importance score for each sector		
		1 - 2.75	2 - 2.04	3 - 2.06
<b>1</b>	<b>IA - Call Centres</b>			
<b>2</b>	<b>IA – Police</b>	0.000***		
<b>3</b>	<b>IA – Library services</b>	0.000***	0.815	
*** <i>p</i> <0.001				

The degrees of difference between the WRWB levels of the three case studies are presented graphically in the mean and 95% confidence interval plot below (Figure 6.1).



**Figure 7.1 Comparison of Sector Findings by IA**

### 7.2.2 Factor Analysis Comparison

As with data collected during the IA, mean importance values (1-5) derived from FA for each occupational group were stacked in a separate spreadsheet (Appendix F, F.2). A one-way ANOVA examined the differences between the three sectors and indicated that significant differences (F value sig.  $p < 0.05$ ) existed (Table 7.3). Residuals were examined and indicated that data were approximately normally distributed (Appendix F, F.2).

**Table 7.3 One way ANOVA for FA Results by Case Study**

	Sum of squares	Degrees of freedom	Mean square	F value	$p$
<b>Sector</b>	7.3811	2	3.6906	19.391	0.000***
<b>Error</b>	21.5061	113	0.1903		

\*\*\* $p < 0.001$

Fisher's LSD Test showed that those within the call centre case study seemingly experienced significantly worse WRWB than those working in the police force or library services (Table 7.4). No difference between police force and library services workers was observed. The mean importance scores (range 1-5) for each sector are provided in

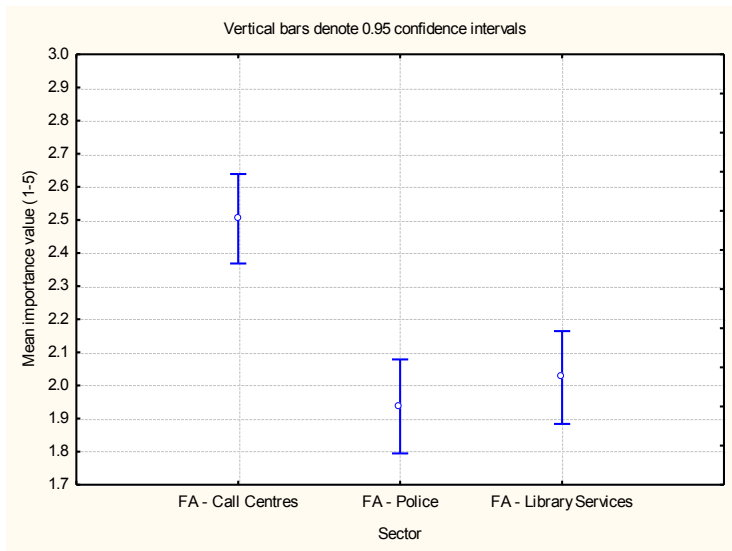
the column headers. Values in the body of Table 7.4 show  $p$  values for pair-wise comparisons of sectors.

**Table 7.4 Fisher's LSD Test for FA Mean Importance Scores by Sector**

Method - Sector		Mean importance score for each sector		
		1 - 2.50	2 - 1.94	3 - 2.02
1	FA - Call Centres			
2	FA - Police	0.000***		
3	FA - Library Services	0.000***	0.388	

\*\*\* $p < 0.001$

The degrees of difference between the WRWB levels of the three case studies are presented graphically in the mean and 95% confidence interval plot below (Figure 7.2).



**Figure 7.2 Comparison of Sector Findings by FA**



## **Chapter 8 Discussion**

### ***8.1 Introduction***

This chapter appraises the main findings arising from the three case studies examined for this thesis. As well as summarising the key results and the common themes arising, a critical appraisal of the performance of IA as a scale construction method in EWB and the feasibility of IA as it is applied to occupational populations in this study is evaluated. The FA procedures used are also evaluated. Findings are balanced against the three comparator EWB scales and existing models reported in the literature. In consideration of these appraisals, a new, working model for the assessment of EWB is suggested. The chapter concludes with responses to the main study questions that this research seeks to answer.

### ***8.2 Overview of Results***

#### ***8.2.1 Case Study Characteristics***

The three participating organisations in this study were all engaged in providing services to the public and represented a satisfactory array of different jobs. While it would have been preferable to have recruited a more diverse cross section of enterprise such as a retailer, professional services firm and manufacturer, the worsening economic climate at the time the study was conducted prevented this from happening; many organisations that were approached initially were involved in corporate re-structuring programmes that deterred them from participating in an EWB research initiative.

Notwithstanding the case study concentration in public service provision, there existed some noteworthy differences between the three organisations in the context of EWB to which earlier academics have already directed attention. For example, Warr (1994) highlights, among others, variety and physical security as important determinants of EWB, both of which varied in their prevalence between the case study participants; call centre work has a particular reputation for being repetitious (Holman, 2002) while tasks performed by police officers can be dangerous and threatening to their physical security (Collins and Gibbs, 2003; Biggam et al., 1997). Similarly, the potential interface with home life (for example Van Laar et al., 2007; Sirgy et al., 2001; Danna and Griffin, 1999) highlights shift work arrangements characteristic of call centre operations and police forces which contrasts sharply with the somewhat more predictable daytime working hours of public sector libraries.

### 8.2.2 **Sample Sizes**

With a target sample population of 800 (Section 3.2.2), two out of the three case studies met the size requirement adequately. The call centre operation population of 550 employees fell short by some 31% for reasons explained in Section 4.2.3 and is considered further in respect of the IRP in Section 8.2.4.

### 8.2.3 **Item Generation Phase**

The protocol for generating WRWB variables from employees entailed a focus group format (Section 3.4.1). In the event, only the call centre operation conformed strictly to this arrangement. Owing to work commitments, officers and civilian staff within the police force contributed to the item pool based on one-to-one discussions and library

personnel attended a mixture of focus groups and individual meetings depending on personal preference and work arrangements. The reasoning behind the original focus group format was one of efficiency. As the main objective was to gather contributions from employees directly regarding their perceptions on WRWB, the switch from formalised focus groups to individual discussions for two of the participant groups was not considered a detrimental departure from the study design. The number of employees that engaged directly in the IGP ranged from 64-84 and therefore met the guideline of 50-100 individuals proposed for this stage by Guyatt et al. (1986) and Juniper et al. (1996) as described in Section 3.4.1.

By and large, items drawn from employees directly contributed to approximately 90% of the total number of possible variables for each case study. No comparable figures could be found in the HRQL literature although this seemed consistent with the general ethos of HRQL, where it is the views of the patients that count the most in any measurement protocol. Contributions offered by managers and/or professional staff mostly served to confirm the items already gathered from the workers that they represented. The same was also true of items gleaned from the literature reviews and other management information. A comparison of confirmed WRWB themes with those that appeared in the organisations' staff satisfaction surveys can be found in Section 8.5.1.

With 102 possible WRWB items, the call centre operation established more variables than either the LIS (n = 71) or the police force (n = 64). Two possible reasons for this are posited. Firstly, those working in the library sector and enforcement sector simply

had not experienced WRWB problems to the same extent as those working in a call centre setting. Secondly, and linked to the first reason, it is suggested that the police and library workers had adapted more readily to their workplace environments which then tempered their perspectives on the degree of WRWB impairment. In the HRQL field, this ability to recalibrate one's expectations is known as 'response shift' (McDowell, 2006).

The number of free text contributions in the IRP Questionnaires returned ranged from 119 - 159. The proportion of free text comments compared to total number of respondents was highest in the call centre case study where 32% of those that took part in the IRP provided extra comment via the facility. As already recorded in each of the case study results chapters, analyses of the free text comments did not yield extra dependent variables, suggesting that the content arising from the earlier IGP process presented a sufficiently robust approach to gathering WRWB items from a content validity standpoint. The only exception to this is the possible addition of an item that references the provision of IT in the pilot police scale (Section 5.8.1).

#### 8.2.4 ***Item Reduction Phase***

Care was taken to minimise questionnaire response bias as described in the Methodology (Chapter 3). Serial pilot testing of the draft IRP Questionnaires elicited less than five comments each. These related to suggestions regarding wording of the WRWB items listed. No negative feedback on the navigation or usability of the Questionnaires was received. The time taken to complete the Questionnaires ranged from approximately 12-14 minutes (call centres) to 9 minutes (police force). No

criticisms regarding the length of time required to take part in this phase were recorded, either by respondents or their employers.

The number of completed Questionnaires returned varied. The police force IRP Questionnaire was completed by the highest number of people ( $n = 822$ ) although the ratio of completions to sample size was the lowest (38%). By comparison, the LIS returned 466 Questionnaires (58% of sample population) and call centre respondents returned 377 (69% of sample population). Reasons for the relatively low response rate from the police force are unclear.

The number of returned Questionnaires satisfied the minimum requirements established in the study design (Section 3.2.2) for both the police force and LIS cohorts. Although the call centre respondent levels met the parameters described for IA (Juniper et al., 1996; Guyatt et al., 1986), they were lower than desired based on the guidance for FA set out by Rick et al. (2001) who maintain that sample sizes should exceed four times the number of items in a scale. By this latter estimate, the call centre IRP Questionnaire, which contained 102 WRWB items, should have been returned by more than 408 employees. However, according to Hinkin (1995), the minimum sample size for FA should be 150 which therefore place the call centre response levels in a more satisfactory light.

The finalised number of scale items following the IRP varied. Using IA, the number of items ranged from 46 - 42 (mean = 43.66). For FA, the number of confirmed items was smaller, varying between 41 and 38 (mean = 38.66). Analyses either by IA or FA all resulted in eight sub-groups (domains or factors) for each case study other than the

application of IA to police force data where a total of nine domains were established. More detailed considerations of the item reduction process using IA and FA follow.

#### 8.2.5 *Item Reduction Phase – Impact Analysis*

The table below (Table 8.1) presents summary findings from IA conducted across the three study populations. The proportion (frequency) of subjects who experienced various WRWB items ranged from 0.96 – 0.37 and suggests that the majority of items that were perceived to impact well-being were common to a sizeable share of workers within an organisation. The high frequency levels also seem to provide tacit support for the ability of the employee-centric IGP approach to identify WRWB variables that were relevant to workers themselves.

**Table 8.1 Impact Analysis Summary for all Case Studies**

	<b>Call Centre Study (n = 102 items)</b>	<b>Police Force Study (n = 64 items)</b>	<b>Library Services Study (n = 71 items)</b>
Frequency range (0.00 – 1.00)	0.49 – 0.96	0.51 – 0.86	0.37 – 0.93
Mean Importance range (1.00 – 5.00)	1.42 – 3.93	1.72 – 2.99	1.43 – 3.58
Impact Score range (0.00 – 5.00)	0.75 – 3.62	0.88 – 2.42	0.53 – 3.32
Threshold Selected	2.00	1.20	1.00
Number of items < impact score threshold	35*	10	20*
Item – item correlation deletions ( $r > 0.7$ )	24	8	19
Confirmed number of scale items	43	46	42
Confirmed number of domains	8	9	8
Number of items in largest domain	8	8	8
Number of items in smallest domain	3	3	3
* 1 item deleted as failed to fit with WRWB criteria			

Choice of threshold against which items were deleted fluctuated according to case study (Table 8.1). The decision on cut-point value was subjective and governed chiefly by the requirement to reduce the number of items to approximately 50 for any future applications of the pilot scale (Section 3.5.6). It was therefore inevitable that the number of items omitted in the call centre study was considerably larger than the other two, given the former's larger item pool (n = 102) generated at the outset. While this allowed flexibility on a case by case basis, enabling a decision to be taken based on the data amassed rather than on a pre-determined value that might be contextually inappropriate when applied to a particular set of impact scores, it also raises some methodological design issues which are explored further in Section 8.6.1 which seeks to critically appraise IA as a scale construction approach.

Identifying domains and allocating items to each one was testing and again, this is discussed in Section 8.6.1. The most challenging task was to classify wide ranging variables into sub-groups that followed a common theme and made practical sense. A review of the domains named in established HRQL instruments assisted in this process. Some items were easier to categorise than others. For example, in the call centre study, those that referenced issues to do with workplace facilities (Table 4.4) shared an obvious theme. However, other items such as those that cited an emotional state *and* a workplace trait (for example '*Being overwhelmed by the amount of organisational change*') proved more difficult. In these instances, and consistent with the prescribed IA methodology (Juniper et al., 1996), correlations with other items that fell clearly into a sub-group were examined to help verify classification. A minimum of three items per domain was an additional consideration (Guyatt et al., 1993). Notwithstanding these guidelines, selection of domains and allocating items to them, required a sizeable degree of subjective judgement.

Items that were excluded based on low impact scores were examined across the three case studies. No common themes for omission were apparent.

An inspection of the domains that appeared to arise from IA from each participant organisation disclosed a large amount of consensus. Table 8.2 summarises the degree of agreement in domain selection across the different case studies. Subject areas pertaining to Advancement (ADV), Facilities (FAC), Job (JOB), Physical Health (PHY), Psychological Health (PSY), Organisational Aspects (ORG) and Relationships (REL) arose across all three organisations and were similar conceptually. However, actual items



within each common sub-group described differing attributes that were specific to the workplace under investigation. For example, within the PHY domain, all respondents perceived issues with feeling physically tired while call centre workers cited problems with stiffness, police force personnel referred to gastro-intestinal problems and library staff described problems with their lower limbs. Similarly, in the HWI domain, many more problems with the shift system were identified by call centre workers compared to those working within the police force. These differences may be ascribed to the different workplace environments. For example, LIS employees are more likely to encounter lower limb difficulties owing to the amount of time they spend on their feet in a library while call centre personnel spend most of their time sitting and therefore experience more stiffness. The noticeable variation in impact of shift systems between the call centre and police cohorts may be explained by the latter potentially having a more satisfactory rostering system in place.

**Table 8.2 Summary of Domain Choice across Case Study Cohorts**

Domain	ADV	FAC	HWI	JOB	PHY	PSY	ORG	REL	WL
Call Centre	✓	✓	✓	✓	✓	✓	✓	✓	
Police Force	✓	✓	✓	✓	✓	✓	✓	✓	✓
Library Service	✓	✓		✓	✓	✓	✓	✓	✓

Table 8.2 shows that issues regarding HWI concerns were not evident within the library service although an element of this construct was apparent within the WL domain (*‘Having to work long hours that regularly impact on home life’*) (Table 6.4). Similarly, the call centre operation lacked a WL domain although references to the quantity of work required of people was implied in other items selected (for example *‘Experiencing high levels of stress because of your targets’* and *‘Lacking enough time to*

*recover from a difficult call before having to answer another one'*) (Table 4.4). The divergence in domain content between these three organisations can be explained by the perceived emphasis attached to particular aspects of WRWB (using the IA approach) and how this is then contextualised within the specific work environment under examination.

The essence of IA is that it allows for items to be selected if they were experienced by a large proportion of the study population and also for those that were experienced by a lesser number who considered them to be highly troublesome to their well-being (Juniper et al., 1996; Guyatt et al., 1986). An appraisal of the scores for each participant organisation indicates that frequency and importance tended to correspond with each other. That is, those items that were experienced by large numbers of employees were also perceived to be the most wearing. This observation is discussed further in Section 8.3.3.

Cronbach's Alpha ( $\alpha$ ) values for all domains were acceptable (Rick et al., 2001) with the exception of the FAC domain drawn from the call centre operation which was marginal ( $\alpha = 0.63$ ) (Table 4.5). This indicates that generally, the IA methodology is able to select sub-scales (domains) that show adequate homogeneity.

#### **8.2.6 Item Reduction Phase – Factor Analysis**

As already noted in the Methodology (Chapter 3), there exists a wide range of factor analytical procedures associated with factor analytical methods and the approaches employed by credible methodologists can differ substantially. To appraise critically the FA procedures used in the present study, a comparison is made with the diverse FA-

based approaches used by Marks et al. (1992) and Hyland et al. (1991) who both developed HRQL instruments to evaluate the impact of asthma on patients' quality of life and who contributed their thoughts towards the design of the comparative scale construction study reported by Juniper et al. (1997).

The use of the Kaiser-Guttman method (Kaiser, 1970; Kaiser, 1960; Guttman, 1954) as described in the Methodology (Section 3.5.7) was the principal criterion for deciding on the number of factors to be retained following the factor analytic procedures.

While this application is advocated by some commentators for exploratory analysis (for example Tabachnick and Fidell, 2007), others are critical of this method since there is a tendency to over-estimate the number of factors present and alternative approaches such as Cattell's scree plot (1966) are recommended (for example Wilson and Cooper, 2008). A review of scree plots arising from the present sets of data (Figure 4.1, Figure 5.1 and Figure 6.1) implies solutions of between 2 to 3 factors which represent a more economical treatment. This is preferable where the interest is only in locating major factors (Kim and Mueller, 1978).

Based on these findings, the scree plots suggest that WRWB comprises a small number of dimensions where sub-groups of items are statistically independent of each other and the first factor accounts for 35 – 40% of variance explained (Table 8.5). This shares similarity with the study carried out by Hyland et al. (1991) who established 11 different domains in their 68-item Living with Asthma Questionnaire using factor analytic procedures that drew on the scree test. The authors noted a uni-dimensional, multi-domain solution where perceived impairment in one domain was correlated with

perceived impairment in other domains. Hyland et al. (1991) trialled four versions of their scale sequentially, deleting each time, items with low loadings on the first factor ( $< 0.3$ ) and those that were poor discriminators. This process reduced the number of items from an initial pool of 101 to 68. The first factor in the final version of the scale accounted for 30% of the total variance. Hyland et al. (1991) observe that the broad range of items that make up their Living with Asthma Questionnaire are not predominantly related to mood, which tends to support a uni-factoral solution.

This compares to the analytical procedures reported by Marks et al. (1992) in their work to construct their own quality of life measure for adults with asthma. These authors selected items using PCA informed by the scree test and the desire for a homogeneous scale using Cronbach's Alpha ( $\alpha$ ). Their exploratory analyses suggested a six-component solution that accounted for 69% of variance explained. The finalised questionnaire was confirmed at 20 items spread across four sub-scales following the deletion of items with low item-total correlations and those with less normal distributions. The proportion of variance explained is not reported. This content contrasts sharply with the asthma HRQL scale developed by Hyland et al. (1991) and demonstrates the variability in these FA-types of method to reduce items and determine sub-scales, even when the overall aims for assessment are comparable. Interestingly, Marks et al. (1992) observe that their use of PCA to select and the use of  $\alpha$  to assess items for inclusion in their scale means that their questionnaire does not necessarily embrace all aspects of asthma that impact patients' HRQL; nor does it automatically capture those elements that are perceived to be most important to certain groups. These remarks offered by Marks et al. (1992) get to the nub of the

debate over FA (or PCA) as an appropriate item-selection process and are discussed further in Section 8.6.2.

Inevitably, there is a trade-off between the number of factors extracted (and the percentage of variance explained) and parsimony as determined by the chosen FA strategy. In view of the exploratory nature of this present study and its explicit aim of uncovering comprehensively those aspects of people's work that they perceived to impact their well-being, the present FA method used and the resulting large number of factors extracted based primarily on eigenvalues and what was most interpretable, seems adequate. The registered shortcomings noted by Marks et al. (1992) regarding their own FA-based study design seem to substantiate this. Balanced against the number of domains retained using IA, the retention of major *and* minor factors permitted more direct comparisons with their IA-derived counterparts. It is also noteworthy that Van Laar et al. (2007) extracted the WRQoL scale's six factors based on eigenvalues exceeding 1.00 as did the authors of ASSET (Faragher et al., 2004). Details describing decisions relating to the number of factors selected the QWL scale (Sirgy et al., 2001) are undisclosed in the literature.

Table 8.3 summarises the results associated with each stage of the Item Reduction Phase by FA for each of the participant organisations. The table shows that the largest number of item deletions stemmed from the item-item correlation analyses and following the FA itself. Nearly all variables were experienced by over 60% of respondents. Coincidentally, the same cut-off value for factor loadings was selected for each case study and the number of confirmed factors was equal across each

organisation. In every case, the final number of items selected by FA was lower than the number of items selected by IA. This can be explained by the fact that the latter's final number of items was largely governed by a pre-condition to finish up with a pilot scale totalling approximately 50 items. With FA, a limit on the number of items was not a consideration. Rather, the number of confirmed variables was a function of mathematical modelling.

**Table 8.3 Factor Analysis Summary for all Case Studies**

	<b>Call Centre Study (n = 102 items)</b>	<b>Police Force Study (n = 64 items)</b>	<b>Library Services Study (n = 71 items)</b>
Number of items experienced < 40% respondents	1*	0	2*
Item-total correlation deletions ( $r < 0.4$ )	4	2	1
Item-item correlation deletions ( $r > 0.7$ )	25	9	19
PCA – number of item deletions	1	0	0
FA – selected cut-off value	0.5	0.5	0.5
FA - number of item deletions	30	16	11
Confirmed number of FA items	41	37	38
Confirmed number of factors	8	8	8
Number of items in largest factor	9	11	13
Number of items in smallest factor	2	1	2
* 1 item deleted as failed to fit with WRWB criteria			

Genre of factor determined through FA varied between case studies. Table 8.4 indicates where commonality across factors ostensibly existed. According to Table 8.4, there was consensus across all three case studies in respect of the CHL and MGR factors. There was also substantial agreement in the identification of organisational change as a factor, although this was somewhat obfuscated in the LIS study where aspects of organisational change were rolled up into the GNL factor (Table 6.11).

**Table 8.4 Summary of Factor Choice across Case Study Cohorts**

Factor	REL	HWI	ORG*	FOOD	MGR	PSY	FAC	CHL	RST	WL	PHY	PAY	DCP	RLE	USR
Call Centre	✓	✓	✓	✓	✓	✓	✓	✓							
Police Force			✓		✓			✓	✓	✓	✓	✓	✓		
Library Service			✓		✓		✓	✓		✓	✓			✓	✓

\* includes CHG and GNL factors

Some factors shown in Table 8.4, such as the FAC factor, overlapped with one other participant organisation. Other factors identified were specific to only one case study. For example, the DCP factor and USR factor were particular to the police force (Table 5.11) and library service (Table 6.11) respectively, reflecting WRWB traits characteristic of a certain type of workplace environment.

The size and make up of some factors also deserves comment. The number of items within factors ranged greatly. As its name suggests, the GNL factor in the library services study (Table 6.11) encompassed a wide spread of WRWB variables and contained the largest number of variables (n = 13). This number contrasts with two factors within the police force analysis which comprised only one item each (Table 5.11). Six other factors were made up of just two items apiece (call centre operation = 2, police force = 1, library service = 3).

As already noted in the separate results chapters, some factors seemed to describe particular themes relating to WRWB while others appeared to present a mix of different WRWB aspects which were more abstract and challenging to interpret. For instance, the GNL factor extracted from the library service data represented an assortment of different traits from change through to remuneration and career

development. This contrasted sharply with the PHY factor drawn from the same dataset where all three items related to physical health problems (Table 6.11).

**Table 8.5 Variance Explained by Case Study**

	<b>% of variance explained by first factor</b>	<b>Total % of variance explained by all factors</b>
Call Centre Operation	35%	57%
Police Force	39%	61%
Library Service	40%	64%

Table 8.5 presents the percentage of variance explained by factors for each participating organisation. Generally, variance accounted for by the factors was between 57 – 64% with the first factor accounting for between 35 – 40%. According to Rick et al. (2001), factors accounting for over 50% of variance amongst items may be considered acceptable although a proportion shared by items that exceeds 70% is preferable. On this basis, the total variance explained in each pilot scale was adequate.

These observations on the FA findings can be compared with the study conducted by the developers of the AQLQ who set out to contrast IA with FA using the same protocols as those followed for the present research programme. According to the authors (Juniper et al., 1997), their factor analysis identified 36 items distributed across five factors which accounted for 53% of variance. Comparable to the present findings, Juniper et al. (1997) noted how different HRQL elements associated with asthma, such as symptoms and emotions, loaded onto one factor. The finalised AQLQ, constructed using IA, comprises 32 items allocated across four domains which separate out symptoms and emotional function (Juniper et al., 1992).



For the purposes of this study, it is also pertinent to record that the distribution of items across the factors did not necessarily correspond with their impact scores. For example, all items that were highly loaded on Factor Four in the call centre study (Table 4.11) showed impact scores between 2.84 and 2.25 although the percentage of variance explained by this factor was only 3.35% (Section 4.8.2). Similar observations were also noted for the police force and library service datasets following FA (Sections 5.8.2 and 6.8.2). These mismatches are not wholly surprising since IA and FA draw on very different underlying assumptions. However, they illustrate a potentially inherent weakness in FA to identify those elements of work which affect perceived well-being most adversely. The process of FA only identifies those factors and items that show the most variance in the data which does not automatically equate with those that are most injurious. These findings suggest that it could be erroneous to presume the importance of items as perceived by the study population, based on variance explained.

The majority of Cronbach's Alpha coefficient ( $\alpha$ ) values for each factor was acceptable. All  $\alpha$  values exceeded the required threshold of 0.70 (Rick et al., 2001; Hinkin, 1995) with the exception of four two-item factors drawn from the call centre operation (FAC), the police force (CHL) and the library service (RLE and USR).

### 8.2.7 ***Agreement between IA and FA Methods***

The individual results chapters for each participant organisation considered detailed comparisons between the domains/factors and items selected by IA and FA methods. Visual approximations summarising where there was likely general agreement or

disagreement between domains and factors identified in each case study were made. Bland and Altman plots (1986) were generated to investigate the degree of measurement agreement between those domains and factors where they appeared to describe similar aspects of WRWB.

In the main, there was more agreement than disagreement between domains and factors in all case studies. Both methods generally identified perceived WRWB issues relating to home-work interface (HWI), relationships at work (REL and MGR), organisational change (ORG and CHG), physical health (PHY) and workplace facilities (FAC).

IA tended to give more prominence to advancement (ADV) concerns and psychological health (PSY). Conversely, FA awarded more attention to aspects that were specific to a particular facet of work such as PAY, DCP or CHL.

While, on the face of it, the descriptors for domains and factors suggested that some were measuring the same phenomena, the Bland and Altman plots offered a different interpretation. The graphical presentation of the data consistently showed that the bias levels were close to zero although IA tended to score issues within a domain more highly than the corresponding factor. More importantly, the 95% limits of agreement indicated that within the context of the values used in the study (1-5), there was an unacceptable amount of variability in the data. These results confirmed high levels of disagreement between findings arising from the IA results and FA results reported in this study. The plots do not offer adequate confidence such that one method can replace the other or that they may be used interchangeably.

The reasons for these observations can be explained by two main reasons. Firstly, the items contained within the IA-derived domains were mostly selected owing to their high importance scores. This contrasts with the item selection procedure associated with FA and can therefore account for IA's propensity to score dimensions more highly. The second reason relates more directly to the broad limits of agreement displayed in the Bland and Altman plots; although some of the domains and factors shared the same nomenclature, the contents of each were often quite different. As the agreement between items within each sub-grouping was low, it was perhaps unsurprising that there was a large amount of variation in measurement between the two methods. Even for domains and factors where there were sizeable levels of agreement between items, the limits of agreement were considered too large to offer sufficient confidence that their measurement abilities were of an acceptable match. For example, an examination of the FAC dimension in the Library Services study (Table 6.26) showed the smallest limits of agreement of all plots (1.36) which still accounted for 63% of the FAC domain (Table 6.6) and 61% of the FAC factor (Table 6.13) values.

As well as contrasting domains and factor selection, it is also instructive to consider case study comparisons in respect of actual items selected using IA and FA. Table 8.6 summarises the number of items selected by each method. It also confirms the numbers of items selected using FA that were above and below the chosen impact score threshold figure for each organisation.

**Table 8.6 Case Study Comparisons - IA and FA Item Selection**

	Items selected (IA)	Items selected (FA)	Items common to both method (% IA, % FA)	FA items > selected threshold (% total items selected)	FA items < selected threshold (% total items selected)
<b>Call Centre Operation</b>	43	41	22 (51%, 54%)	9 (22%)	10 (24%)
<b>Police Force</b>	46	37	27 (59%, 73%)	5 (14%)	5 (14%)
<b>Library Service</b>	42	38	27 (64%, 71%)	6 (16%)	5 (13%)

Table 8.6 shows that confirmed items common to each method ranged from 51-64% using IA and from 54 -73% using FA.

The data in Table 8.6 also signify how the FA methodology seemingly rejected variables that were perceived to have a relatively high impact on workers’ well-being. Up to 24% of FA-derived items were below the chosen impact score cut-point for item reduction by IA. For example, in the call centre study (Section 4.8.2), four items with impact scores exceeding 2.00 were wholly discarded and included the item perceived to have the highest impact out of all 102 listed (Table 4.2). In the same way, the finalised pilot scale for the LIS study using FA failed to encompass 10 aspects of work with impact scores greater than 1.00 including work-related stress which were considered to be important and bothersome variables using IA (Section 6.8.2).

Again, these findings can be compared with those of Juniper et al. (1997) who considered IA and FA as item selection methods. Juniper et al. (1997) noted that FA failed to include six high impact items deemed to be important and troublesome to people suffering from asthma and selected, instead, a number of symptoms that fell below the designated IA cut-point.

Juniper et al. (1997) also observed that the domains they selected using IA corresponded closely with the factor structure. This contrasts with the present findings where it cannot be claimed that such a match between domains and factors is evident. Instead, it is suggested that there exists more agreement than disagreement across the two groups of sub-categories. These observations are discussed further in Section 8.6.1.

The *Chi-Square* tests performed on each set of IA and FA-derived results for the three case studies were inconclusive. For the call centre data (Section 4.7.1) and police force data (Section 5.7.1), no significant relationship between choice of item by either methodology was found. However, a small but statistically significant relationship ( $p = 0.0286$ ) between the selection of IA items and FA items for the library service cohort (Section 6.7.1) was established.

### 8.2.8 ***EWB Findings within Case Studies***

In addition to examining differences between IA and FA as questionnaire construction methodologies, basic well-being findings specific to each participating organisation were explored so that comparisons with existing EWB literature could be made. Table 8.7 displays the overall well-being scores (mean importance scores, range 1-5) for each case study by IA and by FA. Table 8.7 also presents the results from the two-tailed *t*-tests that were conducted to compare the IA mean importance scores with the FA mean importance scores for each case study. For the call centre operation, the overall mean importance score for the IA-derived set of items was significantly different ( $p = 0.01$ ) to the mean importance score arising from the FA-derived item set (Section

4.7.2). For the other two case studies, no difference between mean important scores was found (Sections 5.7.2 and 6.7.2).

**Table 8.7 WRWB Scores for each Case Study by IA and FA**

	IA - Overall WRWB score (1-5)	FA – Overall WRWB score (1-5)	Two Tailed T-Test ( $p < 0.05$ )
<b>Call Centre Operation</b>	2.75	2.50	Sig.
<b>Police Force</b>	2.04	1.94	NS
<b>Library Service</b>	2.06	2.02	NS
Sig. = Significant ( $p < 0.05$ ), NS = Not Significant			

A total mean well-being score in the region of 2.00 indicates that, overall, respondents perceived that their work impaired their well-being to a small degree. A well-being score nearer the value of 3.00 (such as the call centre operation using IA indicators) signalled that respondents perceived that their work impaired their well-being moderately. A more detailed consideration of the overall mean scores for well-being is provided in Section 8.2.9.

The earlier results chapters for each participant organisation have highlighted the limited agreement between the different methodologies in respect of ranked domains (or factors) based on their mean importance scores. For example, Section 4.8.3 describes how, in the call centre case study, both the IA findings and the FA findings showed how work impacted on their home life was perceived by respondents to be most important and bothersome. After this, however, consensus between ranked domains and factors fell away. Elements of the highest ranking ORG domain and the highest ranking CHG factor within the police force also matched (Section 5.8.3) as did the highest ranking ORG domain with some of the items contained within the highest ranking GNL factor within the LIS cohort (Section 6.8.3). Agreement between rankings for the remaining domains and factors was less evident.

Moving away from domains and factors, an examination of the order in which items themselves were ranked also shows some dissonance between case studies. Table 4.20, Table 5.20 and Table 6.20 provide comparative rankings by IA and by FA of the 10 highest scoring items for each participant organisation. While data from the police force and library service signified a favourable amount of agreement irrespective of the item selection method, the different approaches gave rise to notably different impressions regarding which aspects of call centre work employees perceive to be most detrimental to their overall well-being. For example, under the IA approach, call centre employees indicated that they perceived the most bothersome aspects of their WRWB to include the target-led culture, insufficient time to acquaint themselves with new policies and poor air conditioning (Table 4.20). None of these aspects of WRWB were reflected in the highest scoring items using FA or indeed captured at all by the FA methodology. Therefore, although on the face of it, there was notional agreement between the highest ranking domain and factor (HWI), the detailed standing of the individual items that sat below the call centre sub-classification descriptors made for discernibly different perspectives on people's WRWB.

On the whole, both approaches were able to identify similar WRWB differences between roles within each organisation. For example, IA and FA both found that team leaders experienced better WRWB than their subordinate CCAs and QCCAs (Section 4.8.3). IA and FA were also consistent in establishing significant differences between police officers and civilian staff (Section 5.8.3) and similarly, between library assistants and library officers and library supervisors/assistant supervisors (Section 6.8.3).

### 8.2.9 *EWB Findings across Case Studies*

Table 8.7 shows that overall well-being scores for each case study ranged from 2.75 - 2.06 (IA) and from 2.50 - 1.94 (FA). Section 7.2 describes how one-way ANOVAs were used to compare the overall mean importance scores resulting from IA and from FA to determine whether the differences between WRWB levels were statistically meaningful ( $p < 0.05$ ). Results indicated that both the IA and FA methodologies found that call centre workers perceived their WRWB to be significantly worse than that experienced by either those working in the police force or in the library service. Similarly, IA and FA were consistent in confirming that no significant difference in WRWB levels between the police force and library service was evident. These findings tend to endorse the views of Holman (2002) who asserts that call centres have a reputation for being unpleasant places to work compared to other types of occupation. That police well-being was on a par with people working in libraries adds further support to the views of researchers such as Biggam et al. (1997) who argue that earlier claims by Axelbred and Valle (1978) that police work is the most psychologically dangerous job in the world, are exaggerated.

The WRWB issues that were viewed by respondents to be most bothersome and important to their overall well-being varied between organisations. For the call centre operation, how work impacted on home life (HWI) was considered to have a significantly worse effect on well-being than all other domains or factors (Table 4.6 and Table 4.13). For the police force, work experiences relating to ORG or CHG aspects were viewed as most detrimental (Table 5.6 and Table 5.13). In many respects, the results stemming from the library study struck a similar note to those of the police; the



IA findings (Table 6.6) show that library workers perceived ORG issues to be most damaging to their well-being, which, as already noted, also featured prominently in the highest ranking GNL factor for this cohort (Table 6.13).

### 8.3 Comparison with HRQL Assessments

This section of the Discussion considers how the results that report on IA as a scale construction method compare against established disease-specific HRQL instruments that have been developed using the IA methodology. This will help evaluate the viability of transferring this clinical evaluation approach to an occupational setting.

#### 8.3.1 Sample Sizes

Table 8.8 shows the number of participants involved in each phase of the IA framework together with the number of variables generated following the IGP and the number confirmed following the IRP. Mean averages are also included in the bottom row of the table.

**Table 8.8 Summary of Participants and Items using IA**

	Number of IGP Participants (employees)	Number of IGP Participants (experts*)	Number of Items Generated in IGP	Number of IRP Participants	Number of Items Post-IRP	Number of Domains
Call Centre Operation	84	11	102	377	43	8
Police Force	64	7	64	822	46	9
Library Service	70	6	71	466	42	8
Mean	73	8	79	555	44	8

\* eg. HR personnel, senior managers, occupational health advisors

The number of participants follows the recommendations stipulated by Juniper et al. (1996) and Guyatt et al. (1986) (Section 3.4.1) and tend to exceed subject numbers

used in HRQL instrument development. For example, developers of the Inflammatory Bowel Disease Questionnaire (IBDQ) (Guyatt et al., 1989a) conducted a survey of 77 IBD patients and clinicians to generate 150 possible items associated with HRQL. Based on responses of 97 patients in the IRP, 32 items were confirmed and sub-divided into four domains. By comparison, the 16-item Chronic Heart Failure Questionnaire (Guyatt et al., 1989b) evolved from 124 possible HRQL items which 88 patients subsequently rated in an IRP questionnaire and the original pool of 99 items for the Breast Cancer Chemotherapy Questionnaire (BCQ) were evaluated using an IRP questionnaire completed by 47 breast cancer patients reducing the number of items to 30 which were classified into seven domains (Levine et al., 1988).

Some HRQL developers (for example Levine et al., 1988; Guyatt et al., 1987) do not disclose the number of patients they involved directly in their efforts to build their item pools. Others consult with notably small numbers of the target population in their IGP. For example, the item pool for the development of the AQLQ (Juniper et al., 1992) involved discussions with only six asthmatic patients although the authors did utilise findings from earlier studies that specifically documented the experience of patients with asthma and chronic airflow limitation.

These observations suggest that the present study's efforts to consult with an average of 73 employees directly, as part of the IGP and garner the views of on average 555 employees using an IRP questionnaire (Table 8.8), compare favourably with patient numbers recruited for HRQL scale construction.

### 8.3.2 *Item Generation Phase*

As already noted (Section 8.2.3), approximately 90% of items generated for the IRP stages were derived directly from employees that participated in the IGP discussions. The item pools were then supplemented by the views of expert and managerial personnel within the participant organisations and a review of the literature. This balance is not necessarily comparable in HRQL scale accounts where some authors draw heavily on previous reports to amass possible variables (for example Juniper et al., 1992). This difference in weighting may be explained by the lack of literature on EWB available which cites potential variables that fit with the definition of WRWB (Section 2.8.2). Unlike the experience of authors such as Juniper et al. (1992) who were able to source a number of comprehensive academic accounts documenting disease-related HRQL issues from the patient's standpoint, equivalent literature within the occupational sector was limited. No studies on WRWB, other than the investigation reported by Juniper et al. (2009), were available although authors such as Van Laar et al. (2007) and Sirgy et al. (Sirgy et al., 2001) proffered some possible generic items in their respective studies. Scholarly reports on WRWB (or EWB) within sector-specific journals were more scarce. Call centre studies mostly deployed generic scales (for example Holman, 2002) or focussed on one element of well-being (for example Wegge et al., 2006; Holdsworth and Cartwright, 2003) (Section 4.2.1); police literature focussed almost exclusively on stress amongst officers (for example McCreary and Thompson, 2006; Biggam et al., 1997; Brown and Campbell, 1991) (Section 5.2.1) as did the literature pertaining to the library sector (for example Schneider, 1991; Bunge, 1987) (Section 6.2.1).

Table 8.8 also shows that the number of items accrued in the IGP for the different case studies ranged from 102 - 64 (mean = 79) and is substantially smaller than item pools generated for HRQL instruments constructed using IA. This suggests that a disease such as IBD (Guyatt et al., 1989a) is perceived by patients to potentially impair their quality of life in more ways than employees view how their work may be detrimental to their general well-being. This distinction may be explained by the fact that contracting a disease or health condition can only be viewed as a negative state, whereas the role of work offers employees advantages as well as disadvantages in respect of their overall health and well-being, as maintained by commentators such as Black (2008) and Waddell and Burton (2006). As such, the capacity of work to adversely affect overall well-being is lessened.

### 8.3.3 *Item Reduction Phase*

As far as can be determined, the IRP for established IA-based HRQL scales used paper versions of the questionnaires. Certainly, this is the case for the AQLQ (Juniper et al., 1992), the RQLQ (Juniper and Guyatt, 1991), the IBDQ (Guyatt et al., 1989a) and the BCQ (Levine et al., 1988). As described in this present study's Methodology (Section 3.5.1), an online questionnaire was deployed on the grounds that a web-based format presented a more efficient form of data collection and avoided problems associated with missing data. Consistent with HRQL practice, care was taken to pilot a draft version of the Questionnaire with potential users to ensure the navigation, instructions and wording of items were clearly understood. Feedback from pilot testing was negligible, signifying that the online format was straight forward and easy for people to complete.

This format also allowed for a free text facility at the end of the Questionnaire which employees were invited to use if they wanted to record additional work-related experiences not already captured. This feature represented a deviation from published HRQL instrument protocols (Juniper et al., 1996; Guyatt et al., 1986). However, in view of the scant literature available on EWB, this aspect offered the present study further capacity to understand and document the most important and bothersome aspects of WRWB. As noted earlier (Section 8.2.3), the free text contributions received did not yield significantly new WRWB themes not covered already in the original item pools and suggests that the format adopted for IGPs was an effective and efficient mechanism for assembling possible variables.

Individual impact scores resulting from the three case studies ranged from 3.62 - 0.53 (Table 8.1). The higher impact scores appear to be greater than those recorded for comparable HRQL scales where data are published. For example, the maximum impact score captured for the BCQ was 2.96 (Levine et al., 1988) and the uppermost impact score recorded for the AQLQ was 3.31 (Juniper et al., 1992). Based on these results, this implies that work has the propensity to impair people's perceived well-being to a greater degree than asthma or breast cancer. Lower frequency, mean importance and impact scores for HRQL scales are unavailable for comparison purposes.

Section 8.2.5 referenced how frequency and importance scores for variables tended to align with each other. This observation might therefore devalue the apparent capacity for IA to select items which may not necessarily be experienced by a large percentage of study respondents in the IRP. The benefit of this IA feature is illustrated well in the

development of the AQLQ (Juniper et al., 1992) where the authors list variables which were experienced by less than 50% of patients that showed importance scores exceeding 3.00 (for example, avoidance of cold weather). It is therefore suggested that this aspect of IA adds an additional layer of rigour when selecting items and should not be discounted based on the results of three case studies presented here.

The Methodology (Section 3.5.4) describes the use of Kendall's Tau ( $\tau$ ) to ascertain whether the same items were applicable to all roles within each participant organisation. This marks another difference to HRQL scale development protocols. The majority of HRQL scale authors do not report an evaluation of possible impact score differences across sub-groups. The exception is Juniper et al. (1992) who assessed visually the impact score rankings by gender, age, asthma severity and treatment requirements as part of the development of the AQLQ. The application of  $\tau$  in the current study is considered an added measure of robustness.

Interestingly, no threshold values are documented in the HRQL scale literature. Choice of cut-point for impact scores by HRQL developers varies according to each scale under construction. Selection of a cut-point is primarily conditional on the need to develop a particular length of instrument in consideration of cost, efficiency and patient burden (Juniper et al., 1996; Juniper et al., 1992). An added consideration is the requirement to establish domains that contain a minimum number of three items (Guyatt et al., 1993). Consistent with HRQL scale development, cut-points selected for impact scores in the present study differed according to the case study and were based on the need for a finalised scale comprising approximately 50 items and the requirement for a

minimum of three items per domain (Section 3.5.6). The issue of cut-point selection is discussed further in the wider evaluative section of IA as a construction method (Section 8.6).

As noted earlier (Section 8.2.5), the process of subjectively identifying interpretable domains and allocating items to them was challenging and is discussed at length in Section 8.6. An evaluation against HRQL scale development practices indicates that the latter avoid including items that combine different aspects. For example, the construction of the AQLQ (Juniper et al., 1992) listed symptoms, emotions, environmental considerations, physical activities and practical problems individually. Items were not linked to any other. This point is revisited in the Future Work section (Section 9.5).

On average, IA in the current study delivered 8 domains per case study (Table 8.8). This number is comparable to the number of domains contained within the King's Health Questionnaire (KHQ) for urinary incontinent women (Kelleher et al., 1997). Other IA-derived HRQL scales contain fewer domains. For example, the BCQ (Levine et al., 1988) and RQLQ (Juniper and Guyatt, 1991) both comprise seven domains, while the AQLQ (Juniper et al., 1992) is made up of four domains. The diverse number of domains established in HRQL scales is primarily determined by the disease under investigation and the different ways in which it impairs patients' quality of life.

The number of finalised items, following the IRP ranged from 46 - 42 (Table 8.10). Mostly, this number of items exceeds those contained within disease-specific HRQL instruments where developers deliberately sought to construct shorter scales. For

example, the AQLQ (Juniper et al., 1992) comprises 32 questions and meets the authors' requirements *a priori* to construct a scale with approximately 30 items (Juniper et al., 1996). The IBDQ (Guyatt et al., 1989a) also includes 32 items and the BCQ (Levine et al., 1988) consists of 30. One of the longer disease-specific HRQL instruments available is the St George's Respiratory Questionnaire (SGRQ) which contains 76 items (Jones et al., 1991) although this instrument was not developed using the prescribed IA methodology followed in the current research.

Guyatt et al. (1986) advise that questionnaire administration should be kept to a maximum of 20 minutes and suggest that developers allow for one minute per question as a guide. Even as a conservative estimate, this advice seems overly generous based on the questionnaire completion times associated with the present study. For example, the call centre IRP Questionnaire, comprising 102 items, took approximately 12-14 minutes to complete.

The present study findings recorded Cronbach Alpha coefficients ( $\alpha$ ) to establish the degree of homogeneity within each sub-scale. The majority of authors do not cite  $\alpha$  values in the HRQL scale literature nor is it specified in the published guidance for IA (Juniper et al., 1996; Guyatt et al., 1986). The exception to this is Kelleher et al. (1997) who do provide  $\alpha$  values for the KHQ domains (range 0.725 – 0.892). The reasons for this apparent reluctance by most HRQL scale developers to consider internal consistency reliability for sub-scales are unclear.



#### 8.3.4 ***Comparison with HRQL Definitions and Concepts***

Schipper et al. (1996) maintain that HRQL comprises four central components: physical and occupational function, social interaction, psychological function and somatic sensation (or symptoms) although the significance of these will vary according to the disease under examination. These elements are traced through into the domains that make up individual clinical instruments designed to assess the impact of disease on the quality of life of patients.

Comparisons with the domains arising from the present study can be made. Table 8.2 shows that all three of the case study results contained domains on physical (PHY) and psychological (PSY) health and interpersonal relationships (REL). In addition, elements intrinsic to the actual work such as workload (WL) and job (JOB) domains were established that may be regarded as being equivalent to HRQL somatic sensations/symptoms. Just as Schipper et al. (1996) state that HRQL comprises physical, social, psychological and somatic dimensions, current findings suggest that WRWB may comprise the same central components, the prominence of which will vary according to organisation or sector. Therefore, while the content of the items themselves are inevitably different, a common thread between WRWB and the HRQL model put forward by Schipper et al. (1996) (Figure 2.5) is apparent.

Table 8.2 also indicates that workplace facilities (FAC) are perceived by workers to be a common source of impairment across all occupational case studies. While environmental surroundings are not named expressly by Schipper et al. (1996), the notion of physical settings does arise in some HRQL instruments. For example, the

AQLQ (Juniper et al., 1992) contains an environmental stimuli domain which describes problems with exposure to certain situations such as cigarette smoke or dust. Just as environmental surroundings are important to patients with asthma, the same can be said of employees within the context of their physical workplace and the facilities provided.

The composition of items within the case study domains also shows parallels with HRQL scales. Just as disease-specific instruments reach across similar domains, the make-up of each differs according to the health condition. The same is true of the WRWB domains presented in the current findings as considered in Section 8.2.5.

## **8.4 Comparison with EWB Assessments**

Detailed descriptions of development methodologies for the WRQoL scale (Van Laar et al., 2007), ASSET (Faragher et al., 2004) and the QWL measure (Sirgy et al., 2001) may be found in the Literature Review chapter (Section 2.4.2). The purpose of the next three sections is to explore how their construction and eventual content compare with the three pilot scales reported in this thesis.

### **8.4.1 Item Generation Phase**

The numbers involved in the IGP ranged from 64-84 individuals (Table 8.1). Expert professionals were also consulted whose numbers ranged from 6-11 (Table 8.1). This approach to gathering an item pool contrasts markedly with the methods adopted by Van Laar et al. (2007), Faragher et al. (2004) and Sirgy et al. (2001). None of these authors report any work to derive input from workers directly. Instead, they cite

earlier academic research as their main source. No criteria for the selection of which studies and variables to include in this exercise are offered.

This approach may partly be explained by the desire of existing EWB scale developers to develop generic instruments that are applicable to any sector or organisation; with so many sectors in existence, perhaps the task of consulting with a sufficiently wide cross-section was viewed as overly complex and/or costly.

Notwithstanding this, an absence of any input from those for whom the questionnaires are ultimately designed, seems unsound. This appears especially so, when all authors acknowledge the subjective nature of EWB and both Van Laar et al. (2007) and Sirgy et al. (2001) emphasise the lack of agreement surrounding what is understood by it.

In addition to this, is the view put forward by Tinsley and Heesacker (1983) who maintain that theoretical models in the field of EWB become outdated within 10 years. As noted earlier (Section 2.4.2), Sirgy et al. (2001) make use of Porter's Need Satisfaction Survey established some 40 years before (Porter, 1961). Similarly, Van Laar et al. (2007) draw on Goldberg and Williams's General Health Questionnaire – 12 (GHQ12) (Goldberg and Williams, 1988) and Warr's work on well-being from 1979 (Warr et al., 1979) and 1990 (Warr, 1990). As their primary source for the ASSET item pool, Faragher et al. (2004) use the 1978 Cooper and Marshall model of stress (Cooper and Marshall, 1978). These concerns regarding the applicability of research conducted a number of decades earlier seem to be corroborated by the views of Cox and Jackson (2006) and Sparks et al. (2001) who describe how recent shifts in the workplace have

led to changes in risk to the health and well-being of workers which have unavoidable implications for any assessment strategy.

While there is clear merit in building on the work of past scholars, there is a risk that practitioners who opt only to use what has gone before, may be in danger of merely recycling past thinking rather than contributing new insights to the EWB field. As a case in point, Van Laar et al. (2007) employ some of the QWL findings reported by Sirgy et al. (2001).

Aside from the approach to generating items, the number of items accrued in earlier EWB scale development should also be compared against the current findings. As described in Section 2.4.2, Van Laar et al. (2007) amassed a total of 200 possible items for inclusion in the WRQoL scale. This is a substantially larger number than that generated for the QWL measure (Sirgy et al., 2001) ( $n = 16$ ). The size of the initial item pool for ASSET is not explicitly stated by the authors (Faragher et al., 2004) although it is inferred that the original number of items stood at approximately 55. By comparison, Van Laar et al.'s (2007) item pool was approximately twice the size of the largest item pool generated for the present study (call centre operation,  $n = 102$ ) (Table 8.8). The item pools generated for the police force ( $n = 64$ ) and library service ( $n = 71$ ) corresponded more closely with the size of ASSET's initial item group than the other two EWB scales.

#### 8.4.2 ***Item Reduction Phase***

For clarification, the 16 items and factors that make up the QWL measure (Sirgy et al., 2001) remained unchanged during the scale's development.

While it is not possible to comment on the bulk of items that were excluded during the item reduction phase for either the WRQoL scale (Van Laar et al., 2007) or ASSET (Faragher et al., 2004) owing to the fact that these details are undisclosed in the literature, the authors do provide some insights on their respective deliberations.

Developers of the WRQoL scale (Van Laar et al., 2007) and ASSET (Faragher et al., 2004) both adopt a similar, two-stage approach to item verification as described in Section 2.4.2. In summary, a panel of experts was invited to consider and review the initial item list which was then followed by an item reduction questionnaire. For the WRQoL scale, six panellists reduced the original item set from 200 to 61, removing those that they considered to be theoretically or practically irrelevant to EWB. It is unclear from the literature, how the panel members decided on the 139 items that were rejected (Van Laar et al., 2007). For ASSET, the original item pool was screened by a team of occupational health practitioners.

Respondent numbers to the developmental WRQoL (n = 953) and ASSET (n = 2552) questionnaires were significantly larger than subject numbers for the present findings (mean = 555, Table 8.8). Both questionnaires deployed Likert-type response scales (agree/disagree).

All items in the present IRP Questionnaires used in the present research were negatively worded. This compares to Van Laar et al. (2007) who included a selection of negatively phrased items while Faragher et al. (2004) used negative questioning for the 37 questions in the '*Perceptions of your Job*' section and positive questioning in the '*Attitudes towards your Organization*' section. Sirgy et al. (2001) chose to use only a

positive line of enquiry. The use of only negatively worded items in the current research was consistent with IA practice and is in keeping with the overall aim of establishing those elements of work which employees consider most damaging to their well-being. Of note also, is the literature that is critical of the tactical use of some reverse-scored items which has been shown to reduce the validity of questionnaire responses (Schriesheim and Hill, 1981).

As noted previously (Section 3.5.7), FA is the conventional method of choice for psychometric instrument development for data reduction and refinement of constructs (Ford et al., 1986). This is owed to its ability to establish mathematical patterns in the relationships among the variables and ascertain whether the observed variables can be explained largely or entirely in terms of a smaller number of factors (Thurstone, 1931). The item reduction processes used for the WRQoL scale (Van Laar et al., 2007) and ASSET (Faragher et al., 2004) were factor analytical. However, as described in Section 2.4.2, personal judgements were also exercised on item exclusions that overrode some of the exploratory factor analytical calculations. For example, Van Laar et al. (2007) discarded the three items in the seventh factor of the WRQoL scale on the basis that they lacked theoretical meaning and showed an unacceptably low reliability alpha ( $\alpha$ ) of 0.60. Likewise, Faragher et al. (2004) employed the services of an independent organisational psychologist who reallocated three items to other factors to boost face validity. Furthermore, eight extra items were added to five factors to improve their internal reliability coefficients ( $\alpha$ ) (Faragher et al., 2004).

In terms of Cronbach alpha coefficients ( $\alpha$ ), subscale internal reliabilities for the WRQoL factors (Van Laar et al., 2007) were acceptable (Rick et al., 2001), ranging from 0.76 - 0.91. For ASSET (Faragher et al., 2004), despite some manual manipulation,  $\alpha$  values for three factors were below adequate levels as recommended by Rick et al. (2001) and Hinkin (1995) (Your Job  $\alpha = 0.66$ ; Job Security  $\alpha = 0.60$ ; Resources and Communication  $\alpha = 0.69$ ).

The development of the QWL measure (Sirgy et al., 2001) did not include an item reduction stage. Instead, Sirgy et al. (2001) pre-selected the 16 items for the instrument and arranged them into seven sub-categories which were then confirmed using FA based on questionnaires completed by 556 respondents drawn from two academic institutions and several accounting firms. As with the WRQoL scale (Van Laar et al., 2007) and ASSET (Faragher et al., 2004), QWL subjects were provided with a Likert-type scale, this time encompassing true/untrue options. The QWL measure exhibited a satisfactory reliability coefficient for the overall instrument ( $\alpha = 0.78$ );  $\alpha$  values for each sub-scale are not divulged (Sirgy et al., 2001).

How do these item reduction strategies for existing EWB scales compare with the IA and FA methodologies applied in the present findings?

The IRP approach used in IA shows clear differences with the WRQoL scale (Van Laar et al., 2007), ASSET (Faragher et al., 2004) and QWL measure (Sirgy et al., 2001). Perhaps the most notable of these is the way in which the earlier developers elected variables based on their own subjective views and those of co-professionals. No empirical data

to support the unilateral choices of items to be included or discounted described by Van Laar et al. (2007) and Faragher et al. (2004), prior to FA, are disclosed.

These actions go to the crux of IA and its alternative approach to item reduction.

Under the IA method, the selection of variables is guided heavily by the quantified experiences of the sample population and correlation coefficients ( $r$ ) (for example Juniper et al., 1996) rather than solely depending on the personal opinions of the research team. While there is still a large element of subjective judgement deployed in the IRP under IA protocols (see Section 8.6), the empirical basis of impact score data to inform choice of content would appear to be more robust than the seemingly, unilateral views of the developers of the WRQoL scale and ASSET.

Aligned to this is the core disparity in choice of response option used. Asking subjects to signal how much they agree/disagree with statements (WRQoL scale and ASSET) or how true/untrue they find statements to be (QWL measure) fails to provide developers with a clear indication of the *importance* that respondents attach to different aspects of the workplace. IA, on the other hand, requires participants in the IRP to quantify how important and bothersome they perceive various elements of WRWB to be which are then calculated and ranked as the impact they exert on employees' perceived general well-being. It seems doubtful that authors such as Van Laar et al. (2007) can accurately presume components of EWB evidenced only on how much employees agree/disagree with workplace descriptors where no facility to ascertain the *degree* to which workers consider these to be impacting is provided for. For example, responses to the WRQoL item *'I am satisfied with the career opportunities available to me at the*



*organisation'* merely show the level to which people agree with the statement rather than provide verification of how it is regarded in the context of EWB or how it may rank relative to other statements listed (Van Laar et al., 2007). It is possible that the three items deleted by Van Laar et al. (2007) on the basis that they lacked theoretical meaning, were of significant importance to the well-being of respondents and other items that were retained, were less so.

In the present study, Kendall Tau ( $\tau$ ) correlations were examined to ensure question sets were applicable to all roles represented in the sample population. Any similar exercises to compare sub-group findings by existing EWB scale developers (Van Laar et al., 2007; Faragher et al., 2004; Sirgy et al., 2001) were conspicuous by their absence. The reasons for this are not given.

Analogies with medical professionals and patient well-being may be drawn. Many studies have shown the poor correlations between clinicians' ability to assess correctly the impact of a disease on patients' well-being based on observation only (for example Slevin et al., 1988). As it generally accepted that clinicians and other observers may misjudge patient well-being (Fayers and Machin, 2007), it cannot be taken for granted that the situation is markedly different for organisational psychologists researching EWB. Certainly, the methods used by developers of existing EWB instruments and the assumptions that they have made, tend to uphold this notion rather than assuage it. Concerns with these potential deficiencies are highlighted by Costanza et al. (2007) who emphasize the requirement to record the relative importance of needs when measuring subjective well-being. So too, do Kiernan and Knutson (1990), who stress

that it is the individual's interpretation of their role in the workplace that best determines their EWB. On these grounds, claims by authors regarding the strong content validity of the WRQoL scale (Van Laar et al., 2007), ASSET (Faragher et al., 2004) and the QWL measure (Sirgy et al., 2001) are somewhat unconvincing.

The overall performance of IA against FA in EWB measurement strategy is examined in Section 8.6.1.

#### 8.4.3 ***Confirmed Content Comparisons***

Following on from an assessment of the different development approaches, this section compares the content of existing EWB questionnaires with IA findings from the current study.

The average length of the pilot scales for the call centre operation, police force and library service was 44 items distributed across 8 domains by IA (Table 8.8). The number of variables was considerably larger than the WRQoL scale (n = 23) and the QWL measure (n = 16) and smaller than ASSET (n = 86).

The number and size of domains were more similar. Table 8.1 indicates that the number of domains established using IA was eight or nine with the largest domain containing eight items and the smallest containing three items. This is akin to the existing EWB scales where the WRQoL scale (Van Laar et al., 2007) comprises six factors (Table 2.3), ASSET (Faragher et al., 2004) comprises 12 factors (Table 2.4) and the QWL measure (Sirgy et al., 2001) comprises seven factors (Table 2.5). The number of items within each factor for existing EWB scales ranges from 1 - 11.

Table 8.2 sets out the different domains established using IA in the present study. As noted in Section 8.2.5, similar themes emerge which identify aspects of work that commonly impact EWB and are summarised in Table 8.9.

**Table 8.9 Common EWB Domains**

<b>Domain</b>	<b>Descriptor</b>
<b>Advancement (ADV)</b>	Impact of training and career advancement needs on well-being
<b>Facilities (FAC)</b>	Impact of environmental needs on well-being
<b>Job (JOB)</b>	Impact of intrinsic elements of job on well-being
<b>Home Work Interface (HWI)</b>	Impact of needs outside of work on well-being
<b>Organisational (ORG)</b>	Impact of wider organisational aspects on well-being eg change, communications
<b>Physical Health (PHY)</b>	Impact of physical health needs on well-being
<b>Psychological Health (PSY)</b>	Impact of psychological health needs on well-being
<b>Relationships (REL)</b>	Impact of social needs on well-being eg manager, colleagues
<b>Workload (WL)</b>	Impact of workload on well-being

A comparison of the contents of Table 8.9 with the WRQoL scale's six factors (Table 2.3) (Van Laar et al., 2007) shows some clear overlap. Plain agreement exists between three domains and factors; ADV/JCS, HWI/HWI and PSY/SAW. Absent from the WRQoL scale are factors representing JOB, PHY, ORG aspects. Only one item in the WRQoL scale describes relationships (REL) at work and the items associated with FAC are very broad (Appendix A, A.1). The GWB factor characterises overall life satisfaction, for example, *'In most ways my life is close to ideal'* and does not match with any domain content owing to the fact that WRWB only considers work-related traits.

An evaluation of ASSET's factors (Faragher et al., 2004) against Table 8.9 is most meaningful if the focus is limited to the eight sub-scales within the instrument's *'Perceptions of your Job'* section (Table 2.4). As with the WRQoL scale, both similarities and differences are noted. A keen resemblance is most apparent between HWI/Work Life Balance, WL/Overload, REL/Working Relationships and ORG/Job Security. Missing

from ASSET are workplace attributes that reference FAC, JOB and ADV concerns although traces of FAC and ADV do feature in the Job and Resources & Communications factors.

ASSET also lacks items directly associated with how work can impact on employees' physical and psychological health. Interestingly, ASSET does include two factors on physical and psychological health (Table 2.4) where respondents are required to indicate the frequency with which they experience particular symptoms. However, these are cited as symptoms often related to stress and the authors are clear to point out that findings must be treated with utmost caution as poor health is not necessarily a direct result of work and may be due to other factors external to the workplace (Faragher et al., 2004). This approach marks a key distinction from the current findings where all items fit with the definition of WRWB and are consequently perceived by employees to be as a consequence of their work.

With only 16 items in total, the QWL measure (Sirgy et al., 2001) shares only limited commonality with the domains displayed in Table 8.9. The most obvious agreement is between ADV and Sirgy et al.'s (2001) Actualization and Knowledge Needs (Table 2.5 and Appendix A, A.2). Fleeting mentions of aspects relating to the FAC, ORG, HWI and REL domains are also evident. The QWL measure contains no references to PSY, PHY, JOB or WL elements. Conversely, none of the domains in Table 8.9 reference the aesthetic needs claimed by Sirgy et al. (2001) to be part of EWB.

#### 8.4.4 **Performance against Existing EWB Scales**

What can be deduced from these comparisons? Some crossover between the IA domains (Table 8.9) and all existing EWB scales (Van Laar et al., 2007; Faragher et al., 2004; Sirgy et al., 2001) is evident although the proportion of agreement varies between instruments. Some of the differences stem from the WRWB definition (Section 2.8.2) which allows only work-related issues that are modifiable. Overall, the IA domains presented in Table 8.9 represent a wider breadth of issues than EWB scales currently proffer. This finding can be explained by the IA methodology which selects variables based on what is considered to be most important and bothersome to the population under investigation.

Absent from all three existing scales (Van Laar et al., 2007; Faragher et al., 2004; Sirgy et al., 2001), is a sub-scale containing items that describe intrinsic aspects of a job (JOB). This is to be expected; the JOB domain in each of the participant studies portray elements specific to the sector which would not be necessarily appropriate in a generic EWB scale. For instance, the JOB domain for the library service, included '*Feeling frustrated with the Library Service's Spydus system*' which exhibited the highest impact score of all items; while this was an important source of impairment to library workers, such an item would be extraneous to workers in other sectors. The applicability of such a variable to other library services is raised as a study limitation in Section 9.4.

Also missing from the comparator scales (Van Laar et al., 2007; Faragher et al., 2004; Sirgy et al., 2001) is a domain on physical health needs (PHY). This seems to be a significant omission since the findings from all three case study populations showed

this to be an important component of their overall well-being. Although ASSET does include a physical health factor (Table 2.4), it has already been noted that the symptoms listed are not explicitly related to work (Section 0). Moreover, it cannot be assumed that exposure (frequency) to a particular symptom automatically impairs well-being as stated by Biggam et al. (1997). This latter point applies equally to ASSET's psychological health factor.

One of the three stated principles behind the development of the pilot scales was to construct questionnaires where the summary scales were amenable to statistical analysis (Section 3.3). Consistent with HRQL IA measurement practice, results can be analysed directly from the scores recorded and are expressed as the average score per item for each of the domains. An overall WRWB score is computed from the mean scores of all of the items. This allows transparency with respect to the findings and how they may be interpreted. Similar methods are followed for ASSET (Faragher et al., 2004) and the QWL scale (Sirgy et al., 2001) and are explained briefly in Section 2.4. This clarity contrasts sharply with the authors of the WRQoL scale (Van Laar et al., 2007) who provide no detail on how data collected are then subsequently analysed and interpreted. Instead, the authors offer to analyse the data themselves and feedback the findings to organisations (Dr D Laar, personal communication). This lack of a published explanation on how data are analysed is considered a further weakness in the WRQoL scale.

Pertinent to the discussion comparing the IA-derived pilot scales with existing EWB instruments is a hypothetical consideration of how the WRQoL scale (Van Laar et al.,

2007), ASSET (Faragher et al., 2004) and the QWL measure (Sirgy et al., 2001) might have performed in assessing the well-being of the three participant cohorts. Table 4.4 indicates that HWI, JOB and FAC aspects were considered by call centre respondents to be most important and troubling to their well-being. At a high, theoretical level, it is ventured that the deployment of the WRQoL scale and ASSET would have successfully identified HWI problems but characteristics relating to JOB and FAC would not have been uncovered. The police force and LIS results both showed that the main concerns centred around ORG, PSY and FAC issues (Table 5.4 and Table 6.4). Again, it is hypothesised that the WRQoL scale would have captured only the PSY issues and ASSET would have identified just ORG problems. It is considered unlikely that the QWL measure would have been able to form a meaningful and accurate impression of WRWB levels across any of three study populations.

Based on these speculative judgments, it seems reasonable to suggest that none of existing EWB scales (Van Laar et al., 2007; Faragher et al., 2004; Sirgy et al., 2001) would have successfully assessed those aspects of work deemed to be troublesome to the well-being of employees within the call centre operation, police force or library service. While some facets of impaired well-being would have been uncovered by the WRQoL scale (Van Laar et al., 2007) and ASSET (Faragher et al., 2004), a full appraisal of all important aspects of WRWB would not have been achievable since the factors and items contained within the two scales are not comprehensive in the way that has been demonstrated by the current findings. The response options used by the WRQoL scale and ASSET further compromise their measurement ability as described in Section 8.4.2. These observations regarding the need to incorporate all important aspects of

well-being are endorsed in the literature by Fayers and Hand (2007) who maintain that any initiative to measure well-being must cover the full breadth of elements associated with the concept that are shown to be important in the target population.

The seemingly incomplete nature of existing EWB scales carries significant implications for those wishing to conduct a well-being assessment of workers. This is considered further in Chapter 9.

## ***8.5 Comparison with existing EWB Definitions and Concepts***

### ***8.5.1 Current EWB Models***

The notion that EWB is subjective is implicit in the methodology applied to the study design and substantiates the more recent literature that maintains it is based on the personal views and preferences of the individual (for example Page and Vella-Brodrick, 2009; Van Laar et al., 2007; Sirgy et al., 2001; Danna and Griffin, 1999; Warr et al., 1979).

As far as they go, the present findings suggest that EWB is a multi-dimensional construct (Table 8.9). In this respect, the results verify the views on generic well-being models (Dewe and Kompier, 2008; Waddell and Burton, 2006) as well as the more recent literature that specifically considers occupational well-being frameworks (for example Page and Vella-Brodrick, 2009; Sirgy et al., 2001; Danna and Griffin, 1999; Warr, 1994). Waddell and Burton's (2006) claim, for instance, that well-being comprises physical, material, social, emotional, developmental and activity dimensions demonstrates some clear overlap with the domains listed in Table 8.9.



Sirgy et al.'s (2001) assertion that EWB should describe only those experiences stemming from the workplace (Section 2.3) fits well with the definition of WRWB (Section 2.8.2) although the latter dismisses those elements that may not be modified through intervention unlike Sirgy et al. (2001) who apply no such limitation. Danna and Griffin's work (1999) (Figure 2.1) and Warr's vitamin model (Warr, 1994) (Table 2.1) both cite a number of categories that overlap with some content presented in Table 8.9. For example, all of Warr's (1994) 'vitamins' are represented in the domains (Table 8.9) with the exception of '*Valued social position*'. Warr's vitamin model does not extend to constructs captured by the HWI, PSY or PHY domains. The FAC domain is partly embodied in Warr's (1994) *Physical Security* 'vitamin' although Warr places more emphasis on safety than provision of amenities.

Notwithstanding these similarities, the present IA findings also present some differences to the literature; either some of the dimensions of EWB posited in earlier research are absent from the current findings *or* certain components of EWB identified herein do not feature in earlier academic accounts. These differences may be explained by two reasons. Firstly, the focus on WRWB applied to the current case studies limits the scope of dimensions by virtue of its meaning. Page and Vella-Brodrick (2009), Van Laar et al. (2007) and Danna and Griffin (1999) for example, include in their models, aspects of well-being that are not directly related to the workplace; Page and Vella-Brodrick (2009) reference subjective well-being that is based on life satisfaction and dispositional affect (Figure 2.3) while Van Laar et al. (2007) include a General Well-Being (GWB) factor in their WRQoL model (Table 2.3) which comprises non-work

questions such as '*Generally things work out well for me*'. Danna and Griffin (1999) cite personality traits (Figure 2.1).

The second reason for the differences is more speculative. It is posited that some models fail to take into account some of the main elements uncovered in the present findings because of authors' research backgrounds. An example of this is the striking omission of physical health considerations from many EWB models (for example Page and Vella-Brodrick, 2009; Van Laar et al., 2007; Sirgy et al., 2001; Warr, 1994) where the proponents are from psychological disciplines which may therefore colour their terms of reference and orientation. By comparison, Danna and Griffin (1999), who do make overt references to physical health hazards and consequences in their EWB model (Figure 2.1), are from a management research background.

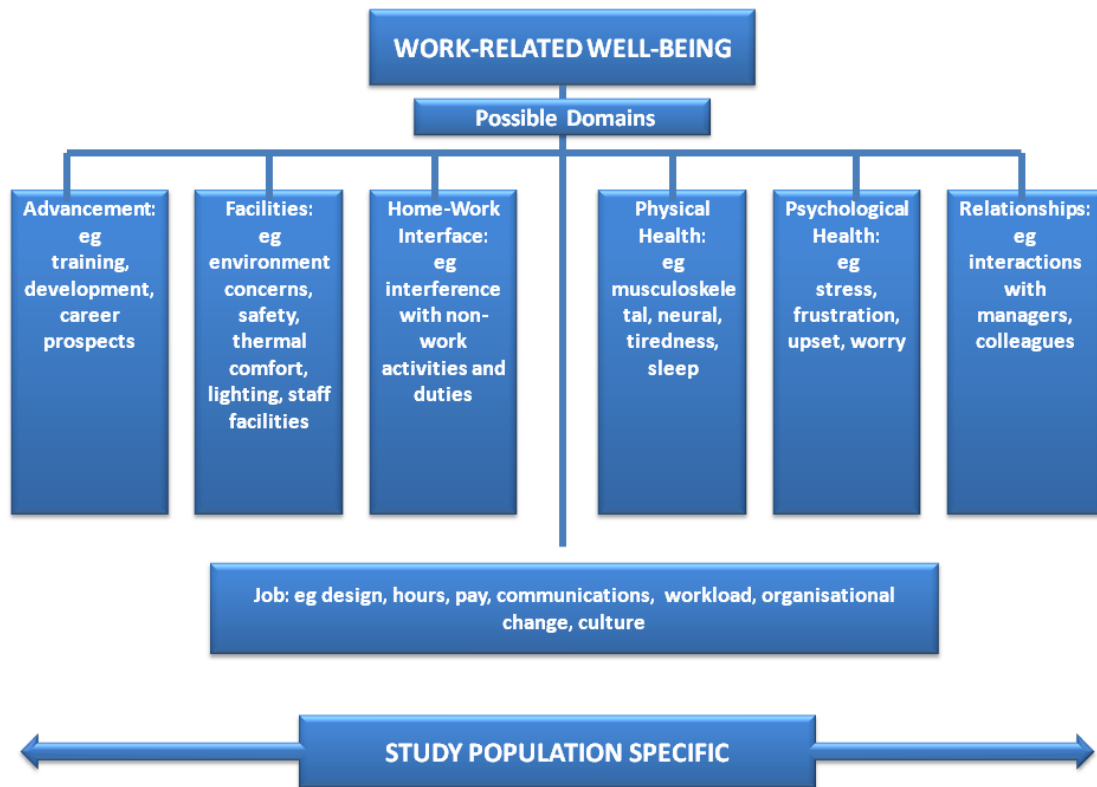
The findings provide tentative support for the literature that makes a distinction between work-related stress and EWB and also between employee engagement and EWB. As espoused by commentators such as Dewe and Kompier (2008) and Van Laar et al. (2007) (Section 2.3.1), the present results indicate that work-related stress is but one dimension of EWB. To illustrate this, work-related stress items were only a small minority of confirmed WRWB items and the PSY domains identified across the three case studies that referenced work-related stress indicated other emotional states as well. This observation concurs with the views of Brief and Atieh (1987), who register concern that job stress studies may be 'making mountains out of molehills' and make a plea for future work to rethink the sorts of job conditions that may adversely affect people's well-being.

Likewise, the views of Robertson and Cooper (2010) concerning engagement (Section 2.3.2) seem likely to be endorsed when the current findings are compared with the three staff satisfaction surveys used by the participating organisations. For example, the police survey comprised 75 items and omitted any variables that sought information on people's physical health, psychological health, relationships (other than the manager), home work interface (other than flexible working) and workload. Subject areas of the staff survey where there was no overlap with the present IA police findings were Purpose, Aims & Objectives, Values, Equality and Diversity, Harassment and Grievances – all of which could be construed as topics that were of more interest to the employer than officers and civilian staff. Similarly, the call centre operation staff survey (75 items) lacked questions on physical health, psychological health, home work interface, interpersonal relationships, facilities and job traits. No mentions of the target-based nature of call centres work, call taking or the shift system were made; all of which have been suggested in the present research, to be important to call centre personnel.

#### 8.5.2 ***Proposed WRWB Model***

Of all the EWB models examined in the literature review (Section 2.3), the results from the current study are most aligned to the framework put forward by Danna and Griffin (1999) (Figure 2.1). The authors consider both antecedents and consequences with the former encompassing a wide range of work-related components including physical and psychological aspects. Nonetheless, Danna and Griffin's model still contains elements such as personality traits and life/non-work satisfactions, that do not adhere to the

present study’s guiding definition. In a bid to help advance thinking in this area, a new, working model for WRWB is therefore proposed (Figure 8.1).



**Figure 8.1 Proposed Working Model for Work-Related Well-Being (WRWB)**

The proposed model brings together the main themes established using IA and summarised in Table 8.9. In view of the exploratory nature of the current study, this model should be regarded as work in progress rather than a confirmed representation. Potential Workload and Organisational domains, arising from the current findings, are subsumed within a wider Job domain in the interests of brevity. None of the seven possible domains is awarded precedence over any other and content is illustrative rather than exhaustive. It is emphasised that these relate to WRWB only; other considerations such as personality type or non-work elements are purposely excluded.

This underlines the pragmatic notion of WRWB which is only concerned with those work-related characteristics that impact well-being and are adjustable through workplace action.

Further, this working model depicts graphically the need to consider the nature and content of the domains within the context of the study population itself (for example sector). Even for three public-facing organisations, differences between WRWB elements were seemingly evident. For markedly contrasting sectors, it is likely that variation in WRWB experiences could be more pronounced. To illustrate this point, coal miners may perceive issues to do with their personal safety to be especially important. Thus, for the first time, a model of EWB establishes the need for specificity. This follows the approach followed in the clinical sector where HRQL researchers and clinicians can assess and track more exactly topics of particular relevance for a given disease or treatment (for example Aaronson, 1989). A more in-depth discussion of the possible merits and drawbacks of EWB sector-specific scales may be found in Section 8.7.

### ***8.6 Evaluation of Impact Analysis as a Construction Methodology***

This section critically appraises the performance of IA as a new way to develop scales to evaluate WRWB. The main means for carrying out this appraisal is by comparing IA against FA - the habitual scale construction method for psychometric questionnaires (Ford et al., 1986) and the same technique used in the creation of the three comparator EWB scales (Van Laar et al., 2007; Faragher et al., 2004; Sirgy et al., 2001).

A review of the literature surrounding IA points to an inherent absence by its proponents to justify and defend the method by way of reference to accepted and established academic practices. Rather, many of the decisions required of IA scale developers appear to rely on large levels of intuition and previous clinical experience. While there are passing references to IA's association with the 'clinical sensibility' framework for clinical scales (Feinstein, 1987), there is little attempt to justify these references in any adequate detail (for example Juniper et al., 1997). Interestingly, IA does appear to satisfy Feinstein's (1987) list of features to be considered when appraising the sensibility of an index (for example purpose & framework, comprehensibility, replicability, suitability, face/content validity and ease of usage). However, these criteria for 'enlightened common sense' are only inferred in the IA literature, rather than explicitly explored and rationalised.

According to Feinstein (1987) the features of sensibility are the most important aspects of an index that determine its success or failure to perform but they are largely ignored owing to the fact that they lack a mathematical basis and largely rely instead on the qualitative judgements of the scale developers. Feinstein (1987) contends that if an index first passes its initial screening test using the framework of sensibility, then quantitative, statistical techniques may then be employed to demonstrate measurement precision and validity.

As briefly referenced in the literature (for example Juniper et al., 1997), these views do show keen parallels with the methodological approach of IA architects in the field of HRQL; they first develop scales that are largely reliant on qualitative, commonsense

(‘sensible’) judgements which are then validated using mathematical techniques (for example Juniper et al., 1992).

While this framework offered by Feinstein (1987) may offer a small amount of academic comfort to some observers, the notion of ‘clinical sensibility’ does not appear to be well-known. The qualitative elements of the IA method would therefore still appear to be exposed to criticism when compared to more established methods and are therefore explored in further detail below.

### 8.6.1 **Data Collection and Analysis**

The approach used by HRQL methodologists using IA embraces a large element of qualitative analyses predominantly in the IGP and the derivation of domains following the IRP. This certainly seems to be the case for the IGP, the cut-point thresholds determined in the IRP and the consequent domain taxonomy, which as already noted, presented testing challenges in the present study (Section 8.2.5). In support of this point, Juniper et al. (1997) cite ‘*intuition, informed by clinical and methodological experience*’ (p. 234) as their bases for domain choices.

In the absence of substantiated reasoning in the IA literature (other than fleeting references to Feinstein (1987)), more recognised, qualitative research frameworks are briefly considered to help further appraise IA as a viable scale construction method.

Established qualitative research designs involve a process where the focus of inquiry is to assess how people make sense of their experiences and interpret them subjectively (for example Neuman, 2006; Guba and Lincoln, 1982). Data are in the form of words

and images from documents, observations and interactions which are often specific to particular settings and the process is inductive; that is, the researcher has only an approximate idea of what he or she may be looking for at the outset (Johnson, 2004). The researcher is the data gathering instrument. By comparison, quantitative analyses are deductive; they use tools such as questionnaires to collect and analyse numerical data objectively to systematically test a clearly defined hypothesis.

The primary emphasis placed on the experiences of employees themselves described in this study shares some resemblance with grounded-theory style analysis (Glaser and Strauss, 1967). More specifically, it shows a degree of commonality with Interpretative Phenomenological Analysis (IPA) (Smith et al., 1999) which aims to offer insights into how an individual, in a given context, makes sense of a given phenomenon.

Participants are experts on their own experiences and are recruited because of their expertise in the area under investigation. Using IPA, data are drawn from sources such as open-ended interviews, focus groups and diaries and the 'bottom-up' analysis requires the researcher to attempt to make sense of the subjects' own attempts to make sense of their experiences through transcripts and coding practices.

Interestingly, according to Reid et al. (2005), the use of IPA in health psychology is rising and, interestingly, the authors make a particular reference to its potential use in wellness and quality of life studies.

The process of IPA and the wider grounded-theory literature is explored in the context of the IGP procedures associated with IA methods. Firstly, the use of an extensive number of semi-structured interviews in the IGP gave rise to rich data where



participants' own terms and interpretations were the central consideration for an employee-centric analysis. As Harper (2007) points out, it is important in qualitative research, to avoid superficial analyses that are a consequence of the study design being overly structured in respect of data collection. These IGP interviews allowed participants the opportunity to express themselves fully and avoid the 'falsification of reality' as described by De Waele and Harre (1979). Interviews with employees themselves regarding their experiences of WRWB only ceased when 'theoretical saturation' (Glaser and Strauss, 1967) had been reached. Saturation in the context of grounded theory is defined as where additional data make only trivial contributions and cannot alter the emerged framework of themes (Coolican, 2004) and this principle is evident in IA practices where interviews only ceased when the researcher was confident all issues had been reported on. Finally, additional data for the IGP phase were collected from a literature search together with interviews with other stakeholders within each participant organisation in order to uncover other concerns and observations that were relevant to the study of WRWB as recommended by the qualitative research commentators, Lincoln and Guba (1994).

In order to limit the potential bias presented by the central role of the researcher in this study, researcher reflexivity must also be commented upon. In order to minimise the influence of the researcher's role and own belief system on the qualitative methods, an interview guide (Appendix B, B4) was prepared and adhered to that allowed the discussions to be conducted in a standardised way. Meticulous records were made of all discussion points and verbatim comments made during the interviews and focus groups. This was the case even if the issues raised had already

been made at an earlier juncture during the session. In addition, the free text facility that was built into the IRP questionnaires also allowed respondents to register their experiences that were independent of any undue influence incurred by the researcher. These were then evaluated as described in Section 3.5.1.

In some respects therefore, the IGP follows some of the rudimentary basics surrounding grounded theory, notably IPA (Smith et al., 1999). However, the additional grounded-theory stages of coding transcripts to breakdown, examine, compare, conceptualise and categorise data are not entered into under the IA method. Instead, IA introduces a more quantitative framework in the form of the IRP Questionnaire to determine those variables that are considered by the majority of the sample population to have most impact on their overall well-being. Following this, further qualitative elements are brought in to play with the largely subjective determination of an impact score cut-point and the subsequent categorisation of remaining variables into an arbitrary number of different domains.

In view of these considerations, the qualitative design of IA's IGP is still viewed to be the an effective approach where the subjective experiences of employees, contextualised to particular workplace environments, was a primary consideration for the study. The lack of additional issues from an examination of the free text comments tends to support this. In the absence of literature that specifically examined WRWB in call centres, police forces and library services, it is difficult to discern how this may be replaced by a viable alternative option.

The quantitative practices that are intrinsic to the IRP portion are a key trait of the IA method, are also appraised positively. They represent an additional layer of data gathering that complement and filter the earlier phase. The IRP provides an efficient opportunity for a wider sample population to engage with the process empirically which gives rise to a rich set of ranked data on perceived impact that is deemed to be an important factor in the evaluation of well-being (for example Costanza et al., 2007). Again, it is difficult to propose an alternative type of approach that would be able to identify empirically and so efficiently those items that are considered to be most important to the majority of a target population.

The subsequent qualitative section that deals with domain classification is considered the weakest area of the IA method. It is unlikely that different sets of experts, working on the same set of data, would arrive at exactly the same decision points in respect of the threshold value and domain content which raises concerns regarding reproducibility. While IA authors suggest that ambiguity can be overcome through the examination of correlational links with items fell clearly into a particular sub-group (Juniper et al., 1996), the process is still dominated by personal judgements. For the AQLQ (Juniper et al. 1997), only two subject-matter experts were involved with this process. Therefore, while IA methodologists (for example Juniper et al., 1992) claim that the framework is systematically robust, there are clear elements of the method that counter this assertion.

On balance however, the qualitative approach to IA domain classification is still viewed as conceptually preferable to the FA methods used in this study where the deductive

mathematical codings are sometimes uninterpretable and shown to delete valuable, contextual data that are shown to be important to the target population (Section 8.6.2).

Notwithstanding this, the subjective choices made and relied on by the researcher regarding the cut-points and taxonomy reported in the study are registered in the Study Limitations section (Section 9.4). To enhance the 'trustworthiness' of the choice of cut-point and the domains uncovered, it is suggested that any future work (Section 9.5) will involve, at a minimum, the views of a panel of experts comprising at least three people. Forthcoming studies may also provide the opportunity to cross check (triangulate) extant findings against both IGP and IRP results.

It is also possible that there may exist other, more satisfactory methods to determine IA domains that reduce the reliance on the views and preferences of the researcher team. Again, this is discussed in the Future Work section (Section 9.5).

### 8.6.2 ***Performance against Factor Analysis***

Section 8.2.7 describes how both approaches generally identified home-work interface (HWI), relationships at work (REL and MGR), organisational change (ORG and CHG), physical health (PHY) and workplace facilities (FAC) which constituted the majority of main elements for WRWB. Cronbach's Alpha coefficients ( $\alpha$ ) for the sub-scales created by IA showed superior acceptability compared to  $\alpha$  values for FA sub-scales (Section 8.2.6).

IA also realised similar results to FA in terms of well-being basics for each of the case studies; the overall mean importance scores for the police force and library service were no different irrespective of method (Table 8.7) and both approaches generally identified the same highest scoring domain or factor for each participating organisation (Section 8.2.8). Furthermore, IA results replicated those from FA in respect of showing that call centre workers perceived their work to be significantly more harmful to their well-being than those employed in the other two organisations (Section 8.2.9). Both approaches also reached similar conclusions on significant differences between the roles performed by respondents across all three case studies (Section 8.2.9). Based on these metrics, the performance of IA against FA was comparable.

Differences between the IA and FA techniques must be recorded too. Although there was general consensus over the highest ranking factor and domain for each organisation, agreement between subsequent sub-scale rankings was less evident as described in Section 8.2.8. It should also be noted that a review of the Bland and Altman plots consistently confirmed unacceptable levels of disagreement between findings arising from common domains/factors.

Further, Table 8.6 compares the notable differences in individual item selection by each method which gave rise to notably different impressions of those aspects of a workplace that were viewed as most irksome to employees. For example, 24% of finalised items selected using FA in the call centre study had impact scores below the designated impact threshold of 2.00. As already noted, even when allowances were

made for items that generally described the same concept, four items with impact scores greater than 3.00 were not recorded in the list of confirmed items derived from FA. Similarly, the library services study identified stress as a high impact variable using IA (impact score = 2.18) but this was not carried through to the FA findings where any references to work-related stress were absent from the confirmed FA item list (Table 6.11). This point is further illustrated by Table 4.20 which compares the 10 highest scoring items identified by IA and FA for call centre employees.

In addition, the FA results from the current case studies gave rise to some factors where the abstract composition of items was difficult to interpret. Instances of this included the call centre REL factor (Table 4.11), the police force RST factor (Table 5.11) and the library service GNL factor (Table 6.11). The number of items per factor was also markedly irregular ranging from 13 to 1 across the three study cohorts (Table 8.3). These concerns regarding interpretability and domain size were avoided using the IA approach since items were purposefully grouped into understandable domains which could be scaled according to requirements. Furthermore, the findings demonstrated how FA tacitly and incorrectly infers the importance of certain factors and variables based on explained variance (Section 8.2.6). This can lead to misguided impressions over the composite dimensions of WRWB and their perceived influence on a study population.

The study to compare FA with IA by HRQL methodologists, Juniper et al. (1997) reports similar issues. In their discussion, the authors ponder whether the deletion of items owing to low correlations (as happens with FA) provides acceptable grounds for

excluding ones that are considered important by patient populations (Juniper et al., 1997).

The advantages of FA should also be appraised. The primary benefit relates to reproducibility; that is, the same FA performed on the same set of data will always deliver the same factor loadings and explained variance since the analysis is based on mathematical modelling. Compared to IA, which is more qualitative in its approach, this may be an appealing feature owing to the fact that the procedure can be replicated and transferred to different studies. However, FA also requires a degree of personal judgement. Cut-point factor loadings have to be judged and, as described in Section 8.4.2, FA can also involve an element of qualitative manual handling to enhance internal reliability and interpretability (for example Van Laar et al., 2007; Faragher et al., 2004). It therefore seems incorrect to favour FA over IA on the basis that the former is entirely quantitative. Rather, it appears reasonable to suggest that both methods rely on subjective judgements although those associated with the IA framework are greater in number and are likely to have a greater impact on the findings (Section 8.6.1).

It has been demonstrated in the current findings that the FA techniques employed have been unable to generate factors that are always interpretable and, perhaps more importantly, encompass comprehensively those attributes that are shown by IA to be highly important and bothersome to the perceived well-being of employees. In addition, the application of FA to the development of existing EWB scales has also been reviewed and potential limitations noted (Section 8.4.2). A review of these

possible inadequacies identifies potential weaknesses in the ability of this kind of data analytic technique to evaluate EWB adequately. At the core of these concerns is a selection procedure informed by statistical modelling which contrasts sharply with IA, where the guiding principle for item selection is what is deemed to be most important and bothersome to employees themselves.

Added to these concerns are the views of Fayers et al. (1998) and Fayers and Hand (1997), who argue that FA modelling is fundamentally flawed for HRQL applications because it implicitly assumes that factors are composed of effect indicators only and changes in HRQL are likely to be reflected in corresponding changes across *all* scale items. In consideration of these deficiencies, Fayers et al. (1998) endorse the practice of IA as an item selection process. While Fayers et al. (1998) and Fayers and Hand (1997) concentrate their views on HRQL scale development, the same concerns may be appropriately levelled at the construction of EWB (and WRWB) instruments which include both effect indicators *and* causal indicators.

Based on these observations, it is suggested that the application of IA to EWB measurement may offer some advantages over FA-type procedures. If it is accepted that EWB is subjective (for example Page and Vella-Brodrick, 2009; Danna and Griffin, 1999; Warr et al., 1979), multi-dimensional (for example Page and Vella-Brodrick, 2009; Van Laar et al., 2007; Wright, 2006) and should cover the full breadth of elements that are shown to be important in the target population (for example Costanza et al., 2007; Fayers and Hand, 1997; Juniper et al., 1996), it is posited that IA



could constitute a potentially more appropriate methodological framework for scale construction than FA.

In order to investigate this notion further, the measurement properties of the differently-derived scales need to be validated. The outcome of these findings will ultimately inform a debate on which method, if either, is more superior in its ability to perform.

### 8.6.3 ***Additional Considerations***

In addition to the points explored above with regard to the qualitative nature of IA and its performance against FA, some further observations on IA as a scale construction method are offered.

Using the IA methodology, individual items in a finalised questionnaire are equally weighted and findings are analysed directly from the scores recorded. Results are expressed as the mean score for each of the domains and an overall HRQL score is estimated from the mean scores of all of the items (Juniper et al., 1996). For some researchers, a potential limitation may therefore arise in respect of an aggregated total score since this suggests that all domains have similar influence. In support of their approach, advocates of IA would argue that automatically assigning weights to items retained may also carry complex restrictions; in a sense, variables have already been awarded a weight by virtue of their impact scores (ie they have been retained following the IRP) and it is preferable to allow individual study populations to elect high scoring items based on their own experience (using the finalised IA scale) rather than them be pre-determined in an earlier study based on the views and experiences

of a different population. Feinstein's work (1987) on clinical sensibility cautions against the use of weightings for complex phenomena such as quality of life indices since the weighting of different variables may be rated differently by patients and clinicians which can result in large-scale disagreements on the sensibility of decisions. This is an important point and may be illustrated hypothetically using findings in the current findings where the call centre case study identified that issues to do with HWI were highly problematic to this cohort (Table 4.6). It is conceivable that other call centre populations in the future may harbour more positive experiences in this area which may therefore become distorted if a weighting system had been applied. This example raises a question over generalisation which is discussed in the Study Limitations (Section 9.4). In view of these considerations, it is held that a simple, un-weighted instrument is preferable. This is consistent with the authors of ASSET (Faragher et al. 2004) who have actively avoided assigning weights to their scale in the interests of simplicity and transparency.

One final observation is a small, technical one. It relates to the 'impact' of variables on people's quality of life and well-being that IA purports to assess. None of the IA literature substantiates the implicit claim that frequency x importance = impact. Again, this relationship seems to be presumed by IA proponents on an intuitive ('enlightened common-sense' basis rather than based on any scientific evidence.

Overall however, the IA method's aim of determining the impact of various items on individuals' well-being should be cautiously embraced. Its primary goal is to achieve content validity that encompasses the choosing and suitably emphasizing the most

important attributes to be included in the instrument is an important ambition when seeking to evaluate the complex phenomenon of well-being. Notwithstanding the issues identified in the preceding two sections, this approach to mensuration, where it is the *importance* of people's own personal preferences that are central to the object of research enquiry, does appear to be more suitable for this genre of assessment compared to conventional data analytic techniques.

As far as the study goes, the IA findings have demonstrated satisfactory validity in the form of satisfactory content validity and internal reliability ( $\alpha$ ). More research to investigate the pilot scales' other measurement properties is required and discussed further in the Future Work section (Section 9.5).

### ***8.7 EWB – Generic vs Specific Approach?***

The IA findings from the present research demonstrated clear sector differences in the aspects that make up the WRWB of employees. While there were common themes across the domains arising from the findings (Table 8.9), the items within each sub-scale varied significantly according to the case study under investigation (Section 8.2.5).

Owing to the way in which the present study was designed, it is inevitable that sector differences were uncovered. What is of more interest to the overall study question is the high importance that some of these sector-specific attributes were credited with by the study respondents. For example, the three highest impact scores for call centre workers (Table 4.2) featured only in the call centre findings. The same comment can also be applied to the highest impact score item for the LIS (Table 6.2).

Importantly, the sector-specific approach also contributes to the literature on well-being in the different occupational groupings. By way of example, the IA pilot scale constructed for the call centre operation identifies important elements of WRWB that, to date, have been overlooked by academics active in this type of workplace (Section 5.8.3).

In addition to this, Section 0 examines how the three existing EWB scales (Van Laar et al., 2007; Faragher et al., 2004; Sirgy et al., 2001) would have most likely been unsuccessful in identifying fully the most important aspects of WRWB as perceived by the three participant organisations owing partly to their generic status.

The failure of generic measures to identify some of the issues relevant to a study population is not uncommon and provides the main justification for disease-specific HRQL instruments (for example Kelleher et al., 1997; Jones et al., 1991). As well as being able to enhance a scale's sensitivity to a particular disease which is then better equipped to detect change over time, some items in generic measures may be inappropriate to a particular cohort. Dijkers (1999), for instance, questions the wisdom of using the SF-36 (Stewart et al., 1988) which includes a question on walking, to evaluate the HRQL of spinal cord injury patients.

The same challenge over suitability may be directed towards the existing EWB scales (Van Laar et al., 2007; Faragher et al., 2004; Sirgy et al., 2001). For example, the WRQoL scale (Van Laar et al., 2007) carries the questions '*My line manager actively promotes flexible working hours/patterns*' and '*I am involved in decisions that affect*

*members of the public in my own area of work'* which may not be fitting for all types of organisation.

The issue of specificity is also alighted on briefly in the EWB literature. In their review of occupational psychosocial hazard measures, Rick et al. (2001) recommend that organisations consider developing measures that are more specific to localised need and workplace context. Similarly, Briner (2005) and Briner and Fingret (2000) call for future well-being assessments to unpack generic concepts into more meaningful and researchable parts that are better able to provide a richer picture of EWB and identify specific problems for management action.

What are the disadvantages of deploying a specific-based measure over one which is generic in its content? The principal benefit of a generic scale is that it permits comparisons across study groups so that different cohorts can be matched against each other (McDowell, 2006). In the clinical sector, the ability to make direct comparisons between sub-groups is of particular value in therapeutic studies where the efficacy of different interventions can only be made using standardised questionnaires (Jones et al., 1991). The trade-off for deploying a specific-based measure is that it is at the expense of generalising findings to other populations (Aaronson, 1989).

Choice over which approach is more favourable should be governed by the overall purpose of the study. If the principle intention of the research is to establish the EWB status of a defined industry sector (or other such sub-group) on which a well-being programme can be tailored and assessed over time, a sector-specific scale is likely to

be more appropriate. If, on the other hand, the fundamental reason for the research is to compare and contrast the EWB of populations across sector, then a generic measure would be preferable.

Both these options lie at opposite ends of a spectrum. One way to balance the benefits and shortcomings between both approaches is to consider a single modular assessment strategy. Under this arrangement, a core scale would reflect the basic WRWB dimensions common to all sectors which would then be supplemented by additional job-specific modules. This hybrid version would facilitate cross-company comparisons whilst still allowing a level of specificity necessary to establish those elements of work that are perceived to be particularly relevant and important to the employee population being examined. A similar approach is reported by Aaronson et al. (1993) who evaluated the well-being of cancer patients. The QLQ-C30 was constructed to include 30 items that describe a range of physical, emotional and social health issues relevant to cancer patients generally and is augmented by a diagnosis-specific (for example lung cancer or breast cancer) module containing questions directly relevant to the cancer (or treatment) under examination (Aaronson et al., 1993).

## ***8.8 Conclusions - Response to Study Questions***

The purpose of this section is to summarise the conclusions from the present research findings in respect of the first three study sub-questions (Section 2.8). A response to the final two study sub-questions may be found in the final chapter which considers this study's contribution to theoretical and practical EWB perspectives (Chapter 9).

### 8.8.1 ***What does this novel application disclose about EWB and how it may be measured?***

This study has sought to transfer the learnings of measurement construction methods used in clinical environments to an occupational environment. The results suggest a number of EWB elements that researchers might be advised to consider in any measurement endeavours that they have. The contribution of these results to the theory and practice of EWB is examined in Section 9.2 and Section 9.3.

The definition of WRWB (Section 2.8.2), borrowed from the HRQL discipline (Juniper, 2005), provides for a set of results that puts the subjective judgements of employees at the centre of the scale construction methodology and any subsequent data analyses. A comparison of the IA-derived findings with those acquired in the development of HRQL scales indicates that the application of this method to the workplace shows promise (Section 8.3).

As far as this study goes, the use of IA, combined with the WRWB definition, suggests a wide range of components that may be associated with EWB (Table 8.9). As with HRQL instruments, these include both causal and effect indicators and, on this basis, a new, working model of WRWB is proposed (Figure 8.1). The model identifies seven possible domains; Advancement, Facilities, Home-Work Interface, Job, Physical Health, Psychological Health and Relationships although it clearly stipulates that the shape and content of domains are dependent on the study population under scrutiny.

A review of the literature reveals that assessments available to organisations wishing to evaluate the well-being of their people are in short supply (Section 2.4.1). The

present datasets also highlight the potential shortcomings associated with the three existing EWB scales that are available (Van Laar et al., 2007; Faragher et al., 2004; Sirgy et al., 2001). These possible flaws reference the way in which the items pools were generated initially and the methods used to reduce variables to a more manageable number (Section 8.4.2). A hypothetical consideration of how these existing EWB scales (Van Laar et al., 2007; Faragher et al., 2004; Sirgy et al., 2001) would perform against the pilot scales constructed for the current study, suggests some notable inadequacies (Section 8.4.4). Unlike existing scales, the type of response options used in IA also enables the researcher to rank hierarchically the elements of work that are most (and least) bothersome to employees' well-being (Section 8.4.2).

It is likely that these possible deficiencies with existing scales (Van Laar et al., 2007; Faragher et al., 2004; Sirgy et al., 2001) would have carried significant implications for any subsequent well-being strategy formed as a consequence of data analyses.

In summary, the response to this question is that this novel application of IA has given rise to a proposed new definition and a draft, new model for EWB measurement. It also highlights potential shortcomings of existing EWB scales.

### **8.8.2 *How does Impact Analysis perform against Factor Analysis as a Scale Construction Method?***

Section 8.6.2 considers in detail the performance of IA as it compares to FA as a methodological framework for EWB scale construction. Important limitations to the IA method are noted (Section 8.6). In summary however, the present findings, as far as



they go, cautiously suggest that IA may offer some advantages over FA as a development process when the aim is the measurement of people's well-being.

All three sets of case study findings consistently demonstrated a weakness in the FA methods used to select comprehensively, those workplace attributes that were most important and bothersome to employee's overall well-being (Table 8.6). The percentage of variance explained by each factor was also shown to be misleading when compared to the impact scores of individual variables. Given the confirmed subjectivity of EWB and the views of commentators such as Fayers and Hand (2007), that it is the *importance* attributed to possible traits that should prevail, this is judged as a potential limitation ; it suggests that low variance /poor correlational agreement should not necessarily act as the main gatekeepers for item admission or omission when assessing well-being. As noted in Section 0, this raises concern over the alleged content validity of existing EWB scales (Van Laar et al., 2007; Faragher et al., 2004; Sirgy et al., 2001).

The ability of the FA methods used herein, to establish factors whose underlying constructs were easy to interpret, has also met with mixed success in the present study. This was also a problem encountered by Van Laar et al. (2007) and by Faragher et al. (2004). By comparison, the use of IA ensures that only the most troubling elements of WRWB are selected in the IRP and the domains appointed (albeit subjectively), depict dimensions of EWB that are clear and understandable.

One of the benefits associated with FA is its reproducibility. This is examined in Section 8.6.2, where it is proposed that the experience of FA is not as objective and replicable

as theory may first suggest. In view of this, it is suggested that this potential advantage is outweighed by the possible disadvantages associated with FA in this study when applied to the measurement of EWB.

Before answering a question over which method is optimal it must be remembered that the measurement properties of the IA-derived pilot scales have yet to be confirmed. If facets such as construct validity, reproducibility and responsiveness are shown to be satisfactory, it is posited that IA may offer an alternative framework for EWB questionnaire development. This is based on the belief that all items of impairment that are shown to be important to employees should be included in any evaluative strategy. This should be the guiding principle irrespective of the statistical relationships between them and the IA method appears to meet this need satisfactorily. Using Feinstein's (1987) framework for evaluating 'sensitivity', the approach to IA is shown to be 'sensible'.

These points are discussed further in Chapter 9.

### **8.8.3 *Based on the Impact Analysis approach to Item Selection, does EWB comprise the same constructs across different sectors or do notable differences exist?***

Section 8.7 has already considered the differences in items selected between the three participant organisations involved in the current study and confirms that similar EWB constructs suggested from the results, existed between case studies although the content of each varied considerably. This appears consistent with disease-specific

HRQL instruments where scales commonly comprise the same genre of domain but items within each can deviate greatly according to the illness under investigation.

The present findings have illustrated how EWB themes may differ across three sectors, some of which were shown to be highly important to respondents. It is reasonable to suggest that the application of IA to other sectors may elicit additional types of domain not already identified herein. How specificity may impact on the number and content of a domain is captured in the proposed working WRWB model (Figure 8.1).

It is inevitable that differences between sectors exist. What is more pertinent perhaps, is the potential impact of these differences between sectors (or other such sub-groups) on any measurement initiative. Where researchers wish to contrast EWB across different types of population, the use of a generic scale is necessary. Where the focus of interest is restricted to a dedicated cohort, it might be preferable to develop an instrument that is honed, through a process such as IA, to reflect the most irksome aspects of WRWB associated with that particular group. This will determine a greater level of granularity which will help to optimise the ability to respond with effective management actions and/or track subsequent change.



## **Chapter 9      Contribution**

### ***9.1 Introduction***

This final chapter examines the main contributions to knowledge that this study tentatively offers. In order to answer the last two sub-questions of the main study question, contributions are considered in terms of current theoretical perspectives and practical perspectives surrounding the measurement of EWB. The chapter ends with a review of study limitations, opportunities for future work and dissemination of findings to date.

### ***9.2 Contribution to EWB Theory***

A review of the findings presented in this research programme and the subsequent discussion, suggest that a contribution to the theoretical perspectives surrounding EWB is made in three possible ways. These are in the form of a new definition, a draft model and a potentially promising, new measurement strategy.

The definition of WRWB (Section 2.8.2) clearly identifies that it is those aspects of work that employees perceive to be important to well-being that should form the basis of an operational and functional EWB model. It also states that only those elements that are modifiable should be considered. In these respects, this definition is different to others recorded in the literature as follows.

Firstly the direction of impairment is made clear; the WRWB definition confirms that it is the impact of work *on* well-being that is key where assessment of the concept is the primary consideration. This contrasts with the views of Wright and colleagues (for example Wright and Bonett, 2007; Wright et al., 2007; Wright and Cropanzano, 2000)

who maintain that EWB is a product of people's general affective outlook or authors such as Page and Vella-Brodrick (2009) and Van Laar et al. (2007) who claim that EWB is a combination of work experiences and other aspects that have no direct connection with the workplace. Secondly, the proposed WRWB definition avoids prescribing set dimensions such as those offered by Danna and Griffin (1999) or Warr (1994). Finally, unlike the more abstract definitions put forward by authors such as Page and Vella-Brodrick (2009), Van Laar et al. (2007) or Sirgy et al. (2001), it limits dimensions to work-related aspects that may be adjusted through intervention.

From a theoretical standpoint, the benefits of these differentiators are explored. The WRWB definition allows for flexibility in the type and composition of well-being domains according to the study population. This is demonstrated by the present study findings where all three participant organisations were shown to experience varying physical health concerns which are cited only by Danna and Griffin (1999) in the theoretical literature. Additionally, by confining variables to only those that may be altered, the ability to modify and therefore track longitudinal change in EWB levels over time is enhanced. This is not to deny that other factors such as dispositional effect (for example Page and Vella-Brodrick, 2009; Van Laar et al., 2007) influence employees' well-being experiences at work. However, the WRWB concept provides for a clear delineation on which elements should be considered from an empirical measurement standpoint. This reflects similar practices in the HRQL field where factors such as patient personality are deliberately ignored owing to the fact that they cannot be modified through intervention. This point is discussed further in the following section (Section 9.3).

Following on from the WRWB definition, the new, working model proposed (Section 8.5.2) also injects new thinking to existing theories relating to EWB as far as its development goes. By default, the model only concerns itself with those elements that fit with the definition, which, as described above, marks a departure from the various models advocated by researchers to date (for example Page and Vella-Brodrick, 2009; Danna and Griffin, 1999). The model puts forward seven domains which comprise both causal and effect indicators. In itself, the mix of variables differentiates it from the majority of other models. It also makes clear that these are illustrative rather than definitive with the blend dependent on the study population under examination, thus avoiding the rigidity of earlier frameworks. Importantly, it introduces to a model of EWB for the first time, the notion of specificity, the merits of which have been duly considered in the preceding chapter (Section 8.7). The flexibility denoted by this model to uncover subtle problems arising from the workplace supports the views of authors who have called for more granularity in measurement practice (Briner, 2005; Rick et al., 2001; Briner and Fingret, 2000). It also lends weight to Cox and Jackson (2006) and Sparks et al. (2001) who urge EWB researchers to be vigilant of the constantly changing ways in which workplace hazards might impact employee health and well-being.

The final area of impact on the theoretical landscape that this study offers, rests with the cautious introduction of a new measurement framework to evaluate EWB. The main aim of this current research has been to test out the performance of IA as a basis for scale construction within an occupational setting. Although more work is required to validate the pilot scales in terms of their measurement properties (Section 9.5),

these initial results suggest that conceptually, IA may offer a new and viable option to those communities wishing to evaluate the well-being of employee populations. An assessment of the application of IA to measure the well-being of employees against use in its indigenous HRQL setting shows satisfactory equivalence (Section 8.3). IA may constitute a new way to empirically evaluate workplace conditions that moves the debate on from work-related stress as advocated by commentators such as Briner (2005) and Brief and Atieh (1987). It may also offer a more etiologic approach to EWB research that Schulte and Vainio (2010) insist is necessary. Moreover, a direct comparison with FA in Section 8.6.1 indicates that IA could represent a feasible alternative to that which has been conventionally used in the construction of existing EWB measurement instruments (Van Laar et al., 2007; Faragher et al., 2004; Sirgy et al., 2001). IA also successfully addresses the theoretical concerns voiced by Fayers et al. (1998) and Fayers and Hand (1997) regarding the measurement of a multi-dimensional construct such as well-being.

When combined, these three elements (definition, model and measurement strategy) may be viewed as notable input to the theoretical understanding of EWB. The basis for each originate from the refined techniques practiced in the field of HRQL where the ability to assess the impact of disease on patient well-being is central to any health measurement programme. Given this bank of experience and the reported satisfactory performance of IA in the workplace thus far, it is hoped that future research may consider adopting this approach. Some of the criticisms expressed by some commentators over poor quality data on EWB and underwhelming correlations with workplace performance (for example Cox and Jackson, 2006; Briner, 1997) may be



addressed. This new approach may also constitute an answer to the observation by Schulte and Vainio (2010) that EWB research will only be useful for guidance or regulation if the relationship between hazards to well-being and the *exposure* to them are characterised so that a meaningful exposure-response model may be devised.

In the field of HRQL, there already exists general consensus over what is meant by the concept and how it may be measured. This has led to a shift in the views of the medical profession and how it should view HRQL in terms of the patient perspective.

Wright and Cropananzo (2007) and Martel and Dupuis (2006) both lament the lack of progress in the theoretical advancement of EWB owing to poor consensus on definitional parameters while Rick et al. (2001) and Loscocco and Roschelle (1991) call for new ideas from other disciplines to advance understanding. This research fulfils both these points. If the academic community can begin to move towards clarity over what is meant by EWB and how it may best be assessed, by perhaps drawing on the findings described in this study, it follows that more progress in this area is probable.

### **9.3 Contribution to EWB Practice**

In addition to contributions to the theoretical perspectives, how the findings from this study provide input to how EWB may be measured and managed on a practical level, are considered.

Firstly, the definition of WRWB (Section 2.8.2) confines variables to only those that an employer may modify if it so wishes. As already noted in the previous section (Section 9.2), this marks a clear difference to all other EWB models (for example Page and

Vella-Brodrick, 2009; Danna and Griffin, 1999) and may allow organisations to maintain a pragmatic response in any subsequent EWB programme. This contrasts with existing EWB scales (Van Laar et al., 2007; Faragher et al., 2004; Sirgy et al., 2001) which carry a portion of generalist statements that employers are unable to tackle directly such as *'Generally things work out well for me'* in the WRQoL scale (Van Laar et al., 2007). It is suggested that the WRWB approach may engender more practical appeal amongst both researchers and organisations wishing to first assess workers' well-being ahead of introducing an EWB programme since it restricts any management actions to ones that are realistically attainable.

The definition of WRWB means that only variables relevant to that sector (or other defined sub-group) will be selected for measurement purposes. This attribute, combined with the IA item reduction process, allows for a dataset that confirms those aspects of work perceived to be most detrimental to workers' well-being. From a practical standpoint, the make up the finalised scale will be wholly relevant to those who are asked to complete it and to those whose responsibility it is to interpret the findings and make recommendations on any ensuing health and wellness initiatives. This represents a more efficient way to gather important data on which to found a strategy since the number of extraneous variables will be minimized. This level of practical proficiency is analogous with the work of HRQL practitioners who view the process as similar to being able to standardise and assimilate individual patient clinical histories (McDowell, 2006; Jones, 2001) without having to incur the associated cost and resource.

The apparent ability to rank which aspects of work are considered to be most (and least) troublesome is a hallmark of IA and signifies another way in which this study offers new insights on how EWB may be measured and managed. By being able to empirically grade variables based on importance, employers and research practitioners are better able to identify and shape effective solutions. They are also better equipped to prioritise particular aspects of any programme which is a central consideration from a planning and investment standpoint.

From an employer's perspective it is likely that there will be a fiduciary keenness to ensure that any investment outlay will be deployed responsibly and in a way that will lead to organisational improvements, however they are defined. Again, the IA measurement framework may provide for this requirement in a new way. Owing to its likely capacity to identify those aspects of work that are more bothersome to people's well-being, IA-derived findings may be more able to pinpoint those areas which require investment and, importantly, those that do not. That the questionnaires will benefit from greater specificity than existing generic models augments this aspect further. For example, for the police force results attained, the ORG domain was ranked as the most troubling to well-being across the force (Table 5.6) which suggests that any subsequent well-being programme should factor in this dimension and seek to make it a priority for action. For the participant call centre operation, the greatest sources of concern seemed to arise from the HWI domain (Table 4.6) and were related mostly to the shift management system, thereby evidencing the requirement for resource to be directed towards a review of rostering arrangements as part of any bid to enhance well-being.

Furthermore, those wishing to evaluate change in well-being levels over time, are more likely to evidence meaningful differences, where the variables contained within a scale are more sensitive to the needs and experiences of a particular group of employees. Being able to empirically demonstrate change will aid in the overall evaluation of well-being programmes and help to redress the cynicism of authors such as Briner (1997) and Murphy (1984) who note the paucity of scientific data to support the effectiveness of well-being initiatives and argue for a more evidence-based approach.

Assuming such relationships exist, researchers may also be better able to detect direct correlations with performance indicators such as sickness absence data or other productivity quotients owing to the enhanced specificity promoted by the IA methodology. As well as constituting a clear practical benefit to the employer, this may also address the views of some commentators who are critical of the apparent lack of reports that find convincing links between EWB and workplace behaviours (for example Cox and Jackson, 2006).

It has already been established that there is a degree of overlap between the various domains identified in this present study and those dimensions proposed in the academic literature (for example Danna and Griffin, 1999; Warr, 1994). However, the domains and items stemming from the current study test the conventional views on what is understood by the term employee well-being and how it should be managed amongst corporate audiences. The recent reports by the CIPD (2007) and Buck Consultants (2009) position well-being (or wellness) programmes as ones which

generally seek to encourage employees to adopt healthier lifestyles. The reports cite initiatives such as fitness club membership discounts, executive screening programmes and sponsored sport activities as well as the traditional occupational health and safety practices. Moreover, according to the Buck Consultants report (2009), the main reasons behind implementing such programmes, reference the employer's desire to improve worker productivity, improve morale and reduce sickness absence. There is a therefore a plain and worrisome gap between the current headline case study findings and the popular provision of corporate initiatives such as those identified by Buck Consultants (2009) and the CIPD (2007). Provided these IA findings are verified in future work (Section 9.5), it is difficult to envisage how the well-being of call centre advisors will be enhanced through fitness club visits or cycle-to-work schemes if the status of home-work interface issues remains unchanged. Following this theme, it seems perhaps even more futile to imagine that their workplace productivity will improve if the high scoring domains are left unresolved.

This is not to disparage the provision of traditional EWB programmes *per se*. Rather it is to caution against a possible, naive belief by some employers that these kinds of initiatives will, on their own, enhance the well-being of staff and lead to improvements in performance. From a practical perspective therefore, this research suggests a more far-reaching orientation towards what is meant by EWB than is held conventionally in occupational circles. It expands current understanding and promotes multi-disciplinary thinking that commentators such as Schulte and Vainio (2010) deem to be necessary if well-being is to be enhanced and performance improved. It also raises doubts over the appropriateness and likely success of traditional health promotion programmes if plans

to address important WRWB issues are not realised first. Even in their current, pilot form, these present results demonstrate the practical sense in organisations first evaluating the well-being levels of employees before embarking on any potential type of programme designed to improve health and wellness levels; by ensuring that the primary needs of workers are understood, the potential to provide well-meaning but largely ineffectual EWB programmes is reduced. This view corroborates that of Briner (1997) who opines on the lack of proper evaluation prior to the design of well-being initiatives.

Because of the methodological basis of IA, questionnaires are eminently scalable; choice of cut-point is dependent on the parsimonious requirements of the target cohort so length can be varied according to need. While this element of subjective judgement brings with it potential methodological unease (Section 8.6.1), this may also be considered a practical bonus over existing EWB measurement practices, since developers may pre-determine the length of scale they consider appropriate in the context of the employees that they are targeting in any evaluation programme.

Although this was not taken up in the current findings, IA also allows developers the option of purposely establishing particular domains of interest at the outset as has happened with some HRQL scale development where methodologists have declared their intentions *a priori* to incorporate specific dimensions (for example Juniper et al., 1996). This is not a viable option under FA methods and may represent a further benefit over current occupational psychometric methods. For example, a researcher wishing to develop a WRWB scale for oil companies where staff safety concerns are

prevalent, may elect deliberately to construct a domain that specifically describes this construct.

Finally, and perhaps most importantly, this study tentatively tenders another option for researchers and organisations wishing to conduct an assessment of EWB. The IA methodology used herein, suggests potential for this type of approach especially in light of the dearth of instruments constructed for organisational use as already highlighted (Rick et al., 2001) and amply illustrated by the limited number of comparator scales available for this current study.

The estimated costs of impaired employee well-being are high (for example, HSE 2009; DWP 2005) and continue to rise. If the government's desired policy (for example Black, 2008) to bring about improvements to EWB is to be successfully met, it is crucial that stakeholder groups have access to the means to bring this about (Schulte and Vainio, 2010). The findings presented herein describe the potential benefits of first evaluating EWB using an established methodology borrowed from another discipline. Researchers, policymakers and organisations alike are more likely to be encouraged to pursue an assessment of EWB at the outset if workable and pragmatic tools, such as the pilot scales developed in the present study, to achieve this are available. This ability will inform them in the choices and investments that they make consequently and ensure that they based on the best possible evidence available.

#### ***9.4 Study Limitations***

There are a number of limitations arising from this present study that are considered below.

The inherent weaknesses associated with the IA method's qualitative decisions over choice of cut-point and domain categorisation are already discussed at in Section 8.6.1. The approach relies, in a large part, on the subjective judgments of the scale developers and is already highlighted as a methodological limitation. What needs to be acknowledged in this section is that the choice of threshold, types of domain and their constituent parts were based on the subjective judgments of just one researcher. This is a study limitation.

Choice of threshold was primarily influenced by the *a priori* decision to end up with a pilot scale of approximately 50 items in length (Section 3.5.6). Owing to the different impact score values collated from each participant organisation, this meant that the threshold value varied between case studies as discussed in Section 8.2.5. While this is generally consistent with the IA approach stipulated by methodologists such as Juniper et al. (1996), who posit that choice of cut-point should be conditional on cost, efficiency and patient burden, the outcome could result in a scale that is unnecessarily long. With hindsight, it might have been a better strategy to decide on a cut-point based contextually on the impact scores amassed for each case study population instead of commencing these deliberations with a target number of finalised items in mind.

To address this point and the allied point over domain choices, it is proposed that the future work (Section 9.5), seeks to introduce more standardisation to lower threshold limits and the choice of domain sub-groups are debated and ultimately agreed between at least three professional researchers who are both familiar with the IA



approach and organisational/employee issues. As noted in Section 8.6.1, it may also be possible to identify additional, more satisfactory methods to determine IA domains that reduce this reliance on the views and preferences of even a wider research team.

Also associated with the IRP in this study, was the requirement for respondents to indicate how *'important and bothersome'* to their overall well-being they considered items to be. With hindsight, this combination of *'important'* and *'bothersome'* may have served to confuse what information subjects were being asked for and therefore represented an important limitation since the two descriptors are not necessarily the same. For example, a respondent answering the question *'Having to book holiday so far in advance'* may view this issue as bothersome but not necessarily important to their well-being. The majority of HRQL instruments use the term *'important'* only in their line of questioning in their IRP phase (for example Juniper et al., 1992) and future work (Section 9.5) will seek to follow this example.

Another clear limitation in this study centres on the recoding of scores from *'0'* to *'1'* as described in Section 3.6. Clearly, the meaning denoted by *'0'* (*'Did not experience'*) was not equal to *'1'* (*'Not at all a problem'*) and this treatment would not be countenanced for data stemming from validated scales – a point that is made clear in Section 3.6. For the purposes of this present study and its stated aims, this recoding allowed the intervals between points on the scales to be consistent across all of the response options. By amending the data in this way, some basic explorations of the data in respect of employee well-being within and across the different case studies,

could be made which allowed some rudimentary observations directly aligned with the study question to be drawn.

The issue regarding the aggregation of scores in the pilot scales to arrive at a valid mean score for each domain and an overall value also needs to be examined further. As already noted in Section 0, some expert methodologists may view this as a limitation since it presumes all variables are weighted equally. While this view is acknowledged, it is held that a non-weighting system that is characteristic of the IA method is appropriate for the reasons explained in Section 0. Possible concerns regarding the absence of weightings may be ameliorated by additional studies within each of the sectors that help smooth findings and verify general themes. This point is explored below.

The three scales that have resulted from this present study have been constructed using the IA methodology and are exploratory at this stage of their development. It should be emphasised that any possible, sector-based conclusions arising from this study only relate to one organisation and their generalisability to other, similar enterprises within the same sector is purely speculative. A further limitation arising from this work is therefore related to restrictions on how these findings may be extended to other organisations in the same sector at this juncture. It must be kept in mind that participants in the item generation and item reduction phases were all employed by one organisation within each sector and it cannot be assumed that their perceptions and experiences are necessarily representative of all workers within that particular organisational division. At this stage, the domains and variables established

in the findings characterise the WRWB issues for the correspondent organisation only. An example of this pertains to the highest scoring variable for the library service which referenced people's frustration with the new library management system (Spydus) that had been recently introduced (Table 6.2). Library workers from other counties that were not undergoing the same system change would not have identified such an attribute. Similarly, the possible merger of the police force with a neighbouring one may have influenced unduly the prominence of issues contained within the ORG domain.

A study limitation also arises from how some of the variables described in the study combined an emotional (or physical health) state with a workplace issue (for example '*Always feeling tired because of shift patterns*'). As noted in the Discussion Chapter (Section 8.2.5), this presented some challenges when apportioning items to different domain categories. In retrospect, it would have been more prudent to split out elements into separate variables that were more consistent with HRQL scale development practice (for example Juniper et al., 1992). Using the example above, this would translate as '*Always feeling tired because of your work*' and '*Shift pattern arrangements*' which would facilitate the domain classification process. These limitations are considered further in the following Future Work section (Section 9.5).

A limitation relating to this present study concerns common method variance (CMV). This refers to the amount of bogus covariance that is owed to the common method used in collecting data (Buckley et al., 1990). Self-report studies such as this one are especially susceptible to CMV since subjects respond to a single questionnaire at one

point in time. While researchers agree that CMV has the potential to impact single method studies, there is little consensus over the extent to which this presents a serious bias effect (Malhotra et al., 2006). For example, Williams et al. (1989) found that about 25% of variance in the studies they examined was attributed to CMV while Spector (1987) established that method effects did not weaken seriously the validity of published reports that he considered. CMV is not considered further in this study.

The final limitation associated with this study concerns the validity of the pilot scales. While this falls outside the scope of the present study (Section 2.8), it is important to note that there is a clear requirement to validate the pilot scales to provide the necessary confidence in their measurement properties to assess and/or demonstrate a genuine effect. Content validity and internal consistency reliability ( $\alpha$ ) have been shown to be adequate. Additional validation would be in the form of construct validity (the extent to which variables match or encompass the intended theoretical construct), reproducibility (the consistency of a measure in a stable population) and responsiveness (the ability to detect true change in subjects even if the change is relatively small). Each of these is discussed in more detail in the Future Work section below (Section 9.5).

### **9.5 Future Work**

The present study constitutes an exploratory investigation into the viability of applying a clinical measurement framework to a different discipline. It is almost inevitable therefore this work will lead to further work. Proposed future work intends to build on what has already been achieved. Specifically it would aim to factor in the noted

weaknesses relating to the IA methodology (Section 8.6) and the study limitations (Section 9.4). This work would comprise two main areas. Firstly it would consider how the pilot scales may be generalised to other organisations within the sector. Secondly, it would examine the measurement properties of the pilot scales to test their validity as precision instruments.

The first phase of future work would aim to address one of the study limitations noted in the preceding section (Section 9.4). In order to be confident that the set of items established in each of the scales is sufficiently representative of the sector in question, the IA methodology (IGP and IRP) should be repeated with three further organisations drawn from each occupational grouping. By drawing on the views and perceptions of a wider study population, it is envisaged that the finalised items would correspond more closely to the most important WRWB issues faced by the sector overall. This work is akin to practices in the clinical setting where the development of disease- specific HRQL scales commonly involves the recruitment of patients presenting with varying levels of illness severity (for example Juniper et al., 1992) to ensure a full spectrum of patient experiences is taken into account.

The IGP would build on the item pool already collated for each sector. Items that reference traits that are deemed to be relevant to one particular organisation would be re-phrased so that they carry a more general meaning that would be meaningful to respondents across the sector.

The IRP would involve inviting respondents from all three new enterprises to complete the Questionnaire and data analyses would determine the domains and their

composition. Respondents would be asked to indicate how *'important'* they perceive various attributes to be to their overall well-being rather than how *'important and bothersome'* as discussed in the study limitations section (Section 9.4). In order to address two of the key study limitations (Section 9.4), advice from qualitative and quantitative methodologists would be sought to specifically investigate the possibility of modifying the IA approach so that it constitutes a more robust procedure for choice of cut-point and domain taxonomy. At the very least, these decisions would be made in consultation with a panel of three subject-matter experts. Care would also be taken to avoid combining potentially different elements within one variable as described in the preceding limitations section (Section 9.4). It is not inconceivable that the number and name of domains shall vary from those identified in the pilot scales.

The re-coding of '0' values to '1' in the data would be avoided. As already noted, this exercise to amend the data was specific to the present study in order to explore some basic findings on the well-being of employees, and would not be part of any forthcoming work envisaged.

In the event that the IA construction framework fails to identify domains that are common to all sector participants, a modular assessment arrangement as described by Aaronson et al. (1993) (Section 8.7) may be considered.

Once domains are clearly established using the prescribed (or perhaps modified) methodology set out above, the next stage of work would be to validate the scales' measurement properties. This would be in the form of construct validation and

confirmation of reproducibility and responsiveness. The proposed approach to each of these initiatives is set out briefly below.

In the absence of an established gold standard, validity of the scales would be achieved by showing clear associations between the new WRWB questionnaires and established, related outcomes (construct validity). This is likely to be in the form of *a priori* predictions concerning what correlational evidence should be obtained between the WRWB scales and how they are expected to behave against other validated measures (for example McDowell, 2006; Streiner and Norman, 1989b). Choice of established instruments against which to evaluate construct validity would be primarily driven by the finalised domains. Possible options may include the eight-item Index of Psychological Well-Being (Berkman, 1971) and the Job Content Questionnaire (JCQ) (Karasek et al., 1998).

As it is proposed that the WRWB scales should have both discriminative and evaluative properties (Section 3.3) validation programmes would need to consider reliability (reproducibility) and responsiveness. For discriminative instruments, repeated administrations of the questionnaire to employees with stable WRWB should produce similar results (Guyatt et al., 1986). In testing a new scale, it is important to estimate the signal (the difference between subjects) and the noise (the difference within a subject when their WRWB state is stable) and determine whether the latter is large enough to mask the size of signal. Reproducibility is most commonly expressed statistically as an intraclass correlation coefficient that relates the between-subject variance to the total variance (for example McDowell, 2006; Juniper et al., 1996;

Streiner and Norman, 1989b). Test-retest reliability would be used to examine the discriminative properties for the WRWB questionnaires.

Evaluative properties (responsiveness) must be able to detect change in an employee's WRWB even if the change is relatively small. The signal for evaluative instruments is the true change occurring in a subject over a period of time. The noise that interferes with detection of the signal is the within-subject variance that is unrelated to the true within-subject change (Juniper et al., 1996). To demonstrate responsiveness, the pilot scales should be administered to a group of employees before and after application of an intervention that is directly relevant to their WRWB needs and has known efficacy (Guyatt et al., 1986). The ratio between change in subjects detected in this study compared to the variability in stable subjects established in the reliability study, should provide an estimate of questionnaire responsiveness.

Finally, the minimal important difference (MID) for each scale would be calculated to aid interpretation of data. The concept of the MID is derived from HRQL scale development and refers to the '*smallest difference in score in the domain of interest which patients perceive as beneficial and would mandate, in the absence of troublesome side effects and excessive cost, a change in the patient's management*' (Jaeschke et al., 1989). The method by which this would be established may be found in Juniper et al. (1996).

## **9.6 Dissemination of Findings**

Significant efforts to disseminate the findings arising from this research programme have been made. To date, three papers have been accepted by peer-review journals



(Appendix G, G.1 - G.3) and a fourth has been submitted. Additionally, four papers have been presented at academic conferences. Details are as follows:

#### 9.6.1 **Academic Papers**

1. Juniper, B. A., White, N., Bellamy, P. (2009) "Assessing employee well-being - Is there another way?" *International Journal of Workplace Health Management*, vol 2, no. 3, pp. 220-230.
2. Juniper, B.A, White, N., Bellamy, P. (2010) "A new approach to evaluating the well-being of police". *Occupational Medicine*, doi: 10.1093/occmed/kqq130.
3. Juniper, B.A., Bellamy, P., White, N. "Testing a new approach to evaluating employee well-being". *Leadership and Organization Development Journal* (in press).
4. Juniper, B.A., Bellamy, P., White, N. "Evaluating the well-being of public library workers". *Journal of Librarianship and Information Science* (in press).

#### 9.6.2 **Conferences – oral presentations**

1. Society of Occupational Medicine Annual Scientific Meeting 2009 (Cardiff, Wales); 'Evaluation of a New Method for Assessing Work-Related Health and Well-Being in Call Centres'
2. IXth International Conference of the International Society for Quality of Life Studies (ISQOLS) (Florence, Italy); 'Evaluation of a New Method for Assessing Work-Related Quality of Life in Call Centres'
3. Royal College of Nursing Occupational Health Nursing Conference 2009 (Southport, UK); 'Evaluation of a new approach to measuring employee well-being'.

4. Institute of Work Psychology Conference 2010 (Sheffield, UK); 'Evaluation of a new approach to measure well-being in the police'.

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## Appendix A Existing EWB Scales

### A.1 Work-Related Quality of Life Scale


# Work-Related Quality of Life Scale

**STRICTLY CONFIDENTIAL**

Your response is very important to us! Please note that no one from your organisation will see your questionnaire. A summary may be provided to your employer but no information will be released that might identify any individual. Please do not take too long over each question; we want your first reaction not a long drawn out thought process. Please do not omit any questions. This isn't a test, simply a measure of your attitudes to the factors that influence your experience at work.

**Please indicate your answers by filling in the circles like this: ●, if you make a mistake do this: ✘**

To what extent do you agree with the following? <i>Please fill in the appropriate circle.</i>		Strongly Disagree	Neutral		Strongly Agree	
		Disagree	Agree			
1.	I have a clear set of goals and aims to enable me to do my job	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2.	I feel able to voice opinions and influence changes in my area of work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3.	I have the opportunity to use my abilities at work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4.	I feel well at the moment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5.	My employer provides adequate facilities and flexibility for me to fit work in around my family life	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6.	My current working hours / patterns suit my personal circumstances	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7.	I often feel under pressure at work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8.	When I have done a good job it is acknowledged by my line manager	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9.	Recently, I have been feeling unhappy and depressed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10.	I am satisfied with my life	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11.	I am encouraged to develop new skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12.	I am involved in decisions that affect <u>me</u> in my own area of work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13.	My employer provides me with what I need to do my job effectively	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

14	My line manager actively promotes flexible working hours / patterns	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15	In most ways my life is close to ideal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16	I work in a safe environment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17	Generally things work out well for me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18	I am satisfied with the career opportunities available for me here	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
19	I often feel excessive levels of stress at work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
20	I am satisfied with the training I receive in order to perform my present job	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
21	Recently, I have been feeling reasonably happy all things considered	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
22	The working conditions are satisfactory	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
23	I am involved in decisions that affect members of the public in my own area of work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
24	I am satisfied with the overall quality of my working life	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		<p>Copyright (c) 2008 QoWL Ltd. All rights reserved, including translation. No part of this publication may be photocopied, reproduced or transmitted in any form or by any means electronic or mechanical, recording or duplication in any information storage or retrieval system, without permission in writing from the publishers even within the terms granted by the Copyright Licensing Agency Ltd. WRQoLv22.</p>				

## A.2 Quality of Work Life Scale

Quality of Work Life (QWL) – Reprinted from Lee et al (2007) Response Options 1-5 (Very False to Very True)
<b>Low-order needs</b>
Need satisfaction of health and safety needs <ol style="list-style-type: none"> <li>1. I feel physically safe at work</li> <li>2. My job provides good health benefits</li> <li>3. I do my best to stay healthy and fit</li> </ol>
Need satisfaction of economic and family needs <ol style="list-style-type: none"> <li>1. I am satisfied with what I'm getting paid for my work</li> <li>2. I feel that my job is secure for life</li> <li>3. My job does well for my family</li> </ol>
<b>Higher-order needs</b>
Need satisfaction of social needs <ol style="list-style-type: none"> <li>1. I have good friends at work</li> <li>2. I have enough time away from work to enjoy other things in life</li> </ol>
Need satisfaction of esteem needs <ol style="list-style-type: none"> <li>1. I feel appreciated at work</li> <li>2. People at work and/or within my profession respect me as a professional and an expert in my field of work</li> </ol>
Need satisfaction of actualization needs <ol style="list-style-type: none"> <li>1. I feel that my job allows me to realize my full potential</li> <li>2. I feel that I am realizing my potential as an expert in my line of work</li> </ol>
Need satisfaction of knowledge needs <ol style="list-style-type: none"> <li>1. I feel that I'm always learning new things that help me do my job better</li> <li>2. This job allows me to sharpen my professional skills</li> </ol>
Need satisfaction of aesthetic needs <ol style="list-style-type: none"> <li>1. There is a lot of creativity involved in my job</li> <li>2. My job helps me to develop my creativity outside of work</li> </ol>

## **Appendix B Research Methodology Materials**

### **B.1 Research Proposal**

#### **Measuring Well-Being within [x] Police**

As part of its approach to the health and well-being, [x] police has indicated initial interest in participating in some research with Cranfield University to develop and pilot an assessment that will enable it to evaluate the well-being of its officers and staff. The work marks an exciting new approach to the way police measure and manage well-being. The purpose of this note is to summarise the approach and specific outputs.

#### **1. The assessment**

It will be a new type of workplace instrument that will enable [x] to measure and track directly how people's jobs impact their health and well-being. It will be a self-report, online questionnaire that is different to existing tools because it is based on proven methodologies used to measure patient health and well-being in clinical settings.

#### **2. The outputs**

In return for this support, [x] police will receive the following benefits:

- A comprehensive report on the well-being of its force using the new assessment tool
- Valuable data to enable to help determine and develop evidence-based initiatives to address issues identified
- Baseline data against which you can measure the effectiveness of actions over time

#### **3. What's involved**

The burden on the force will be fairly minimal. It will mainly involve allowing the researcher access to staff in the form of focus groups which will each last 45 minutes (10 people per group) and inviting them to complete an online questionnaire (anonymously). The questionnaire should take approximately 12-14 minutes to complete.



#### **4. Timing**

It is estimated that the research will be completed in approximately six months. Ideally, the work would start in July or August.

#### **5. The researcher**

The research will be conducted by Bridget Juniper as part of her PhD studies at Cranfield University . She has an MSc in clinical research and has recently worked on patient reported outcomes methodologies. Prior to this, she worked for large multinationals, developing their staff engagement programmes.

June 2008

## **B.2 Focus Group Invitation**

### **Evaluating Well-Being in [x] Library Service – Focus Group Invitation**

#### **Summary**

As part of its commitment to improve and maintain the health and well-being of its staff, the Library and Information Service is undertaking some research in collaboration with Cranfield University. The research will help us assess how people's jobs impact their overall wellness and identify ways we can improve things for our people. Part of this research requires input from our staff in the form of focus groups. We are inviting our staff from all areas of LIS to volunteer for these focus groups and the purpose of this note is to outline further details:

#### **Focus Groups**

- Approximately eight focus groups are being arranged over the next couple of months. Each group will be attended by 10 people.
- Focus groups will be held at individual libraries and head office.
- The purpose of each focus group is to hear from LIS staff how they think their health and well-being has been impacted by their work.
- Each focus group will be hosted by Cranfield University. All contributions will be non-attributable.
- Each focus group should last 45 minutes. No preparation ahead of attending a focus group is required.

#### **Criteria**

- **Criteria for taking part in a focus group are as follows:**
  - Currently employed by LIS either in a part-time or full-time capacity (contractors need not apply).

- Employed with the organisation for at least three months.

### **Participating**

- If you are interested in taking part in one of these focus groups and meet the criteria, please submit your name and contact details to your library manager or department head.
- Once we have a full list of possible volunteers, dates and times for focus groups will be confirmed and you will be contacted with further information.
- Findings from the research together with agreed actions to address any issues identified will be shared with all staff.

### **Timings**

- If you are interested in taking part in a focus group, please register your interest by [x] date.
- It is anticipated that the focus groups will take place in November and December 2008.
- Following the focus group phase, all LIS staff will be invited to complete a well-being questionnaire (anonymously). It is likely this will take place in February 2009.
- It is anticipated that findings from the research will be made available to staff in September 2009.

### **Why is the Library Service involved in this?**

- Protecting the health and well-being of staff is key to being able to successfully serve our communities.
- This research represents a new and exciting approach to employee well-being. The analysis will enable us to identify the main work-related issues that impact the health and well-being of our staff so we can take appropriate action and introduce improvements that will benefit not just our staff, but their families as well.
- The project offers an opportunity to be associated with exciting new research into a subject that is rising up management agendas.

## **The researcher**

The research will be conducted by Bridget Juniper as part of her PhD studies at Cranfield University . She has an MSc in clinical research and has recently worked on patient reported outcomes methodologies. Prior to this, she worked for large multinationals, developing their staff engagement programmes.

Further information on the research plan and details from previous pilot studies are available. Please contact Bridget Juniper on +44 7776 187235 or [b.juniper.s05@cranfield.ac.uk](mailto:b.juniper.s05@cranfield.ac.uk)

## B.3 Focus Group Instructions

### Well-being research – focus group instructions

Thank you for volunteering to take part in the well-being focus groups that are part of a wider research study we are undertaking in collaboration with Cranfield University.

The focus group that you will be attending has been arranged for [date, time and location details]. It is anticipated that the session will last 45 minutes.

The purpose of the focus group is to hear from LIS staff how they think their work at LIS has impacted their overall health and well-being. Please note, there are no right or wrong answers to this; the researcher, Bridget Juniper, who will be hosting the session, is keen to hear all contributions and suggestions. There is no need to carry out any preparatory work in advance of the session.

All comments and contributions will be confidential to the group and non-attributable. Content from focus groups will be used to help construct a questionnaire which all LIS staff will be invited to complete at a later date.

If you have any questions, please speak to your library manager or department head. Alternatively, you can contact the Cranfield University researcher using the following details:

Bridget Juniper on +44 7776 187235 or [b.juniper.s05@cranfield.ac.uk](mailto:b.juniper.s05@cranfield.ac.uk)

## B.4 Interview Guide

### Scene setting

1. Thank them for their time to support study
2. Introduce BAJ and credentials
3. Provide background and context to study
4. Emphasise that contributions are non-attributable

### General questions

1. Overall, how do you consider that your overall well-being is impacted by the work that you do at [x]? Ask them for examples to illustrate the points that they make.
2. Prompt questions (if required):
  - a. How do you think your work has impacted on:
    - i. Physical health? (seek specific examples)
    - ii. Psychological health? (seek specific examples)
    - iii. Home life? (seek specific examples)
    - iv. Desire to learn and develop new skills? (seek specific examples)
    - v. Additional observations about your colleagues' work-related well-being that may provide further insights?
    - vi. Other aspects of your well-being that you consider important that have not been covered already? (seek specific examples)
3. Is there anything else about your work and well-being that you would like to share?




### Closing points

1. Next steps
2. Circulate BAJ contact information, should they wish to follow up on any points covered or think of additional input at a later date
3. Thank them for their support and contributions

## B.5 Ethical Approval Form

### ETHICAL APPROVAL FORM

**Cranfield**  
UNIVERSITY  
School of Management

TITLE of the Research Project <b>Evaluating the impact of work on employee well-being</b>		
DELETE those which do NOT apply		
Doctoral Project		
NAME of researcher(s) OR for anonymously submitted student material EXAM NUMBER <b>Bridget Juniper</b>		
I certify that this is a true account of the research, and I have considered any ethical implications of the project SIGNED 		
DATE <b>22.9.08</b>		
NAME of SUPERVISOR (for student research) <b>Dr Nicola White, Cranfield Health</b>	COURSE/ YEAR	DATE
SUPERVISOR'S SIGNATURE (or Lead Researcher's in the case of STAFF research)		
I certify that the project specified above conforms to the School of Managements' current ethical guidelines, and that the questions in this form have been answered and any ethical issues addressed OR		
I certify that there are NO ethical implications whatsoever present in this study as the project is based on an analysis of publicly available secondary sources (if so, please indicate with a cross here <input type="checkbox"/> ).		
SIGNED 	DATE <b>25.9.08</b>	
ETHICAL APPROVAL GRANTED / WITHHELD		
SIGNED 	NAME <b>R-KWIATKOWSKI</b>	DATE <b>31/10/08</b>

#### Introduction

- ◆ This form is designed to help you consider ethical aspects of your research, and to help the School of Management in providing advice and approval
- ◆ If you are using data that are not already in the public domain, or are obtaining data from people, then there may be ethical implications
- ◆ This form should be filled out by the researcher, and (in the case of non faculty work) counter-signed by the supervisor or member of faculty (additional comments for clarification can be added if necessary)
- ◆ This form is used in many contexts, so not all questions may apply to your research
- ◆ You may submit a paper or an electronic version (by email: for students via your supervisor who can forward it to the relevant Ethics Committee member)
- ◆ You may need to include this form with your research submission (eg for a grant, for marking etc)
- ◆ **IF** your research is based purely on publicly available secondary sources please sign and cross above,

**ELSE**, if you consider that there are **NO ETHICAL IMPLICATIONS** to your research please answer **ALL** the questions and tick **BOX A**, **AND** then **provide a short summary** and sign, **OR**, if you consider that there **MAY BE ETHICAL ISSUES** raised by your proposed work then please fill out this form and tick **BOX B** and sign; **THEN** you will need to **provide further information**, which will lead to in-depth consideration by the School Ethics Committee

- ◆ Ethics and methodology are not the same; but they may be related; research design is not the focus of this process; that is a matter for supervision, professional judgement or peer review
- ◆ There is an **obligation** on the **lead researcher or supervisor** to bring to the attention of the Ethics Committee, or the University **any** ethical implications not covered by this checklist
- ◆ The School will keep a copy of this form and will collect data for monitoring purposes



		YES	NO	N/A
1	Will you describe your main research procedures to participants in advance, so that they are well informed about what to expect?	y		
2	Will this be done verbally and / or in writing, as appropriate, and will understanding be checked? <b>Verbally and in writing</b>	y		
3	Will you tell participants that their participation is voluntary?	y		
4	Have you addressed any relevant legal aspects of data collection and storage (eg those covered under Data Protection or Freedom of Information legislation)?	y		
5	Will you obtain informed consent for participation, in a recorded form? (eg a written form, consent as part of a recorded interview, or as electronically verifiable consent or similar). <b>Data collected from participants (who are voluntary) will be on an anonymous basis.</b>			n/a *
6	If the research is observational, and participants are in a context where they would not expect to be systematically observed, will you ask participants for their consent?			n/a *
7	Is normal privacy, as usually interpreted by participants in that context, being respected?	y		
8	Will you tell participants that they may withdraw from the research at any time and for any reason?	y		
9	In questionnaire-based research, have you checked if a reliable and valid instrument already exists before creating one of your own?	y		
10	Have you piloted any questionnaire or interview guide, to check for clarity and/ or possible offence?	y		
11	In questionnaires, or interviews, will you clearly give participants the option of omitting or declining questions they do not want to answer? <b>Participants will be asked to answer all questions but they can always withdraw from the questionnaire at any time if they wish.</b>			n/a *
12	Will you tell participants that their data will be treated with full confidentiality?	y		
13	Have appropriate precautions been taken with respect to commercially confidential or sensitive data (for example in relation to the organization's own codes or any regulatory codes)?	y		
14	Will data be rendered unidentifiable, and, if at all possible, will the sources of those data be able to verify that they are actually not identifiable?	y		
15	If individuals or organizations will be identified, or be identifiable, (e.g. in a case study) has fully informed prior consent for this been specifically obtained?			n/a *
16	Will participants or organizations be informed whether the data may also be used for non-research purposes (e.g. summaries presented to sponsoring organizations, publications)?	y		
17	Will you debrief participants (ie give them a brief explanation of the study)?	y		

*\*Participation is on an anonymous basis. In the focus group phase, the interviewer will only know the type of role individuals perform; she will not ask for names and other personal details. None of the input or commentary from the focus groups will be attributable to any party. . The second phase involves the completion of an online questionnaire. All responses are anonymous - no personal details that identify participants will be sought. Participation will be on an entirely voluntary basis. Although people will not be given the opportunity to decline answering some questions they may withdraw from completing the assessment at any point.*

If you have ticked **NO** to any of **Q1-17**, but have ticked box A, **please give a full explanation.**

		YES	NO	N/A
18	Will your project involve deliberately withholding information from, deceiving or misleading participants (eg about the true purpose of the research or about the researcher)?		n	
19	Is the research of a sort where any formal agreement (eg the University's Tripartite agreement) is required for ethical, legal or contractual reasons?		n	
20	Is there a foreseeable risk of any participants experiencing either physical or psychological distress or discomfort?		n	
21	Are participants being subjected to risks greater than those which they would usually take in their normal lives?		n	
22	Are there any pre-existing conditions (eg medical conditions) that might put participants at increased risk during the project?		n	
23	Are there significant power differences present, or do dual or other complicating relationships exist? (e.g. the researcher is also a manager, director, has other perceived power, is romantically involved with a participant, works for a competitor etc.).		n	

If you have ticked **YES** to any of **Q18 –23** you should normally **TICK BOX B**; if not, please give a full explanation on a separate sheet.

		YES	NO	N/A
24	Do participants fall into any of the following groups? If you answer <b>YES</b> to <b>ANY</b> of these questions <b>TICK BOX B BELOW</b> <b>Note</b> in some of these cases you may also need to obtain satisfactory Criminal Records Bureau clearance (or equivalent)	Children (under 18 years of age)		n
		People with learning or communication difficulties		n
		Patients or people in care		n
		People in custody		n
		People engaged in illegal activities		n

Please tick **EITHER BOX A** (no ethical implications) **OR BOX B** (may have ethical implications) **BELOW** and **PROVIDE THE DETAILS REQUIRED** in support of your application then **SIGN** the form.

<b>A.</b> I consider that this project has <b>NO SIGNIFICANT ETHICAL IMPLICATIONS</b>	Yes y	No	N/A
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Please give a brief description of participants and procedure (methods, tests used etc) using **between 50 and 150 words**. Do please try and ensure that the ethics committee will have a good idea of your research as a result of reading this and will not need to ask for clarification or additional information.

The research will involve 3 organisations and comprises 2 phases.

The first phase involves focus groups and its purpose is to generate items for the second phase. The researcher will host 4 focus groups which will each comprise 6-10 employees from the organisation. The discussion will consider how employees' jobs impair well-being. Content arising from the groups will be confidential.

The purpose of the second phase is to identify the key factors and domains underpinning employee well-being within each organisation. All employees will be invited to answer an online questionnaire regarding how their jobs impact their overall well-being. Many variables contained within the questionnaire will be drawn from the earlier focus groups. Employee involvement will be entirely voluntary and completions will be anonymous. The questionnaire should take approximately 20 minutes to complete. During the analysis, all sub-groups will be > 10 subjects to protect anonymity.

Findings from the analysis will be shared with the management teams and employees.

*This form (and any attachments) should be submitted to the Ethics Committee (see below).*

<b>B. I consider that this project <b>MAY HAVE ETHICAL IMPLICATIONS</b> that</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>
should be considered by the School Ethics Committee			

**Please provide all the further information listed below in a separate attachment.**

1. Title of project.
2. Purpose of project and its academic rationale.
3. Brief description of methods and measurements.
4. Participants: recruitment methods, number, age, gender, exclusion/inclusion criteria.
5. Consent and participant information arrangements, debriefing.  
(Please attach intended information and consent forms).
6. A clear but concise statement of the ethical considerations raised by the project and how you intend to deal with them. You might also wish to explicitly argue why the need to carry out this research, in this way, overrides any ethical issues raised. A project may raise ethical considerations but still be judged to be an appropriate piece of research.
7. If there is a foreseeable risk of harm or distress you should also explain how you will ameliorate it, and if it endures, what steps you will take to minimise its impact, and what referral agencies are available to you.
8. Estimated start date and duration of project.

**Additional Comments from the Supervisor (you may wish to clarify aspects of the procedure, state if this is a classroom based assignment, indicate other ethical approval that has already been obtained etc.)**

The proposed work forms a continuation of research that Bridget successfully completed as part of her MSc in Clinical Research at Cranfield University in 2007. Although other quality of life-type instruments exist to assess work-related stress, Bridget's instrument differs in two aspects: her approach is holistic and looks at employees' overall well-being which is determined primarily by work and which can be influenced by work-place interventions; secondly, her analysis method is novel in this field which makes this research unique.

All information collected as part of this research will be on a wholly anonymous basis with no link back to any participant. As a result, it is considered that this project has no significant ethical implications.

A copy of this form should be submitted to the relevant member of the Ethics Committee for consideration, the Community representatives are:

**Innovation & Process Management:**                      **Professor Keith Goffin**  
(Innovation, Operations, Project Management, IS)

**Leadership & Organization Development:**                      **Professor Kim Turnbull James**  
(Organizational Studies, People, OB, HR, Praxis, General Management)

**Policy Strategy and Performance:**                      **Dr Ruth Bender**  
(Strategy, Economics, Finance and accounting, Entrepreneurship / Enterprise)

**Demand Chain Management:**                      **Dr John Towriss**  
(Marketing, Logistics, Supply Chain)

For MBA Projects:  
For PhD Projects:  
For DBA Projects:

Richard Kwiatkowski  
Dr Colin Pilbeam  
Professor Alan Harrison

- Please keep a separate copy (as a precaution against loss) for your records
- If you send it by email please make the subject;  
**Ethics Form: Your name: Your Course (Full title) if any: Date research is expected to begin**

**FINAL SECTION**

I am familiar with the School Guidelines for ethical practices in research (and have discussed them with any other researchers involved in the project). I believe that this form accurately represents the research.

Signed.....*up site*.....Print Name.....*N.J. WHITE*.....Date.....*25.9.08*.....  
Signed.....Print Name.....Date.....  
Signed.....Print Name.....Date.....  
Signed.....Print Name.....Date.....  
Signed.....Print Name.....Date.....  
Signed.....Print Name.....Date.....

**LEAD RESEARCHER OR SUPERVISOR**

Signed.....*up site*.....Print Name.....*N. J. WHITE*.....Date.....*25.9.08*.....

**STATEMENT OF ETHICAL APPROVAL**

This project has been considered on ethical grounds using agreed School procedures and is approved

Signed.....*R. Kwiatkowski*.....Print Name.....*R. KWIAKOWSKI*.....Date.....*11 Nov 08*.....  
(Chair Ethics Committee, or Community representative)



## Appendix C Call Centre Study Results

### C.1 Frequency, Importance and Impact Scores for all items

Rank	Question	*Frequency	±Mean.Imp	ΔImpact
1.	Perceiving the organisation to be more target led than patient led	0.94	3.83	3.62
2.	Having to read your emails during your break times or before/after your shift	0.93	3.82	3.56
3.	Having to book holiday so far in advance	0.95	3.70	3.53
4.	Ability to plan ahead with friends and family is restricted because of the rostering system	0.96	3.65	3.49
5.	Plans with family and friends being affected by the shift system	0.96	3.54	3.40
6.	Finding it difficult to swap shifts	0.94	3.45	3.24
7.	Having insufficient time to familiarise yourself adequately with new policies and procedures	0.94	3.36	3.17
8.	Poor air conditioning (either too cold or too hot)	0.92	3.38	3.10
9.	Having a limited social life because of the shifts that you work	0.91	3.31	3.01
10.	Experiencing frustration because of the rostering system	0.92	3.29	3.01
11.	Finding it difficult to attend regular courses/classes outside of work because of the shift system	0.90	3.33	2.99
12.	Not having enough team meetings to discuss issues and ideas	0.90	3.31	2.97
13.	Finding it difficult to arrange weekends off	0.90	3.29	2.96
14.	Not having enough team meetings so you know what is going on	0.91	3.22	2.94
15.	Lacking adequate control over your choice of shift	0.92	3.18	2.92
16.	Eating at 'unconventional' meal times because of the way your breaks are organised	0.91	3.13	2.84
17.	Always feeling tired because of shift patterns	0.92	3.09	2.84
18.	Having disturbed sleep patterns because of your shifts	0.90	3.14	2.83
19.	Not being involved or consulted on decisions that affect you	0.91	3.09	2.82
20.	Having insufficient opportunities for social interaction with your colleagues	0.89	3.17	2.81
21.	Being unable to get into a routine because your shifts are so varied	0.88	3.14	2.75
22.	Feeling stiff because of the long spells you have to sit	0.88	3.12	2.73
23.	Having insufficient time to prepare and eat a proper meal during a shift	0.89	3.07	2.73
24.	Lacking enough time to recover from a difficult call before having to answer another one	0.86	3.17	2.72
25.	Being unable to take breaks with your colleagues	0.91	2.97	2.69
26.	Experiencing high levels of stress because of your targets	0.90	2.98	2.68
27.	Not being consulted enough on work matters that impact you directly	0.88	3.00	2.65
28.	Having a body clock that is impacted negatively by rotas	0.89	2.99	2.65

Rank	Question	*Frequency	±Mean.Imp	ΔImpact
29.	Having insufficient opportunities for promotion	0.81	3.23	2.60
30.	Having unhealthy food and snacks while on shift because they are quick to eat	0.85	3.08	2.60
31.	Believing that senior management don't appreciate the work that you do	0.84	3.08	2.58
32.	Having inadequate facilities to buy/prepare healthy food and drinks during your shift	0.84	3.08	2.58
33.	Having to do a job where there is little variation	0.86	2.99	2.58
34.	Feeling like you lack control and empowerment because of your targets	0.87	2.97	2.58
35.	Having to read emails that are not relevant to you and your role	0.91	2.84	2.58
36.	Receiving poor communications on things that matter to you at work	0.89	2.86	2.55
37.	Being unable to confer with your team colleagues about advice to callers	0.87	2.91	2.53
38.	Feeling run-down because of the shift work	0.88	2.85	2.52
39.	Lacking feedback from callers on how you helped them	0.85	2.92	2.49
40.	Only seeming to receive feedback when you could have done something better	0.84	2.92	2.44
41.	Lacking enough training to allow you to keep up to date with new developments in your field	0.84	2.90	2.44
42.	Not having the chance to get to know your work colleagues and establish friendships	0.82	2.95	2.42
43.	Feeling unable to use your professional discretion as much as you would like to	0.84	2.90	2.42
44.	Having to work a twilight shift immediately before a day off	0.78	3.10	2.41
45.	Experiencing muscoskeletal problems (eg backache) because of the long spells you have to sit	0.84	2.87	2.40
46.	Having insufficient family-friendly policies in place	0.79	3.02	2.39
47.	Being unable to support your colleagues as much as you would like to	0.89	2.65	2.36
48.	Not feeling part of a real team	0.83	2.83	2.35
49.	Having a different desk space each time you come to work	0.87	2.68	2.34
50.	Feeling isolated from colleagues even though you sit with them	0.80	2.88	2.31
51.	Being overwhelmed by the amount of organisational change	0.86	2.65	2.29
52.	Believing that you are inadequately paid for the job that you do	0.83	2.73	2.27
53.	Putting on weight because you are not eating healthy food at work	0.77	2.90	2.25
54.	Having a poor team spirit	0.83	2.71	2.25
55.	Having inadequate training to allow you to do your job effectively	0.84	2.70	2.25
56.	Being unclear about the overall strategy and plans for the organisation	0.86	2.60	2.25
57.	Not feeling sufficiently challenged by your work	0.84	2.62	2.19
58.	Experiencing worry and anxiety after difficult calls	0.90	2.43	2.19
59.	Working at a site that is not very clean and tidy	0.81	2.66	2.16

Rank	Question	*Frequency	±Mean.Imp	ΔImpact
60.	Lacking energy because of the work that you do	0.81	2.59	2.11
61.	Having to split days off	0.76	2.76	2.10
62.	Feeling physically exhausted because of your work	0.85	2.46	2.10
63.	Working somewhere where there isn't much of a buzz	0.76	2.75	2.08
64.	Being unable to concentrate properly at work because you are tired	0.86	2.42	2.08
65.	Feeling you can't off-load to anyone at work about issues that are important to you	0.80	2.56	2.06
66.	Feeling emotionally drained from your work	0.82	2.48	2.05
67.	Experiencing high levels of stress because of the type of calls you have to deal with	0.86	2.33	2.01
68.	Being bored at work	0.81	2.46	1.99
69.	Having poor training facilities	0.78	2.55	1.98
70.	Experiencing high levels of stress because of your high workload	0.80	2.45	1.97
71.	Experiencing visual problems from looking at the screen	0.79	2.49	1.96
72.	Having too many work demands to be effective in your role	0.81	2.37	1.92
73.	Having breaks that are not regularly spaced out across your shift	0.78	2.44	1.91
74.	Being unable to improve/maintain your physical fitness because of your shift patterns	0.75	2.54	1.90
75.	Developing headaches because of your job	0.75	2.53	1.88
76.	Having unclear objectives to work towards as part of your development	0.79	2.38	1.88
77.	Feeling lonely while you are at work	0.77	2.42	1.86
78.	Having a sore throat because of all the talking on the phone	0.74	2.36	1.75
79.	Having inadequate rest areas	0.75	2.33	1.74
80.	Not feeling that you are doing a rewarding job	0.74	2.28	1.69
81.	Not being rostered with your own team	0.74	2.27	1.69
82.	Being unable to get a proper break because you have to attend to admin matters during your 'off-line' time	0.75	2.24	1.68
83.	Lacking pride in the job that you do	0.72	2.30	1.67
84.	Feeling depressed because of the cumulative fatigue from shifts	0.73	2.29	1.67
85.	Lacking praise and recognition by your line manager	0.75	2.23	1.66
86.	Feeling under valued for your contribution by your immediate line manager	0.72	2.26	1.63
87.	Having a poor working knowledge of the rostering system	0.73	2.19	1.60
88.	Not feeling as though you are making a positive difference to those who call for help	0.75	2.13	1.60
89.	Having limited access to your immediate line manager	0.74	2.10	1.55
90.	Having poor lighting at your station	0.72	2.08	1.50
91.	Having voice problems because of all the talking on the phone	0.70	2.13	1.48
92.	Experiencing hearing problems because of all the phone work	0.64	2.12	1.35
93.	Being unable to take your allocated breaks because of the workload	0.69	1.93	1.32
94.	Finding it difficult to speak to your line manager about	0.66	1.96	1.30



Rank	Question	*Frequency	±Mean.Imp	ΔImpact
	your work or personal problems			
95.	Having insufficient feedback on your performance so you know how you are doing	0.66	1.93	1.28
96.	Feeling weepy and tearful because of your work	0.64	1.91	1.23
97.	Feeling unsupported by your colleagues at work	0.72	1.66	1.20
98.	Feeling unsupported by your line manager	0.62	1.75	1.08
99.	Feeling you are not treated with the respect you deserve from your immediate line manager	0.57	1.80	1.02
100.	Having a poor working relationship with your immediate line manager	0.57	1.69	0.97
101.	Feeling bullied by your immediate line manager	0.49	1.55	0.77
102.	Losing weight because you are not able to eat properly at work	0.53	1.42	0.75
<p><i>*proportion of subjects reporting item as bothersome</i>  <i>± mean importance score in subjects who reported item as bothersome (maximum = 5)</i>  <i>Δfrequency x mean importance (maximum = 5)</i></p>				

## C.2 Free Text Responses

No.	Free Text Comment
1.	<p>1) LIGHT REFLECTING OFF NEW BLACK KEYBOARDS AT WORK STATIONS MAKES IT DIFICULT TO SEE KEYS CLEARLY</p> <p>2)TOTAL LACK OF EFFECTIVE, REGULAR CLINICAL UPDATES FOR STAFF/THESE HAVE BEEN PROMISED NUMEROUS TIMES BUT WE ARE STILL WAITING</p> <p>3) POOR USE OF CLOSURE DAYS. NEED TO USE THESE TIMES MORE EFFECTIVELY TO INFORM AND TEACH STAFF. PART TIME STAFF NOT ALWAYS HAVING ACCESS TO THESE CLOSURE DAYS DUE TO ROSTERING ISSUES. HAVE HAD TO RESORT TO COMING IN ON DAYS OFF (UNPAID)TO ACCESS IMPORTANT SESSIONS, EG VISIT BY REGIONAL [ ].</p> <p>4)FRONT ENDING BY [ ] IS A VERY POOR USE OF RESOURCES AND IS INEFFECTIVE. IT WAS 'SOLD' TO US THAT WE WOULD BE USED AT EXTREMELY BUSY TIMES FOR SHORT PERIODS BUT THIS IS BECOMMING THE 'NORM' ON MANY SHIFTS.</p> <p>5) EXPECTING TO READ DOCUMENTS TO UPDATE/TRAIN OURSELVES IS APPALING. NO CHANCE TO DISCUSS THE NEW REGIME/POLICY. WHEN QUESTIONING ANY NEW POLICY ONE IS JUST SIGNPOSTED TO 'EMAIL' THE GROUP WHO PRODUCED THE INFORMATION. NOT SATISFACTORY FOR A PROFESSIONAL ORGANISATION. OUR REGISTRATIONS ARE POTENTIALY ON THE LINE AND WE SHOULD BE UPDATED AND TRAINED IN A PROFESSIONAL MANNER. WE NEED TO ENSURE PATIENTS ARE GETTING RELEVANT INFORMATION FROM WELL TRAINED, UP TO DATE [ ].</p>
2.	<p>1.An example of the pressure that staff are under and the target driven culture email from [x] saying 20-25 mins to complete this questionnaire and the [ ] team leader saying that I would only need 10 minutes to complete!</p> <p>2. Pressure from [ ] team leader/Team leaders about your availability on line increases stress and anxiety throughout shift.</p> <p>3.I feel that I have to come into my shift 20-30 minutes before my scheduled start time to keep updated with e mails, system alerts and sabs alerts.</p> <p>4.At times throughout busy shifts I have had to request to stop recieving calls to keep up to date with system alerts.</p> <p>5.I have had to re direct e mails to my home e mail account as I am unable to keep up to date with them at work. eg policy's and other work related content.</p>
3.	all target driven. not treated as a professional just another number.
4.	All the 'family friendly' policies and things to 'Improve working lives' seem to be aimed completely at those that have children. I have no children but that does not mean that my life outside work is less important than that of those with children yet I feel that sometimes I get the 'short end of the stick' with regard to shifts and benefits.
5.	ANNOYED WHEN OFF SICK THAT DAYS OFF ARE COUNTED-WHEN NUMBER OF WORK DAYS IS LESS THAN THAT WHICH IMPLEMENTS THE ATTENDANCE /DISCIPLINARY PROCEDURE.THAT ONE STILL HAS TO EXPLAIN ONESELF EVEN THOUGH A DOCTORS CERTIFICATE IS PRODUCED FOR SICKNESS. ALSO THAT IT IS A ROLLING PLAN- ONE CAN BE ON AN ACTION PLAN FOR EXCEEDING THE NUMBER OF SICK DAYS - HAVE ANOHTER EPISODE AND THEN BE ON ANOTHER PLAN. EG- WHEN LOSING ONES VOICE- ONE IS UNABLE TO DO THE JOB BUT STILL SUBJECT TO AN ACTION PLAN TO IMPROVE ATTENDANCE.

No.	Free Text Comment
6.	<p>As a team leader I fell subject to a form of inverse bullying where constant demands are made of me from my 'sub-ordinates'. many of these demands are either trivial or not really my concern, but an instant response is demanded.</p> <p>I often feel like the filling in a sandwich passing on messages/requests between staff and the schedule team, consequently feeling as if I am getting it in the neck from both.</p>
7.	BAND 6 FOR A CTL IS NOT RIGHT. MANAGERIAL ROLE, TAKING CHARGE OF A CALL CENTRE MOST WEEKENDS. MY COLLEAGUES HAVE A BAND 7 SO WHY NOT ALL CTLS? THE ROLE DOES NOT MATCH THE AFC GUIDELINES FOR A BAND 6 THAT SUGGEST THAT AUTONOMOUS MANAGERIAL ROLE REQUIRES A BAND 7.
8.	BECAUSE OF THE LACK OF FEEDBACK FROM OUR CALLERS, I DO NOT FIND THE JOB REWARDING
9.	BEING DISREGARDED BY SENIOR MANAGEMENT WHEN HEALTH/ENVIRONMENT MATTERS ARE RAISED.
10.	Being expected to do more work eg managing a bigger team/covering shifts with reduced number of CTL/TL because they are not being replaced due to 'national over establishment' and senior management not understanding the impact at site level as they do not know/understand the role we have.
11.	Being given a night shift (11 pm until 7am) before a day off.
12.	being requested to take annual leave for hospital appts( despite being registered as disabled). can go sick but may be subject to stringent sickness /attendance policy- thus making it potentially difficult to apply for posts nearer to home of similar pay scale.
13.	BEING SCHEDULED TO DO NIGHT SHIFTS. NOT ENOUGH SUPPORT FROM 'TOP DESK' WHEN HAVING PROBLEMS EG CHILD PROTECTION REFERRALS, DIFFICULT CALLS.
14.	<p>being told that you are not at work to socialise but to work is a bit harsh, as long as you are doing your job, then you should if not busy etc., be able to talk to your work colleagues as at the end of the day 90% of your life is at work, also in this job you do not get to have a break the same time as your colleagues, in this job sometimes you do need to wind down if get awkward calls and talk to a colleague/friend at work. Also the rostering is too far in advance as your social/family life events happen not necessarily before you have to put your shifts in, then it is very difficult to change shifts etc., this can be very stressful as you feel under pressure, also there should be no reason to change a time or shift as long as you have given plenty of notice. Or the only other way is to have like a rolling rota, for full time workers, and a mini-rolling rota for part-time workers. At the end of the day we are only human and we do have lives outside the work place which are just as important. So if your work live is satisfactory and your happy with your shifts then you will put in 100% work satisfaction. Also your family life will be happy too. There are a lot of people whose family do not live local, so this is why the shift pattern is important especially if you are able to change the shifts quite readily without having the hurdles to climb.</p>
15.	CALL CENTRE NOISE. CAN BE VERY STRESSFUL
16.	call room very noisy during busy periods, difficult to concentrate and hear what caller is saying, lack of private spaces,if dealing with a caller who has a sesitive query they can hear your colleague speaking or even laughing, not at them ,but with there caller which can be misinterpreted
17.	COMING IN WITH COUGHS AND COLDS AND NOT GIVEN CONSIDERATION WHEN YOU ARE COUGHING, DUE TO TALKING TOO MUCH AND AIR-CON.
18.	<p>Concentration being affected by struggling to filter out loud background noise in a packed call centre.</p> <p>Car parking difficulties.</p>

No.	Free Text Comment
19.	difficulty trying as a line manager to implement Policies i.e. attendance Management, work performance etc due to lack of adequate Training staff and support. The constant lack of Trust between staff and Line Managers due to TU input in to Site Regional and National matters that has become the norm.The feeling that the 'training' days feel that it is just Senior Managers 'ticking' the boxes to appear as an organisation to be behaving appropriately.Currently though the NA work load has been spread over all sites the feeling of ownership of calls and care has been diluted so the job of [ ] Advisor (and consequently [ ] Management) has become mundane almost mechanical which concerns me as historically [X] has always provided a efficient QUALITY service to callers
20.	EXCESSIVE NOISE LEVELS IN THE CALL CENTRE - FROM COLLEAGUES. I HAVE MENTIONED THIS AND NOT HAD SATISFACTORY HELP.
21.	Experiencing very poor communication (not returning calls, emails)with local HR department whilst on maternity leave & as a direct result of this being paid incorrectly 4 months out of 6. Poor service at Payroll helpdesk which led to emotional stress & financial difficulties due to being given incorrect information by HR.
22.	eye problems caused by airconditioning, wrist ache and pain on movement
23.	Feedback given is always negative. i.e non is given when things are good!
24.	Feeling extremely frustrated that Team Leaders stand around and chat about non work related issues, whilst Health Advisors & [ ] are working - this is particularly stressful at weekends when it is busy and we don't have enough time to even say hello to work colleagues, but you look at the 'top desk' and all you see is them chatting, laughing and eating!!!!
25.	FINISHING A NIGHT HAVING A DAY OFF THEN BACK IN ON AN EARLY, (NEEDING TO GET TWO LOTS OF SLEEP IN 24 HOURS WHICH IS MEANT TO BE YOUR DAY OFF)
26.	FRUSTRATING COMPUTER PROBLEMS, CALL HANDLERS SHOULD BE CONSULTED OR SAT WITH BY THE PROGRAMMERS SO THEY CAN SEE HOW FRUSTRATING SOME OF THE PROBLEMS ARE AND WHAT IS REALLY NEEDED TO MAKE THE SYSTEM EFFICIENT!
27.	Frustration +++ and professionally wrong that patient care is compromised by targets and this is forced upon us . ie Patient's are all triaged at start of call and given a priority for their condition and care needed at that time . this is totally ignored with regards to targets ie a P3 ( a lower priority )is transferred directly to a [ ] whilst a P2 ( higher priority ) is left waiting in the queue and all because of statistics , nothing is considered about the well being of the patient and we are forced to take these calls . The speed at which the calls are transferred in the out of hours periods is exhausting and totally unnecessary . It does not take a Genius to see that eventually the staff are going to be 'burnt out' and this type of unnecessary speed is going to result in huge numbers of repetitive strain injuries as well as other problems
28.	good working relationship with immediate manager, however there is an aggressive/robust/postive management style practiced by those above them that slip or be percieved as bullying
29.	gradual reduction in variety of roles/ no longer running the call centre, very little time preceptoring/  these off line times allowed you to expand knowledge and responsibility,allowed for greater interaction with colleagues and feeling call 'centred' and team spirited. Learning new skills are greatly missed.

No.	Free Text Comment
30.	Having had an on-going work-related health problem has meant a life-style change to enable me to remain at work. Having been set specific attendance targets has been very stressful as my home/social life has been curtailed to facilitate improved attendance at work. I feel that I am just a number to the organisation and my role is to produce auditable performance statistics. My professional accountability is under constant scrutiny but the quality of service I am able to offer to callers is not measured by the organisation.
31.	HAVING NO BREATHING SPACE BETWEEN CALLS AT PEAK TIMES. A FEW SECONDS WOULD HELP TO CLEAR MIND FROM ONE CALL TO ANOTHER, ESPECIALLY WHEN LARGE NUMBER OF CALLS ARE ABOUT THE SAME SYMPTOMS. THERE ARE TIMES WHEN YOU CANT EVEN GET TO THE WRAP BUTTON WHEN YOU NEED TO. THIS WOULD ALSO HELP WHEN YOU HAVE CALLS IN YOUR ADVICE LINE CALLBACK AS OFTEN STAY LONGER THAN SUGGESTED TIME AS CANT TIME TO PICK THEM OFF BEFORE NEXT CALL COMES THROUGH
32.	HAVING NO DIRECT CONTACT WITH ROSTERING TEAM, & NO CONTROL.
33.	HAVING TO FRONT END WHEN THE SYSTEMS KEEP ON CHANGING. VERY STRESSFUL. I JUST WANT TO DO [ ] ADVISOR WORK
34.	<p>Having to work a night, late or twilight shift before rest days. 10hr break from shift to shift - which breaches health &amp; safety. Would be useful if the voicemail message states at the beginning 'callers to have contact number &amp; postcode of where the patient is'. This would help with AOL targets.</p> <p>Flexiable working pattern to ensure single parents can accomodate their familes during ill health. I.E: cancelling a shift due to son/daughter ill health, but re-arranging to work a shift to accomodate the site short fall of staff.</p>
35.	Having two jobs i find it frustrating that i cannot work to a set rota. also having to plan for holidays/time off months in advance is unreasonable and not getting every ohter christmas off.
36.	Huge amount of responsibilty but pay does not recognise this
37.	<p>I applied for flexible working but was granted it without fulfilling all my criteria which I find unacceptable. I was promised the other criteria could be managed through the rostering system which has not happened.</p> <p>I find staff very unhelpful when trying to sort out queries with pay. My immediate line manager informed me that it was not their responsibility to deal with it whereas HR never provide adequate responses.</p> <p>Part-time staff are at a disadvantage when applying for annual leave as it may be released when you are not at work for several days and by the time you can make the earliest application, there is no holiday left to take. Very distressing when you need certain holidays if you have children.</p>

No.	Free Text Comment
38.	<p>I feel that the call center can be very bitchy and gossipy. I wouldn't want most of the people i work with to know my personal business as they would just gossip about it.</p> <p>I don't like the fact that i cannot do evening courses out side of work to make friends as the shift patterns always mean i miss 1/2 the classes.</p> <p>I feel quite unsupported by my colleagues in my base but more support from TL/CTL in another base.</p> <p>I'm sad that my SDM is leaving as she has been very supportive.</p> <p>It annoys me that i have 8 people in my team when a colleague has 2 people and we are on the sam number of hours per week. - and on the same pay.</p>
39.	<p>i feel the shift pattern or lack of it has a big impact on my life</p>
40.	<p>I FEEL TRAINING STANDARD HAS GONE DOWN SO MUCH SINCE I STARTED HERE AND THE STANDARD OF TRAINERS, ALSO THING CHANGE IN YOUR JOB AND YOU DONT REALISE IT TILL YOU READ YOUR EMAILS AFTER YOU ARE INTO YOUR SHIFT AND BY THEN YOU HAVE MADE AN ERROR</p>
41.	<p>I find it frustrating and irksome to find that there is a lack of continuity in application to AOL's CCC etc between sites. You attend a training session and meet other members of staff from these sites and I find that the targets ar approached differently with emphasis on other areas - these appear to more positive whereas in this site the approach is negative. Its based on what you HAVEN'T done as opposed to what you have achieved.</p> <p>CCC is still not functioning properly - no shift trader system yet. This was a selling point of this rostering programme. Instead we can't even swap inter region let alone nationally. Yet other sites are swapping regionally.</p> <p>I would like to be treated as a professional with many years experience, instead of a school kid in a playground who is unable to make decisions regarding trivial matters.</p> <p>Having Line Managers who are equally unable to make front-line decisions - refering simple requests to a higher authority - some times to an administrator to say Yes/No. eg Taking TOIL or change of shift to an earlier/later start or finish.</p>
42.	<p>I find that the rosta is the biggest stress to me. I have various requirements and the rosta affects so much of it. In the 20 years I have been a [ ] I have never found the shift patterns so unpleasant and stressful.</p>
43.	<p>I have felt that we are being overloaded at times with training, and then there is no training for long periods. It would be better to be spread out more so that we could give each piece of training the attention and time it deserves.</p>
44.	<p>I have had to be seen by Occupational Health as the terrible shift pattern was distressing me so much and causing ill health, this has to be reviewed after 6 months of 'consistent' shifts, I had also reduced my hours to try to help with this problem prior to seeing Occupational Health. When the rostering was completed locally I had never had any problems before the rostering was done centrally.</p>
45.	<p>I HAVE RECENTLY HAD TO REQUEST A CHANGE OF LINE MANAGER AND AM NOW MUCH HAPPIER AT WORK. QUESTIONS WERE ANSWER BASED ON MY EXPERIENCES UNDER MY PREVIOUS LINE MANAGER AS THAT SITUATION IMPACTED ON 10 OUT OF THE PREVIOUS 12 MONTHS OF WORK</p>
46.	<p>I HAVE SERIOUS HEALTH ISSUES, THAT IMPACT ON MY WORK, AND HAVE RECEIVED A LOT OF HELP AND SUPPORT FROM MY LINE MANAGER.</p>

No.	Free Text Comment
47.	I have worked at [X] for almost 8 years and have seen alot of change. On a positive note I feel we now deal with calls more quickly and callers do not have to wait hours for a callback. On a negative point I now feel the service has become so target driven that safety is a big issue and callers are being put at a greater risk than when they were having to wait for a [ ] to callback. Staff are under such pressure to achieve stats that they are no longer able to use their professional judgement and if they do then they are chastised for not achieving targets. In 27 years of [ ], I have never worked anywhere where the moral is so low. Staff only receive negative feedback from line managers and there is absolutley no flexibility within rotas and shift patterns. Also there is an inability for any decisions to be made at CTL level. Sickness and people leaving is higher than anywhere I have worked. I am hard working, reliable and take pride in delivering high standards. I have tried to stick this out in the hope that it will get better but it has only got worse and I now too am joining the list of leavers before the stress here makes me go off sick.
48.	I have worked at [X] for over 3 years and have never had a team meeting, I only know who is in my team by name and would not recognise them at work. I therefore believe there is no such thing as a work team other than in name only. The job is extremely isoliting and that is the main thing that I find I struggle with.
49.	I HAVE WORKED HERE 4 YEARS AND HAVE NEVER HAD A TEAM MEETING.WE HAVE NO CLINICAL TRAINING TO KEEP US UP TO DATE, THEREFORE IF WE DO NOT STUDY/READ IN OUR OWN TIME, WE WILL BECOME OUT OF DATE PRACTITIONERS, THEREFORE ILL-ADVISING PATIENTS.
50.	I think that there could be permanant shifts as we have enough people who cover all hours. We also have enough people that don't mind doing different shifts who would be able to cover the unfilled areas. This does need to be looked into as i for one can not work around my husband and 2 children and another job much less a social live, exercise classes or my psychology course. Regular shifts would help out a lot.
51.	I understand the need for need for targets due to the financial implications for the service , but to be informed my job is at risk if those targets are not being met very demoralizing . I find it particularly upsetting as I pride myself on the quality of my calls , which Im sure the caller appreciates and would ultimately reflect well for the service
52.	I work full time. As a result of a chaotic shift pattern earlier in the year I was becoming increasingly unwell which resulted in my line manager making a referral to Occupational Health. This was with my complete agreement. As a result of this, I am feeling less tired, drained and my sickness has improved considerably. I am fearful that if I work chaotic shifts, I will again have the same problems resurfacing.
53.	if for example you work 11pm to 7am that is classed as your day off even though you have worked 6.5 hours into that day this is unfair. chairs are not comfortable and you should have a minimum of 13hrs between shifts.
54.	<p>Ihave recently had to have time of work , supported by OH for many of the reasons listed above.</p> <p>This is a new phenomenon to me as I have never had to have time of for stress related issues brought about by poor rostering and lack of social life , pressures from home to be a parent and partner .</p> <p>Maintaining current practice and feeling valued.</p> <p>Recognition for experinece knowledge within [x] and lack of opotunities for improvement, or role diversity.</p> <p>No energy and physical syptoms as direct result from sitting and using VDU, (wearing glasses now, but only for screen work!)</p> <p>Hip and foot pain and discomfort, inflamation from position and lack of mobilisation.</p>

No.	Free Text Comment
	No feed back about callers or Management about on going issues and future plans , or why they're changed.
55.	inadequate facilities for training. Training affected as no space to have a meeting. Lack of opportunities to discuss important matters because nowhere private to hold them.
56.	it seems to me that full time staff are affected far more by a lot of these issues. I am part time and have a relatively set shift pattern for my Monday to Friday shifts so do not think I am personally as affected as others by some issues
57.	Lack of Off line admin time - i reckon a 2 hour admin slot once per week to catch up on the 'bits and pieces' would solve a number of problems that have been faced at [x] for years.  Having time off sick and feeling the pressure of the 'disciplinary action pending.'
58.	LACK OF RESPECT ESPECIALLY FROM [ ] TEAM LEADERS - BEING SPOKEN TO IMPATIENTLY & AS IF I SHOULD HAVE ALREADY DONE SOMETHING (WHICH IS OBVIOUS TO THEM, BUT NOT PART OF MY ROLE OR TRAINING).  BEING SPOKEN DOWN TO & BEING BROUGHT TO TASK IN FRONT OF OTHERS OR IN A BOSSY WAY IF THERE IS A PROBLEM (INSTEAD OF BEING SEEN AS A VALUED COLLEAGUE WHO HAS JUST HAPPENED TO MAKE A MISTAKE ON THIS OCCASION & WHO IS PART OF THE SOLUTION).  LACK OF CONTROL OVER THE ENVIRONMENT IN WHICH I WORK (LIGHTING)  NOT ENOUGH TIME TO RELAX OR EAT DURING BREAKS, LEADING TO ABDOMINAL DISCOMFORT.
59.	Lack of rest facilities for breaks, difficulty swapping shifts,
60.	lack of training in the organisation to keep our skills up todate, the lack of communication within the organisation especially for those who work a lot of unsocial hours. lack of feedback from callers. rostering to far in advance.  are we going to get some feed back from this assesment
61.	Lack of understanding/willingness to listen and compassion from Line Managers and Managers as to sickness levels mainly caused by the working environment and shift patterns which in turn has increased stress levels to the extent of being advised by my GP to leave my job because of the stress and upset it is causing.
62.	Lacking a national, centralised mechanism for swapping shifts.  Receiving 'Training by email' - the emails we lack time to read.  Being inundated with feedback from people other than my line manager about below target performance.  Slow computers.



No.	Free Text Comment
63.	<p>line manager is very good, but they have to enforce the instructions from senior management - even if they dont agree. It feels as if the service is all about statistics. You dont know which patients you are going to speak to so how you can meet targets that state a certain percentage must go to each end point is a mystery. AOL can be affected negatively by doing a high number of calls ie - if you do 20 calls, and 1 min wrap time for each then that is an extra 20 mins you are on not ready. If you do 40 calls- and 1 min wrap after each call - that is an extra 40 mins of not ready time - therefore doing more work makes your AOL worse. Staff morale is very low, talking to other colleagues we all experince persistent feelings of dread and not wanting to come to work, many staff actively looking for other work. Initial traing and return to work referesher after sickness is good, but there is no opportunity for education and personal development on an ongoing basis - even basic skills that are expected of a [ ] - ie resuscitation update, as it is considered not specifically relevant to this organisation - however as a [ ] you would be expected to know how to perform CPR in an emergency situation. At [ ] there is no canteen now, just a snack van visiting twice a day. jacket potato is most healthy food, otherwise is all pies, pasties, burger, sausage etc. Feeling tired from shifts all the time does not inspire me to pre cook meals to bring to work. Shift swaps, especially out of hours shifts are difficult to swap as people do not want to do extra anti-social shifts. Shifts ending after 6pm before a day off are unacceptable, particularly shifts ending between 9pm-2am.</p>
64.	<p>Line managers being unable to make simple decisions.</p> <p>Being timed on breaks down to the second and on occasions i have seen colleagues being pulled up for being 1 - 2 mins late.</p> <p>Only feedback ever received is negative</p> <p>Lack of flexibility with shifts, shift trader not working.</p> <p>Having to always work weekends - for eg having 2 weeks A/L then still having to work usual weekend shifts in remaining 2 weeks (i.e both of them) I feel if you have A/L then you weekends should be reduced</p>
65.	<p>management disregarding medical advise given to myself during pregnancy.</p> <p>upper management being untruthful.</p>
66.	<p>MANAGEMENT ONLY LOOK AT PERCENTAGES ON AOL BUT DO NOT LOOK AT PROBLEMS EXPERIENCED DURING SHIFT OR GIVE ANY CONSIDERATION TO THIS.</p> <p>STAFF EXPERIENCE A HIGH LEVEL OF GENUINE ILLNESS DUE TO THE STRESS PRESSURE AND POOR WORKING ENVIRONMENT THEY WORK IN IE STAFF WEAR COATS AND SCARVES DURING WINTER BECAUSE OF THE DRAFTS FROM AIR CONDITIONING SYSTEMS. DESKS AND KEYPADS AND PHONES WOULD TEST POSITIVE IF TESTED FOR BACTERIA!</p>

No.	Free Text Comment
67.	<p>My line manager was seconded to her role and this secondment has ended and so I have a new line manager. I worked with my previous line manager for 8 months and thought she was fantastic-very supportive and I was able to let her know of problems that impacted on my ability to work well. I know my new line manager through consulting her as CTL but am worried that she doesn't know me and how this will affect our relationship. Also, how will we get time to know each other with pressures of work. targets and incessant pressure are also impacting negatively. I know this has been stated before in the questionnaire but I would like it known that continuous pressure to meet targets causes STRESS. Sometimes I've felt so stressed and tired after a shift that I haven't been able to sleep properly. This then impacts on my performance the next day as I'm tired. There is no feeling of being part of a team. Everyone works as individuals and whilst the majority of my NA colleagues are extremely supportive-when it is busy we don't have time to interact so there is no in-built support network. 121's and call reviews I believe are the organisations way to provide Clinical Supervision but this is not Supervision as I understand it or that I have worked with previously. You need to be able to access supervision when you need to not when your line manager says you're going to. Call reviews are not a supervisory tool in my view-they are a tool to manage performance and exhort us to do better without giving us the means to improve. Training is non-existent. When recruiting they want people with a wide range of experience and yet we have no way other than accessing and paying for external courses to maintain our currency. I do take on board the needs for generic training and that [X] are not paying me to only answer calls on Family Planning, Sexual Health or General Practice. HOWEVER, I do teach colleagues on these things and if I am to deliver effective training then I should have access to updating. I also need this to be able to provide the best evidence led practice to my patients. I don't feel that I am doing that necessarily at the moment.</p>
68.	<p>My main problems is the rota and split days off, twilights before days off and also rota administrators not prepared to give you the weekend off before your week Annual Leave, despite requesting this.</p> <p>The fact our team leaders have limited control over the rota. Other issues are Senior Managers who really do not appreciate the hard work that front line staff are providing.</p>
69.	NEW CHAIRS IN CALL CENTRE TOO HARD
70.	[X] Site shares working environment with [X] service-sometimes especially OOH and Weekends I find the noise levels very high-finding it hard to always have the space and quiet to think through the information I am being given to reach my decision-this I find stressful
71.	Night duty is particularly bothersome to me, it affects my sleep pattern for a few days after working a night. Also, affects my digestive system - indigestion and sore mouth, my mood and ability to cope with stress. I have arranged to split my nights, working just 1 night at a time to combat the effects
72.	Night shifts preceding twilights and then running into long stretches before a day off.
73.	Night shifts prior to days off are unacceptable. Varying shifts do not allow a routine to be established (this is worse at [X] than at any hospital I have worked )
74.	nights and earlies in same week. rostering is a major negative factor at [x]. rosters too impersonal and lack flexibility. too regimented
75.	No opportunity for advancement in pay due to the lack of ability to change pay bands
76.	NO ROOM TO SHOW INITIATIVE .DECISIONS ARE TOO MUCH TOP DOWN STIFLING ORIGINALITY /CREATIVITY IN RESOLVING CALLER'S PROBLEMS .LACK OF RESPECT FOR COLLEAGUES /PROFESSIONAL CAMARADERIE
77.	Not able to access occupational health easily. Having to clean desk before working.

No.	Free Text Comment
78.	<p>not being able to choose the exact shifts that i would like to work, eg i feel that every employee should be interviewed about how they would like the rota to be idealistically. i applied for this job to work shifts but when i joined they were shifts that i wanted to do. over the years very cunningly the powers that be have changed the way the rota is managed and as the service has become more out of hours orientated, we have therefore been allocated shifts that we would never have chosen. i started here wanting to never work later than 7pm and preferring to do early shifts and not to work at weekends.</p> <p>this is obviously not happening and having to organise a rota so far in advance is ridiculous when sometime i do not know what i am going to do next week never mind in two months time.</p> <p>Also not having the chance of any promotion, or being recognised for any additional roles such as trainer is very demoralising when i know i have the skills and experience to do so, but due to being stigmatised following having had a poor sick record has hindered this development and presented me in a poor light to the powers that be.</p> <p>On busy shifts being made to constantly take the calls in a barrage back to back without a breather most of the time as this would therefore mean going on a walk away code, affecting stats causing further problems, etc, etc.</p> <p>Especially being given late shifts which i do not want as i am an early bird and as i said earlier if im at at 5am, im extremely exhausted by the evening to be working.</p> <p>The sick leave policy being a tad harsh, peaking as someone who has had an awful lot of bad luck healthwise and therefore feel i have been stigmatised and treated unfairly as such. 'having a record' presents notions of being a criminal when one cannot help to have been sick, and although i am now at point where i am managing my health to the best of my abilities, the record is set and damage has been done in making me feel worthless and without a voice.</p> <p>we are not battery chickens like the advert presented on tv presented so please dont treat us as such.</p> <p>the main thin is feeling that in the 6 years since i have worked here at [x] i have lost my confidence through all the hassles re my health and feel like i cannot move to anything else, rather than feeling i have achieved something.</p> <p>Only when i get a thankyou from a patient do i feel that i have helped someone. But the powers that be do not recognise this much at all, albeit measuring statistics.</p>
79.	Not being able to have a fixe rota for child care problems adds alot of extra stress to the day.
80.	Not being paid for 'development opportunities' e.g. CAS trainers, preceptors, child protection trainers, SCAN trainers, etc etc. These could all be 'promotions' that carry suitable remuneration, which could alleviate the lack of career development to a degree.
81.	NOT ENOUGH SUPPORT FROM SITE LEADS
82.	not enough time to read emails so important ones may get missed, no real plan of for eg weekends off that are rostered , unless they are veto'd. The only flexibility that they are so proud of is one way only and that is theirs.Swapping shifts can be a real nightmare and often are not possible
83.	Not having adequate equipment at each desk. I have to spend time at the start of each shift finding a foot rest, wrist supports and an appropriate chair! Each pod should be set up with basic support systems. Even things like have a screen that can be placed at the correct height would be great.

No.	Free Text Comment
84.	NOT HAVING ENOUGH TIME TO GET YOUR HEAD TOGETHER AFTER A DIFFICULT CALL
85.	not knowing if have got a job in the longterm is a major concern
86.	NOT PARTICULARLY ACCOMMODATING TO FIXED SHIFT PATTERNS.
87.	NOT VALUED BY SUPERVISORS, MORE AND MORE DEMANDS BEING MADE FOR IMPROVEMENT WHEN IN FACT TARGETS ARE BEING MET. NEVER GOOD ENOUGH. TEAM LEADERS/SUPERVISORS BEING PAID GOOD MONEY TO CHAT AND MAKE TEA/TOAST/LUNCH ETC. WHEN OTHER STAFF ARE BEING HAMMERED TAKING CALLS. EVENTUALLY GETTING TO THE STAGE WHERE YOU ARE TAKING THAT MANY CALLS IT IS HARD TO CONCENTRATE. NEGATIVE FEEDBACK - ITS ALWAYS THE CALL THAT WASNT QUITE CORRECT RATHER THAN THE HUNDREDS THAT WERE. CRITICAL THINKING/CSPT ? YOUR DAMNED IF YOU DO YOUR DAMNED IF YOU DONT.
88.	OBSESSION WITH TARGETS AND STATISTICS GETS ON MY NERVES.
89.	Occupational health recommendations being ignored by management due to not being workable yet the job helped cause the health problems in the first place. No recognition of the need for time off for special events- if staffing is low there is no chance managers will change a shift even if it is for weddings etc. Constant turnover of staff is very unsettling. Lack of recognition of staff turnover is concerning to those who remain
90.	OTHER LINE MANAGERS GIVING ME NEGATIVE FEEDBACK - THIS SHOULD BE FED BACK TO IMMEDIATE LINE MANAGER IN THE FIRST INSTANCE
91.	<p>Poor IT facilities eg logging on to do this survey has taken 30 minutes the time I was originally allocated. The 2 computers I tried first were too slow to load for me to log on. This impacts on AOLs and time at start of shifts.</p> <p>Senior management making decisions that impact on professional accountability. The service seems to be stat driven and not taking into account the worth Professionals it uses to achieve its stats in Healthcare. Individuals are being driven by a call centre style approach in an attempt to facilitate a measureable productivity. Healthcare is being marketed across the [ ] as a product despite the fact that good quality healthcare is borne out of caring professionalism and from that is not a product. It is an element of society that is should be a crafted value. Not a driven product.</p>
92.	PUTTING ON WEIGHT BECAUSE OF LACK OF PHYSICAL ACTIVITY IN THE ROLE RATHER THAN EATING UNHEALTHY FOOD

No.	Free Text Comment
93.	<p>REPORTED RSI PROBLEMS WITH HANDS, SHOULDERS, AND HIPS. DIAGNOSED BY GP AND DOCUMENTED ON MEDICAL RECORDS, THIS IS ALSO CAUSE CONCERN IN THIS FIELD OF WORK WITH MY COLLEAGUES.</p> <p>BEING SHORT TEMPERED DUE TO PRESSURE OF WORK AND THE DEMANDS OF THE SERVICE WHICH IS TARGET LED.</p> <p>TRAINED <input type="checkbox"/> CALL HANDLING ON EVERY SHIFT WHEN <input type="checkbox"/> STATED IN OXFORD THAT HE WISHED <input type="checkbox"/> TO <input type="checkbox"/> NOT CALL HANDLE. HELEN YOUNG PRODUCED A POLICY AND SINCE THE IMPLIMENTATION <input type="checkbox"/> ARE CALL HANDLING EVERY SHIFT THE MINIMUM 50% OF THE SHIFT. THIS IS DEMORALIZING AND A COMPLETE WASTE OF HIGH CALIBER <input type="checkbox"/>.</p> <p>HIGH TURN OVER OF STAFF, HIGH SICKNESS LEVELS WHICH HAS NOT BEEN INVESTIGATED BY OCCI HEALTH WHO ARE EMPLOYED BY <input checked="" type="checkbox"/> AND NOT EXTERNAL COMPANY.</p> <p>MY CONCERN IS THE MONEY <input checked="" type="checkbox"/> SPENDS ON TRAINING STAFF AND UNABLE TO RETAIN STAFF THIS IS A WASTE OF TAX PAYERS MONEY.</p> <p>THERE IS NO STAFF DEVELOPMENT. <input type="checkbox"/> TEAM LEADERS SPENDING TIME TALKING TO EACH OTHER ON SHIFT AND USING GOOGLE WHEN STAFF ARE WORKING FLAT OUT TO MEET TARGETS FOR THE GOVERNMENT.</p> <p>WHICH INFACIT THEY COULD TAKE CALLS AND ALSO CALL HANDLE. IT DOES NOT NEED EACH SITE <input type="checkbox"/> TEAM LEADERS TO PUT IN STATISTICS ON THE SYSTEM. REGIONAL <input type="checkbox"/> TEAM LEADERS CAN DO THIS.</p> <p><input type="checkbox"/> TEAM LEADERS ARE THE SAME PAY SCALE AS <input type="checkbox"/> ADVISORS THEREFORE WE COULD ALL HAVE A ROTATIONAL ROLE, IN THIS AREA.</p> <p>THIS IS A PAPER EXCERCISE THE COMMENTS WILL NOT BE ACTED UPON AS THESE COMMENTS HAVE BEEN PUT FORWARD ON SEVERAL OCCASSIONS.</p> <p>WHY IS EXIT INTERVIEWS NOW DONE ON SYSTEM AND ARE NOT SEEN BY HR OR TEAM LEADERS?</p>
94.	RSI
95.	RUMBLING AND NOISES IN MY EARS
96.	Seeing other staff arriving late for their shifts time and time again. Nothing seems to be done to change this with individuals.
97.	SHIFTS BEING CHANGED ON MY ROTA WITHOUT MY CONSENT OR KNOWLEDGE CAUSING CHILDCARE PROBLEM
98.	<p>Should have headsets that can have changeable ear piece. As headsets over the head can cause headaches.</p> <p>Term Time contract more available.</p>
99.	SINCE WORKING HERE I HAVE HAD TO LEAVE A LONG STANDING EXERCISE CLASS DUE TO SHIFT PATTERNS AND MY MANAGER NOT BEING WILLING TO ADD THIS TO MY PROFORMA
100.	sore throat,lack of voice because of sore throat, cold affecting every 2 months.

No.	Free Text Comment
101.	STAFF MORALE CAN GET VERY LOW. NEVER POSITIVE FEEDBACK, ALWAYS NEGATIVE. ALWAYS TARGET RELATED, WHETHER INDIVIDUAL PERFORMANCE OR COMPANY TARGETS. NO STUDY OR RESEARCH TIME AS QUALIFIED [ ] TO UP TO DATE SELF. NO OPPORTUNITIES TO STUDY SPECIFIC AREAS, MANAGEMENT ETC. NO ADMINISTRATION TIME TO READ EMAILS OR ALERTS. NO AUTONOMY AS A PRACTISING [ ]. NO TIME INBETWEEN CALLS TO CATCH BREATH!. NO INTERACTION FROM TEAM LEADERS, ALWAYS TALKING AMONG THEMSELVES AND VERY UNSOCIABLE ON SHIFT, CREATES A BARRIER BETWEEN STAFF. CAN FEEL LIKE THE COMPANY FORGETS THIS IS A [ ] LED SERVICE, NOT A COMPUTER CALL CENTRE.[ ] ARE ALMOST LEFT TO FEND FOR THEMSELVES RATHER THAN BEING HELPED ALONG WITH KEEPING UP TO DATE WITH THEIR KNOWLEDGE AND SKILLS.
102.	Staff morale is at an all time low because of many of the issues highlighted in this questionnaire, along with the perceived uncertain long term future of the Call Centre. A general atmosphere of low morale, in itself, is very infectious and wearing.
103.	THE BEST WAY TO IMPROVE 'WELL-BEING' IS TO HAVE SET SHIFTS & OCCASIONAL TIME OFF PHONES TO DO OTHER THINGS. ALSO HAVING LINE MANAGERS THAT LISTEN & KNOW HOW TO RESPOND TO PEOPLE & PREASURE.
104.	The biggest problem and the thing that affects me most is the Shift patterns and lack of assistance given by rotering when there is a problem with the off duty.
105.	The positive management of attendance policy can be percieved as punative. Once you get to stage 2 any short term improvement in attendance seeems irllevent as the policy looks back at the previous 12 months. Therefore it is very difficult for anyone with a lot of sick absence to be able to move on and short improvements have little affect overall. It can take 9 to 12 month before you go down to stage 1. This is very demoralising.
106.	THE ROSTERING PROCESS IS FRUSTRATING AND DOES NOT MAKE ALLOWANCE FOR THE FACT THAT I HAVE ANOTHER JOB AND HAVE TO HAVE AVAILABILITY FOR THAT TOO. ROSTERING PROCESS TOO INFLEXIBLE AND DICTATORIAL. IT SEEMED MUCH BETTER WHEN COMPLETED AT A MORE LOCAL LEVEL.
107.	There is a complete lack of understanding where child care is required and no flexibility within the rota or the company to accommodate this,even after following strict work guidelines. Even when health has been affected by this there is till no movementaccommodation on the company's behalf. There is no value of staff (the company's greatest asset) and no efforts to retain staff whatsoever, even loyal staff who wish to progress within the company.  Very poor communication on a personal level to staff from higher management.
108.	There is one health advisor that does not communicate with me at all, will not even acknowlege me. When i am on shift with this person i do feel very intimidated and uncomfortable. I have tried to approach the situation to know avail. I am aware that i am at times being spoken about by this health advisor to other collegues. I have not spoken to my line manager as i don't do many shifts with her and i don't feel i want to cause any problems or make the situation worse.
109.	TOILET SEATS NOT GETTING CLEANED DESPITE CLEANERS COMING IN DAILY
110.	Training is good in job, but education for [ ] is very poor. I understand that we need to keep ourselves updated but I think that the organisation should offer clinical education days too. (not just updates and CAS training.)
111.	TRAINING OTHERS SHOULD AT LEAST RAISE ONE'S SALARY BUT THAT IS NOT THE CASE INSTEAD THE SALARIES GET EVEN LESS!
112.	trying to book appts at hospitals/drs around shifts. When computers/phones not working it makes it verty stressful trying to get something sorted especially if no one is about to help because of the shift you are on.
113.	very poor staff retention and morale

No.	Free Text Comment
114.	weight gain - not due to unhealthy food, but due to a sedentary job. previously on my feet all day in a hospital environment
115.	when asked if i could work fixed rota as stated in improving working lives i was told no unless i had a very good reason!! was childcare not enough?
116.	WHEN WORKING BUSY SHIFTS BEING ON 'READY' ALL THE TIME MEANS THAT WE GET CALL AFTER CALL WITHOUT TIME TO THINK ABOUT WHAT WE HAVE DONE.
117.	<p>Work place bullying by other Managers/Team Leaders within the organisation.</p> <p>Harrasment by shift leader when offline. Operational manager ineffective in leadership and target driven with no real idea of '[ ] issues' or '[ ] values'. Lack of Clinical training for [ ] (essential for [ ] practice and registration to the NMC governing body) - most recent training involves computer updates (systems etc) and CCA ('how to be a call centre worker'). Being overlooked for training/extended role opportunities based on target figures and not the actual work I do.</p> <p>All the above have happened to me personally and to some of my colleagues, this has left me feeling disillusioned and undervalued and I am actively persuing other job opportunities as a result.</p>
118.	<p>WORKING 4 DAYS PER WEEK BUT ROSTERED ON FOR 8 X SHIFTS IN A ROW X TWICE IN LAST YEAR RESULTING IN EXHAUSTION AND SICK LEAVE/NIGHT DUTY BEFORE WEEKEND OFF/ HOLIDAY / CHANGES NOT MADE CLEAR OFTEN WHEN BEEN AWAY/NO TIME TO READ EMAILS BEFORE SHIFT UNLESS COME IN AN HOUR EARLY/ NO QUIET DARK PLACE TO SIT ON RARE OCCASION OF MIGRAINE/</p> <p>FEELING THAT YOU ARE PRESSURED ON A COMPLICATED OR MENTAL HEALTH CALL AND ANXIETY BECAUSE THIS WILL IMPACT ON CALL TIMES/OFTEN UNRELENTING CALLS AT BUSY TIMES AND LATE SHIFTS DO LEAVE ONE FEELING EXHAUSTED / NO SICK ROOM WITH A SOFA OR BED/ WE HAVE HAD STAFF VERY UNWELL HAVING TO LIE ON THE FLOOR / WHEN REQUESTING EARLY SAT /LATE SUNDAY TO HAVE SOME TOME OVER WEEKEND THIS IS ALWAYS IGNORED UNLESS PUT IN AS A VETO</p>
119.	wrist pain/hand pain stiffness.

### C.3 Comparison of Impact Score Rankings by Role

Item	Numbers in body of table denote Impact Score Ranking		
	Team Leaders	QCCAs	CCAs
Believing that you are inadequately paid for the job that you do	1	80	28
Being unable to take your allocated breaks because of the workload	2	98	98
Ability to plan ahead with friends and family is restricted because of the rostering system	3	3	3
Plans with family and friends being affected by the shift system	4	4.5	4
Having to book holiday so far in advance	5	4.5	1.5
Perceiving the organisation to be more target led than patient led	6	1	5
Finding it difficult to attend regular courses/classes outside of work because of the shift system	7	10	26
Having a limited social life because of the shifts that you work	8	18	9
Always feeling tired because of shift patterns	9.5	27	15
Not having enough team meetings to discuss issues and ideas	9.5	8	27
Having unhealthy food and snacks while on shift because they are quick to eat	11	52	18
Being unable to get a proper break because you have to attend to admin matters during your 'off-line' time	12	88	90
Having insufficient time to prepare and eat a proper meal during a shift	13	39	19
Having disturbed sleep patterns because of your shifts	14	20	23
Having too many work demands to be effective in your role	15	73	80
Experiencing frustration because of the rostering system	16.5	12.5	12
Finding it difficult to arrange weekends off	16.5	14	15
Having a body clock that is impacted negatively by rotas	18.5	32.5	35.5
Receiving poor communications on things that matter to you at work	18.5	42	34
Eating at 'unconventional' meal times because of the way your breaks are organised [8]	22	29.5	10.5
Believing that senior management don't appreciate the work that you do	22	37	42
Not being rostered with your own team	22	89	86
Being overwhelmed by the amount of organisational change	22	53	62.5
Poor air conditioning (either too cold or too hot)	22	12.5	8
Being unable to get into a routine because your shifts are so varied	25	29.5	21.5
Having inadequate facilities to buy/prepare healthy food and drinks during your shift	26	40	32
Putting on weight because you are not eating healthy food at work [	27.5	58	45



Item	Numbers in body of table denote Impact Score Ranking		
	Team Leaders	QCCAs	CCAs
Not having enough team meetings so you know what is going on	27.5	9	21.5
Being unclear about the overall strategy and plans for the organisation	29.5	57	52
Not being involved or consulted on decisions that affect you	29.5	19	20
Finding it difficult to swap shifts	31.5	6	6
Having to split days off	31.5	61.5	69
Feeling run-down because of the shift work	33.5	46	29
Experiencing high levels of stress because of your targets	33.5	21	39
Having insufficient opportunities for promotion	35.5	35	33
Having insufficient time to familiarise yourself adequately with new policies and procedures	35.5	7	7
Having poor training facilities	37	65.5	78
Not being consulted enough on work matters that impact you directly	38	23	40
Having to work a twilight shift immediately before a day off	39	38	57
Being unable to improve/maintain your physical fitness because of your shift patterns	40	74	72
Having inadequate training to allow you to do your job effectively	41.5	50	68
Feeling unable to use your professional discretion as much as you would like to	41.5	34	65.5
Having breaks that are not regularly spaced out across your shift	43.5	83.5	55
Working at a site that is not very clean and tidy	43.5	55	70
Having insufficient opportunities for social interaction with your colleagues	45.5	15.5	25
Having to read emails that are not relevant to you and your role	45.5	45	17
Experiencing high levels of stress because of your high workload	48	67	76
Being unable to take breaks with your colleagues	48	25	24
Lacking adequate control over your choice of shift	48	15.5	10.5
Feeling physically exhausted because of your work	50.5	69.5	51
Working somewhere where there isn't much of a buzz	50.5	60	64
Having insufficient family-friendly policies in place	52.5	51	35.5
Lacking enough training to allow you to keep up to date with new developments in your field	52.5	22	71
Feeling stiff because of the long spells you have to sit	54	28	15
Experiencing musculoskeletal problems (eg backache) because of the long spells you have to sit	55	44	43
Lacking energy because of the work that you do	56.5	64	53
Having insufficient feedback on your performance so you know how you are doing	56.5	96	94
Feeling like you lack control and empowerment because of your targets	58	31	37.5
Feeling under valued for your contribution by your	59.5	86	89

Item	Numbers in body of table denote Impact Score Ranking		
	Team Leaders	QCCAs	CCAs
immediate line manager			
Having unclear objectives to work towards as part of your development	59.5	71	74
Developing headaches because of your job	61.5	81	56
Experiencing visual problems from looking at the screen	61.5	72	60.5
Lacking praise and recognition by your line manager	63.5	79	91
Only seeming to receive feedback when you could have done something better	63.5	47	31
Having to read your emails during your break times or before/after your shift	65	2	1.5
Being unable to concentrate properly at work because you are tired	66	68	50
Feeling emotionally drained from your work	68	63	60.5
Being unable to support your colleagues as much as you would like to	68	43	46
Having a poor team spirit	68	48	58.5
Having inadequate rest areas	70	76	83
Feeling you can't off-load to anyone at work about issues that are important to you	71.5	56	73
Not feeling part of a real team	71.5	36	58.5
Experiencing high levels of stress because of the type of calls you have to deal with	73	65.5	62.5
Experiencing worry and anxiety after difficult calls	74.5	54	49
Having to do a job where there is little variation	74.5	41	13
Finding it difficult to speak to your line manager about your work or personal problems	76.5	93	95
Not feeling sufficiently challenged by your work	76.5	59	41
Having a different desk space each time you come to work	78	49	37.5
Feeling lonely while you are at work	79.5	61.5	85
Having poor lighting at your station	79.5	90	87
Lacking feedback from callers on how you helped them	81	24	44
Having limited access to your immediate line manager	82.5	91	75
Being bored at work	82.5	69.5	54
Feeling depressed because of the cumulative fatigue from shifts	84	82	77
Being unable to confer with your team colleagues about advice to callers	85	17	47.5
Feeling isolated from colleagues even though you sit with them	86	32.5	65.5
Feeling unsupported by your colleagues at work	87.5	95	96
Feeling unsupported by your line manager	87.5	97	97
Not having the chance to get to know your work colleagues and establish friendships	90.5	26	47.5
Feeling you are not treated with the respect you deserve from your immediate line manager	90.5	99	100
Not feeling that you are doing a rewarding job	90.5	76	79
Lacking pride in the job that you do	90.5	78	81

Item	Numbers in body of table denote Impact Score Ranking		
	Team Leaders	QCCAs	CCAs
Having a poor working relationship with your immediate line manager	93	100	99
Feeling weepy and tearful because of your work	95.5	94	93
Lacking enough time to recover from a difficult call before having to answer another one	95.5	11	30
Having a poor working knowledge of the rostering system	95.5	83.5	84
Not feeling as though you are making a positive difference to those who call for help	95.5	85	82
Losing weight because you are not able to eat properly at work	98	102	101
Feeling bullied by your immediate line manager	99	101	102
Having voice problems because of all the talking on the phone	100	87	88
Experiencing hearing problems because of all the phone work	101	92	92
Having a sore throat because of all the talking on the phone	102	76	67

## C.4 Impact Analysis – Item Deletion and Probability Plots

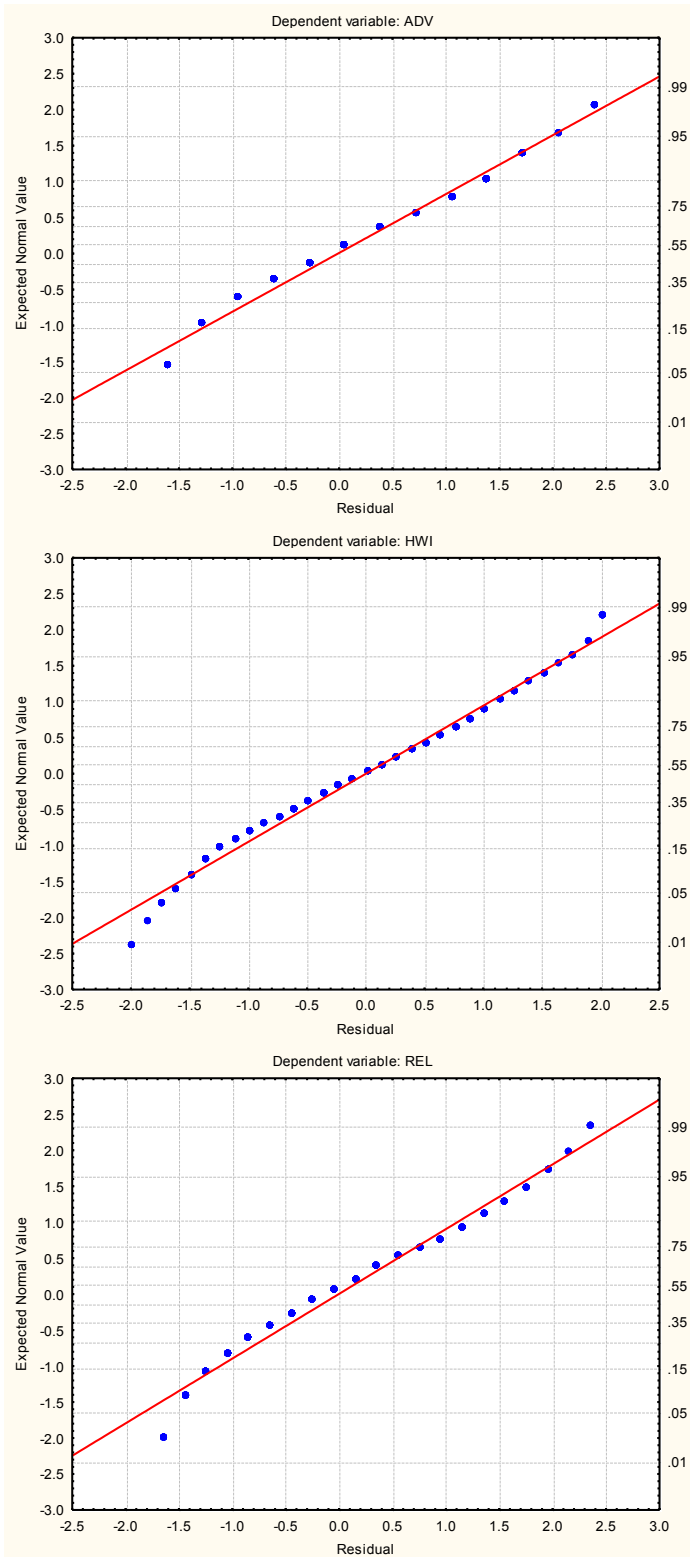
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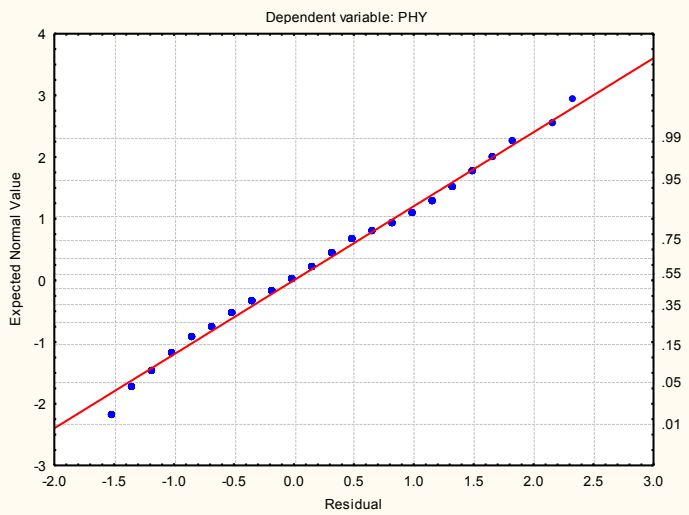
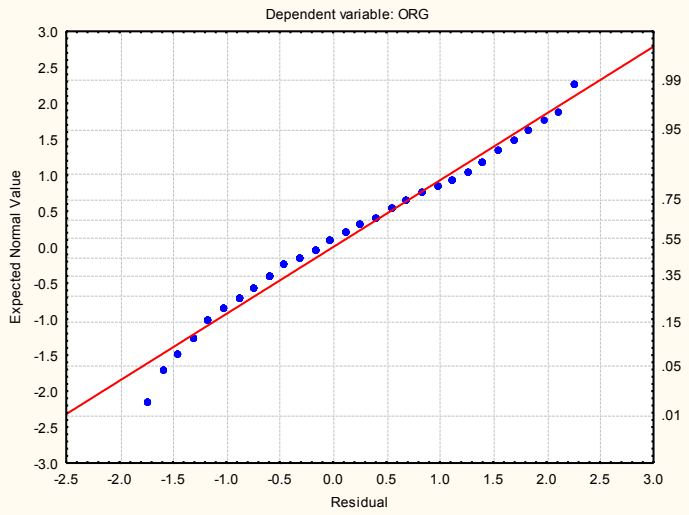
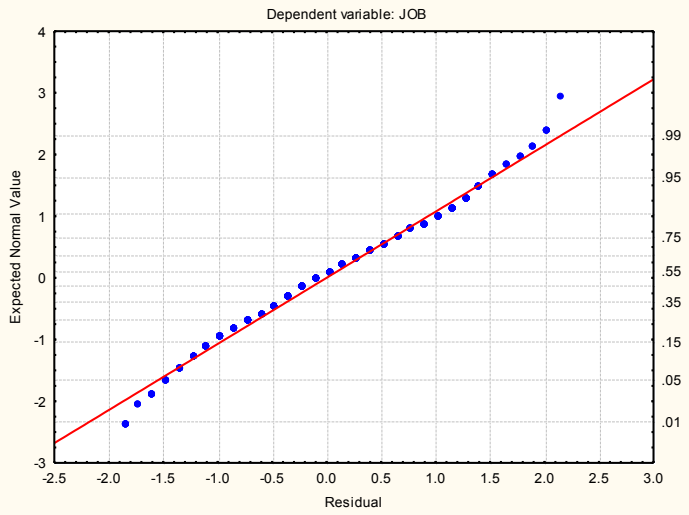
No.	Item	Impact Score
1.	Being bored at work	1.99
2.	Having poor training facilities	1.98
3.	Experiencing high levels of stress because of your high workload	1.97
4.	Experiencing visual problems from looking at the screen	1.96
5.	Having too many work demands to be effective in your role	1.92
6.	Having breaks that are not regularly spaced out across your shift	1.91
7.	Being unable to improve/maintain your physical fitness because of your shift patterns	1.90
8.	Developing headaches because of your job	1.88
9.	Having unclear objectives to work towards as part of your development	1.88
10.	Feeling lonely while you are at work	1.86
11.	Having a sore throat because of all the talking on the phone	1.75
12.	Having inadequate rest areas	1.74
13.	Not feeling that you are doing a rewarding job	1.69
14.	Not being rostered with your own team	1.69
15.	Being unable to get a proper break because you have to attend to admin matters during your 'off-line' time	1.68
16.	Lacking pride in the job that you do	1.67
17.	Feeling depressed because of the cumulative fatigue from shifts	1.67
18.	Lacking praise and recognition by your line manager	1.66
19.	Feeling under valued for your contribution by your immediate line manager	1.63
20.	Having a poor working knowledge of the rostering system	1.60
21.	Not feeling as though you are making a positive difference to those who call for help	1.60
22.	Having limited access to your immediate line manager	1.55
23.	Having poor lighting at your station	1.50
24.	Having voice problems because of all the talking on the phone	1.48
25.	Experiencing hearing problems because of all the phone work	1.35
26.	Being unable to take your allocated breaks because of the workload	1.32
27.	Finding it difficult to speak to your line manager about your work or personal problems	1.30
28.	Having insufficient feedback on your performance so you know how you are doing	1.28
29.	Feeling weepy and tearful because of your work	1.23
30.	Feeling unsupported by your colleagues at work	1.20
31.	Feeling unsupported by your line manager	1.08
32.	Feeling you are not treated with the respect you deserve from your immediate line manager	1.02
33.	Having a poor working relationship with your immediate line manager	0.97
34.	Feeling bullied by your immediate line manager	0.77
35.	Losing weight because you are not able to eat properly at work	0.75

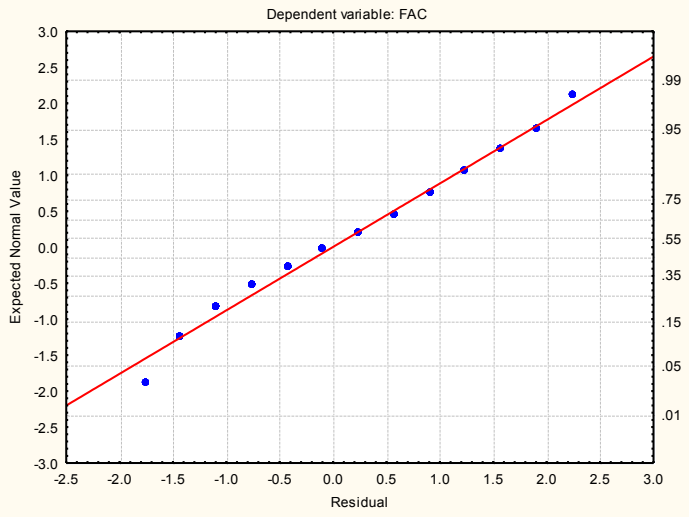
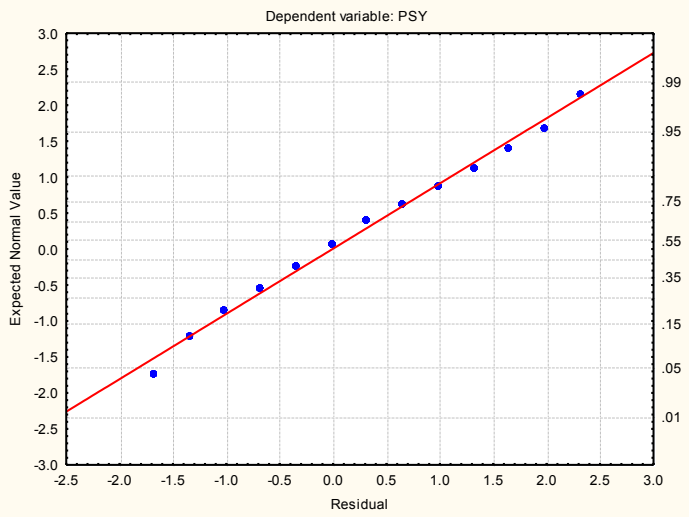
#### C.4.2 Item Deletions owing to high correlations ( $r > 0.7$ )

No.	Item	Impact Score
1.	Not having enough team meetings to discuss issues and ideas	2.97
2.	Having to read emails that are not relevant to you and your role	2.58
3.	Ability to plan ahead with friends and family is restricted because of the rostering system	3.49
4.	Having a limited social life because of the shifts that you work	3.01
5.	Finding it difficult to arrange weekends off	2.96
6.	Having insufficient time to prepare and eat a proper meal during a shift	2.73
7.	Having unhealthy food and snacks while on shift because they are quick to eat	2.60
8.	Lacking enough training to allow you to keep up to date with new developments in your field	2.44
9.	Experiencing worry and anxiety after difficult calls	2.19
10.	Feeling emotionally drained from your work	2.05
11.	Lacking adequate control over your choice of shift	2.92
12.	Not being consulted enough on work matters that impact you directly	2.65
13.	Feeling like you lack control and empowerment because of your targets	2.58
14.	Having disturbed sleep patterns because of your shifts	2.83
15.	Having a body clock that is impacted negatively by rotas	2.65
16.	Feeling run-down because of the shift work	2.52
17.	Experiencing musculoskeletal problems (eg backache) because of the long spells you have to sit	2.40
18.	Lacking energy because of the work that you do	2.11
19.	Feeling physically exhausted because of your work	2.10
20.	Being unable to take breaks with your colleagues	2.69
21.	Not having the chance to get to know your work colleagues and establish friendships	2.42
22.	Feeling isolated from colleagues even though you sit with them	2.31
23.	Having a poor team spirit	2.25
24.	Not feeling sufficiently challenged by your work	2.19

### C.4.3 Probability Plots for Residuals - Call Centre Domains









## C.5 Factor Analysis – Item Deletion and Probability Plots

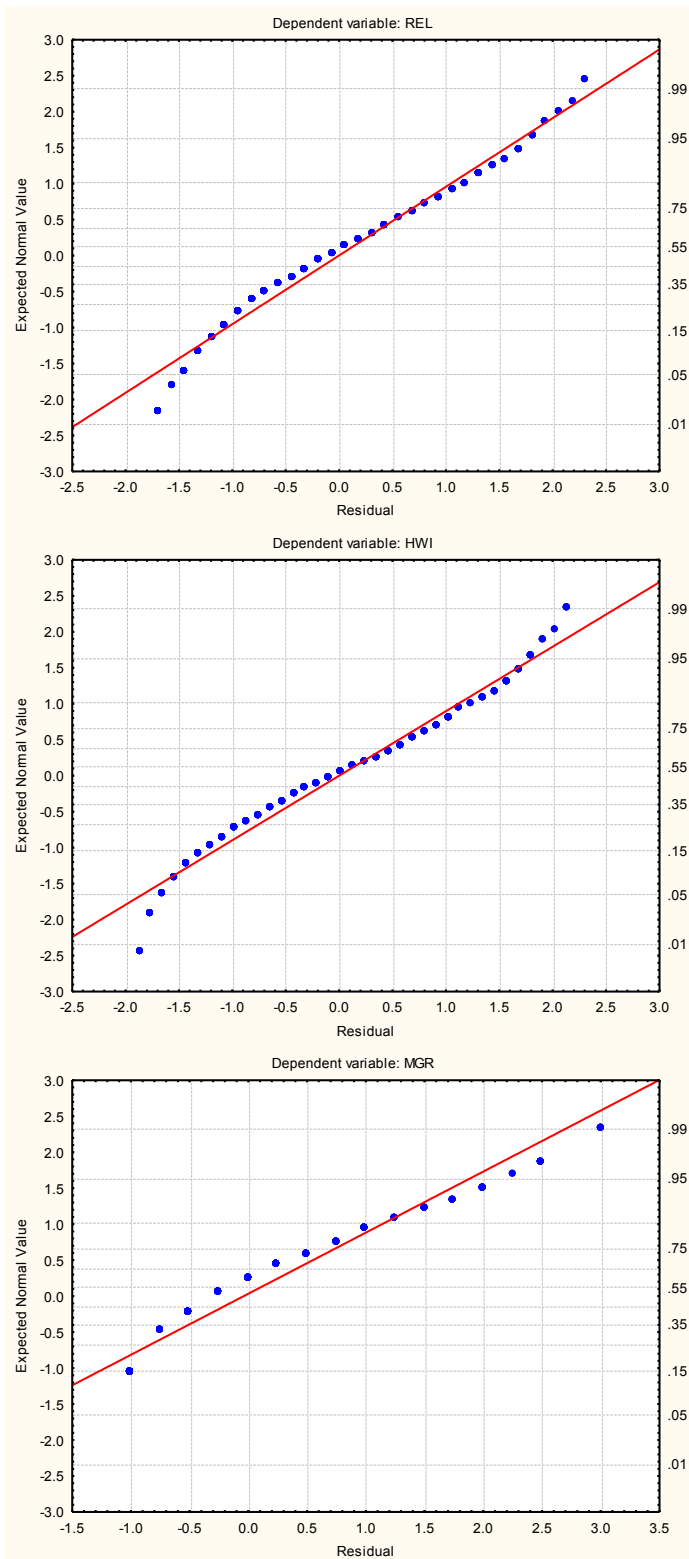
### C.5.1 Item deletions owing to low Item-Total Correlations ( $r < 0.4$ )

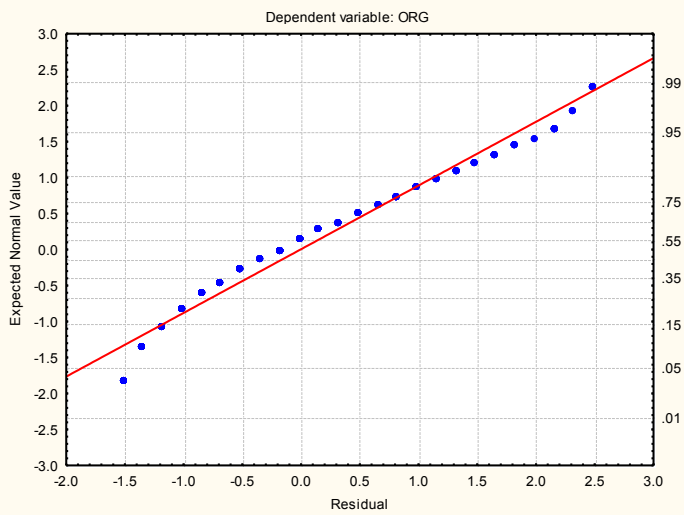
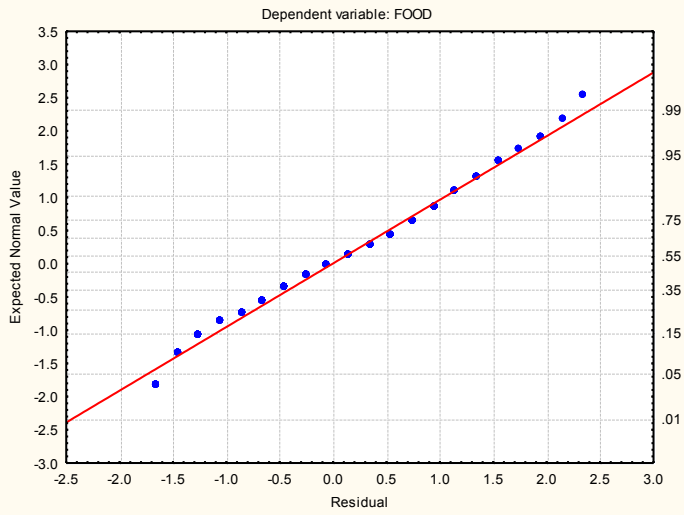
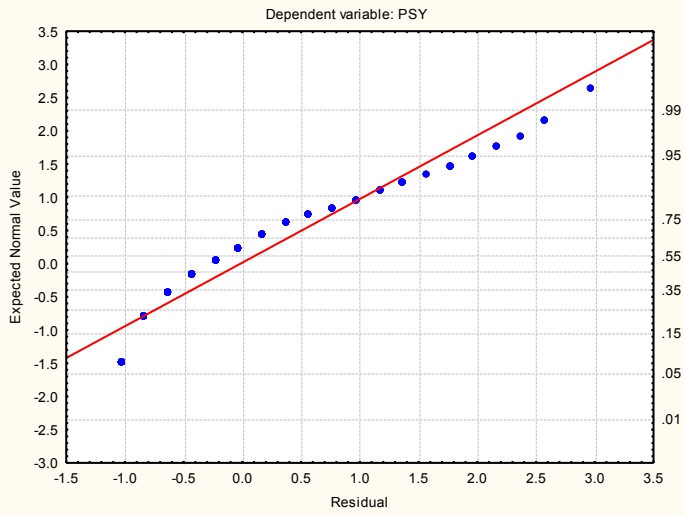
No.	Item	Item Total
1.	Having a sore throat	.39
2.	Believing you are inadequately paid	.34
3.	Being unable to take your allocated breaks because of your workload	.30
4.	Losing weight because you are not able to eat properly at work	.30

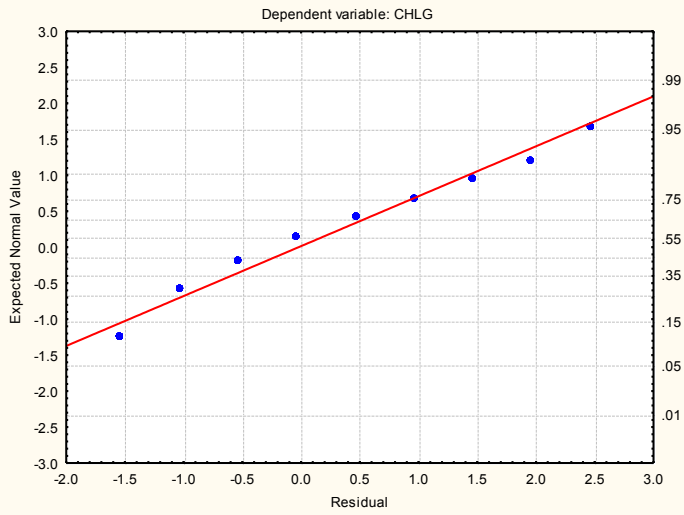
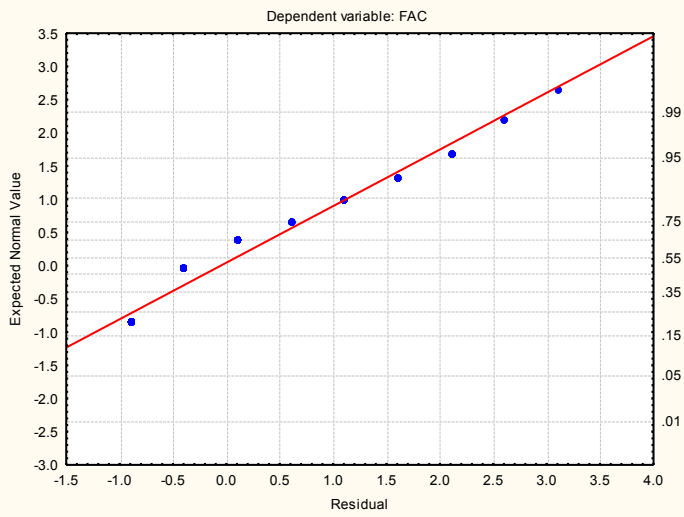
### C.5.2 Items deleted owing to high Item-Item Correlations ( $r > 0.7$ )

No.	Item
1.	Ability to plan ahead with friends and family is restricted because of the rostering system
2.	Being bored at work
3.	Experiencing high levels of stress because of the type of calls you have to deal with
4.	Experiencing high levels of stress because of your targets
5.	Experiencing musculoskeletal problems (eg backache) because of the long spells you have to sit
6.	Experiencing worry and anxiety after difficult calls
7.	Feeling bullied by your immediate line manager
8.	Feeling isolated from colleagues even though you sit with them
9.	Feeling physically exhausted because of your work
10.	Feeling run-down because of the shift work
11.	Feeling unsupported by your line manager
12.	Feeling you are not treated with the respect you deserve from your immediate line manager
13.	Finding it difficult to arrange weekends off
14.	Finding it difficult to speak to your line manager about your work or personal problems
15.	Having a poor team spirit
16.	Having a poor working relationship with your immediate line manager
17.	Having disturbed sleep patterns because of your shifts
18.	Lacking energy because of the work that you do
19.	Lacking enough training to allow you to keep up to date with new developments in your field
20.	Lacking pride in the job that you do
21.	Not being involved or consulted on decisions that affect you
22.	Not being rostered with your own team
23.	Not feeling as though you are making a positive difference to those who call for help
24.	Not having enough team meetings to discuss issues and ideas
25.	Plans with family and friends being affected by the shift system

### C.5.3 Probability Plots for Residuals – Call Centre Factors







## Appendix D Police Study Results

### D.1 Frequency, Importance and Impact Scores for all Items

Rank	Question	Frequency	Mean.Imp	Impact
1.	Feeling overwhelmed by the amount of organisational change within the force	0.86	2.81	2.42
2.	Believing that senior officers and managers don't appreciate the challenges you face in your role	0.78	2.99	2.32
3.	Believing that your promotion opportunities in the force are limited	0.77	2.98	2.31
4.	Being concerned about how your job may change in the future	0.86	2.69	2.31
5.	Believing that opportunities to develop your career are limited within the force	0.77	2.96	2.28
6.	Feeling frustrated by the paperwork involved with your job	0.80	2.82	2.25
7.	Feeling undervalued for your contribution by the wider force	0.79	2.82	2.22
8.	Feeling under pressure to attend work when you are unwell	0.72	2.92	2.09
9.	Always feeling physically tired because of the hours you work	0.79	2.65	2.08
10.	Having to work unsociable hours that impact on family and friends	0.72	2.90	2.08
11.	Being unable to take restful breaks during your working day	0.73	2.82	2.05
12.	Having a poor diet because of the job that you do	0.68	2.97	2.03
13.	Experiencing high levels of stress because of your work	0.79	2.56	2.02
14.	Receiving inadequate communications on issues that matter to you	0.79	2.55	2.01
15.	Having a poor quality work environment eg cramped accommodation	0.74	2.67	1.99
16.	Lacking adequate facilities at your workplace eg canteen, showers	0.70	2.71	1.90
17.	Constantly feeling under pressure from work, even on days off	0.74	2.56	1.90
18.	Lacking a clear career development plan	0.73	2.61	1.89
19.	Having a job that disrupts your private life	0.73	2.57	1.87
20.	Having too many work demands to be effective in your role	0.74	2.46	1.81
21.	Not feeling valued for your work by your line manager	0.72	2.49	1.80
22.	Having inadequate facilities for rest during your working day	0.68	2.61	1.79
23.	Not being able to sleep well because of work worries	0.74	2.40	1.78
24.	Finding it difficult to book leave because of under-resourcing	0.67	2.64	1.78
25.	Being unable to improve/maintain physical fitness because of your job	0.72	2.48	1.78
26.	Being concerned about losing your job because of organisational changes	0.74	2.37	1.75
27.	Experiencing persistent low moods because of your work	0.72	2.43	1.74
28.	Feeling demoralised because of your work	0.71	2.42	1.71
29.	Putting on weight because of your job	0.71	2.40	1.70
30.	Experiencing high levels of stress because of organisational changes	0.70	2.43	1.69

31.	Experiencing musco-skeletal problems because of your work eg back complaints	0.67	2.52	1.68
32.	Experiencing neural problems because of your work eg headaches	0.72	2.34	1.67
33.	Not having the right equipment to enable you to do your job properly	0.68	2.46	1.66
34.	Having insufficient training on the technical skills required for your work	0.71	2.33	1.65
35.	Having an unsatisfactory performance appraisal system	0.65	2.51	1.64
36.	Lacking constructive feedback on your performance by your line manager	0.70	2.32	1.64
37.	Lacking control over your priorities at work	0.71	2.29	1.62
38.	Receiving insufficient training on softer skills eg people management	0.71	2.23	1.59
39.	Having to work extended hours because of your workload eg late nights	0.66	2.36	1.56
40.	Regularly lacking the ability to concentrate because of your workload	0.69	2.24	1.54
41.	Believing that your overall compensation package is inadequate	0.58	2.58	1.51
42.	Not being paid overtime	0.60	2.47	1.47
43.	Not feeling sufficiently challenged by your job	0.70	2.07	1.46
44.	Reporting to someone who lacks the skills to manage effectively	0.63	2.30	1.45
45.	Lacking enough sleep because of your work patterns eg shifts	0.61	2.32	1.42
46.	Not feeling part of a real team	0.65	2.16	1.41
47.	Lacking sufficient flexibility over working times and patterns	0.59	2.14	1.27
48.	Having a job where there is little day-to-day variation	0.65	1.94	1.25
49.	Experiencing gastro-intestinal problems because of your work eg stomach complaints	0.59	2.12	1.24
50.	Lacking a real sense of camaraderie with your team	0.63	1.96	1.24
51.	Having holiday plans disrupted because of your work	0.58	2.09	1.21
52.	Not feeling really supported by your immediate team	0.64	1.87	1.20
53.	Lacking a good working relationship with your line manager	0.59	2.00	1.18
54.	Not feeling able to confide in someone at work	0.57	2.04	1.17
55.	Believing that your work is not contributing to anything very meaningful	0.62	1.87	1.17
56.	Regularly having to come to work on your rest days	0.58	1.99	1.15
57.	Not having a clear understanding of your main work priorities	0.62	1.84	1.14
58.	Impact of the confidential nature of your work on your private life	0.56	1.96	1.10
59.	Being unclear about how your job supports the force's overall objectives	0.58	1.87	1.09
60.	Worrying about the potential impact of disciplinary proceedings	0.56	1.94	1.08
61.	Having to work during your days off because of your workload	0.55	1.93	1.07
62.	Being psychologically or physically affected by external factors eg public abuse	0.56	1.72	0.96
63.	Being bullied by others within the force	0.51	1.82	0.92

64.	Experiencing cardio-vascular problems because of your work eg high blood pressure	0.51	1.72	0.88
<i>*proportion of subjects reporting item as bothersome  ± mean importance score in subjects who reported item as bothersome (maximum = 5)  Δfrequency x mean importance (maximum = 5)</i>				

## D.2 Free Text Comments

No.	Free Text Comments
1.	A large proportion of my time off is spent being on call with no recompense for that.
2.	ACPO accept that CPD must be maintained but do not fund or support this in training
3.	Always tired at the end of the working day.
4.	As a manager it is mainly the expectations on you that are sometimes debilitating.
5.	Being continually asked to complete poorly thought out, badly designed pointless questionnaires which takes me away from what I am paid to do!!
6.	Being made to work on too many important reports during the summer with no real support due to sickness of senior persons in the unit led to me suffering a mental breakdown needing treatment/counselling.
7.	Being permanently on call and receiving many calls through evenings night and weekends which impacts on my family
8.	being treated differently due to race, this is indirect by people not communicating with you unless they dont have any choice. People not answering when you say hello or goodbye at the end of the shift. People in the team making comments which, can be taken as victimisation or bullying and to target you.
9.	Being unable to work in a division near my home and having an 80 mile trip each day, which has an impact on my private life and causes extra tiredness.
10.	Biggest factor has been the uncertainty over the collaboration with Herts. This has affected the morale of staff which has had numerous knock on effects
11.	Canteen is too small, not enough computers when all staff are working, PCSOs need some sort of protective equipment ie. CS or batton incase anything kicks off as our role is confrontational alot of the time especially with youths possibly carrying knives more often.
12.	working 20 mins away from station means no back up quickly if im in trouble we should be based closer to our areas ie [ ] station
12.	Constant change does not allow for a period of maintainence.We seem to be changing again, before the first change has taken place.
13.	This is demoralizing and confusing as I never feel at a static place - the job is always spinning.
13.	currently in a period of 'limbo'. Unsure whether I will remain in this role at all, or if so, where I will be based, which will impact hugely on family. Unsure of my options,ie, where else I would wish to go, as I am currently in the job I want to do. It is tiring and often long hours away from home. It is a very physical job,but whilst tiring, I love my role, and being part of a close team.
14.	Developing RSI since 2005 because of my job, am unable to pursue further education in computer studies should I wish to do this. Very concerned that my future career/job prospects are non existant, because of my injury. I feel that if you are Police support with an injury/illness, if you are not under Occupational Health no one is interested in you.
15.	Due to the nature of our role we deal with a lot of violence related investigations - these include violence against children and sexual assaults. There is insufficient support for staff who deal with traumatic incidents. I have waited two years to speak to welfare about a violent murder, for which i attended a number of graphic post mortems.
16.	Feel really low, depressed and moody when at work, however when I have a few days off I suddenly cheer up and find myself becoming me again. I feel my job is very mundain and I feel I need more challenge and responsibility.
17.	Feeling obligated to attend work despite illness due to a) work commitments and b) sickness monitoring.



18.	For several years now my place of work, along with other police stations in [ ], has not had organised and staffed canteen's that serve freshly made hot and cold foods. This I feel has had a negative effect not only on officers and support staffs convenience, but more especially on the eating habits of all, which has resulted not only in more unhealthy foods being consumed, but also having to prepare food in set aside kitchen areas that would fall far below the Health and Hygiene Standards requirements, should they ever get inspected?
19.	Four on four off shift pattern is by far the best shift pattern I have ever worked for preventing me from being tired and keeping my morale and excitement of coming to work high.
20.	Frustrated over constant breakdowns of programs which either slow down my work or stop it altogether My possibly mistaken belief is that they are cutting back on more reliable equipment to save money
21.	Frustration with poor IT infrastructure
22.	<p>general lack of sufficient resources to be able to be an effective team - given that officers away on sick leave, courses and other such still count as part of strength when they are clearly unable to contribute</p> <p>Further - overtime directives which include keeping any paperwork taken on overtime. this is a clear deterrent for overtime to be worked as officers KNOW they will increase their work load without any time to conduct the enquiries.</p>
23.	Have had an issue where i felt pressured into not booking annual leave because other people have family and i dont. therefore i was forced to put others with family first before myself and disregard my plans.
24.	having a feeling that if i don't do it nobody else will.
25.	I am carrying out a role that i applied for and started in April 2008 to date i only carry out one duty out of the whole role this is due to re-organisation and not having enough staff to provide the service required this means that i do a role which is below what i am being paid for so there is not much job satisfaction.
26.	I am expected to work 12 hour days and nights in custody at [ ]. There is an assumption from supervisory staff that I will be able to fit in refreshment breaks during this time. This assumption is incorrect and there are shifts when I make stupid and careless mistakes because I feel unable to leave the custody area. There is insufficient support from supervisors. In addition there is a Detention Officer who works in custody who regularly does not take breaks, and he is not paid for his breaks.
27.	I am hypothyroid, and despite it being well-treated I still suffer from constantly feeling cold - inadequate heating throughout both my office and the canteen make my time in work extremely uncomfortable, and I usually sit with a coat on simply to not shiver!
28.	I AM NOT A SICKLY PERSON,BUT WHEN I AM ILL, I ALWAYS DO MY BEST TO COME IN AS I AM ALWAYS WORRIED ON HOW I AM JUDGED FOR TAKING TIME OFF,DUE TO THE WAY SICKNESS IS MANAGED.I HAVE BEEN FORTUNATE NOT TO HAVE BEEN IN HOSPITAL BUT I FEEL IT IS VERY UNFAIR ON ANYONE WHO HAS TO ATTEND HOSPITAL FOR AN OPERATION AND HAVE TIME OFF ,FOR THIS TO BE COUNTED TOWARDS THEIR SICKNESS RECORDS,WHEN OTHERS TAKEN TIME OFF FOR COLDS,HEADACHES OR SOMETHINGS FAR MINOR. I HAVE BEEN VERY POORLY WITH A COLD SEVERAL TIMES AND HAVE ATTENDED WORK AS I FEEL THE PRESSURE BECAUSE OF STAFF SHORTAGES. ALSO WHEN PERSONS DO GO SICK AND OUR MINIMUM STAFFING LEAVES ARE SUPPOSED TO BE 9 AND WE GO TO 8,OUR SECTION MANAGEMENT VERY RARELY CALL ON EXTRA STAFF,UNLIKE OTHER SECTIONS,AND FEELS LIKE THEY DO NOT CALL ON STAFF TO SAVE MONEY, WHILST THE PRESSURE IS INCREASED FOR STAFF ON DUTY.I LOVE WORKING FOR [ ] POLICE,THE ABOVE ARE MY ONLY GRIPES.
29.	I am not 'highly' stressed, but the job I undertake within the force can be stressful in relation to dealing with members of the public and their reactions to my particular role. This survey appears to focus on 'highly' stressed only.

30.	i am now working in the area that i live. this is causing a work life balance and feel that i am never off duty. i am becoming worried about going out of the house when off duty incase i am recognised by criminals or even just members of the public that wish to discuss community issues.
31.	I am on FSU, that is I crew an ARV. We have nowhere secure, and quick for us to access, to store guns and body armour when on refs break so we wear all of the kit for 12 hours without a break. We cannot have it accesable to cleaners or other visiters tio our office. This means that a break is not a break!
32.	<p>I am very disappointed that departments in my division, who work closely together, do not have mutual respect and understanding. This is partly due to ignorance (particularly with long service staff members who do not adjust easily to change) and partly lack of information given during induction and the probation period. This regularly causes upset, stress and tension between dept and individuals unnecessarily.</p> <p>I do feel low moral at present. I do not currently feel much opportunity to progress my career as many advertised jobs require specified experience. I understand the reasoning as it reduces costs etc but sometimes feel there is very limited opportunity to get into spcialised roles through trainee routes.</p> <p>Unfortunately, I do not feel I have had the correct level of training for my role. As someone who deals with a variety of people and situations on a daily basis, I have had no formal training or guidance on dealing with upset or irate people in the correct and appropriate manner. I sometimes fear of repercussions due to lack of knowledge of what is correct and/or allowed.</p>
33.	I am very happy with my job and I do not feel that anything impacts on the performance of my job.
34.	I believe that it is inherent in people with disabilities to push themselves that much harder in relation to attendance at work even when others without disabilities would have possibly gone sick. Certainly this is the case for me as I would not wish my disability to be perceived as troublesome to others.
35.	i do a 6 day shift then have 3 off 6 on, 3 off another 6 on then 4 off. I find the whole 6 day shift too much, and does in pact on family life, unfortunatly my partner also does shift work, although mine only days, she does long days and nights, and we do not get to see each much, this really makes me feel down.
36.	I do feel that I have been singled out as an example and that things have been manipulated to benefit others as to they want things to be. This left me feeling that what I had to say was not valued and did not matter, also the fact I was asked first before action was taken was just a lip service and my opinion did not realy matter in the long term anyway.
37.	I do not feel supported as an individual by the HR provision in force
38.	i dont feel we are fully supported in terms of welfare for the work we do and not enough attention is paid when having dealt with unpleasant and distressing tasks unlike the police officers who have a much better support system. it seems to be an attitude of its our job so deal with it. which means you are left to dwell on matters and try and gain the support of family when this isn't always possible due to confidentiality issues
39.	I feel that management have become far more concerned with evidencing their PDRs and being put under pressure to reach 'targets' that they don't have the time to support and help officers within their team. I also feel that if a line manager has a bit to fill on their PDR that becomes their focus even at the expense of officers. I also feel that complaints or concerns that officers raised to management are not taken seriously and swept over.

40.	<p>I feel that the team leaders in our department favour certain members of staff, offering them more support and training than other members even if they are newer. I have found that others appear to be shown more attention with regards to training than myself, although I am newer. This wouldnt always be a huge issue as they get to me in the end, but this is often when something needs to be done by me due to rota'ing of work and i dont know how to do it.</p> <p>This is also frustrating because you need to be trained on certain things to move up the pay scales, this is made more of an issue as we are paid very poorly!</p>
41.	<p>I feel the service management forget how important the social side of staff 'networking' was very important to maintain. However, it has been lost through a number of factors which include the Service seeming to knock the camaraderie out of staff, and turn this lifestyle choice into just a job. I find that really upsetting...</p>
42.	<p>I find it unacceptable that PCSO's should be punished if they do not get their '5-A-DAY' priority forms in!! If NPO's are meant to be out there with the PCSO's and in the community, why should NPO's not have to do the priority forms? Also, I feel it unfair that now PCSO's may be being looked at in their performance ie. how many stop checks, how many intel logs etc. If PCSO's are in an area where it is very quiet etc, it will be difficult to hit those targets. I feel there is a constant strain on PCSO's as they still do not get the respect they deserve from other officers and higher. The PCSO's I also work with, would rather come into work while very ill, rather than call in sick!</p>
43.	<p>I get constant headaches since starting in August 2008, maybe due to lack health and safety training. Also the temperature in the room can become unbearable.</p>
44.	<p>I have a civilian Manager as well as a police officer as a manager, and the majority of the above relates to work environment outside the police arena.</p>
45.	<p>I have been changed from an individual self motivated person, to a puppet with more and more people pulling the strings to get in on the action</p>
46.	<p>I have been placed on section - which means working nights and late-lates, I was not doing this before I was moved onto section, this decision was taken without consulting me, this has caused a lot of pressure on my private and family life, my youngest child is 4 andthis 'new' shift pattern is not proving good for my health (lack of sleep) and family life.</p> <p>The person(s) who decided to move me should have considered my welfare and not just the orgainsations.</p>
47.	<p>i have developed an eye condition due to shift/stress conditions that require constant monitering.</p>
48.	<p>I have no problems with my direct line manager ~ we have worked together for many years and there is mutual respect and understanding. I don't feel my manager's manager is fair in the way my manager is dealt with and this is upsetting and worrying. I feel my manager gets bullied and treated unpleasantly. I don't think my manager's manager really understandes some of the parameters that some of us have to work in. There 'appears' to be a lots of hidden agendas, and dare I say it ....back stabbing amongst the senior managers. I know there is a lot of change coming up in 2009 and I don't feel very positive about it as have seen how this sort of change has been implemented before. I feel quite powerless and expect the changes to be imposed on me whether I like it or not.</p>
49.	<p>I have no religious faith. There is nowhere to mark this at the start of the questionnaire so I have put down 'other'. Why do surveys of this type not allow 'none as an option.</p>

50.	<p>I have since April 2008 been under investigation by PSD for a misconduct matter, it was not until September that i was interviewed and November 2008 I was informed by email i would be attending a full powers meeting in March 2009. Why this process should have to take this long I have no idea. I believe this is a form of punishment in itself. I have had no support throughout this time, Federation have told me to 'relax, dont worry' I have been under enormous stress and im just expected to carry om my normal role with the upmost enthusiam. This complaint comes from a long history of bullying by my line manager, this matter could have and should have been dealt with at a divisional level as I have been advised by federation. Even the DI has since told me, he did not foresee this happending and thought I would simply get a reprimand, he told me 'I never thought your were dishonest' why doesnt he speak up then? I have colleagues and supervisors 'singing my praises'. I have a very good PDR. yet this has not been taken into consideration. If my honesty and intergrity is in question why have I not been suspended? why am i allowed to work in a evidential capacity? I am put in positions of trust every day, I have never once acted dishonestly because I am an honest person, what i did was simply silly...I have admitted this and im sorry.</p> <p>Im good at my job and well respected for my work.</p> <p>I have been treated like a criminal, I wouldnt treat a prolific burgular or rapist the way [ ] Police have treated me. I was informed by my DI of the complaint whilst on nights by email so there was no one I could speak to until gone 9am the following day. This is outrageuos and extremely poor management skills, poor people skills and just rude. Federation told me it was nothing and that I had to sit back and wait..It was August before anyone even asked if I was ok and November before that same DI asked how I was doing...meanwhile I have had the very worst year of my life, not only has my honesty been questioned, the career i always wanted, the job I loved has been ripped away from me because one sgt didnt like me, because of who I am not because of my work. Two Very close family members have spent an awful lot of time in hospital which has caused extreme pressure and emotional stress on myself and my family, they now need 24 hour care so im juggling this and work with my mum.</p> <p>When this particular sgt approached me about this complaint in March 2008 he laughed in my face and told me 'I've caught you out now havent I' and this is what he did to me...</p> <p>I dont feel as though [ ] Police could care less about me or my well being, they have treated me terribly and just expected me to carry on under this stress. My friends and family have been my support network. I have been offered nothing from the police. I feel so low and so let down i cant tell you. I only wish you would look at this so that no one else will ever have to go through what I</p>
51.	I have tennis elbow (RSI) in both elbows due to computer work.
52.	I transferred to [ ] Police in November.
53.	<p>In general terms I am very happy with the way I am managed and looked after by [ ] Police. Policing by it's nature is a challenging and demanding function. Stress, change and scrutiny are inherent in it and must be accepted as a fact of life. I feel well remunerated for the role I perform and whilst pressure of work sometimes impacts negatively on my home life this is off-set by the stimulus that pressure provides. A dull life it would be were there no stress in it!</p>
54.	<p>In the event of a serious incident where there are stress issues then the force are not anywhere near as supportive as they should be. To be blunt there is too much of a blame culture where individuals are blamed. There is also not enough meaningful support. All too often lip service is paid to these processes and on paper they look good but generally lack bite and are not credible.</p> <p>With all due respect to this process this report will not change anything. We need more managers who want to make a change and not just those that are furthering there careers. Sorry to sound bitter but this is the reality.</p>

55.	in the role that I work we are used to mop up what the sections have not got time to deal with as the sections are short of officers.
56.	inadequate leadership resulting in bullying and harrasment, inadequate ways to deal with this behaviour and not actually implementing the policies for this.
57.	It appears supervisors change certain things for their own end ie Portfolio needs then having made changes that are non beneficial then move on and then the wheel is reinvented,they have no concept of the work carried by certain individuals .You know the role you are going to perform therefore if it is not satisfactory then time to look around to perform another role and take pride in what you do.
58.	It is not the work that is the problem it is the constant change of computer systems and not enough support when it goes 'live' i.e.  when NSPIS went live and this caused major problems for the Phoenix Dept and not one person from the Project Team showed their face. It was months before a member of the Phoenix Team sorted the problem.
59.	IT SEEM THAT SENIOR OFFICERS COLLABORATION TEAM BELIEVE THAT THE MAIN PRIORITY IS SAVING MONEY. WHAT ABOUT ALL THE EFFORT WE PUT IN PREVIOUSLY TO INVESTING IN PEOPLE - HAVE THEY NOW PUT THIS TO ONE SIDE TO TICK MORE BOXES!!!!
60.	Lack of clear guidance by line manager makes me feel that I am being set up to fail.
61.	lack of flexibility over taking leave and reluctance to allow shift swap to facility required time off.
62.	LACK OF HEATING IN WINTER & VENTILATION ALL YEAR ROUND.
63.	lack of resourses over last 6 months have meant excessive overtime by certain officers to assist colleagues which has impact on wellbeing and other officers refusing to do overtime which then has impact and no choice in running section levels below minimum resourses
64.	Lack of sleep due to worry over workload. nowhere to 'switch off' at work for breaks as always available
65.	Lack of true communication from senior managers is the problem - all we get are soundbites - never direct answers
66.	LONG TERM SHIFT WORK, I HAVE DONE THIS FOR 21YRS ON A 24HRS/7DAY PATTERN. HEALTH /SLEEP PATTERN HAS DETORiated. YET THERE IS NO SCOPE TO DO A CONVENTIONAL DAY SHIFT, DUE TO LACK OF RESOURCES AND STRUCTURAL CHANGES. SHIFTWORK SHOULD BE LIMITED FOR OFFICERS WELL-BEING.
67.	Loosing rest days is due to being required to attended training.
68.	lots of interruptions, noise in the office, hard to concentrate which leads to headaches regularly, job highly dependant on computer use - desk bound all day, work load causes health problems. Would love to work from home, as my job is not linked to security issues. Others work from home in the force. Full time parent - working hours and school run stresses.
69.	Low staff levels, shifts being changed at very short notice because of this, feeling under pressure when it would benefit the whole office to stay home when for example you have a cold which could pass around the office. Not enough computers for eveyone to be able to work at the same time. Office space to small for evryone to be comfortable. Never being able to take a full break due to how busy we can get, but being criticised if we have to close early ot declare no breaks on time sheets.
70.	Many of the pressures I feel may be due in some part to my condition but I do feel that everyday is like climbing a mountain and there is no respite.

71.	Most people don't work here for the money or career prospects. Good job, because there aren't any and I've never expected different. The problems that really bother me that I face in my work are the same as what I see other people struggling with around the force - just too much work and not enough people to do it. Who shall I let down today so I can do something else more important? Some days I find this more stressful than others but if you can't take pressure get a job in a shop. It's probably inevitable in a small force. But senior managers could help a lot more by assisting with the short cuts - get rid of the stupid bureaucracy around IT (seven forms, a home visit, a business case....just to get a lap top. Does the Chief Constable have to do this? I doubt it. Get into the 21st century!) and do something about the state of the IT system. If it worked properly I wouldn't regularly spend 45 mins a day trying to fix some random problem with a printer - which I then have to make up at the end of the day in what should be my time. That's very frustrating and demoralising when you are repeating the same time wasting activities again and again and again - most of which could be avoided if senior managers actually addressed these basic issues.
72.	My work has changed significantly since the Corporate Services reorganisation. It is now a case that the pressure of deadlines is constant, with the amount of work and number of deadlines causing tiredness, demoralisation, and raising the spectre of depression, in the long term. I suppose what I am trying to say, is that the volume of work causes constant pressure, which is threatening to wear me out.
73.	No contact at all from senior management to our team in person regarding anything to do with our work, lack of work or anything. email system is too easy for management to hide behind their computers and not face any unhappy workforce.
74.	No line management support and isolation from the main. Non appreciation and recognition of the teams work
75.	No recognition of good work. Recognition only seems to be provided to those who work in close proximity to higher-ranked managers as they are more visible to them. This in turn demoralises the general workforce (patrol sections being a good example of this), who feel they are not rewarded for their hard work.  Rare Emails congratulating officers do not suffice and do not boost morale.
76.	NOT BEING ABLE TO BOOK ANY TIME OFF DUE TO RESOURCING/MINIMUM MANNING LEVELS ON THE FIREARMS UNIT. A PROBLEM THAT HAS WORSENERED OVER THE PAST YEAR, WITH ONLY THE ODD DAY AVAILABLE TO BE TAKEN OFF IN A MONTHS OR TWO'S TIME.  LACK OF RECOGNITION / HELP / UNDERSTANDING FROM UNIT INSPECTOR - IE, IF YOU DON'T LIKE IT, P%\$S OFF TO SECTION. CARRIES THE SAME ATTITUDE ON A NUMBER OF ISSUES THAT EFFECT OFFICERS WELL BEING.
77.	On call for virtually no compensation at all and still be expected by the organisation to be on the end of a phone 24/7. Undervalued compared to other areas of the force due to the force priorities. The force fail to recognise the work and achievements of departments that easily outperform others just because the area of their work is not foremost on the general public's mind.
78.	On some days during my working week I am required to lift and carry quantities of boxes. This can cause fatigue (usually after work).
79.	One of the team is not pulling their weight
80.	organisational changes and management decisions to not fill vacant posts has put pressure on the remaining staff often migrating into roles which they are not trained full on or qualified to do. The remaining staff dare not complain for fear of being targeted next time around when redundancies loom again. Squeezing the loyal remaining staff to do more and more, is a problem.
81.	OUR SECTION HAS BEEN COVERING ANOTHER SECTIONS UNDERSTAFFING FOR THE LAST 8 MONTHS, EVERY FOUR REST DAYS WE HAVE BEEN ASKED TO COME INTO WORK, WHICH MEANS WE DON'T GET ENOUGH REST BEFORE RETURNING TO WORK, THIS ALSO IMPACTS ON OUR FAMILY LIFE AND OUR HEALTH.
82.	Overall, I feel supported & valued by my manager & colleagues, work in a pleasant environment & enjoy what I do!

83.	Pretty poor office / building atmosphere, dark corridors, lack of resting/relaxation facilities. Canteen facilities are absolutely appalling for the amount of people that work at HQ!!!!!!!!!!
84.	Raising a complaint or grievance resulting in bullying and victimisation. What is the point in using the procedures there to protect me as an employee only to find myself exposed by it.
85.	Recently we have been told our job will include dealing with rape victims and there has been no discussions with us about this. We are being sent on a course and basically being told we will have to get on with it.
86.	required to take blood pressure tablets and tablets for acid reflux due to work related health issues.
87.	Short staffing levels impacting on the remaining staff to cover their duties and those of the staff that are long term sick, annual leave or have left and not be replaced.
88.	<p>Sleep is a big issue, it is not easy to 'sleep on demand' when working night shifts. Whilst on patrol shift work I would lie awake both night and day worrying about work and what I hadnt done. This would then compound itself by worrying about not sleeping and being tired the next day and not doing the things that I had worried about not doing.</p> <p>Being more aware of my own safety, IE being frightened to walk alone to my car after work for fear of being followed. Getting home in the early hours after a traumatic incident and being scared to be alone and in the dark.</p>
89.	Sometimes you feel that you are working really hard and putting in a lot of effort and your colleagues are sat about (sometimes acting inappropriately) and they get paid exactly the same as you for doing half of the work. The sergeants never seem to do anything about it and it causes resentment and frustration in the job and you sometimes wonder why you bother.
90.	Staff under resourcing meaning not always able to undertake activities which encourage positive outlook on disability due to being unable to take time off at appropriate times despite having plenty of flexi and A/L to take.
91.	Subjected to a pay freeze due to senior management trying to prove their worth and endeavouring to complete portfolios and demonstrating to their bosses how much money they have saved the organisation.
92.	Team meetings always being arranged on my rest days and being expected to come into work.
93.	THE 6 HOUR WORK RULE. IF YOU WORK 6 HOURS YOU DON'T GET A BREAK EVEN IF YOU TURN UP EARLY.
94.	The apparent systematic corporate undervaluing of my role and individuals poor political stance has made my work environment vastly more difficult than it should be. On a daily basis I am prevented/obstructed from doing the most basic parts of my role remit by these factors. This makes me feel under valued and has led to negative psychosocial effects on my health.
95.	The biggest problem within my role is that there is not enough time to cope with the very large amount of work in a satisfactory way - I am always playing catch-up and feel that I don't do anything 'very well' as I have to rush through things. This is not how I would like to perform - it is important to me to do a good job.
96.	The biggest stress problem is knowing whether I will have a job or not after the collaboration process.
97.	THE COMPUTER SYSTEMS WE NOW USE ARE TOTALLY INADEQUATE, NOT FIT FOR PURPOSE AND NO ONE SEEMS TO KNOW HOW TO SORT PROBLEMS OUT EFFICIENTLY. SOME DAYS SEEMS POINTLESS COMING TO WORK AS THE COMPUTER SYSTEMS ARE CONSTANTLY NOT WORKING PROPERLY.

98.	<p>The constant change within the senior rank structure and the new ideas they implicate cause confusion for everyone. Portfolio lead senior officers are causing the main problems within the Division. The force constantly talks about working towards the same goal but sadly senior officers seem exempt from this and can enforce changes to suit them and their career rather than for the development of the job/area. These changes are virtually on a daily basis and work often started gets put to one side to begin a new task!</p> <p>The SNT shift pattern is awful and how a 7 day working week can be justified is ridiculous. This has just caused more problems within my personal life with regards to childcare and cost of child care.</p>
99.	<p>The disrespectful attitude I often come up against, particularly from those on division I am meant to be working alongside can really upset me. I often feel undervalued, unappreciated and demoralised. If only certain colleagues could grow up and see that I am in a role that gets stuck between them and police officers, life would be 1000 times easier. My access to a kitchen has recently been greatly reduced and I am now in a position where I can only access the night kitchen if I want to reheat food. I used to avoid using this facility as it has no windows or obvious ventilation system, the microwave is normally filthy, there is often no cleaning fluids or materials and the equipment in there tends to walk off by itself. This is the second questionnaire that has done the rounds in recent months, is there a chance some action could be taken before more the next round of questionnaires is delivered?</p>
100.	<p>The first 20 years of my career was before the days of computers where I was able to deploy a variety of skills. My job now involves using a computer all day which makes all tasks exactly the same and at times extremely monotonous.</p>
101.	<p>The lack of adequate succession planning within the force is one of the most debilitating issues for me. It is also one of the most damaging for the force as a whole because the lack of a process (boards every few months - not knowing what the plan is for me etc) means I am totally distracted from my role for the duration of these processes. Why don't we move to a deferred pass process then I won't be tempted (As at the moment) to look to another force. This uncertainty makes me lose sleep and feel very unwell.</p>
102.	<p>The lack of canteen or any sort of social facilities has had a negative impact on the social structure of the whole station. There is no incentive to use the 'canteen facilities' for those not part of a group of friends. There is no feeling of being 'cared for' by our employer, with no cooked meals, a vending machine full of fattening and expensive food and another one which is difficult to use and also expensive. The social life and morale in this police station have sunk very low and I no longer enjoy coming here.</p>
103.	<p>The poor level of IT support means that many hours at work are wasted with frustrating gaps in access to force and external systems. This adds to the pressure of a high workload. The technology is supposed to be here to help us to do our jobs, not to stop us.</p>
104.	<p>The state of the building I work in means that I am often sat in a draft and have to wear extra layers of clothing to keep warm!</p>
105.	<p>THE STATION AS A WHOLE IS DIRTY THE TOILETTS ARE NOT VERY CLEAN THE CUSTODY AREA SMELLS AND THE WHOLE PLACE IS GENERALLY RUN DOWN AND DIRTY AND THIS EFFECTS MY OVERALL FEELING OF BEING CLEAN</p>



106.	<p>The stress i feel in my role relates to two main areas:</p> <p>1. ACPO team constantly changing the priorities - knee jerk reaction to problems or not making themselves available to sort out issues when they arise, which rightly should be their responsibility. This comment is aimed in particular at the Head of Corporate Services.</p> <p>2. IT issues. Our IT is absolutely useless. Nothing works as it should, there is a complete lack of investment in the technology we have and because the force chooses to operate its IT on a hoestring budget we are failing to provide the service we could and should to our customers.</p> <p>Both these things are by far the most stressfull to deal with a regularly prevent me from doing my jobas effectively as i would like to.</p>
107.	The unwillingness of line managers/senior officers to deal with those Officers who are lazy, disruptive and never make a mistake because they never put themselves into a position where they might make one, I.E WORK!
108.	The whole organisation seems to be in complete turmoil at the moment. Change for change's sake. 'Headless chicken' syndrome.
109.	The work room is too hot as most of hq seems to be. When you come in to the building it is like walking into a sauna.
110.	There are no communal areas left to meet others & unwind. You therefore eat your meal at your desk.
111.	There should be a more varied choice in the canteen. i.e. not always sandwiches - and simple, hot food should be available. More, cleaner gym facilities with improved shower and changing rooms. The gym at HQ is very depressing - needs a tv and sound system.
112.	Total lack of support from the organisation in returning to work from an injury on duty.
113.	Under resourcing and abstarctions causing potential starin, being run down and susceptible to infections. Demands of senior officers who want a response and want it now with little or no awareness of the issues involved.
114.	Unfair treatment by the professional standards procedures, very stressful.
115.	Very noisy environment at times
116.	When we had a re-structure in March, there was all this talk about new roles and people learning other peoples roles for resilliance,which I was all up for, it lasted a couple of months... in my department people are doing there same roles as before the re-structure just under new job titles??? and in some case's less money.
117.	Whilst many of these things do not affect or bother me personally, I am aware that others within the Force are adversely affected by many of the areas covered in your survey.
118.	<p>whilst serving for beds police initially i suffered from stomach problems probably caused through stress, i was off work sick for these reasons.</p> <p>i have had two periods of long term sickness one whereby i broke my foot and also admitted to hospital with suspected meningitis. i have attempted to transfer to another force due to the journey to work being 1hr 30mins each way, however my application has been refused through my sickness record. i have not been off work only if i have to , and i am regularly working overtime, more or less daily. i can confidently say that i have worked more hours overtime than i have had off sick.I feel i am being punished through no fault of my own. i would like to add that my last sickness in january 2008 for two weeks in hospital with suspected meningitis, prior to this i had worked 87 hours overtime in the december 2008 and 30 hours in the weeks in january leading to my sickness, i can sumise that this sickness was mainly brought on by the hours worked. therefore my transfer has been delayed another twelve months, i am mindful of not going off sick and have been to work with flu and sickness in order not to ruin my sickness record any further. i am typing this with the symptoms of flu, my body is aching all over i have a headache and feel a little dizzy but i have to carry on. as resources are low and work needs to be done. also if i am to achieve this transfer then it has to be.</p>

119.	witnessing the collaboration between beds and Herts, and how much effort i put into getting to where i want to be, to see a group of people completely destroy the unit i work on. furthermore, if i do manage to stay on the unit, the new working hours proposed are ludicrous to say the least, and if worked they will at least destroy my current relationship, and at worst kill me, made up of mainly lates and nights with very few decent rest periods, complete madness, and disregard for the people on the front line!!!!!!
120.	working for an organisation that does not practice what it preaches causes stress. They are going through the motions to tick the right boxes without any thought for their staff.  Basically, as I don't tick the right boxes, my career will stagnate under the banner of diversity!!!
121.	workloads and changes imposed on my department have adversely affected the way my staff feel and how they are able to perform their role. Changes have been made without considering the long-term consequences and how other members of the team will cope.
122.	A certain colleague within the office not pulling their weight and getting away with it.
123.	Although I am not highly stressed within my job, the role I undertake within the force can be stressful due to dealing with the public and their reactions to court hearings and the results of their case.  Due to the wording of this survey I have not been able to answer some of these questions as I would have liked to as I feel it would have been incorrect.
124.	As I have had recent period of sickness due to operation, I am aware that if I take further periods of genuine sick leave this may affect my ability to progress my career.
125.	Being on-call effectively every two weeks for either 3 or 4 days for both [ ] & [ ] forces and being on-call once in every 4 weeks is taking its toll. Each normal working day is approx 10 hours long, with upto 3 hours travel on top. In addition to on-call, when there is a new job (one every 4 weeks or so) The shifts extent to 16-18 hours, on-call requirements continue.  Reduced levels of resourcing are having an impact on individuals and team as the work is increasing but staffing decreasing, this causes increase stress as Courts and forces do not reduce their demands.  The result is reduced retention of staff and probable early burn out for SIO's.
126.	Collaboration process and a change to a proposed shift pattern that will be unhealthy for our personal health and our private lives. The total lack of consideration for the officers upon which these changes are being imposed. In fact I wouldn't stop short of saying that the proposed shift pattern is disgusting.
127.	Constant threats of reduced budgets resulting in job losses and there not being enough funding available to attend conferences or training courses which would be beneficial to my role.
128.	Duplication and duplication of paperwork eg CMS 11, nim tasking sheets.  Not in any other dept's remit so the buck stops at section officers.  1000 things right and nobody says a word, 1 thing wrong and somebody's willing to pounce at the off a hat to have a moan!!!  SPP's? not for section officers? not for the officers most in the line of danger being the first on scene at incidents?
129.	Finally, if you have experienced other ways in which your work impacts your well-being, please provide details in the free-text box provided [65]

130.	frustration and annoyance when HR lose forms / request further copies of the same thing  slightly undervalued in the way that some people speak to you - orders and very abrupt at times  shocked at some comments made by NPOs about certain members of the community - makes me feel embarrassed and that i don't want to work with people like that
131.	Hearing reports of crime can make me fearful and paranoid within my own home.
132.	I was off for nearly 2 weeks in October, I passed out at home with severe abdominal pain, so bad an Ambulance was called. The Doctors did the basic urine test and this came back negative, so their case was closed. For the two weeks I wasn't right and could feel this in myself, I just couldn't put a name to the complaint. Being a female I think I worried a lot more about problems 'Down There' area!!! When I came back to work It was really hard because I couldn't actually say what it was, I almost felt like a sicknote because I was never diagnosed!!  I would have liked to follow this problem up privately and for more tests to be done, however I can't afford the fees of a private hospital. I would love the force to have in place something or someone that would actually give a damn about me and offer medical assistance or referrals.
133.	I would like to say a great deal within this, but what I say would identify me straight away and that would do little to help!
134.	Lack of equality within the work place and lack of disciplin on people who contravene proceedure due to preferential treatment.
135.	Lack of sleep due to stress and worry concerning high workloads..
136.	MAKING FORMAL COMPLAINTS ABOUT SERIOUS WRONG DOINGS VIA PSD. THE MATTER BEING INVESTIGATED AND THE OFFENDING PERSONS BEING MORE OR LESS LET OFF BY JUST RECIEVING MANAGEMENT ADVISE ONLY OR NOTHING. WHERE AS OTHERS WHO ARE BEING INVESTIGATED FOR THE SAME/SIMILAR THING HAVE BEEN SUSPENDED FOR LONG PERIODS OF TIME ON FULL PAY. THEN WE ARE TOLD TO MAKE SURE WE REPORT ANY WRONG DOING WE SEE TO PSD AND WHEN YOU DO YOU ARE TREATED DREADFULLY AND MADE TO FEEL YOU HAVE DONE SOMETHING WRONG IN REPORTING OTHERS. YOU END UP NOT BEING FULLY SUPPORTED THROUGH THE PROCESS AND BEING LEFT NOT KNOWING WHAT IS HAPPENING OR GOING ON WITH THE ENQUIRY. ITS DREADFUL THE WAY PEOPLE WHO HAVE PLUCKED UP COURAGE TO REPORT THEIR COLLEGUES, ARE TREATED WHEN YOU KEEP BEING TOLD YOU HAVE DONE THE RIGHT THING BUT YOU END UP BEING THE ONE WHO IS MADE TO FEEL THE GUILTY ONE. AS A RESULT YOU WISH YOU HAD NOT BOTHERED TO REPORT THE WRONG DOING, BUT SO MANY PEOPLE IN THIS ORGANISATION ARE DOING WRONG AND WHY SHOULD THEY CONSTANTLY GET AWAY WITH IT WHEN ALL YOU WANT TO DO, IS COME TO WORK DO THE JOB YOU LOVE AND AN HONEST DAYS WORK FOR YOUR WAGE AND SEE OTHERS DOING NOTHING BUT GETTING AWAY WITH IT AND STILL HAVING LOADS OF INAPPROPRIATE LEAVE AND BEING PAID FOR DOING NOTHING WHEN OTHERS ARE SLOGGING THEIR GUTS OUT. IT ENDS UP BEING SO FRUSTRATING IT CAUSES HEALTH PROBLEMS. WORRY, STRESS AND FEELING OF BEING USED AND PUT UPON BY OTHERS. IT IS SO WRONG....
137.	Mostly cramped office space and layout means we all face the wall like naughty schoolchildren, lack of storage or storage that is 5 floors away, dirty office needs cleaning and painting - whole building is just depressing but at least senior officers have nice new carpet.
138.	My experience in matters is that it is not what you know but who you know. Some people get opportunities just because of who they know rather than their ability.
139.	Not having enough Police Officers is stressing for my colleagues, they are going to incidents with not having enough back-up.
140.	Onerous amount of on-call for little compensation e.g. 3 days on 3 days off for all of the year, compensated by bonus payment of £500. I appreciate this comes with my current job, however other roles in the force have higher bonus payments and have to work less than half of the days I do. Does make my role/responsibilities feel somewhat undervalued.

141.	Over all the Force has been extremely supportive over my need to look after my wife who is disabled and over the death of my sister
142.	<p>Parking at [ ] is shambolic. Nobody seems to control it and people are allowed to persistently block CID vehicles in and leave their personal cars in apparently reserved spaces. At the weekend section officers take the opportunity to park their personal vehicles in the CID parking bays causing delays and problems when wanting to respond to incidents. The people who could sort this problem out seem to have their own spaces and as such don't have the motivation to sort this out or discipline the people responsible. This is quite de-motivational when most of the staff at [ ] have to walk 15 minutes to work from the nearest free parking area but some get away with ignoring the policy.</p> <p>Further to this the situation in custody at [ ] is outrageous. It is not uncommon to wait 1 - 2 hours before entering custody. During this time you will be stood with a suspect or defendant who regularly become more and more agitated by the delay. This only happens at [ ], not [ ] or the far busier [ ]. To waste 2 hours of an officers day waiting to get onto custody is ridiculous but this never seems to be addressed. I wonder how this effects moral and more worryingly whether this effects officers decisions to make arrests on the street if they know they face a 2 hour wait in a cramped, hot corridor with nowhere to sit down and a possibly aggressive suspect for company.</p>
143.	Several occasions in the last year 'the plan' to re organise our unit has changed without apparent proper planning or thought. This aimless direction is now in its 3rd year.
144.	Since I have had a change of supervisor (yet again), my role has been stripped from me. I am no longer allowed to do what I consider (and have been doing for the last 5 years) is my role. I am not allowed to attend meetings in relation to my work, nor do I write reports (well, I write them but they get completely re-written as he likes to put his own style and stamp on it) even though there is nothing factually incorrect about what I have written. I no longer follow-up on what work I do, it is done by my supervisor. So in reality my supervisor is very controlling, likes to take the credit for all the work that is done and I feel completely worthless as all I do is data entry. He does no work of his own as he sits reading a newspaper and playing sudoko. Obviously the work I've done over the previous 5 years was a waste of my time and the forces money. Oh how I feel wanted and empowered in my role. Good stuff!!!!!!!
145.	The job has caused me to experience nightmares or vivid dreams that cause me to wake or move about.
146.	<p>The job I undertake can be very stressful, although this does not meet the continued high stress levels asked about within this survey dealing with the public and their reactions within my role can cause stress levels to raise.</p> <p>I feel that the survey has been carefully worded using 'high levels' and in certain areas a yes could be indicate by me, but due to the wording feel I would be incorrectly completing this form.</p>
147.	<p>The questions are one way, and there are no questions about why the person wants to come to work, what work does for that person, a sense of pride, a sense of accomplishment, a worthwhile career.</p> <p>The questionnaire seems to allued to what problems work causes, as opposed to a work life balance, some people love coming to work and it is a part of the solution to life not a problem. Look at the benefits that work provides to an individual not just a negative causation effect.</p>
148.	The survey puts an emphasis on whether staff are supported by managers but there is nothing about how managers feel about support from staff e.g. do managers feel that staff support them
149.	The unprofessionalism of certain senior officers.

150.	<p>There is a lack of clear direction from the very top.</p> <p>Formal communication is wretched, relying on an intranet, that has poor design and no search capability.</p> <p>There is I believe a widespread lack of trust of management, perhaps with good reason. Bullying is almost institutional, even at and indeed especially at senior management levels. This is for both staff and notoriously for officers. This has resulted in a widespread fear of speaking out, or of acknowledging poor performance. Yet we are the worst performing force in the country. This inevitably impacts on well-being. Evidence of this can be seen in the high usage of the confidential reporting line for a wide range of issues that one should be able to address openly.</p> <p>On the plus side there is good evidence of progress - but so slowly.</p>
151.	<p>To some extent it has been covered - 'reporting to someone who lacks the skills to manage effectively' and references to lack of team camaraderie.</p> <p>As a result of the organisational changes with Corporate Services, I was required to reapply for my job. I was successful and put into a new team. Unfortunately, I am now torn between what my 'customers' want (previously the team I was in) and what my line manager wants. This largely stems from inflexibility on the part of my line manager who has been way over promoted, is out of his depth and scared that he is going to be found out. As a result, there has been a lot of conflict and I have found this difficult.</p> <p>As I have a much higher regard for my 'customers' than for my line manager, I have increasingly dealt directly with them and now regard my manager as irrelevant. If he was less inflexible and micromanaging in an attempt to cover up for his lack of management skills, I would be happy to work more closely with him, but it is easiest to bypass him.</p> <p>Additionally, the (nominal) team we are in is dysfunctional. There is no team spirit and people have learnt to keep their heads down and do as they are told. It is not worth putting new ideas forward because if they don't fit with the boss's rigid view of the world they will go nowhere. Any initiative is viewed as a threat and stifled.</p> <p>The force must learn to promote people on genuine merit and not just because people have been kicking around for long enough. If there is no one internally that is good enough, go outside the organisation. We have ended up with some truly poor middle to senior staff managers as a result of weak ion &amp; recruitment processes. For me personally, this has been a cause of considerable distress and frustration over the last 12 months and is likely to continue so for the foreseeable future.</p>
152.	<p>Too many to cover</p> <p>To stressed to take the time to complete this other than in the vague hope this may make a difference</p>

153.	<p>Towards 2000, Enable etc etc etc. All externally purchased ideals implemented by senior officers clearly attempting to tick specific boxes within their personal development profiles in order to achieve the next rank. They have come, been taught/lectured and delivered in all manners of media. None have remained, none have even vaguely stayed true to their ideals - the constant in the equation has been that the promoting force (ie the senior driving officer) has been promoted and left. Our force grows and grows, not with budding frontline officers but with more and more vehicles that make it impossible to park in the headquarters carpark at 09:01 hours monday to friday...</p> <p>What about me? I am ruthlessly efficient, a real proactive old school police officer who leads from the front and does what the public expects - hassle, probe and target the criminals utilising infomation/intelligence lead policing on a daily, weekly and monthly basis.</p> <p>What can I change? Very little, just the area I police one day at a time. Am I moaning? Do I really like my job? I love it, I wouldn't change a single day.</p> <p>What can't I change? The bungling bureacrats who routinely research and change something because it isn't broken, the people who juggle budgets and wonder how more 'business-like' they can make the police in order to please its 'customers' - please.</p> <p>Where are you Sir John Harvey-Jones</p>
154.	<p>Uncertainty over shifts and cover impacts on my wife who prefers to know when I will not be at home in advance, particulalry at night. At present this frequently changes at short notice.</p>
155.	<p>Under resourcing of front line officers, mean worry of assistance if required as frequently there is no response. Feeling of only interest of finance from manangement, and far too much movement of senior officers constantly changing things for their portfolios, reduce moral, leaving officers having to justify to 'customers' about poor quality of service. Lowering entrant quality combined with poor in house training has resulted in poor quality student officers, which though may have produced short term cash savings has left poor disciplined, unfit and insufficiently trained officers who go on to mentor others. I have never known such low moral of officers, and a genuine belief amoungst all that senior officers move and change things purely for portfolio building to move on shortly after and leave a mess for someone else who comes and changes it once again. Officers don't know from one month to the next current policy and procedure.</p>
156.	<p>Unwarranted comments made to third parties about oneself and inappropriate comments made of others in their presence &amp; absence.</p>
157.	<p>Upon returning from major surgery I was presented with an 'Attendance Discussion' sheet saying as I had 19 days off sick for the year I had triggered this. In the 11 years of working for the force I have not once rang in sick to work, all absences over that time have been due to surgery and were certified by hospitals/doctors. I was dissapointed after giving so many years of excellent attendance to the force to receive this.</p>
158.	<p>Working 11 hour shifts, and only being entitled to one 45 minute break makes it very difficult to eat properly, and can mean that towards the end of the shift I am left feeling worn out, and slightly lacking in energy, meaning I don't feel I can perform my role to the nest of my ability.</p>
159.	<p>Working in a windowless small office without adequate ventilation thus making it very easy to catch colds and bugs</p>

### D.3 Comparison of Impact Score Rankings by Role

Item	Numbers in body of table denote Impact Score Ranking		
	Police staff	Police officer	PCSO
Having to work unsociable hours that impact on family and friends	31	2	13
Having a poor diet because of the job that you do	41	6	3
Not feeling part of a real team	35	49	35.5
Always feeling physically tired because of the hours you work	13	7	22.5
Not feeling valued for your work by your line manager	14	28	16.5
Not feeling sufficiently challenged by your job	20.5	54	14.5
Experiencing neural problems because of your work eg headaches	18	34	40
Having a poor quality work environment eg cramped accommodation	12	15	35.5
Regularly having to come to work on your rest days	63	43.5	57.5
Feeling frustrated by the paperwork involved with your job	16	1	12
Feeling overwhelmed by the amount of organisational change within the force	5	3	9.5
Receiving insufficient training on softer skills eg people management	34	39	19.5
Putting on weight because of your job	30	26.5	31
Not being paid overtime	49	33	7.5
Constantly feeling under pressure from work, even on days off	29	10	18
Not being able to sleep well because of work worries	22	21	25
Lacking sufficient flexibility over working times and patterns	52	46	50.5
Having to work during your days off because of your workload	60	48	62.5
Feeling undervalued for your contribution by the wider force	8	8	14.5
Lacking constructive feedback on your performance by your line manager	17	41	25
Believing that your overall compensation package is inadequate	44	32	55.5
Not feeling really supported by your immediate team	47	56	37.5
Having a job where there is little day-to-day variation	42	63	27
Being concerned about losing your job because of organisational changes	4	61	37.5
Being unable to improve/maintain physical fitness because of your job	37	17	32
Experiencing high levels of stress because of your workload	11	11	46.5
Having a job that disrupts your private life	39	9	21
Not having a clear understanding of your main work priorities	56	52	57.5
Believing that your promotion opportunities in the force are limited	1	36	1
Having insufficient training on the technical skills required for your work	33	38	9.5
Having to work extended hours because of your workload eg late nights	50	19	52.5
Lacking adequate facilities at your workplace eg canteen, showers	20.5	13	29.5
Believing that your work is not contributing to anything very meaningful	53	51	40
Lacking a real sense of camaraderie with your team	46	55	50.5
Having too many work demands to be effective in your role	32	16	42
Experiencing gastro-intestinal problems because of your work eg stomach complaints	55	43.5	61
Having holiday plans disrupted because of your work	57	45	62.5
Experiencing persistent low moods because of your work	23	25	25
Lacking a good working relationship with your line manager	45	59.5	55.5
Being unable to take restful breaks during your working day	27.5	4	22.5
Lacking control over your priorities at work	36	30	44.5
Being concerned about how your job may change in the future	2	20	4
Lacking enough sleep because of your work patterns eg shifts	54	31	46.5
Receiving inadequate communications on issues that matter to you	9	22	11

Feeling under pressure to attend work when you are unwell	10	12	16.5
Experiencing musco-skeletal problems because of your work eg back complaints	27.5	29	34
Having inadequate facilities for rest during your working day	38	14	33
Not having the right equipment to enable you to do your job properly	43	23	6
Feeling demoralised because of your work	25	26.5	19.5
Reporting to someone who lacks the skills to manage effectively	26	50	48.5
Experiencing cardio-vascular problems because of your work eg high blood pressure	64	62	64
Being bullied by others within the force	58	64	54
Believing that opportunities to develop your career are limited within the force	3	24	2
Finding it difficult to book leave because of under-resourcing	24	18	60
Having an unsatisfactory performance appraisal system	19	40	28
Not feeling able to confide in someone at work	48	57	44.5
Lacking a clear career development plan	6	42	5
Being unclear about how your job supports the force's overall objectives	51	58	59
Experiencing high levels of stress because of organisational changes	15	37	43
Regularly lacking the ability to concentrate because of your workload	40	35	48.5
Being psychologically or physically affected by external factors eg public abuse	61	59.5	40
Worrying about the potential impact of disciplinary proceedings	59	53	29.5
Believing that senior officers and managers don't appreciate the challenges you face in your role	7	5	7.5
Impact of the confidential nature of your work on your private life	62	47	52.5



## D.4 Impact Analysis – Item Deletion and Probability Plots

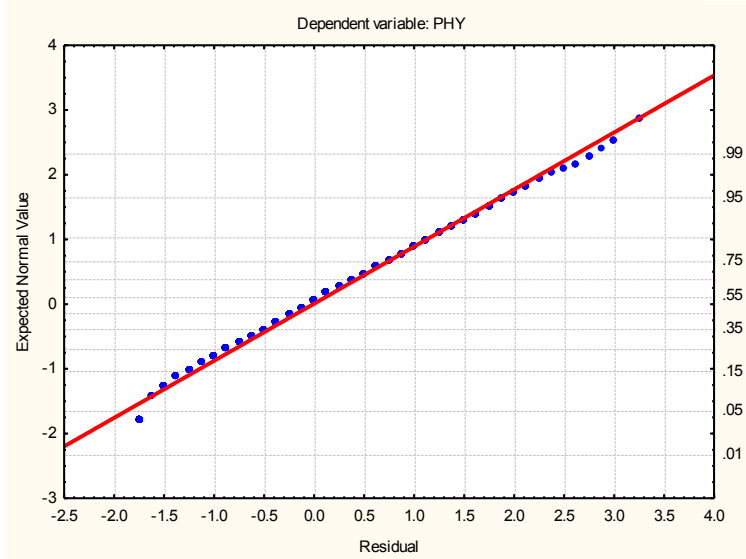
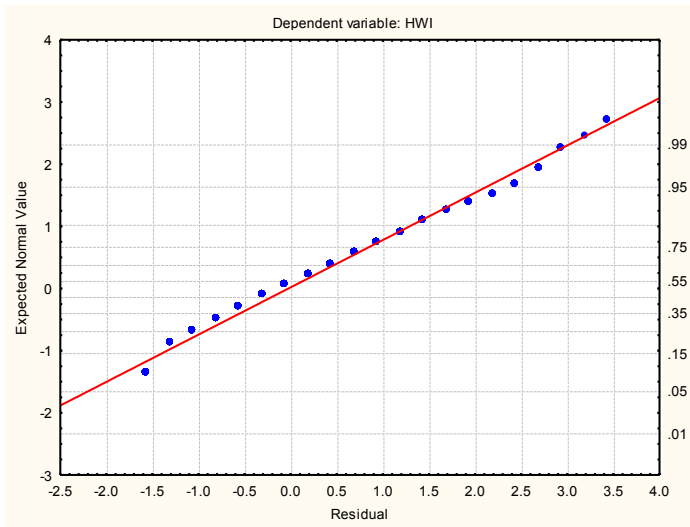
### D.4.1 Items deleted owing to impact scores of less than 1.20

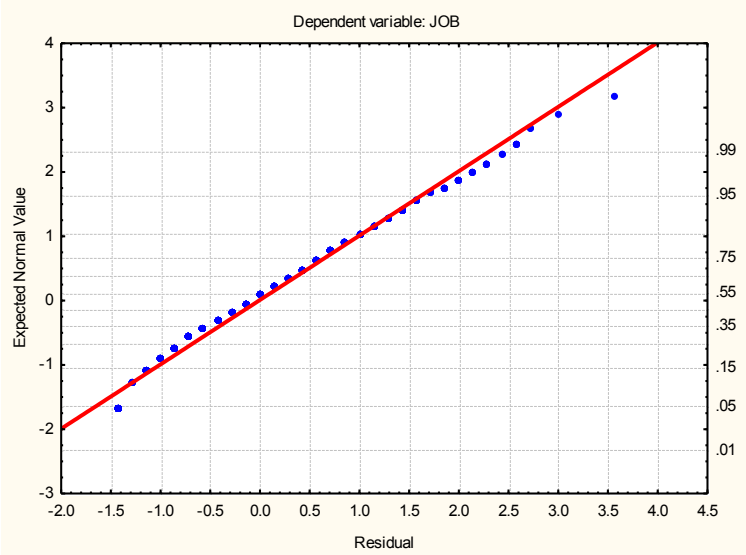
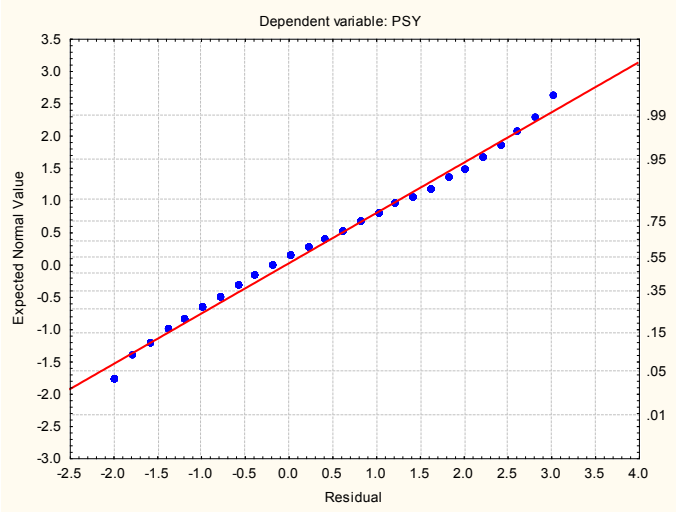
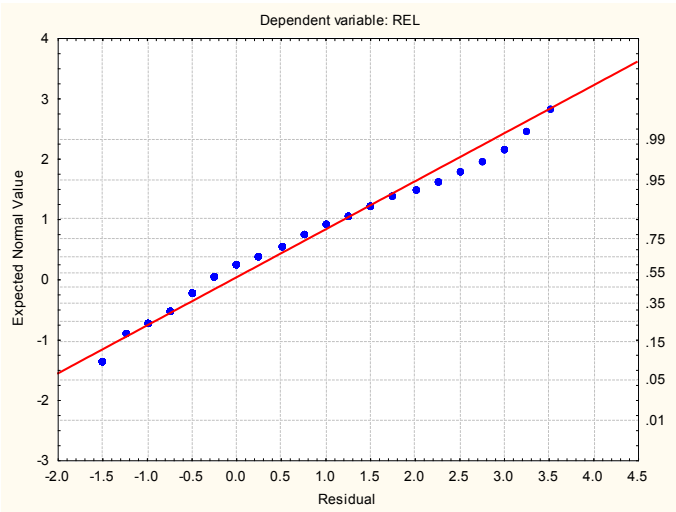
No.	Item	Impact Score
1.	Lacking a good working relationship with your line manager	1.18
2.	Not feeling able to confide in someone at work	1.17
3.	Believing that your work is not contributing to anything very meaningful	1.17
4.	Regularly having to come to work on your rest days	1.15
5.	Not having a clear understanding of your main work priorities	1.14
6.	Impact of the confidential nature of your work on your private life	1.10
7.	Being unclear about how your job supports the force's overall objectives	1.09
8.	Worrying about the potential impact of disciplinary proceedings	1.08
9.	Having to work during your days off because of your workload	1.07
10.	Being psychologically or physically affected by external factors eg public abuse	0.96
11.	Being bullied by others within the force	0.92
12.	Experiencing cardio-vascular problems because of your work eg high blood pressure	0.88

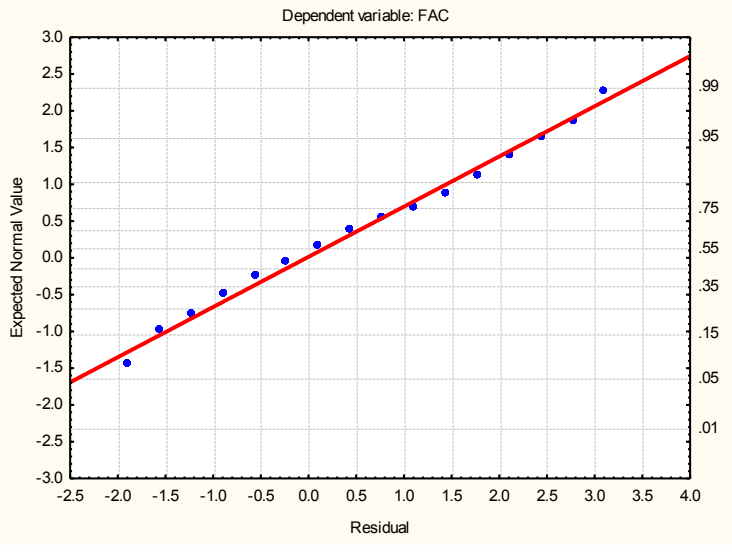
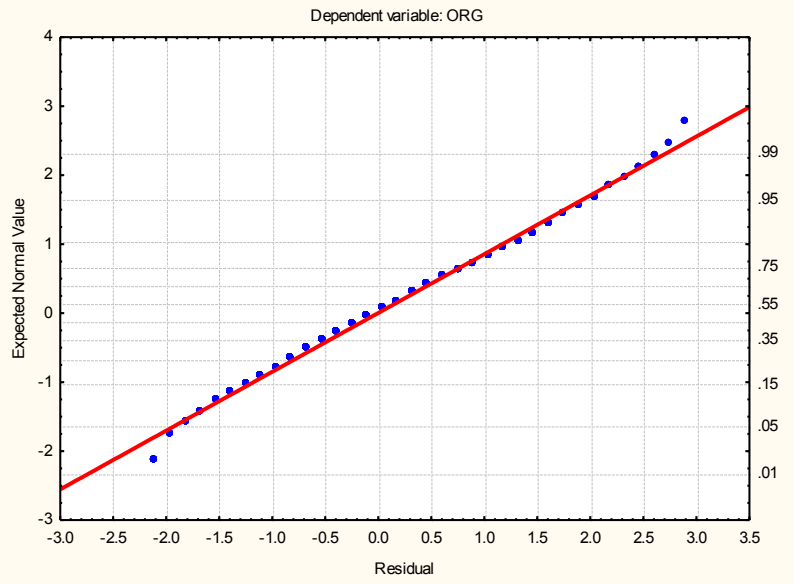
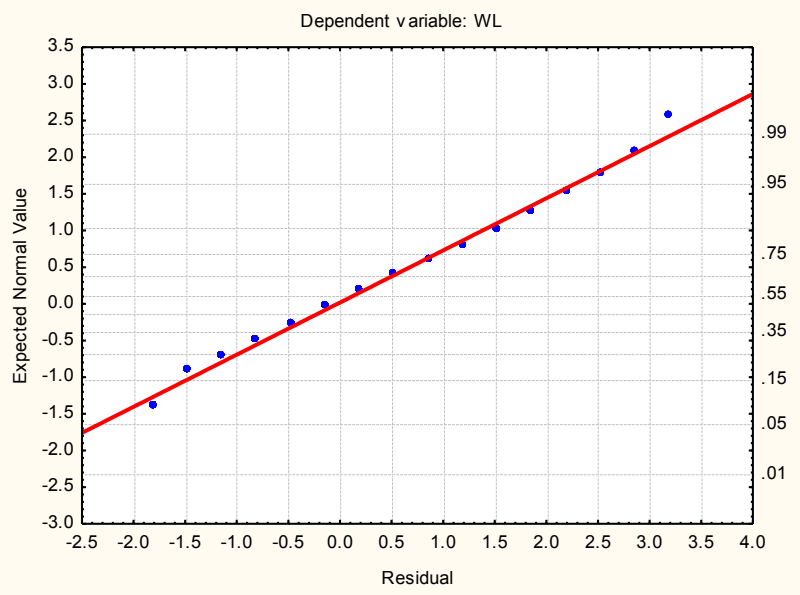
### D.4.2 Item Deletions owing to high correlations ( $r > 0.70$ )

No.	Item	Impact Score
1.	Believing that opportunities to develop your career are limited within the force	2.28
2.	Constantly feeling under pressure from work, even on days off	1.90
3.	Lacking a clear career development plan	1.89
4.	Having a job that disrupts your private life	1.87
5.	Lacking constructive feedback on your performance by your line manager	1.64
6.	Regularly lacking the ability to concentrate because of your workload	1.54
7.	Not feeling really supported by your immediate team	1.20

### D.4.3 Probability Plots for Residuals – Police Study Domains







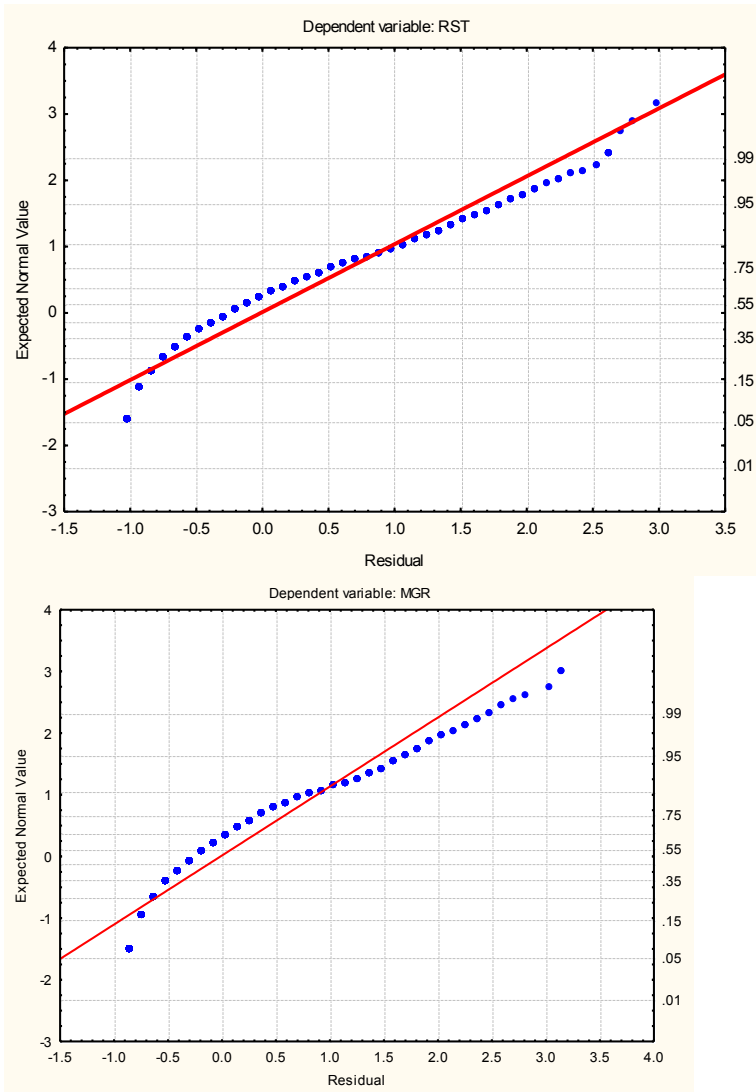


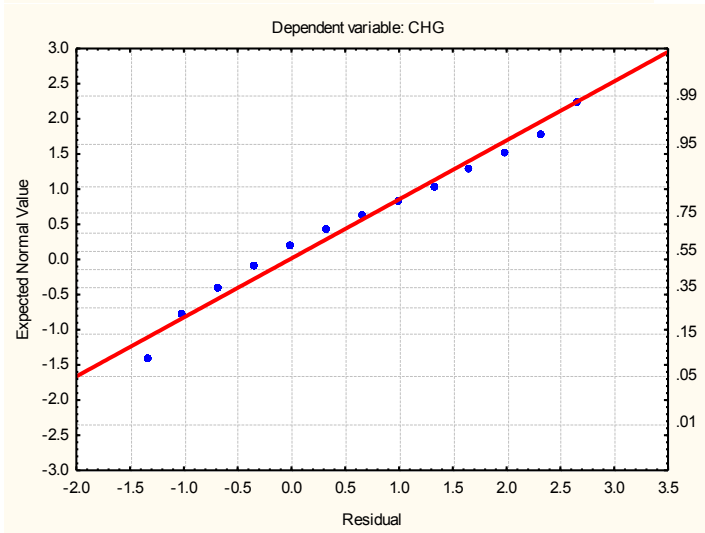
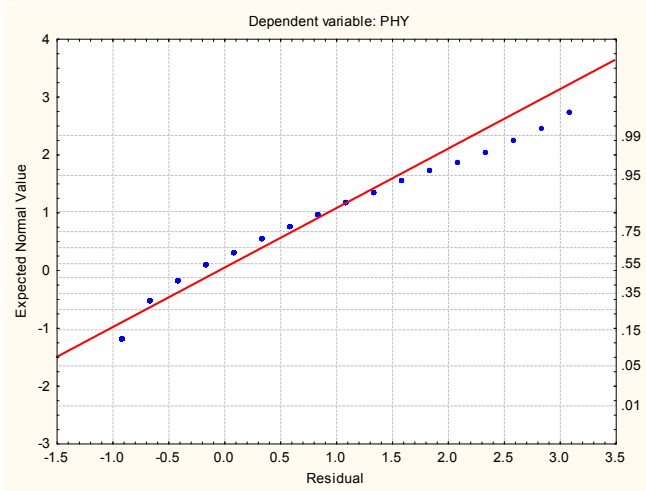
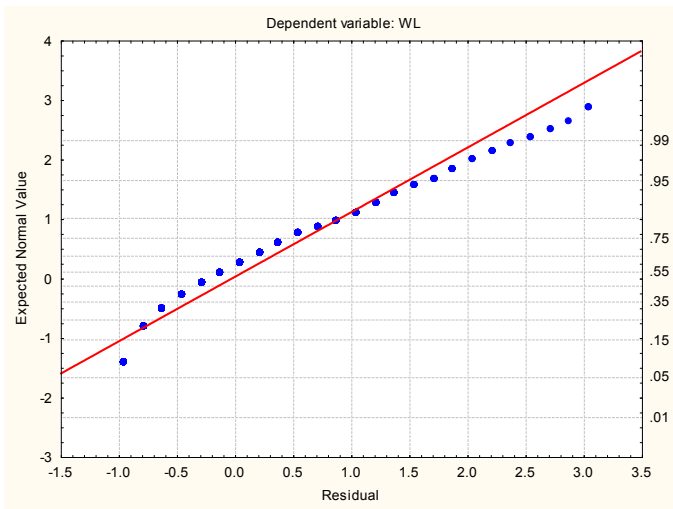
## D.5 Factor Analysis – Item Deletion and Probability Plots

### D.5.1 Item Deletions owing to high Item-Item Correlations ( $r > 0.7$ )

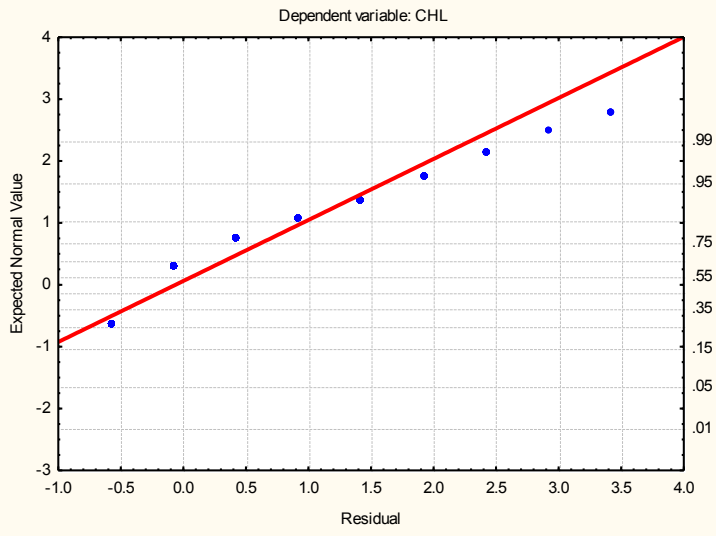
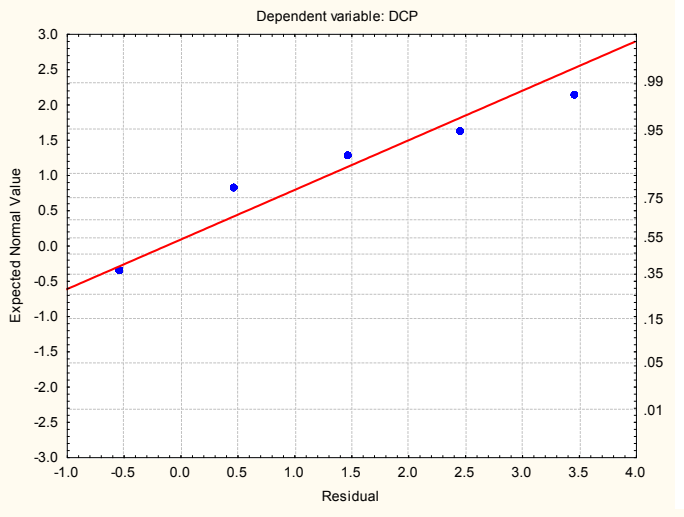
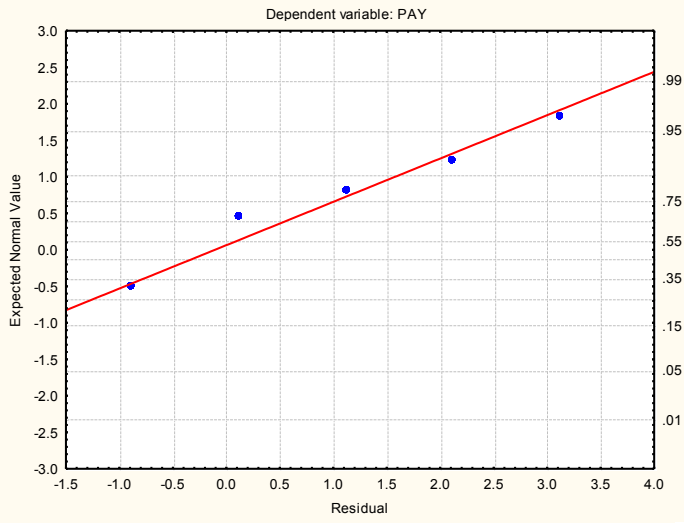
No.	Item
1.	Having to work unsociable hours that impact on family and friends
2.	Lacking constructive feedback on your performance by your line manager
3.	Constantly feeling under pressure from work, even on days off
4.	Lacking a real sense of camaraderie with your team
5.	Experiencing high levels of stress because of your work
6.	Believing that your promotion opportunities in the force are limited
7.	Having too many work demands to be effective in your role
8.	Lacking a good working relationship with your line manager
9.	Believing that opportunities to develop your career are limited within the force

## D.5.2 Probability Plots for Residuals – Police Study Factors









## Appendix E Library Study Results

### E.1 Frequency, Importance and Impact Scores for all Items

Rank	Question	Frequency*	Mean.Imp±	ImpactΔ
1.	Feeling frustrated with the Library Service's Spydus system?	0.93	3.58	3.32
2.	Poor air-conditioning at work (either too hot or too cold)?	0.90	3.40	3.06
3.	Believing that the public service offered by libraries is of a reduced quality?	0.85	3.37	2.88
4.	Being uncertain about how your job may change in the future?	0.88	3.11	2.73
5.	Worrying how changes in the Library Service may impact your job?	0.88	3.01	2.65
6.	Being overwhelmed by the amount of organisational change within the Library Service?	0.86	2.98	2.55
7.	Being unclear about the Library Service's future plans?	0.84	2.88	2.41
8.	Feeling uncomfortable with how the Library Service is diversifying its public offering?	0.83	2.84	2.36
9.	Believing that Library Management Team do not appreciate the challenges that you face?	0.76	3.01	2.29
10.	Feeling frustrated because of your work?	0.79	2.80	2.22
11.	Feeling overwhelmed by the volume of work?	0.79	2.78	2.18
12.	Feeling stressed because of your work?	0.79	2.76	2.18
13.	Having too many demands on your time to be effective in your job?	0.79	2.78	2.18
14.	Not feeling appreciated by the wider Hants County Council senior team?	0.73	2.95	2.17
15.	Thinking that your career prospects are limited?	0.72	2.99	2.15
16.	Having an unsatisfactory remuneration and reward package?	0.72	2.90	2.09
17.	Not being consulted on decisions that impact your work?	0.76	2.72	2.08
18.	Always feeling physically tired because of your work?	0.75	2.71	2.03
19.	Feeling undervalued by those in other parts of the Library Service?	0.72	2.75	1.97
20.	Lacking the necessary skills to meet the changing needs of library users eg PC queries?	0.76	2.57	1.94
21.	Receiving poor communications from Library Management Team?	0.77	2.46	1.91
22.	Lacking pride in the Library Service?	0.73	2.60	1.90
23.	Feeling out of control because of your workload?	0.74	2.56	1.89
24.	Not feeling valued for your contribution by Library Management Team?	0.69	2.71	1.87
25.	Feeling demotivated and demoralised because of your work?	0.71	2.63	1.85
26.	Being unable to switch off and relax when you are away from work?	0.69	2.59	1.80
27.	Experiencing poor quality sleep because of your work?	0.71	2.48	1.77
28.	Being unable to cope with the number of work-related emails you receive?	0.74	2.40	1.77

Rank	Question	Frequency*	Mean.Imp±	ImpactΔ
29.	Lacking adequate training to enable you to do your job effectively?	0.74	2.38	1.77
30.	Having poor quality working accommodation?	0.69	2.47	1.70
31.	Experiencing headaches because of your work?	0.70	2.38	1.66
32.	Having to miss your breaks during the day because of your workload?	0.70	2.29	1.59
33.	Feeling that you are not really making a worthwhile difference in your job?	0.67	2.36	1.59
34.	Receiving poor communications from the wider Hants County Council community?	0.65	2.45	1.59
35.	Feeling threatened by some members of the public?	0.70	2.19	1.53
36.	Not having enough team meetings?	0.68	2.21	1.50
37.	Experiencing a drop in self-confidence because of your work?	0.62	2.35	1.47
38.	Being unclear about your role and priorities at work?	0.68	2.15	1.46
39.	Having to work hours that regularly impact your home life?	0.65	2.22	1.45
40.	Not having the necessary training to advance your career?	0.60	2.42	1.45
41.	Believing that your immediate line manager lacks the necessary skills to bring the best out in you?	0.64	2.24	1.44
42.	Having poor lighting at work?	0.60	2.37	1.42
43.	Feeling angry because of your work?	0.61	2.31	1.40
44.	Receiving poor communications from your line manager on issues that are important to you?	0.61	2.27	1.39
45.	Experiencing problems with your legs and feet because of your work?	0.59	2.35	1.39
46.	Having to work beyond your statutory hours?	0.65	2.11	1.37
47.	Feeling persistently low because of your work?	0.59	2.31	1.35
48.	Having to perform duties at work which are beyond your skill set?	0.67	1.98	1.32
49.	Not believing that you are offering a valuable service to the community?	0.57	2.28	1.29
50.	Developing musco-skeletal problems eg back problems because of your work?	0.58	2.22	1.28
51.	Having poor quality staff facilities eg kitchen, rest areas?	0.59	2.19	1.28
52.	Being unable to take time off in lieu, owed to you?	0.59	2.15	1.27
53.	Not feeling supported by your immediate line manager?	0.58	2.20	1.26
54.	Having an inadequate performance appraisal system?	0.57	2.15	1.23
55.	Being unclear on your performance objectives?	0.59	1.98	1.17
56.	Lacking flexibility over your working times and patterns	0.57	2.03	1.16
57.	Having potential RSI (repetitive strain injury) problems because of your work?	0.53	2.12	1.13
58.	Not feeling supported by your team at work?	0.57	1.97	1.11
59.	Lacking constructive feedback on your performance from your line manager?	0.55	2.01	1.10
60.	Not having time to eat properly during the day because of your workload?	0.56	1.89	1.06
61.	Not being encouraged by your manager to use your initiative at work?	0.55	1.91	1.04
62.	Having a regularly difficult journey to and from work?	0.50	2.04	1.02

Rank	Question	Frequency*	Mean.Imp±	ImpactΔ
63.	Suffering from stomach problems because of your work?	0.46	1.88	0.87
64.	Feeling isolated and lonely at work?	0.49	1.70	0.84
65.	Regularly being asked to work different hours?	0.50	1.59	0.79
66.	Not having enough variety in your day to day work?	0.48	1.65	0.79
67.	Being bored at work?	0.44	1.76	0.77
68.	Being unable to confide in a colleague at work?	0.46	1.68	0.77
69.	Being unable to make plans with friends and family because of unpredictable working hours?	0.48	1.58	0.76
70.	Lacking good camaraderie with your work colleagues?	0.47	1.59	0.74
71.	Being interrupted/likely to be interrupted by work matters while on holiday?	0.37	1.43	0.53
<p>* = proportion of workers reporting item as bothersome  ± = mean importance score in subjects who reported item as bothersome  Δ = frequency x mean importance (maximum = 5)</p>				

## E.2 Free Text Comments

No.	Free Text Comment
1.	A continued lack of staff at my home branch due to having to cover for smaller libraries when vacancies are not filled or staff are on leave or off sick.
2.	a lot of screen work, resulting in occasional eye fatigue. lunch breaks always interrupted by 'phones calls
3.	A supplementary answer to many of these would be inadequate, or poorly supplied information/communication
4.	Although it happened 18 months ago now I still feel unsettled by the last restructure and its consequences. I also feel rather helpless in the face of some of the unhappiness I see in colleagues. That said, I do feel that the new structure is working quite well and I feel that the various teams of which I am a part have gelled together very well. I get the support I need from colleagues and from my line manager. I know it is pointless to want time to settle down before there are any more changes so I plaster on a smile and get on with it.
5.	An IPP process that tries to link performance to pay which is often felt to be unhelpful, doesn't motivate and doesn't fit into public sector working very well.
6.	As I am part time and have no school age children, therefore usually available,I have to be so flexible about working hours so much so that 2 weeks are rarely the same. This does impact on what I can plan to do in my own time.
7.	As I work 10 hours one week and 18 hours the next I tend to get forgotten. I don't work on the staff meeting day so I'm not involved with that and I tend to fill in where necessary cos my jobs are quite easy. They are keeping the counter tidy and filling the new stock table, which isn't being used at the moment, so I tend to do the shelving or phoning cos the other's are busy doing their jobs which take up most of their time. I also have another job which means I'm not always available to turn up for meetings or other activities when they aren't on my usual days so as you might imagine, I'm one of those 'last to know' people so I suppose you could say my stress levels never peak that often. My IPP report said I move about too much and I am a health and safety hazard! Better slow down, methinks and smell the coffee, or tea or hot chocolate that I occasionally serve.
8.	As I work part-time I can ensure that i eat around my working hours, however it is easy to dehydrate when working on the counter or shelving/tidying for 3-4 hours without a drink and this causes headaches. Continuous handling of heavy books also causes wrist ache. Customers expect me to have a very high IT skills and time to sit coaching them on the computer, I do not the training or the time to really help.
9.	At the moment it is our lack of ability to use Spydus properly to ensure the customer gets what they deserve. I personally feel that the Spudus package isn't up to the job and this frustrates me. It's embarrassing when people complain and you can't give them a adequate explanation.  The public areas have been refurbished but the staff work and break areas are inadequate and poorly equipped. Furniure is just a mish mash of old uncomfortable stuff thrown together.
10.	Balance between local management expectations and responsibilities (i.e. support and responsibilities to your team and buildings) and higher service expectations and ensuring both are met causes problems since they represent different allegances and also pereceived commitments to change and development.
11.	Being answerable to more than one manager who don't always agree on what I'm doing in my work
12.	Being sent to cover different branches at short notice. Always expected to be cheerful and enthusiastic about everything especially managers/ supervisors ideas. Being told off if we change anything about the counter. Never knowing where supervisor and manager are or when they are going to be here. Never get timetables in advance. no notes for staff meetings. being unable to bring up grievences with supervisor/manager without them taking it personally. when asking for leave getting told, as a joke, that we can't it then having to wait for sometimes weeks to get clearence for it which means your never sure if your going to get it. mannger/supervisor taking

	leave whenever they want often at short notice.
13.	Constant pressure from above to do more with less.
14.	Constantly being short staffed. Not enough budget to do the job as well as I would like. Realising that this is not likely to improve in the future.
15.	Constantly having to be upbeat and enthusiastic when dealing with the public whilst having to deal with a totally useless computer system that you end up apologising for is very frustrating
16.	continual change in direction and expectations... no time given for ideas strategy ro' bed in 'and be properly evaluated.. short termism culture
17.	Cuts in hours i.e frozen Posts cause a lot of pressure when working atcounter Public are used to being served quickly but are now forced to queue and wait if enquiry desk is busy,and there is no-one else to assist (short staff).The use of computers does not apply to all people especially the older generation. The new spydus system is very slow and takes a lot longer to deal with each reader.People get annoyed at having to wait so long while small details are adjusted.
18.	Dealing with the children who come in mainly to use the computers. They can be very disruptive, and become agresive and threaten staff when asked to leave. Often we only have 2 staff on in the evening which can be difficult if a large group comes in. We do call the police, but their response time can be slow. This is increased during school holidays when they spend 2 hrs on the computer and get bored,and wind each other up. esp during 1/2 term when the weather is bad and there is nothing else to do. Activities are generally only available in the summer holidays. This could be helped by either only allowing 1 hour a day on the computers, or not allowing them to log back on straight away- somehow- so they can have a break from the screen and get some fresh air. Not sure if this is possible though. Of course if we could be issued with cattle prods,our job would be easier (our manager has already said no to this, but it's a thought)!
19.	Excessive travel both before and after works and driving for [ ] means weekly travel of c500 miles. This causes fatigue, lack of concentration and physical problems. Due to my role it is difficult to work at home although I have Pc access to do so. [ ] seems to be well behind other organisations in orgainising virtual meetings and conference calls....therefore I regularly drive 36 or up to 68 miles for [ ] on top of my journey to and from work.
20.	extream heat in summer, strain on eyes from lighting and computers and hand/ wrist strains
21.	Feel isolated from [ ] all workplace activities seem to be based in [ ]. Feel that appraisal with immediate line manager is a problem as that is who you are most likely to have coniflcts with
22.	Feel stressed that I am often expected to take charge of the building, cover the enquiry desk, etc when many of my colleagues on the same grade are not. Feel that this extra responsibility is not recognised. Newer staff with less experience are on the same salary as me and that is frustrating.
23.	Feeling frustrated at the volume of work to be done and not having enough personal time or staff time in which to complete the tasks .We always seem to be dealing with the latest crisis or demand - ie firefighting - rather than dealing with tasks in a full and structured manner.
24.	Feeling frustrated because I am not being asked to use the skills which I have spent 20 years acquiring. Also, not being given enough time to do the things I have been asked to do.
25.	Finding the Spydus system slower and less acurate than the old system is extremely fustrating, to myself and customers. Computers keep freezing and it takes so long to work your way around Spydus.  I was looking forward to the new system but it has not lived to expectations especially trying to find items in the catalogue, the old catalogue was so much more informative and easier to use.
26.	following the refurbishments many here have experienced sore throats bad coughs and headaches
27.	Frustrated with Spydus reservations going wrong
28.	Frustrates family as I spend a great deal of time talking about the problems of work when at home
29.	Frustration in constantly having to deal with work tasks that are all classed as priority. Sometimes feeling inadequate if some tasks are not completed because of this and having to justify why not complete on time.Constant awareness of not wanting to delegate too much to other staff ie getting the balance right. My own self-help techniques using CBT and REBT exercises have helped

	with this. (counselling through ESL) recommend staff can attend courses to learn these strategies. Other managers workload impacts on my own workload as targets are cascaded down.
30.	General stress and lack of time to do anything properly - constant interruptions and the need to fill in for senior asst leave/ absence for training or sickness makes doing ones own job highly stressful - it always has to be pushed aside for frontline cover thus making it VERY pressured, this leads to health issues and lost breaks and late finishes/ early starts to catch up - all unpaid and unremarked by line managers. Managers load us up with tasks (IPP/ Reading Scheme/ other initiatives to disseminate) and have no conception of how we can make time for this and our own work plus helping our teams to cope. Managers never offer to physically help or 'do anything' in real terms - and often cancel dates when they were expected in branches and we felt we could call on them in emergency (e.g half terms/ holiday times when short staffed) because of meetings or their own leave -they do not consult the branch to see what effect their absence will have on branch running. Consequently they become 'unimportant' in branch life, as we are forced to 'account' without them, yet they expect to be included in all branch activities and gongs on - impossible to marry to two, staff do not feel that line managers have anything 'to do' with the branches. The P&B process has left Supervisors in a very poor position- increased workload due to a more detailed RP as part of the process (poor or no advice received about how to plan a RP to make it more 'generic') and no change in pay and grading. This is causing the group to be very unhappy indeed. IPP does not help - we have been told by our managers that we merely meet expectations, no more so no reward from this source either. Just to be encouraged or told by your manager that you are doing a good job would be a start but this is not forthcoming either. My own experience is that line managers have little care for supervisors welfare apart from lip service to keep us quiet - they regard them as workhorses to be well used. Sorry - very miserable at present.
31.	General unhappiness at the way old rules that were in place for years have now been pushed aside and no longer matter.
32.	generalised low level stress due to being in a job I was obliged to apply for to maintain my income. Skin problems, stomach problems, sleep problems, anxiety and panic attacks .
33.	Generally a feeling of being undervalued by managers/group managers in the area - they do not appreciate the hard work a senior library assistant does during the course of the day. Immediate supervisors/line managers are fine, it is those who are further up the scale, and have no clue about the day-to-day running of a library and who have no contact with the public. This gives me a feeling of frustration, and one of even if I did make a suggestion, it would not be understood or taken on board.
34.	Having a line manager who was consistent in what they asked of the staff - and not perpetually changing their mind. Only embarking on projects within the library that could be carried out properly, with sufficient planning and realisation of the impact on all members of staff. Constant 'butterfly' like thinking by the line manager seriously impacts on the morale of the staff in the library I work at, it has reached an all time low. Especially at a time that we are dealing with changes countywide on top of local initiatives.
35.	having a well documented back problem and continually being given long hours on my feet. going home at the end of the week and having to rest for the following day in order to be free of back pain.
36.	Having previously been able to walk to work, now having to spend up to 10 hours a week in the car has impacted on my personal time as well as adding to my personal stress by travelling during rush hours.
37.	Having to work in a large open plan office, where there is a lot of staff adding to extra noise level and a greater possibility of cross infection colds, flu etc.
38.	Having to work on an industrial estate, not adequately served by public transport. Having to work in an open plan office being forced to listen to every work and non-work related conversation and phone call. Feeling trapped in such an office. Our previous building had corridors. This meant there was human traffic. You met colleagues from other departments, albeit briefly, but there was more contact with a wider range of people.

39.	his has been a particularly bad year whereby we moved buildings which was a major stress factor and transferring to the new spydus system in the same year, of which we have had a lot of problems that are still ongoing ,being another major stress factor,so much so I developed a bout of shingles at Christmas.
40.	I am on the same grade as staff who I line manage and supervise. This does not effect how I carry out my role, but does make me feel undervalued.
41.	I desperately want to be creative and proactive but don't get enough time to do so, due to the sheer amount of reactive tasks I have to do. Due to staffing pressure, I have to help out the lower grades with their tasks (quite often) so I am not getting the opportunity to shine in my professional role. It is frustrating.
42.	I do feel I need the journey home from work to calm down from a stressfull day with an ever-growing work load. I feel if I didn't have the 30 minutes sat in rush hour to compose myself, I would end up taking more frustration home with me than I ever used to.
43.	I do not believe that we have sufficient training in our role as library assistant. I feel frustrated by the introduction of spydus and feel it is very long winded system. I feel rather inadequate when asked for help at the peoples network.
44.	I do not enjoy my work as much as I used to. When I am feeling positive I think all I can do is work to the best of my ability and that I can make a difference. When I feel less sure I do sometimes question the value of some aspects of what I am doing. Feeling unsettled and unsure about your contribution at work does spill over into your personal life and leads to a general feeling of dissatisfaction. Having said that I try not to let it impinge too much!
45.	I don't think having one 10min break during a 5.5 hours shift, working with the public and mostly standing up is sufficient. I find each time that I do my 5.5 hours shift (9am to 2.30pm) that I am exhausted for the rest of the day and my family is effected by this.
46.	I feel stressed because very often I am unable to help the public and give the level of customer service I would like to due to the short sightedness of line managers which 'winds me up'.
47.	I feel the location of [ ] has made travelling to and from work more expensive both financially and time-wise...it has added for me an extra hour on to every working day which has meant that I am sometimes too tired to enjoy my leisure time.I feel that a job on such a scale as a library assistants shouldnt impactin this way..i greatly appreciate the way in which the acting head of service has done all in her power to help alleviate this problem but believe the wider issue wasnt acknowledged or indeed hasnt been tackled by [ ] County Council who enjoy a good reputation for their services to the public, this should be balance by its service to its staff
48.	I Feel very inadequate because of my lack of PC training & readers expect you to know everything.
49.	I find that I can only properly relax if I am actually on leave and away from home. Because I can access e-mails at home, and know that if I don't, there will be a huge back log, then I feel I have to do that. As a middle manager, I know that if I don't attend to something, then the people that I line manage will suffer, and I owe it to them to do what I can for them.I also feel that I am 'piggy in the middle' between my extremely over worked line manager, and staff who I line manage who are struggling with their work loads, and the vagaries of the system. I must do my best for both.
50.	I have a chronic condition that is managed by the use of immunosuppresents, meaning I am open to all kinds of infections (especially as my child is at nursery). When I have to call in sick, I feel as though my line managers do not believe me, and do not understand or support me with my condition. This causes some stress, which is a trigger for my condition.
51.	I have been relocated from a workbase a 10 minute walk from home to one that is a 65 mile round trip with responsibilities for sites which are an 80 mile round trip. I often have to drive 95 miles a day which is tiring and make worse my problems with insomnia so have had to approach my GP for help. I have often nearly driven off the road with tiredness after only 2 hours sleep. I resent the 15 hours a week I know have to spend just travelling to and from work and this has had considerable impact on my home life and relationships. I am exhausted by the end of the day. I also feel very depressed that in October 2009 I will lose my relocation travel allowance which means my salary will be effectively cut by £2500 per year as that is how much it now costs me to travel to work. My work has had definite impact on my well being - and not in a positive way.



	Fortunately I have a very supportive and understanding husband but although I love my work, the circumstances I have been placed in are a continual drain on my health and I am currently waiting for a consultants appointment after having problems with my vocal chords/neck/throat since November. I do not know yet whether those problems are entirely physical or part stress related.
52.	I have trouble switching off at home and if there has been a particular issue at work during the day, then I can't sleep as I will be think about it. I take sleeping pills on a regular basis.
53.	i have work in libraries for nearly 20 years, beginning as a saturday assistant & working my way up. i used to look forward coming to work, for the amount of different things i would do. sadly now, i feel i come more for the good people i work with. i find more & more things are being put on me, things that 'won't have any library staff input' which turn into a lot of hassle for me & my staff, who are not being replaced. i feel my role has turned more into an office based admin role rather than public role. thoughts of moving to another job are coming to me more & more
54.	I seem to have constant coughs and colds, I think as a result of the hot dry atmosphere at work, plus coming face to face with lots of children who always seem to have the sniffles but don't seem to own a handkerchief!
55.	I simply don't have enough time in my day or the relevant training to do all that is asked of me efficiently and in a way that gives me job satisfaction, I am constantly stressed and frustrated.
56.	I think it akward when asked to cover other hours because I feel guilty if I say no but often I'd rather not. And trying to fit in leave has always been a problem, in the past I end up carrying it over which is not ideal.
57.	I think that my current workload makes it impossible for me to have a meaningful work-life balance which is a real concern and could eventually affect the way I am able to lead staff. I regularly have to work late and have to cancel my evening arrangements at short notice due to pressures of workload/deadlines/covering for lack of staff. I have no concerns about working hard, but I am unable to work smart which is an issue for me and I do not perform particularly well in a long hours culture - as I get overtired, can't think straight and then make mistakes. I have obviously raised this with my manager and although nothing has been actioned over the past year, I am hopeful that solutions can be found - perhaps after the staffing audit?
58.	I think that one of the supervisors is not up to the job, so acts irrationally. She shouts and jumps to conclusions. I have had to walk out on one occasion as I felt that this amounted to bullying, and I will not be bullied. Very stressfull!
59.	I think that there are too many decisions made by people who have no idea of the real impact on frontline services. I feel too much is thrown at us with little or no thought as to how we are going to fit these things into an increasingly congested day. staffing levels are getting dangerously low at times, putting pressure on existing staff who, through a lot of goodwill, carry on giving as excellent a service as they possibly can. New iniciatives come raining in supposedly with 'little staff input' but this is never the case in reality. Maybe some senior managerial staff should have regular periods back on 'the shop floor'
60.	I think the sheer amount of work expected of everyone is overwhelming and each week you get more and more to do. The training is not always there as the the Supervisors are too busy to do it. It makes the staff self esteem really low and you end up with staff sickness which then impacts on you and you end up with unhappy staff and workplace. Not good!
61.	In the three and half years I have worked at [ ] library we have always been a full time person short. This has had a great impact on the remaining staff, not just due to the lack of training and low morale. A library is a physically demanding working environment and staff shortages put more demands on remaining staff. Having had no previous problems I have just returned from 5 months sick leave due to muscular/skeletal injuries from lifting boxes, stacking shelves, pulling trolleys and standing on concrete floors for 2 hour plus shifts on a full time.  During this time I was put on half pay but not informed or sent payslips and now have financial difficulties because of delays with Occupational Health. So I have been off work due to injury received at work, my return was delayed because of Occupational Health and I have financial difficulties as a result because we are always short staffed!

	<p>Being unhappy at work means it is hard to provide a professional service especially to rude/aggressive/unhygienic people knowing you do not have support of your immediate line manager. Working in a disorganised and uncomfortable environment is also stressful. Lack of access to workroom terminals means you cannot access emails/information let alone do work duties properly. The heating system has never worked properly so the dry atmosphere spreads colds and is uncomfortable as well as wasting resources.</p> <p>Both my physical and mental well being have been affected since working for the library service and being knocked back from 3 interviews has lowered my self esteem to the point that as soon as I find something else I will be leaving.</p>
62.	it the backup, if you do a good job or deal with a difficult situation and your line manager is informed so should the Library Management Team or ever the Group Manager. Praise goes a long way to improving moral. Lets let each other know how good we are - not the bad things in life. The Library Service is good but we don't promote ourselves enough.
63.	Lack of adequate hand drying facilities. Unhygienic towels in toilet and kitchen areas.
64.	lack of space sometimes health hazard we have one room which acts as office , work room, store room, staff room etc.
65.	lack of staff and being paid the same as equivalent workers in smaller quieter libraries. We are so busy we should get paid more.
66.	Lack of staff, having to do colleagues' work when no one is available in addition to my own post. An excess of schemes and initiatives that are too fiddly to work in practice.
67.	Lack of training on new SAP system
68.	Lack of understanding or appreciation of our diverse role by management expressed in lack of resources for aspects of service other than core business.
69.	Late nights, Spydus and working in an old building
70.	Library in shopping centre playing loud music.Centre management refuse to cut speaker outside Library Entrance or reduce volume and ineffective automatic door system means that doors are often stuck open.Impossible to concentrate on Spydus queries at counter with the racket! And, no ! I am not some grumpy old woman who does not like pop music at all..have reported to Line Managers who, because they do not do much counter work , I get the impression that they don't see a problem. Also, I have reported fault to Automatic door people who can't seem to help!These were existing heavy entrance doors which were adapted to make them automatic for disabled access and therefore aren't fit for the purpose.
71.	Library Officers lost their appeal against our pay grading and most of us will take a significant in pay this October, when salary protection ends. This is already causing a great deal of distress and anger, and of course some of us are considering whether to stay on after October. Those that do will not be happy people.
72.	Long hours, less staff, asking for leave can be stressful, especially at short notice
73.	Long term worries over job security due to changes like self-issue coming in. Concerns that the library service is dumbing down and less emphasis on book borrowing contributes to stress and uncertainty about the future. Excessive worrying by other staff on these issues affects staff morale and can be draining.
74.	Lost the director's vision which is very unrealistic.
75.	<p>Management have a habit of not listening to staff and when suggestions are made to better the situation it's always a case of making out they understand but doing what they want anyway, despite the impact on the staff concerned. Thankyou is not a word often heard from above despite the stress of a new computer system etc, it's always a case of 'get used to it it's not going away'.</p> <p>Flooding of emails is a major concern! Has everyone forgotten the art of speech?</p>
76.	Mostly the failure of IT eg: peoplesnetwork and Spydus -doesn't seem such a great improvement especially for the public when everyone is in such a rush and that takes much longer! This is from someone who was very optomistic about it at first. Lack of enquirey training. Lack of support from professional staff as they are so few and far between. Staff left working in libraries have much more to do and this is difficult for all but especially for those with only 1-2 staff to start

	with.
77.	My enormous workload and the new structure which makes it difficult to get any sense of achievement has seemed to eat away at my confidence level and work now seems to affect and dominate my whole life. I am also having to try and support and manage a team that are showing increasing signs of stress related illness and disillusion and that often gets me down.
78.	My general self-confidence has been knocked to pieces. A year ago I was competent at my job and could provide the customers with a good service. Since SPYDUS was introduced, I am unable to do that. This mainly due to the fact the system itself is poor and it is unpredictable.
79.	my job was done away with but we INFORMATION ASSISTANTS were  not offered redundancy by my employers they just gave us a totally  different job and we were told to get on with it!
80.	My working situation has made me depressed and I am consulting a counsellor because of this which is now impacting on my home and family life.
81.	New initiatives from the government and council, and work previously done at DHQ and HQ levels are consistently being passed down despite the fact that the staffing levels are lower than before. Library assistants have a massively increased workload but have received little or no training, and no remuneration. We are never asked our opinion before major changes to frontline practises are made despite the fact we are the ones who deal with them - many of the latest decisions ahve extended the time it takes us to do things - especially Spydus!  Also, here the supervisor delegates all her work and does nothing whilst we struggle with our workload - it has been reported to the manager above her and nothing has been done. This is very bad for morale and well-being.
82.	no clear career progression, with no interest from management about career progression for this particular position which looks likely to disappear - very worrying and soul destroying
83.	Not enough staff to cover lunch breaks. Always being sent to cover other branches without notice. Inconsistent Manager/Supervisor timetables - we never know where they are!! Taking the initiative (when there is not a senior member of staff to ask) and then being told off for doing it. Double standards eg - Senior staff taking time off when we are told to never have time off when someone else is already on leave. Having to wait weeks to get confirmation of leave. Not having consistant rules to follow set up and maintained by Supervisor. Having to do Supervisor's jobs eg SAP, Stats and retail. Always expected to be enthusiastic and happy even when we aren't and especially about our managements suggestions. Not having any time off the counter - to do stock work. we are expected to do it on the counter whilst serving the public. Don't have a workroom anymore. Not much help or feedback from the Adult stock Librarians. The public expect us to be Computer technicians and I find it very hard to explain to them that I don't know what has stopped their PN from working properly.
84.	not having enough staff to complete a job. continually jumping from one crissis to another. no job satisfaction. no feeling i did that well. i feel i have done each job just enough to keep us from going under.
85.	Not having enough staff. Having to be on the counter often when I should be in the office.
86.	Not having enough time to do my work properly, and feeling that I am letting the borrowers down because of this. Getting stressed because unable to fulfill my daily work load.
87.	not totally sure I've put myself down for the correct wage level on first page!!  I have a brilliant line manager in sue leach and she has kept my head above water more than anything else.
88.	Our library is small but the busiest in our grouping and should have medium library status. We have one small room which serves as the office, staffroom, storeroom and workshop which means everything is crammed in, a health & safety hazard! Other libraries get refurbishments and upgrades but our library doesn't get anything! This is not good for staff morale or for the

	members of the public who come in, we have a growing population which warrants a bigger library.
89.	Outside factors such as the future of our library building, leave me feeling uncertain and vulnerable, job-wise
90.	Overall, too much work, not enough time. I do not feel any staff on the front line are appreciated for what they do by the higher levels and do not feel they actually care. The fact I now in salary this year says it all.
91.	Periods of extreme staff shortages.
92.	Poor pay restricting the quality of life available in time outside work.
93.	providing cover for small branches due to staff shortages or sickness sometimes being threatened by aggressive customers
94.	Reluctance to take time off when I am unwell, because of my work load, and staff shortages.
95.	Since the last round of staff cuts and the advent of Spydus I have struggled to do my job to the standard that I would like to do it to. I like the work. The problem is the volume of work that I now have to deal with. As a result there are aspects of the job that I no longer see to. This has been exacerbated by the advent of Spydus which is crap! This situation has persisted now for about 18 months and it is definitely demotivating me. This job takes all my energy. Most nights I wake up with the job on my mind. Generally I am much more anxious than I was 2 years ago. I feel particularly anxious on Sundays prior to the start of the working week. I feel that my work/homelife balance is out of sync. But for the economic situation I would be actively looking for another job which is a shame as I like the job and the people I work with. I used to not mind coming to work. Now I would rather not come in.
96.	Sometimes just not feeling like we are being listened to by management (Library Managers and above, NOT supervisors), having less time off-counter to deal with behind the scenes tasks due to staff shortages, Library Managers not understanding all the jobs we do - when we are on Counter for example, she will take us away to deal with Enquiries if they are busy but then a queue builds up at the counter. Just not enough time to fit everything in that we have to! Having to take tasks that we can do in Ref and on Enquiries as thats the only time to get them done - but if you are distracted by customers etc, it feels like there's no point taking anything with you! And some jobs (ie stockwork) are not practical to take into the main library.
97.	Sometimes the lack of training in some aspects of the job can be very frustrating, especially when we are very busy and there is nobody to help.  I am also unclear as to what my role is sometimes, as we are often asked to do different things.  I think that there is a distinct lack of communication between Library management team and weekend staff and we are not consulted about the many changes to our roles, changes in procedure and within the library itself.  Despite this I think we are valuable to the community and I often feel pleased to be doing what I am, and proud to be helping the public.
98.	Sometimes think some of the things we do are a waste of time and just a paper pushing exercise. Very frustrating. Spydus is very time wasting and the most frustrating thing I have had to deal with in 15 years of library service. Its a real step backwards. Thank you [ ] for that!
99.	Spydus has made a non stressful job extremely stressful. Not only did it make our job vitually impossible for several weeks but it highlighted the fact that our unusual department is totally overlooked by those making decisions and changes despite us being a vital service to our customers.
100.	Staff leaving and not being replaced. Since I joined this has happened twice and with an increasing workload due to the sucess of the service and new serivces being provided all the time, this has had the most impact on my overall well-being. I feel frustrated by my inability to deliver an excellent service to the community and it is obvious as time goes on that an adequate or in some cases poor one is felt to be enough by those that control the central budget. This has lead to a feeling of frustration and lower self esteem as professional achievement is hindered by poor

	investment in people and their skills by the library service as a whole.
101.	standing on hard surfaces for long periods at work, working with spydus.. not user friendly or very efficient !
102.	Stress moving from [ X ]to[ X ].
103.	The amount of work that is expected of us in the library service does not reflect how we perform. The public expect a very good service and I for one do not think, that we provide this. More work is put upon us and the 'backroom' jobs area is very neglected. As a library with an adjoining Military Library, we do not have a full time librarian and people come in expecting us to be able to find out information on past relatives and we lack training and time to do or deal with this. We also do not have enough manpower to cover, in our military library and if someone from the public had an accident, this might not be found out if someone injured themselves.
104.	The buliding is often inadequate to perform the tasks set, e.g. shelving - not enough space for books not enough room to move trolley nowhere to leave trolley out of the way when shelving, particularly upstairs, which could consequently cause health and safety issues.  No security guard also impacts the staff and the public's well-being.  Upset with how books and education in the library are no longer the most important thing, even though there is nowhere else that offers these services. The library has lost many regulars as it is too loud and there in inesefficient space to work.
105.	The constant struggle to cope with less staff and more work - there is no longer a feeling of job satisfaction as there is never enough time to finish things jobs without feeling frustrated and hurried.
106.	The current Library structure puts the Service Development Librarians too much out on a limb....
107.	the fact that the implementation of Spydus has impacted greatly as there was no specific training for our service and it seems quite often that the higher management structure does not realise our service even exists.
108.	The feeling of 'letting down' our older and regular customers who we now never have time to talk to -some who we know this is their only social opportunity. I feel glad that i shall soon be leaving as this is not the service i joined and cannot serve the public with the personal touch i used to and mostly cannot provide the books wanted without the cost of requesting them. If the recession bites hard we will not be in the position to provide the good FREE service that will be wantedas all our work is now geared to making money.
109.	The feeling that incorrect assumptions are based on other peoples' perception and these are acted upon in an unprofessional manner.  There is little chance of a clear or fair response or opportunity to develop better and more efficient work practice.  Poor verbal communication and the chance to share is denied.  There is a culture of divide and rule.  Poor understanding of the vital role libraries have in the community
110.	the frustration of being a Spydus Trainer and not having the Unit Managers backing us up and allowing their staff enough time to practice. it wasnt something I could leave at work and not impact my home life.  I have a supervisor who is quite controlling with with her job and if she's not in our small branch it can make it difficult getting things done with out consulting her.
111.	The general dumbing down of the service in the last 5 years is demoralising to staff who entered the service with a commitment to providing excellent service and resources
112.	The increased work has impacted on my eyes, I now have eye strain but outside of work it is o.k.

113.	<p>The job is demanding and tiring. To give 100% to it at work (which i hope I do)means that home life suffers a bit</p> <p>I have answered this in relation to [ ]. The old building was less pleasant to work in and my journey is now easier. The move was pretty stressful though. I am 50/50 SLS and public libraries</p>
114.	<p>The lack of concern for what the public wants from the library service makes me depressed.</p>
115.	<p>The Library Management expect far too much of Library Assistants/Senior Assistants in relation to their pay now.</p>
116.	<p>The move from to [ ] was stressful. Then having to cope with a new computer system as well. The Children's Section having the Children's Book Festival at the same time as everything else.</p>
117.	<p>The move to [ ] has had huge impact on life, access to shops, post office etc is impossible. very difficult to be out of town. the move was very stressful and physically hard work. the fact that wessex book festival and spydus were all going on at the same time made me feel very pressured and stressed.</p>
118.	<p>The number of changes that have been made in the last few years have been very disruptive. The service doesn't have time to re-group before even more changes are put in place, and the removal from the front line of the librarians has impacted on the remaining staff in a very big way.</p>
119.	<p>The parking arrangements we have annoy me all the hours I work and could be easily fixed but nobody will spend a bit of money on it! our cars have been damaged by the public who shouldnt be there!</p>
120.	<p>The size of the geographical area covered is a worry. I have a journey of at least 20 miles to a work base. It's not possible to spend a lot of time at every place and I feel that I do not see 2 of my 4 managers as regularly as would be the ideal.</p>
121.	<p>The structure of the Library Service is still not working. Service Development Librarians and Children's Librarians should be responsible to Group Managers and the areas they serve. Still too many managers at Library HQ who do engage with what is happening at branch level. This causes extra work and duplication. Large Projects such as [ X ] and Spydus should have had a dedicated Senior Manager to project lead and troubleshoot to shortcut problems and properly communicate with staff and the public.</p>
122.	<p>The temperatures in some rooms are inadequate, I got chilblain on my feet because it got so cold at one point. I have a little heater now that helps. I am a bit worried about the changes because of spydus, there is a negative atmosphere because the system still does not work properly.</p>
123.	<p>The use of miss-information and subtle bullying by management at all levels to under mine and demoralize staff.</p> <p>Management ignoring proceeedures.</p>
124.	<p>The Windows-based screens employed by Spydus are a great strain on the eyes and much more tiring. Frustrations with poor performance of Spydus is very embarrassing when dealing directly with the public (e.g. unreliable catalogue, slowness of terminals when discharging books) and makes one feel stupid. It is demoralizing to be expected to be positive about a system that lets one down constantly.</p>
125.	<p>There are 2 main ways the recent re-organisation has impacted on my wellbeing:</p> <p>1. I want to work more hours but because I was in a part time position (albeit looking for longer hours) at the time of the reorganisation, I was only allowed to apply for parttime positions while full timers were allowed to apply for part time positions. That seemed unfair. I now have 4 libraries to work with in 18.5 hours - I cannot do my job as well as I would like because I feel I'm always skimming the surface, I never have time to draw breath and plan or reflect too much (except at home when away from work). I am flexible enough to come in on days off to go to meetings/courses, without that flexibility my job would be much harder. I am told I am doing a good job but feel its at the cost of sleepless nights &amp; not being able to switch off at times.</p>

	<p>2. The second issue is having to come to terms with my role being downgraded and having no career path. I am a chartered librarian now working as a Library Officer (overall I enjoy the role and would not want to become a service development officer) but now my children are grown I want to devote more time to my 'career' and I feel angry that that opportunity has been taken away from me. I see colleagues around me stressed out by trying to do so much in so little time and it does make me wonder how the service will evolve when the current incumbents leave. There are weeks when sometimes everyone is spending so much time on the desks that routine backroom jobs accumulate to the point it impacts on front line delivery.</p> <p>Personally my role now is not much different to when I was a reader development librarian yet I am working much harder for the prospect of less money.</p> <p>No acknowledgement of the Library Officers position and the failure of their regrading appeal has been made by senior management which I feel is disgraceful given the majority of us were working under the old system.</p> <p>It is a constant source of worry for me what I am going to do on a lower salary and ultimately on a lower pension. I feel very badly let down even though I know its not personal.</p> <p>As I say I enjoy my job on the whole, would just like more time to do it better &amp; be paid for it. I feel a review of the past 2 years is needed - are right roles in the right places, how has the new structure worked, does anything need modifying.</p> <p>The Library Service runs on staff goodwill, so many are prepared to swop days off, work late at short notice, have short lunch times but its not recognised in a formal way and without it the public would not have the service they have.</p> <p>I don't know how people are expected to progress in their career now - the jump to a library manager pay scale from a supervisor is so great and us Library Officers have nowhere to go up to. Its being regarded as a progression for library assistants but then what?</p> <p>As an aside this new system Spydus is very time consuming to use. Processes that had become refined over the years now t</p>
126.	<p>There are so many changes happening that work has become very stressfull. Without Librarians, we are given more and more to do, without enough training, that it makes us feel very inadequate which makes it very difficult to switch off once you get home. It also means we make more misstakes because we have so much on our minds. SPYDUS also doesnot seem to have sorted itself out and cannot be relied on which makes word even more confusing. It is very unuser friendly. I hate to say it but having to do things like this when we have so much else to do is also very frustrating</p>
127.	<p>There is tremendous frustration with Spydus. At a time when the remaining staff have an increasing number of duties to perform and an increasingly responsible workload, the time spent trying to tease a successful outcome out of a very capricious computer database is so disheartening. If the county wanted to reduce its staffing budget it ought to have invested in the very best and sophisticated library database. The introduction of Spydus and its numerous crass failings has done more to reduce staff morale than the previous two re-organisations.</p>
128.	<p>Too many changes to structure of service over last few years have had a very unsettling effect, please just let us get on with the job of providing an efficient service to the public!</p>
129.	<p>Travelling within working hours - I cover a large area, and regularly have to travel 30+ miles a day on top of my home to base mileage. This is frustrating, as it is 'dead' time (many of the locations I visit are rural, so driving is the only realistic option), especially as I have to allow for traffic and then either arrive at destinations early or risk missing the reason for the journey!</p>

130.	Varying size of Library groups means that those with larger groups struggle to keep up with the workload and do not have time for the more enjoyable promotional work. Stress leads to
<b>Item</b>	<b>Numbers in body of table denote Impact Score Ranking</b>
131.	Very seldom do we have a full hour for lunch or leave on on time
132.	Very worried about potential further restructuring - difficult to plan a career path.
133.	Volume of work and shortage of staff to carry it out are the major issues which cause me stress, both because of increased personal workload and a feeling that we are unable to offer the same level of service to the public that we once did. Spydus is, in my opinion, a complete disaster - it is slow, difficult to operate, and lacks the functionality of Galaxy - in short v. frustrating. The relentless pace of change and number of new initiatives from senior management contribute to a feeling that they do not understand (or care about?) the problems that front-line staff are facing.
134.	We have been surveyed and asked our opinions on various aspects of our work and then it seems our views are totally ignored. This is very frustrating.  Also we always take the 'flack' from readers when changes to the service are made that we have no control over, e.g 'The call centre.'
135.	We need a security guard at work due to a large increase in drunk/high/violent customers at work. There are many areas in the library which are not well lit or are secluded and these are obviously not places that you would want to be around unstable people. The higher-up library management have repeatedly ignored our requests for a security guard which is leaving me (and other people) feeling despondent. I feel that the library management are never around to discuss our concerns and when our views are passed on they have just been dismissed without due consideration. I and the rest of the staff are also not trained to deal with these people and although we have the option of 'shop-watch' they can take a long time to arrive and are quite useless apart from the effect that comes from wearing an official uniform.
136.	what was an enjoyable job, with satisfaction at providing a good public service has become very frustrating. Too much work has been passed down to the library assistants combined with a lack of support from supervisors/managers.
137.	With the recent reorganisation my work is now set at a level well below my skills, experience and capacity and consequently it is not stretching. Just as importantly the service to the public is not of the same quality as previously - some areas of lib service DO continue to provide the best for customers - but in other areas customers are most certainly experiencing a poorer quality of information and resource provision - this upsets me since I have always wished to provide the very best quality to all our customers
138.	Working in a very busy small library, it can be difficult to get everything done and it's frustrating when other libraries feel unable to help out with staff if one of us is off sick.  It can also be difficult to arrange leave as only one staff member can be off at a time. We only cope because we are all very considerate to each other and compromise. It would be nice if we could get more cover from larger branches.
139.	workroom environment is very poor with regards to health and safety  very often lack of proper duties delegation and supervision from senior staff to new member of staff or even other staff who just stand around talk and do nothing.

### E.3 Comparison of Impact Score Rankings by Role



	Library Assistant	Library Officer	Library Supervisor or Assistant Supervisor	Service Development Officer	Library or Group Manager	Mobile Driver	Senior Assistant or Information Officer	Van Driver
Having poor quality working accommodation?	24	22	36.5	40	27	22.5	29	47
Experiencing headaches because of your work?	21.5	50.5	30.5	41	31.5	28	33	47
Being unable to cope with the number of work-related emails you receive?	48.5	29	11	23	6	48.5	38	47
Having to work hours that regularly impact your home life?	48.5	37.5	44	28	9.5	58	52.5	47
Not feeling supported by your team at work?	57	47	59	51.5	40.5	64.5	59	47
Not having time to eat properly during the day because of your workload?	69	60	56	35	20.5	58	67	47
Being unclear about your role and priorities at work?	42	31	51	8.5	50	48.5	47	47
Having to work beyond your statutory hours?	62	49	34	30.5	11	48.5	60	47
Lacking flexibility over your working times and patterns	52	44	46.5	59.5	50	62.5	58	47
Worrying how changes in the Library Service may impact your job?	6	7.5	6	3	6	4	4.5	9
Experiencing poor quality sleep because of your work?	33.5	20.5	21.5	23	24.5	15.5	43.5	17.5
Believing that your immediate line manager lacks the necessary skills to bring the best out in you?	45	40	49.5	48	20.5	32	35	47
Being unable to make plans with friends and family because of unpredictable working hours?	66	70.5	67	50	37	69.5	70	47
Being unable to take time off in lieu, owed to you?	59	53.5	41.5	45	23	24	50	47
Believing that the public service offered by libraries is of a reduced quality?	3	3	2	1	13	4	3	47
Feeling threatened by some members of the public?	25.5	47	32.5	66	42.5	58	23	47
Poor air-conditioning at work (either too hot or too cold)?	2	9.5	4	28	1	6.5	2	4.5
Not feeling supported by your immediate line manager?	54	58.5	53	45	37	58	40	47
Being overwhelmed by the amount of organisational change within the Library Service?	7	18.5	3	12	16	12	4.5	17.5
Suffering from stomach problems because of your work?	63	63.5	61.5	66	67.5	64.5	62	47
Receiving poor communications from Library Management Team?	21.5	14.5	28	39	27	28	17.5	47
Not being encouraged by your manager to use your initiative at work?	47	65.5	61.5	71	56	66	55.5	47
Feeling frustrated with the Library Service's Spydus system?	1	4	1	15	3.5	1	1	47

Lacking the necessary skills to meet the changing needs of library users eg PC queries?	9	35	23	54	58	20	11.5	47
Lacking pride in the Library Service?	12	25	27	23	59	36.5	19	4.5
Feeling out of control because of your workload?	29	26	16.5	12	12	53	30	47
Having a regularly difficult journey to and from work?	64	41.5	69	35	47	28	64	9
Lacking constructive feedback on your performance from your line manager?	58	65.5	57.5	53	31.5	43	52.5	47
Being bored at work?	61	55	71	69	69	53	63	47
Always feeling physically tired because of your work?	16	29	19	17	9.5	32	27	9
Being unable to switch off and relax when you are away from work?	36.5	23	16.5	6.5	17.5	25	45	17.5
Having an unsatisfactory remuneration and reward package?	23	1.5	9	32.5	47	2	14	17.5
Experiencing a drop in self-confidence because of your work?	42	27	39	18	45	58	46	47
Thinking that your career prospects are limited?	11	1.5	30.5	5	37	10	11.5	47
Having to miss your breaks during the day because of your workload?	55	44	25	23	8	15.5	51	9
Having poor quality staff facilities eg kitchen, rest areas?	36.5	44	54	64	47	20	55.5	47
Not feeling valued for your contribution by Library Management Team?	35	12	18	19.5	22	22.5	26	47
Experiencing problems with your legs and feet because of your work?	25.5	67.5	40	62.5	65.5	48.5	31.5	9
Having too many demands on your time to be effective in your job?	19	9.5	12	10	2	43	15	47
Feeling that you are not really making a worthwhile difference in your job?	33.5	33.5	36.5	19.5	37	40	34	47
Being uncertain about how your job may change in the future?	5	5	5	2	6	12	6	2.5
Feeling uncomfortable with how the Library Service is diversifying its public offering?	4	24	10	28	42.5	12	9	9
Feeling stressed because of your work?	18	7.5	13	6.5	17.5	36.5	21	17.5
Lacking good camaraderie with your work colleagues?	65	67.5	67	59.5	67.5	58	69	47
Developing musco-skeletal problems eg back problems because of your work?	44	61	49.5	51.5	56	28	48	9
Feeling isolated and lonely at work?	67	58.5	67	35	63	62.5	68	47
Not having enough team meetings?	31	39	35	61	63	36.5	25	17.5
Being interrupted/likely to be interrupted by work matters while on holiday?	71	70.5	64.5	66	63	69.5	71	47

Feeling demotivated and demoralised because of your work?	27.5	14.5	26	16	24.5	20	28	47
Receiving poor communications from your line manager on issues that are important to you?	39	50.5	48	58	31.5	43	39	47
Feeling frustrated because of your work?	15	6	15	8.5	14	15.5	16	47
Being unclear about the Library Service's future plans?	8	18.5	24	4	31.5	4	7	1
Regularly being asked to work different hours?	68	69	64.5	37.5	53	67	65	47
Feeling undervalued by those in other parts of the Library Service?	27.5	17	21.5	14	40.5	8.5	20	17.5
Lacking adequate training to enable you to do your job effectively?	17	33.5	29	45	29	18	22	17.5
Having poor lighting at work?	38	37.5	41.5	55	27	43	36	2.5
Not feeling appreciated by the wider [ ] County Council senior team?	13.5	12	14	30.5	44	6.5	10	17.5
Feeling angry because of your work?	42	29	46.5	32.5	56	43	42	47
Having to perform duties at work which are beyond your skill set?	56	52	45	48	37	58	37	47
Not believing that you are offering a valuable service to the community?	40	41.5	43	37.5	71	69.5	43.5	47
Feeling overwhelmed by the volume of work?	20	16	8	12	3.5	48.5	17.5	47
Being unable to confide in a colleague at work?	70	63.5	63	68	65.5	53	66	47
Having an inadequate performance appraisal system?	50.5	56.5	52	56.5	34	28	49	47
Not having enough variety in your day to day work?	60	56.5	70	70	70	69.5	61	47
Believing that Library Management Team do not appreciate the challenges that you face?	13.5	20.5	7	23	15	15.5	8	47
Feeling persistently low because of your work?	53	36	38	26	53	48.5	57	47
Not having the necessary training to advance your career?	30	32	57.5	42.5	53	36.5	31.5	47
Not being consulted on decisions that impact your work?	10	12	20	48	19	32	13	47
Receiving poor communications from the wider [ ] County Council community?	32	47	32.5	56.5	60.5	8.5	24	47
Being unclear on your performance objectives?	50.5	53.5	55	42.5	50	36.5	54	47
Having potential RSI (repetitive strain injury) problems because of your work?	46	62	60	62.5	60.5	36.5	41	17.5

## E.4 Impact Analysis – Item Deletion and Probability Plots

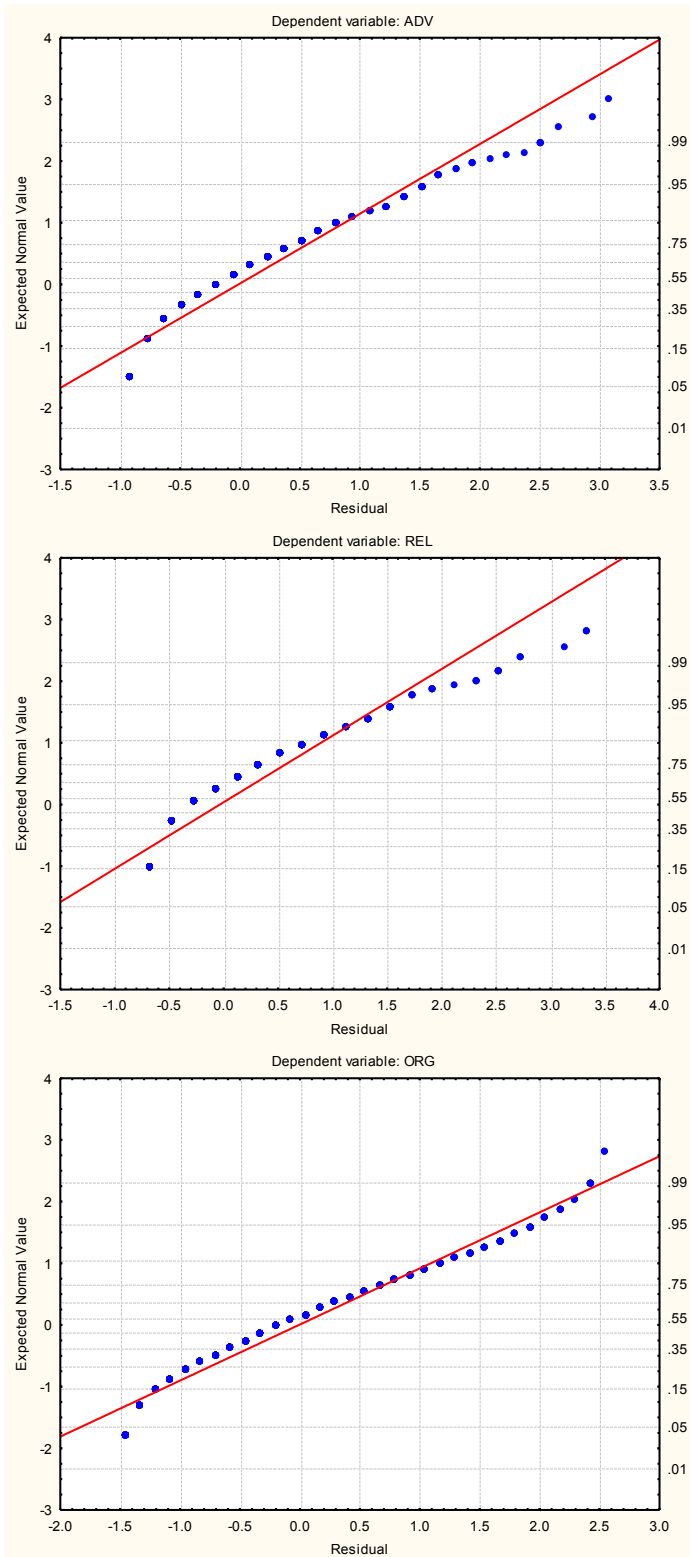
### E.4.1 Items deleted owing to impact scores of less than 1.00

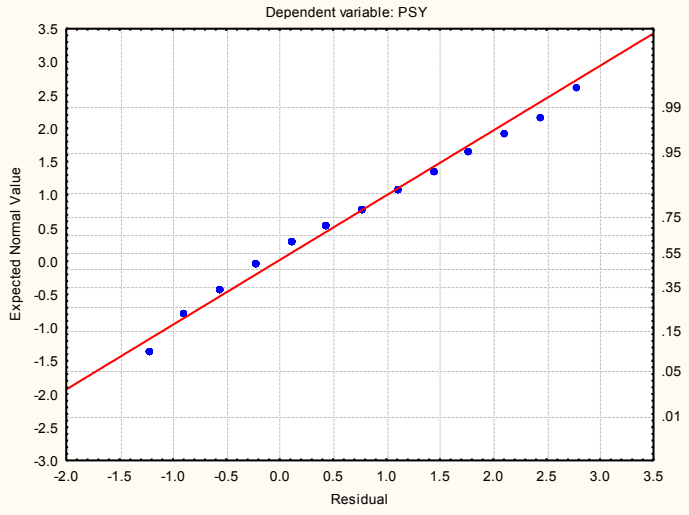
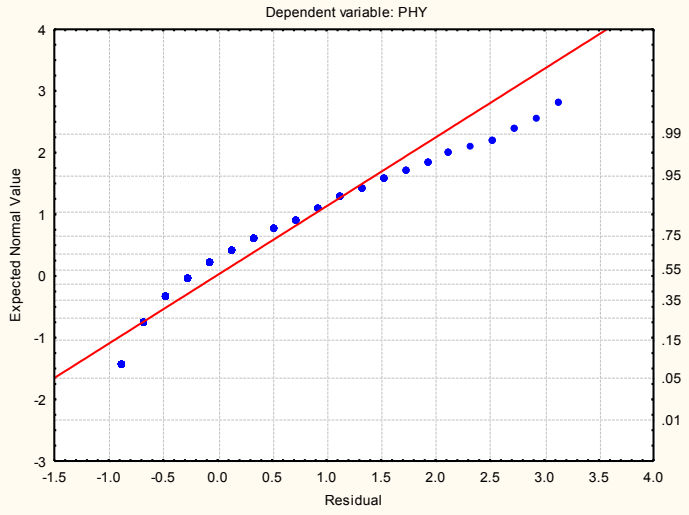
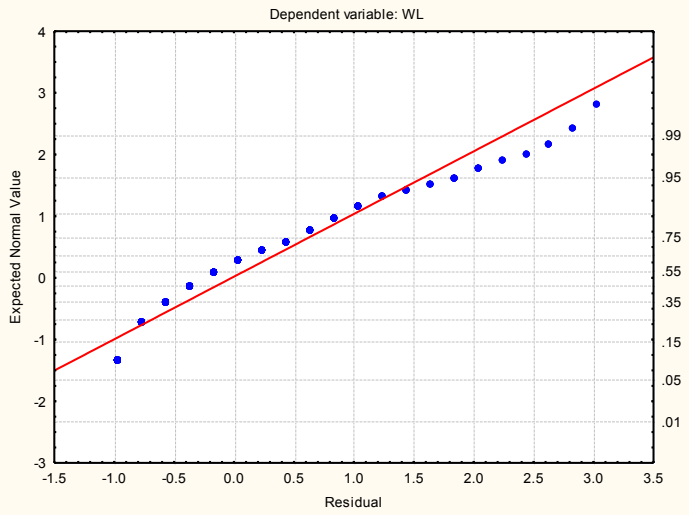
No.	Item	Impact Score
1.	Suffering from stomach problems because of your work?	0.87
2.	Feeling isolated and lonely at work?	0.84
3.	Regularly being asked to work different hours?	0.79
4.	Not having enough variety in your day to day work?	0.79
5.	Being bored at work?	0.77
6.	Being unable to confide in a colleague at work?	0.77
7.	Being unable to make plans with friends and family because of unpredictable working hours?	0.76
8.	Lacking good camaraderie with your work colleagues?	0.74
9.	Being interrupted/likely to be interrupted by work matters while on holiday?	0.53

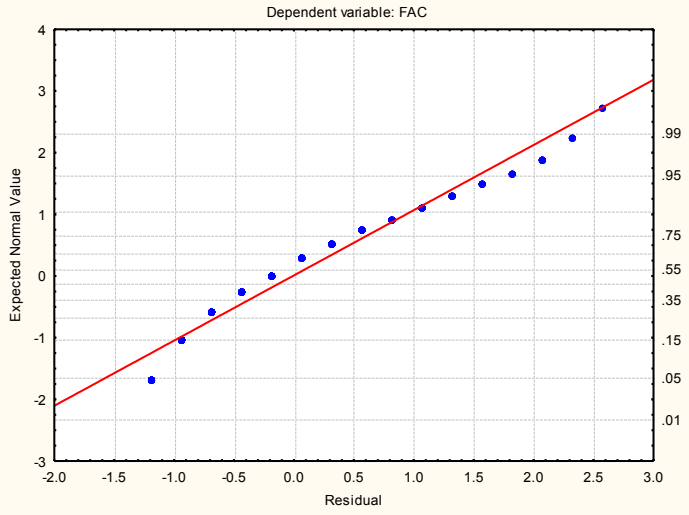
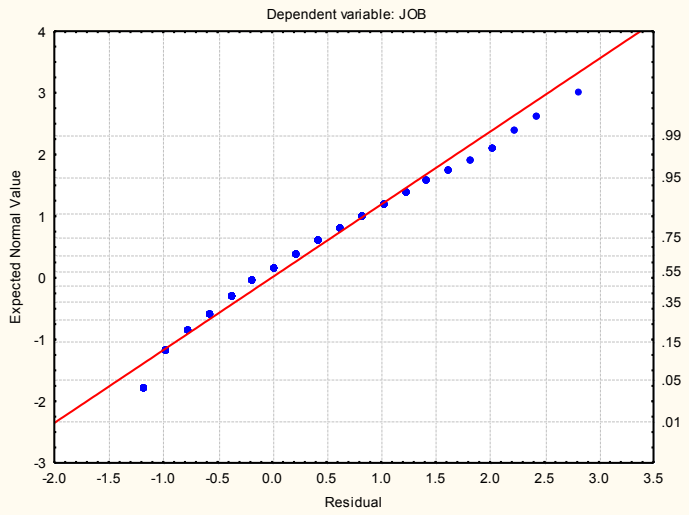
### E.4.2 Item Deletions owing to high correlations ( $r > 0.7$ )

No.	Item
1.	Lacking pride in the Library Service?
2.	Having to work beyond your statutory hours?
3.	Being uncertain about how your job may change in the future?
4.	Experiencing poor quality sleep because of your work?
5.	Receiving poor communications from your line manager on issues that are important to you?
6.	Believing that the public service offered by libraries is of a reduced quality?
7.	Feeling out of control because of your workload?
8.	Experiencing a drop in self-confidence because of your work?
9.	Not feeling valued for your contribution by Library Management Team?
10.	Having too many demands on your time to be effective in your job?
11.	Feeling that you are not really making a worthwhile difference in your job?
12.	Being unable to switch off and relax when you are away from work?
13.	Feeling demotivated and demoralised because of your work?
14.	Feeling angry because of your work?
15.	Feeling persistently low because of your work?
16.	Feeling undervalued by those in other parts of the Library Service?
17.	Not being consulted on decisions that impact your work?
18.	Not having time to eat properly during the day because of your workload?
19.	Lacking constructive feedback on your performance from your line manager?

### E.4.3 Probability Plots for Residuals – Library Domains







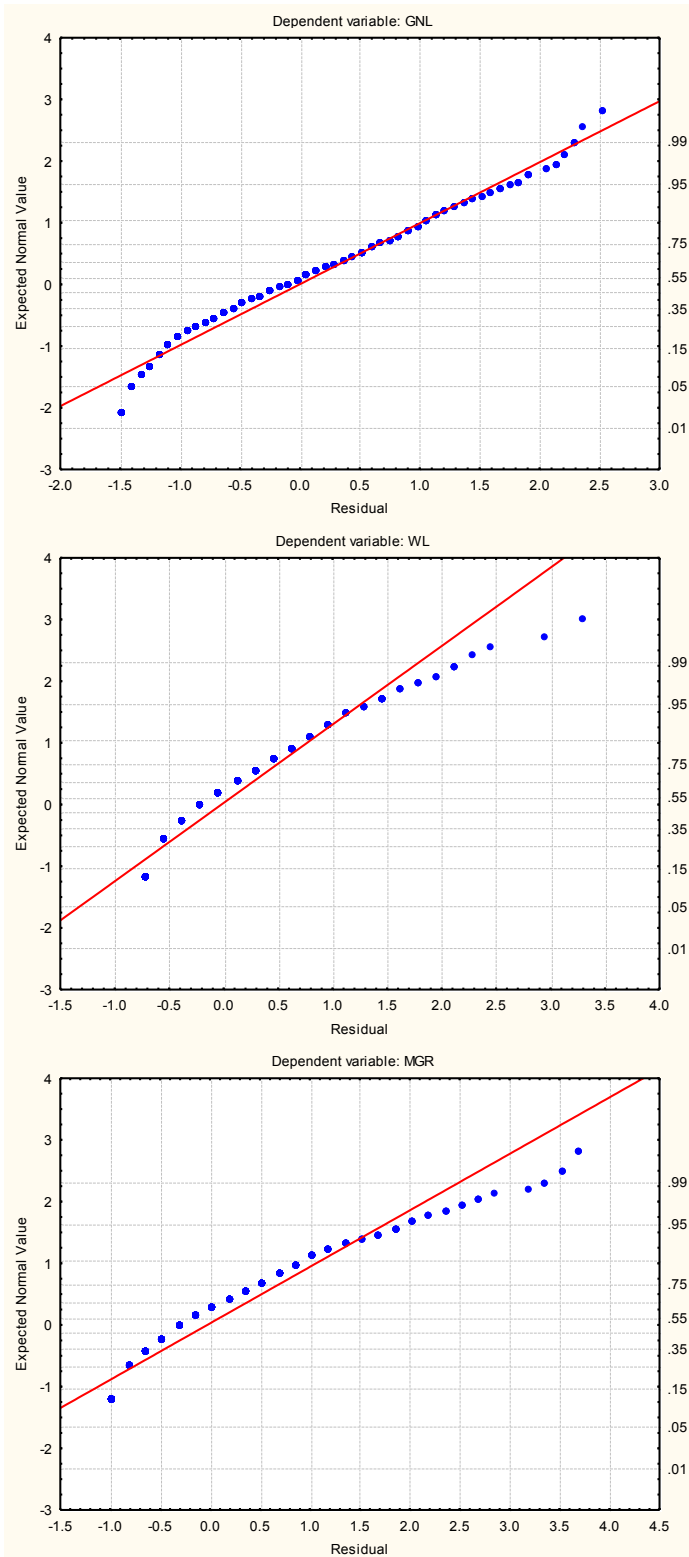
## E.5 Factor Analysis – Item Deletion and Probability Plots

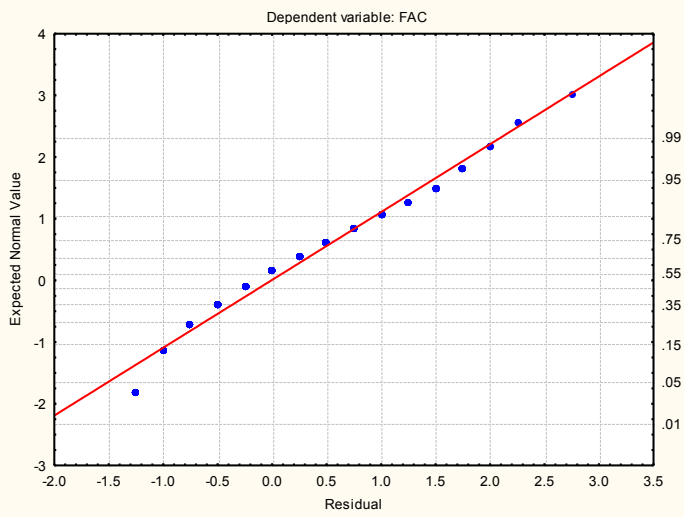
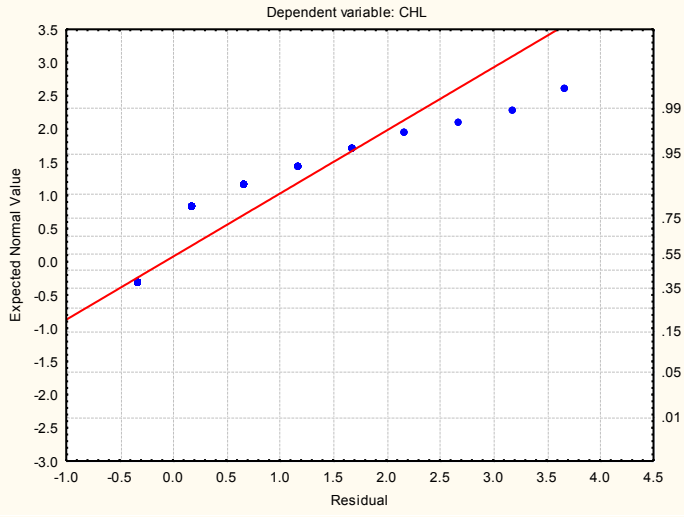
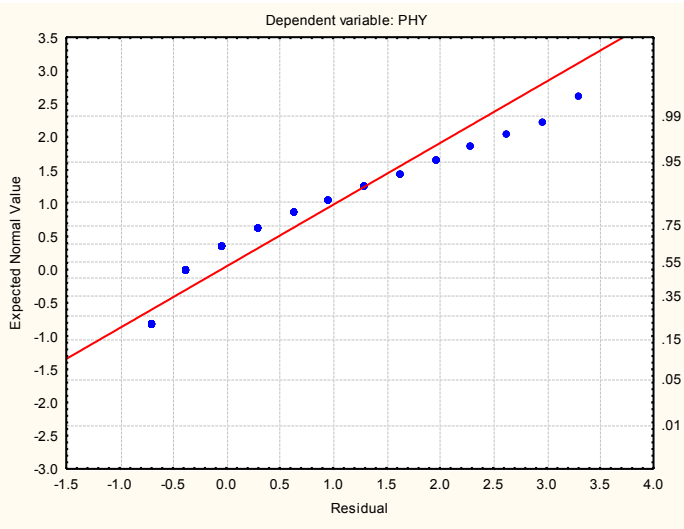
### E.5.1 Item deletions owing to high Item-Item Correlations ( $r > 0.7$ )

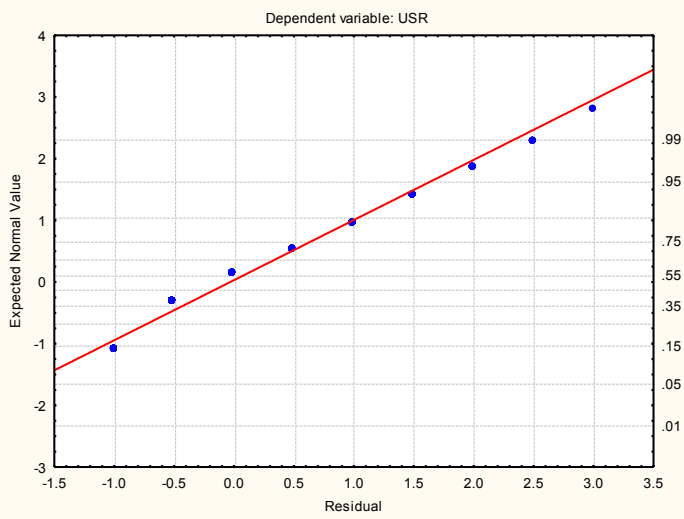
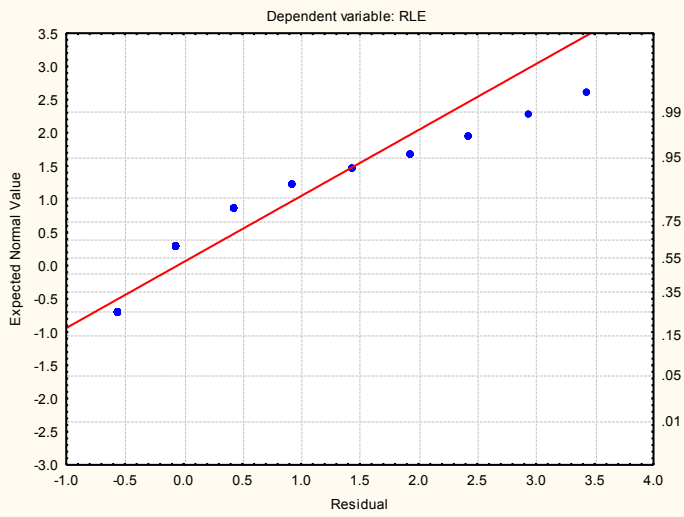
No.	Item
1.	Being unable to switch off and relax when you are away from work?
2.	Experiencing a drop in self-confidence because of your work?
3.	Experiencing poor quality sleep because of your work?
4.	Feeling angry because of your work?
5.	Feeling frustrated because of your work?
6.	Feeling out of control because of your workload?
7.	Feeling overwhelmed by the volume of work?
8.	Feeling persistently low because of your work?
9.	Feeling stressed because of your work?
10.	Feeling undervalued by those in other parts of the Library Service?
11.	Having to work beyond your statutory hours?
12.	Lacking constructive feedback on your performance from your line manager?
13.	Lacking pride in the Library Service?
14.	Not being consulted on decisions that impact your work?
15.	Not feeling appreciated by the wider [ ] County Council senior team?
16.	Not feeling supported by your immediate line manager?
17.	Not feeling valued for your contribution by Library Management Team?
18.	Not having time to eat properly during the day because of your workload?
19.	Worrying how changes in the Library Service may impact your job?



## E.5.2 Probability Plots for Residuals – Library Factors





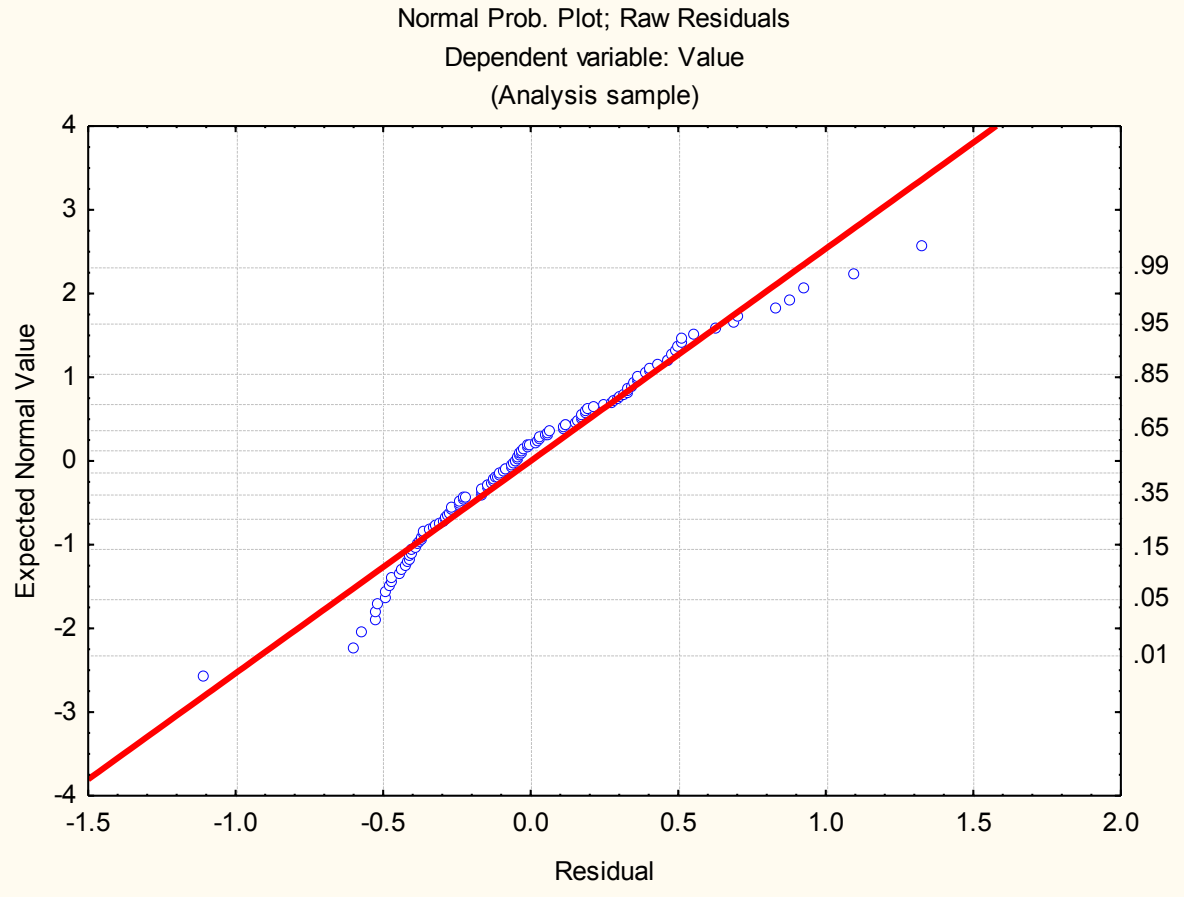


## Appendix F Additional Analysis

### F.1 Case Study Comparisons – Impact Analysis

No.	Item mean importance scores (1-5)		
	IA – Call Centres	IA - Police	IA – Library Services
1.	2.923077	2.362530	2.015021
2.	2.933687	2.344282	1.963519
3.	2.856764	1.754258	2.030043
4.	2.474801	2.294404	1.796137
5.	1.636605	2.080292	1.547210
6.	2.148541	1.755474	1.781116
7.	2.779841	1.958637	1.590129
8.	3.098143	2.242092	2.770386
9.	2.745358	1.574209	1.796137
10.	2.222812	2.453771	1.682403
11.	2.862069	2.560827	1.828326
12.	2.254642	1.880779	3.163090
13.	3.671088	1.991484	1.688841
14.	3.435013	1.878345	2.695279
15.	3.090186	2.037713	2.130901
16.	3.575597	1.677616	1.495708
17.	3.302387	2.435523	3.390558
18.	2.342175	1.922141	2.182403
19.	2.599469	1.604623	2.278970
20.	2.628647	2.009732	2.369099
21.	2.466844	2.060827	2.431330
22.	2.663130	2.229927	1.896996
23.	2.519894	1.520681	1.695279
24.	2.923077	2.535280	1.798283
25.	2.795756	1.941606	2.530043
26.	2.419098	1.899027	2.392704
27.	3.225464	2.201946	1.706009
28.	2.604775	1.607056	1.824034
29.	2.424403	2.072993	2.429185
30.	2.660477	1.656934	2.575107
31.	2.387268	1.632603	2.023605
32.	3.026525	2.021898	1.821888
33.	2.740053	2.324818	2.431330
34.	2.326260	1.916058	1.652361
35.	3.180371	2.451338	1.723176
36.	2.344828	2.218978	2.396996
37.	2.636605	2.375912	1.656652
38.	3.625995	2.015815	2.530043
39.	2.716180	2.102190	1.847639
40.	2.904509	1.984185	1.937768
41.	2.583554	2.001217	1.577253
42.	2.870027	1.817518	1.596567
43.	2.437666	2.104623	
44.		1.984185	
45.		1.996350	

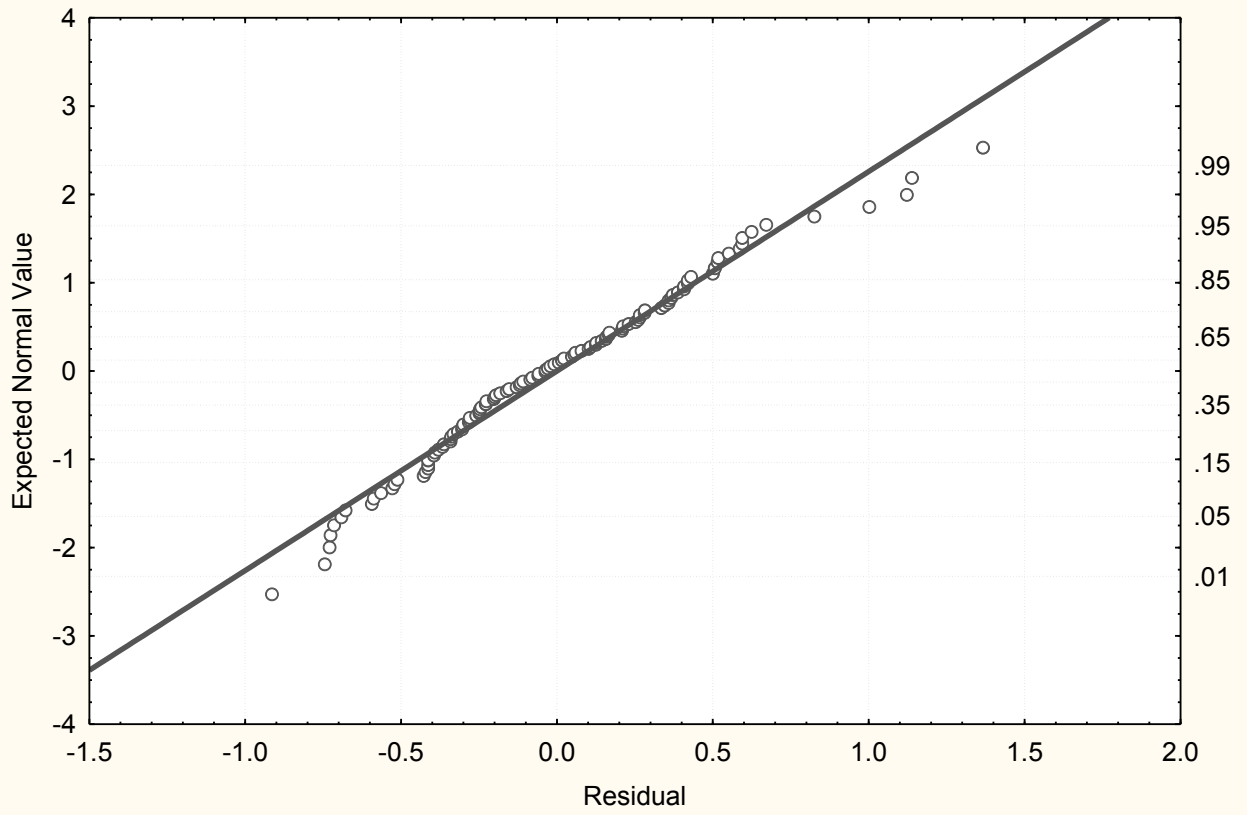
No.	Item mean importance scores (1-5)		
	IA – Call Centres	IA - Police	IA – Library Services
46.		2.543796	



## F.2 Case Study Comparisons – Factor Analysis

No.	Item mean importance scores (1-5)		
	FA – Call Centres	FA – Police	FA – Library Services
1.	2.923077	2.344282	2.015021
2.	2.763926	1.754258	1.963519
3.	2.755968	2.294404	2.030043
4.	2.933687	2.080292	1.796137
5.	2.838196	1.958637	1.781116
6.	2.474801	1.574209	1.796137
7.	3.098143	2.453771	1.278970
8.	1.909814	2.560827	1.682403
9.	2.220159	1.991484	3.025751
10.	1.588859	1.878345	1.828326
11.	2.222812	2.037713	3.163090
12.	1.915119	1.677616	2.695279
13.	2.862069	1.515815	2.130901
14.	2.254642	1.555961	1.495708
15.	1.938992	1.604623	3.390558
16.	2.090186	2.144769	2.182403
17.	2.161804	1.899027	1.332618
18.	3.098143	2.201946	2.369099
19.	3.090186	1.545012	2.431330
20.	2.342175	1.656934	2.150215
21.	2.628647	1.632603	1.798283
22.	2.466844	2.324818	2.394850
23.	2.785146	1.916058	1.916309
24.	2.519894	2.451338	2.849785
25.	2.923077	1.806569	2.530043
26.	2.090186	2.218978	1.706009
27.	2.090186	2.015815	1.345494
28.	2.424403	2.102190	1.824034
29.	2.660477	1.817518	1.721030
30.	2.387268	1.416058	1.776824
31.	2.254642	2.104623	2.575107
32.	1.777188	1.984185	1.293991
33.	1.992042	1.597324	1.821888
34.	3.625995	2.166667	1.723176
35.	2.108753	1.996350	1.656652
36.	2.716180	1.851582	1.309013
37.	2.350133	1.523114	2.530043
38.	3.002653		1.596567
39.	2.713528		
40.	2.769231		
41.	2.870027		

Normal Prob. Plot; Raw Residuals  
Dependent variable: Value  
(Analysis sample)



# Appendix G Dissemination of Findings

## G.1 International Journal of Workplace Health Management



The current issue and full text archive of this journal is available at  
[www.emeraldinsight.com/1753-8351.htm](http://www.emeraldinsight.com/1753-8351.htm)

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### Assessing employee wellbeing: is there another way?

Bridget Juniper, Nicola White and Patricia Bellamy  
*Cranfield University, Cranfield, UK*

#### Abstract

**Purpose** – The purpose of this paper is to compare factor analysis (FA) with an alternative approach known as impact analysis (IA) in determining items for a questionnaire to measure employee wellbeing.

**Design/methodology/approach** – FA and IA were conducted on a raw data set drawn from an earlier study to develop an assessment that measures the impact of work on employee wellbeing. IA is an accepted clinical methodology used to verify items in the development of health-related quality of life instruments that evaluate patient wellbeing in clinical trials.

**Findings** – FA and IA gave rise to considerably different assessments. IA resulted in a 51-item scale spread across ten different domains. FA generated an eight-factor scale with 46 items. In total, 31 variables were common to each version. The additional 20 items using IA included a number of variables that were identified by employees as being important to their wellbeing. The 15 extra items yielded by FA included six variables that were perceived by staff to be relatively unimportant. Five factors were fairly consistent with five of the domains. Both scales showed adequate internal consistency reliability.

**Research limitations/implications** – The present study suggests an alternative methodology for measuring employee wellbeing. The small number of subjects who participated in the earlier research is a limitation.

**Originality/value** – The study offers exploratory research into an alternative way to measure wellbeing in the workplace that draws on an accepted clinical methodology already used to assess and evaluate patient wellbeing.

**Keywords** Employees, Measurement, Job satisfaction, Health education

**Paper type** Research paper

#### Introduction

There is increasing recognition that the well-being of employees has a direct impact on an organisation's performance and productivity levels (Cooper and Worrall, 2007; Ferrie *et al.*, 2002; Haltom, 2005; Sczesny and Thau, 2004). As a result of this, a small number of staff questionnaires have been developed which are used by employers to help measure and manage the health and well-being levels of their workforce (Faragher *et al.*, 2004; Mills, 2005; Sirgy *et al.*, 2001; VanLaar *et al.*, 2007).

To date, items for inclusion in these well-being assessments have been selected using a conventional psychometric technique known as factor analysis (FA) (Hurley *et al.*, 1997). FA describes a set of statistical methods for analyzing the correlations among several variables in order to estimate the number of fundamental dimensions that underlie the observed data and to describe and measure those dimensions.

A new type of well-being assessment has recently been developed as a pilot, known as the work and well-being assessment (WWBA) (Juniper, 2007). The WWBA measures "work-related well-being" which is defined as "...that part of an employee's overall well-being which is determined primarily by work and which can be influenced by work-place interventions" (Juniper, 2007).



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The WWBA is different to other workplace health tools because it employs an alternative approach to variable selection known as impact method or impact analysis (IA) and is the same as that used to develop health related quality of life (HRQL) questionnaires in the clinical and healthcare sectors (Guyatt *et al.*, 1989a, b; Guyatt *et al.*, 1986; Juniper *et al.*, 1992; Juniper and Guyatt, 1991; Juniper *et al.*, 2003; Levine *et al.*, 1988). HRQL instruments are used in clinical trials to assess and evaluate the impact of new drugs on the health and well-being of patient populations as perceived by the patients themselves.

This study compares IA with FA using the original data collected in the development of the pilot WWBA. The comparison considers the outcome from each method in determining the final items considered to be relevant to the well-being of employees.

### Method

The methodology to develop the WWBA was the same as that used to create a number of validated HRQL instruments (Guyatt *et al.*, 1986).

#### *Item generation*

A comprehensive list of possible work-related well-being problems was generated through a series of one-to-one interviews with 15 employees and five human resource (HR) and occupational health professionals. The item pool was supplemented by an extensive literature review culminating in a total of 106 variables.

#### *Item reduction – impact analysis*

A total of 126 office-based employees representing a wide range of roles, sectors and levels of seniority were asked to indicate which of the 106 items in the item pool they had experienced during the past year. For each item that was positively identified, they were asked to score how important and troublesome it was to their overall well-being. Scoring was on a Likert-type 5 point scale (1 = not at all important and 5 = extremely important). Results were expressed as “frequency” (the proportion of employees experiencing a particular item) and “importance” (the mean importance for each variable). The “impact” score was the product of “frequency” and “importance”.

Items were ranked according to impact score. As with the development of some earlier HRQL instruments (Juniper *et al.*, 1992), items that appeared to be measuring the same impairment and were highly correlated with one another (Pearson  $r > 0.7$ ), were either combined or the item with the lowest impact score was eliminated. The remaining highest scoring variables were selected and grouped by domain based on intuition and sensibility (Feinstein, 1987), informed by HR and methodological experience.

Internal consistency reliability was assessed using Cronbach’s alpha coefficient (Cronbach, 1951).

#### *Item reduction – factor analysis*

FA to select items was conducted on a similar basis to that described by Juniper *et al.* in their work to compare IA and FA in the construction of an asthma HRQL instrument (Juniper *et al.*, 1997). First, items that were identified by fewer than 40 per cent of

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subjects were removed (frequency < 40 per cent) then items showing item-total correlations of < 0.40 were discarded also. If items appeared to be measuring the same impairment and were highly correlated with one another, the item with the lowest item-total correlation was eliminated ( $r > 0.7$ ). A principal component analysis was conducted and items loading by < 0.4 on the first factor were also removed.

Domains were determined using varimax rotations for different numbers of factors ranging from three to eight. A panel of three HR professionals reviewed the groupings and, on the basis of intuition informed by experience, selected the cut-off point and number of factors that made the most practical sense. Items that were not included in the finalised factors were also rejected.

Internal consistency reliability was assessed using Cronbach's alpha coefficient (Cronbach, 1951).

## Results

### *Impact analysis*

In general, items with impact scores of >1.0 were selected for the WWBA since this value indicated a degree of impaired work-related well-being. A detailed description of the complete selection process is documented elsewhere (Juniper, 2007)

Pair-wise correlations ( $r$ ) between items were examined to test if two (or more) questions were tracking very similar concepts ( $r > 0.7$ ). Results indicated 22 item-item pairs where  $r > 0.7$ . Where this was the case, pairs were either combined or one was deleted in favour of the other depending on which had the highest impact score and following consultation with the HR panel. Based on this process, nine items were deleted and 13 pairs were combined resulting in a final list of 51. Table I shows the top 30 highest impact scores prior to item reduction.

A review of the final list of 51 variables by a panel of three HR professionals indicated groupings into ten separate domains. These are presented in Table II together with the scale and sub-scale reliability values (the numbers in brackets represent the number of items within the grouping). Internal consistency for the WWBA overall was 0.96 ( $\alpha$ ) with all ten sub-scales showing  $\alpha$  values between 0.91 and 0.70 indicating acceptable levels of reliability (Rick *et al.*, 2001)

### *Factor analysis method*

Nine items from the original item pool of 106 were identified by less than 40 per cent of employees and were therefore removed. A total of 13 variables had item-total correlations < 0.4 and were also discarded and an examination of item-item correlations where  $r > 0.7$  resulted in a further 23 items being eliminated.

The remaining 61 items were included in the principal component analysis (PCA). The results of the PCA set out in Table III showed that the first five factors explained over 50 per cent of the total variance and were therefore selected for further analysis. Continuing the steps adopted by Juniper *et al.* (1997), seven items had loadings of less than 0.4 in the first factor and were removed.

The residual 54 items then went into the varimax rotation which suggested an optimum, interpretable eight-factor solution using a cut off value of > 0.5. Table IV shows the eight factors, eigenvalues and variance explained by each factor. The first factor comprises items ( $n = 9$ ) relating to psychological health. The second factor relates to direction and understanding, empowerment and being able to make a

Work-related item	Frequency <sup>a</sup>	Mean importance <sup>a</sup>	Impact <sup>b</sup>
1. Had to work extended hours, i.e. early mornings and/or late evenings	0.81	3.02	246
2. Experienced high levels of stress and anxiety	0.77	2.95	228
3. Felt frustrated	0.81	2.79	226
4. Unable to switch off and relax when away from work	0.77	2.86	219
5. Future career prospects at your company seemed limited	0.69	2.96	204
6. Experienced office politics	0.77	2.67	204
7. Too many demands on your time to be effective in your job	0.79	2.57	203
8. Unmanageable workload	0.76	2.63	199
9. Lacked confidence in your company's leadership	0.76	2.62	199
10. Unable to improve/maintain physical fitness levels due to work commitments	0.72	2.72	195
11. Lacked a clear personal development plan	0.66	2.88	189
12. Reduced energy levels due to work commitments	0.72	2.61	189
13. Unable to pursue leisure interests due to work commitments, e.g. sports and hobbies	0.66	2.82	185
14. Felt demotivated	0.68	2.71	183
15. Lacked a clear plan to develop your professional skills	0.68	2.69	183
16. Not consulted on decisions that impacted your work	0.7	2.6	183
17. Difficult/unpleasant journey to and from your workplace	0.68	2.69	182
18. Unsure about your job's future	0.66	2.75	182
19. Frequently unable to get enough quality sleep due to work commitments	0.7	2.56	18
20. Did not feel valued/recognised for your contribution by your boss or others senior to you	0.62	2.86	177
21. Felt angry	0.68	2.56	174
22. Felt unhappy	0.68	2.56	174
23. Received poor communications by the company on issues and changes that mattered to you	0.69	2.49	172
24. Plans with partner/family disrupted due to work commitments	0.69	2.48	171
25. Lacked constructive feedback on performance	0.64	2.65	17
26. Had to work weekends	0.71	2.37	168
27. Had unrealistic goals set for you	0.68	2.48	168
28. Plans with friends disrupted due to work commitments	0.70	2.34	165
29. Lacked enjoyment of work	0.66	2.52	165
30. Felt demoralized	0.63	2.59	164

**Notes:** <sup>a</sup>Proportion of employees reporting item as troublesome (maximum = 1.0); <sup>a</sup>Mean importance score in subjects who reported item as troublesome (maximum = 5); <sup>b</sup>Frequency × mean importance (maximum = 5)

**Table I.**  
Top 30 impact scores

difference at work. Items in the third factor are associated with time-constraints and exercising control over work while factor four focuses on relationships at work. Most of the items in factor five relate to employee development and factor six includes variables connected with attitudes to the organisation. Only one item appears in factor seven ("not having regular access to your boss"). Finally, factor eight appears to refer to some physical health impairments (musculoskeletal and neural) plus two items concerned with pride and resilience.

IJWHM 2,3	Scale/sub-scale	Cronbach's alpha value ( $\alpha$ )
<b>224</b>	WWBA overall (51)	0.96
	Psychological health (9)	0.91
	Engagement (8)	0.85
	Direction and understanding (5)	0.83
	Impact outside of work (5)	0.82
	Advancement (4)	0.81
	Physical health (5)	0.80
	Workplace environment (3)	0.79
	Relationships at work (5)	0.76
	Control (4)	0.72
<b>Table II.</b> WWBA domains and internal consistency reliability values	Workload (3)	0.70

	Factor	Eigenvalue	% Total – variance	Cumulative – Eigenvalue	Cumulative – %
<b>Table III.</b> Principal component analysis – eigenvalues and variance explained	1	19.61366	32.15354	19.61366	32.1535
	2	4.81818	7.89866	24.43184	40.0522
	3	2.94390	4.82607	27.37574	44.8783
	4	2.43462	3.99118	29.81036	48.8694
	5	2.11794	3.47204	31.92831	52.3415

A further eight items were rejected as their loadings were  $< 0.5$  on any of the eight factors reducing the final number of variables to 46. The factors identified accounted for over 63 per cent of variance indicating adequacy of fit with the data (Rick *et al.*, 2001).

Cronbach's alpha values were calculated overall and for each of the eight factor sub-scales and ranged from 0.96 to 0.81 indicating acceptable levels of reliability (Rick *et al.*, 2001). The values are presented in Table V (the numbers in brackets indicate the number of items within each factor).

#### Comparison of the two methods

At completion of the item reduction stage, IA yielded 51 items across 10 domains and FA yielded 46 items across eight factors. Both approaches gave rise to scales with the same internal consistency reliability scores (0.96).

Table VI lists a selection of the extra 20 items that form part of the WWBA that would not have been included using factor analysis.

Table VII presents a selection of the extra 15 items that would have been included in the WWBA had factor analysis been used to select items.

Owing to copyright issues it is not possible to reproduce a comprehensive list of all variables.

#### Discussion

The two approaches to item selection give rise to substantially different question sets. Of the 106 variables in the initial item pool, only 31 remained common to each at the conclusion of the analyses representing 61 per cent of the final list of WWBA items and

Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	Factor 8
Lacked enjoyment of work*	Did not feel that you were making a difference at work	Unable to find time during the day to eat properly	Experienced lack of corporate integrity at work*	Drop in self-respect due to work*	Lacked pride in your company's offering and standing	Did not have regular access to your boss*	Lacked resilience at work
Felt distressed*	Overwhelmed by amount of organisational change	Lacked control over pace of work and deciding how to do it	Lacked good working relationship with your team*	Lacked a clear plan to develop your professional skills*	Lacked feeling that you really belonged at your company		Lacked pride in your work*
Experienced high levels of stress and anxiety	Lacked empowerment to get on with your job	Had to work extended hours, i.e. early mornings and/ or late evenings	Experienced atmosphere of distrust at work	Lacked constructive feedback on performance	Lacked feeling that you were part of a team at work		Musculoskeletal problems due to work, e.g. backache
Lost sense of humour*	Not consulted on decisions that impacted your work	Too many demands on your time to be effective in your job	Experienced personal conflict at work	Not given an opportunity to learn and develop	Lacked confidence in your company's leadership		Neutral problems due to work, e.g. headaches
Felt out of control	Received poor communications by the company on issues and changes that mattered to you		Did not feel you were supported by your colleagues*	Under-utilised at work	Unsure about your job's future		

(continued)

**Table IV.**  
Varimax rotation with eight factors (loading cut-off > 0.5)

Table IV.

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	Factor 8
	Drop in self-confidence due to work	Lacked direction and understanding of your own company's plans and priorities		Experienced lack of fairness and equality at work	No variation to work routine*	Lacked confidence in your company's future		
	Felt bad-tempered*	Lacked clear understanding of your own business plans and priorities*		Not respected for your differences*				
	Felt frustrated	Lacked direction and understanding of your own role and responsibilities						
	Felt angry	Lacked clear understanding of management structure*						
% of variance explained	34.7	7.04	4.70	4.33	3.76	3.09	2.97	2.54
Eigenvalues	18.75	3.80	2.54	2.34	2.03	1.67	1.60	1.37

Note: \* Items not in the WWBA

67 per cent of the items if FA had been used. IA and FA analyses identified an additional 20 items and 15 items respectively.

Both scales showed acceptable internal consistency reliability (Rick *et al.*, 2001).

IA relies heavily on frequency and importance attributed to each item. This has the benefit that even if a variable is not experienced by a large proportion of subjects, it will still be included if those that do encounter the problem rate it as highly important and troublesome to their overall well-being. Similarly, high frequency items that only attract low importance values will also be included.

In contrast, FA depends largely on frequency and the structure of correlations between items. This can result in rejection of some variables even though they are

Scale/sub-scale	Cronbach's alpha value ( $\alpha$ )
Overall scale (46)	0.96
Factor 1 (9)	0.91
Factor 2 (9)	0.89
Factor 3 (4)	0.72
Factor 4 (7)	0.84
Factor 5 (6)	0.86
Factor 6 (6)	0.88
Factor 7 (1)	-
Factor 8 (4)	0.81

**Table V.**  
Factor extraction and  
internal consistency  
reliability values

Variable	Impact score
Unable to switch off and relax when away from work	2.19
Future career prospects at your company seemed limited	2.04
Unable to improve/maintain physical fitness levels due to work commitments	1.95
Reduced energy levels due to work commitments	1.89
Unable to pursue leisure interests due to work commitments, e.g. sports and hobbies	1.85
Did not feel valued/recognised for your contribution by your boss or others senior to you	1.77
Felt unhappy	1.74

**Table VI.**  
Selected WWBA  
variables that would not  
have been included if  
factor analysis had been  
used

Variable	Impact score
Drop in self-respect due to work	0.94
Lacked pride in your work	0.86
Did not feel you were supported by your colleagues	0.85
No variation to work routine	0.77
Not respected for your differences	0.73
Lacked good working relationship with your team	0.60

**Table VII.**  
Selection of variables that  
would have been included  
if factor analysis had  
been used



perceived by employees to be key to their work-related well-being using the IA approach.

For example, two out of the highest scoring seven variables by impact ( $> 0.2$ ) would have been excluded from the WWBA had FA been used. These items concern "being unable to switch off and relax when away from work" and "future career prospects at your company seemed limited". (See Table VI). Similarly, variables regarding recognition ("did not feel valued/recognised for your contribution by your boss and others senior to you") and remuneration ("insufficient remuneration") would have been rejected under the FA method even though they had impact scores of 1.77 and 1.42 respectively. All problems concerning the workplace environment would also have been omitted under the FA method.

Conversely, six items with low impact scores ( $< 0.1$ ) would have been selected had FA been applied. (See Table VII).

A comparison of the respective domains and factors shows both similarities and differences. Although no domains and factors match completely, there are some strong parallels between the psychological health domain and factor 1 and the engagement domain and factor 6. There is also some consistency between the direction and understanding domain with factor 2, the relationships at work domain with factor 4 and the advancement domain with factor 5. None of the factors capture any items relating to either impact of the job outside of work or the physical work environment. Furthermore, other factors seem inconsistent in content. For example factor 6 contains an item regarding being part of a team that appears to fit better within factor 4 and factor 8 incorporates seemingly unconnected questions on pride, resilience, musculoskeletal problems and neural problems.

Historically, FA has been favoured by questionnaire developers as it is data-driven and offers a mathematical way to reduce data to a manageable and meaningful set of dimensions. However, FA does also require a number of subjective judgements; these include the choice of cut off, method of rotation and decisions about which factor structure is the most satisfactory. For example, when developers were determining the factor structure for ASSET (A Shortened Stress Evaluation Tool) (Faragher *et al.*, 2004), an independent organisational psychologist reviewed the items for face validity and exercised personal judgement by moving some questions to other, more appropriate factor groupings. Moreover, several Cronbach's alpha coefficients were considered unacceptably low ( $< 7.0$ ) and additional items were added to the ASSET questionnaire to bolster factor reliability. Therefore, to favour FA over IA because the former is based on statistical modelling while the latter is driven by employee perception and expert judgement is ill-informed.

Having examined the different approaches and related outcomes, is it possible to endorse one in favour of the other?

The answer to this depends on the exact aim of the assessment. If the overall objective is to measure how all aspects of people's jobs impact their well-being as perceived by employees themselves, then IA seems to be the most appropriate option as it will capture all aspects of work considered important by staff irrespective of the strength of correlation between different items (or indeed the frequency if the importance levels are sufficiently high). This study supports this view.

If, on the other hand, the goal of the assessment is to measure pre-determined components of well-being where mathematical outcomes are more important than



perceptions of employees, FA could be the better choice. Researchers may also be drawn to FA because this is the conventional way of managing large data sets even though it may be at the expense of missing key insights into employees and their experiences of work as this study reveals.

The primary purpose of the WWBA is to allow employers to assess accurately how their employees' overall well-being is impacted by their jobs so they may identify ways to make improvements. IA ensures that the scale covers *all* variables that are viewed as having a high impact by staff. As a consequence, the organisation can be confident that the data provide a more comprehensive analysis of the situation and particular well-being problems will be detected compared to a FA approach where the content and number of variables may be more restricted.

These findings from the pilot study are encouraging and a more detailed research programme to develop a WWBA using IA based on a larger sample size is being undertaken currently.

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## G.2 Occupational Medicine

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# A new approach to evaluating the well-being of police

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<b>Background</b>	There is a growing body of evidence that links employee well-being to organizational performance. Although police forces are under increasing pressure to improve efficiency and productivity, the evaluation of well-being in law enforcement is mostly restricted to self-report stress questionnaires that are based on questionable construction methodologies. No instrument to specifically determine the well-being of police force employees currently exists.
<b>Aims</b>	To construct an instrument that measures the work-related well-being of officers and staff within a police force.
<b>Methods</b>	The approach is drawn from well-established clinical models used to evaluate the well-being of patients. Potential variables were confirmed using an item selection method known as impact analysis that places keen emphasis on frequency and importance as perceived by the respondents themselves.
<b>Results</b>	Analyses of 822 completed response sets showed that nine separate dimensions of police work can adversely affect well-being (advancement, facilities, home work interface, job, physical health, psychological health, relationships, organizational and workload). Overall, officers showed inferior well-being compared with their colleagues. Content validity and adequate internal reliability were confirmed.
<b>Conclusions</b>	This study considered a new robust approach to evaluating the well-being of all those working in law enforcement. The nine dimensions extended beyond conventional stress measures and may offer a practical alternative way of assessing the overall well-being status of an entire force using a systematic item selection framework.
<b>Key words</b>	Health; law enforcement; measurement; police; stress; well-being; wellness.

### Introduction

A growing number of studies are providing convincing links between the overall well-being of staff and their performance in the workplace [1–4]. This has prompted the need for more robust methods to evaluate the well-being of workers so that organizational effectiveness may be better optimized.

The work of the police is generally considered to be demanding and can involve exposure to adverse events that impact negatively on health. To date, health-related police studies are mainly in the form of self-report questionnaires that examine occupational stress. Examples include the Police Stress Questionnaire 36 (PSQ 36) [5], the Operational and Organizational Police Stress Questionnaires (PSQ-Op and PSQ-Org) [6], the Police

Stressors and Felt Stress Inventory [7], the Situational Stress Inventory [8] and the Police Stress Survey [9]. Additionally, the Police Daily Hassles Scale (PDHS) and Police Daily Uplifts Scale (PDUS) [10] were constructed to evaluate the minor daily experiences in police life that are salient to wider aspects of well-being rather than stress *per se*.

A review of these scales suggests four potential shortcomings that provide the rationale for this present study.

Firstly, variables for the stress scales are selected from previous research findings and discussions with officers about their views on potential stressors. With the exception of Hart *et al.* [10], no developer has sought data on actual exposure to a stressor and the degree of stress experienced to ensure the most relevant variables are included in the instrument. As Biggam *et al.* [5] and

Gudjonsson and Adlam [8] note, it is inappropriate to automatically assume that officers will experience stress as a consequence of exposure to an event.

Secondly, the sample sizes for many of the scale construction studies appear small. For example, Gudjonsson and Adlam [11] relied on the views of 19 junior officers to determine the most relevant stressors; Brown and Campbell [7] developed a list of 107 possible variables from discussions with some 40 officers of which the operational items were then reduced to a total of 13 by 10 judges who eliminated items that they considered to be rare, traumatic or trivial.

Thirdly, the focus to date has only been on the experiences of serving officers. As ~40% of a force is made up of civilians and the performance of a force is somewhat dependant upon this population, it is considered appropriate to examine whether one scale could embrace the well-being issues of both officers and their civilian colleagues.

And finally, a limitation arises from the fact that the majority of extant studies focus on occupational stress rather than the wider construct of well-being that can be defined as a subjective state that draws on multiple dimensions including physical, material, social, emotional, developmental and activity-based issues [12].

The aim of this study was therefore to develop an instrument that specifically and purposely measured the wider well-being of all those working within a police force. To address the aforementioned issue of being able to identify variables based on exposure and perceived severity, an approach known as impact analysis (IA) [13,14] was applied. IA is a proven methodology employed to develop Health-Related Quality of Life (HRQL) questionnaires that evaluate the well-being of patients in a clinical setting. Examples of HRQL scales include the Asthma Quality of Life Questionnaire (AQLQ) [15] and the Quality of Life in Stage II Breast Cancer Questionnaire [16]. IA invites patients to 'score' how they believe that their own well-being has been impacted by their ill-health based on frequency and perceived importance.

There are parallels between the assessment of impact of disease on patient well-being and the impact of work on employee well-being that this study seeks to explore. In support of this, an earlier pilot study examined the viability of applying the HRQL methodology to the workplace with encouraging results [17]. For the purposes of this study, the definition of work-related well-being (WRWB) was adapted from HRQL practices [17] as follows:

that part of an employee's overall well-being that they perceive to be determined primarily by their work and can be influenced by workplace interventions.

This definition is important because it emphasizes the importance of employees' own perceptions and only includes those variables that may be modified through intervention by an employer.

## Methods

Approval for the study was provided by the Cranfield University School of Management Ethics Committee.

The work was conducted in collaboration with a medium-sized police force outside the metropolitan area of London.

A comprehensive list of all possible WRWB issues was generated through a series of semi-structured interviews with 64 individuals including 30 officers and 27 staff representing a wide range of directorates, departments and responsibilities. Discussions were also held with the chief constable, the force medical advisor and representatives from occupational health, welfare and human resources. The item pool was augmented by a literature review and additional management information collected by the force itself.

All officers, police community support officers (PCSOs) and civilian staff were invited to complete, anonymously, an online questionnaire that listed all items generated in the previous phase. A free text response option was added if respondents wished to record additional WRWB experiences not already covered by the variables presented. The questionnaire was pretested with a number of officers and staff to ensure that content and instructions were clear.

Respondents were asked to indicate which of the items they had experienced during the past year. A score of '0' denoted that the respondent had not experienced the issue. For each item that was positively identified, they were asked to score how important and bothersome it was to their overall well-being on a 5-point scale (1 = not at all important and 5 = extremely important). As the respondents were requested to provide a score, this scale could be considered continuous [13]. Results were expressed as 'frequency' (the proportion of people experiencing the issue) and 'importance' (the mean importance for each variable listed). The 'impact score' was the product of 'frequency' and 'importance'.

Items were ranked according to their impact score. The non-parametric test, Kendall's Tau [18], was used to compare item rankings between the three different roles to ascertain if the same set of items could be applied to all subgroups. Probability values ( $P$ ) < 0.05 indicated significant correlations in the rankings between the roles.

Items were examined for normality and then item-item correlations were investigated using Pearson's correlation coefficient ( $r$ ). Items that appeared to be measuring the same impairment, for example, fatigue and tiredness, and were highly correlated ( $r > 0.7$ ) were either combined or the item with the lowest impact score was discarded [13]. The remaining highest scoring variables were selected and categorized into domains based on methodological experience and dimensions documented in established instruments [13,19]. Where domain membership was ambiguous, correlations of items with items



that clearly fell in particular domains were examined [13]. Internal reliability was assessed using Cronbach's alpha coefficient ( $\alpha$ ) [20].

To help assess the performance of IA as a scale construction method, the well-being findings for the participant force were examined. To do this, all 0 values recorded for confirmed items were replaced with a '1' value since the two values denoted the same general meaning (where 0 = 'No, I did not experience this problem' and 1 = 'Yes, I did experience this problem but it was not at all important or bothersome'). Variable and domain impact scores would therefore range from 1 to 5 (where 1 = Did not experience/Not at all important or bothersome and 5 = Extremely important and bothersome).

Differences in importance scores between domains and between different roles were investigated using a repeated measures analysis of variance (ANOVA), where the selected domains were the dependant variables. Residuals were tested for normality and the significance of pair-wise comparisons was examined using Fisher's Least Significant Difference (LSD) test to determine meaningful differences between group means in an ANOVA setting.

## Results

A total of 64 variables were identified in the item generation phase and loaded into an online questionnaire. In total, 822 completed assessments were returned. Responses represented 38% of the total force population [officers  $n = 372$  (45%), PCSOs  $n = 43$  (19%), staff  $n = 383$  (47%), other  $n = 24$  (3%)] that broadly reflected the composition of the force.

From the pool of completed assessments, 159 free text responses were recorded and checked against the 64 variables. No additional areas of WRWB were identified which signified that the present item set had good content validity.

Frequency data ranged from 0.86 to 0.51 and mean importance data ranged from 2.99 to 1.72. Impact scores ranged between 2.42 and 0.88.

Impact scores for each variable were ranked by role and Kendall Tau correlations were examined. Item rankings for each role were significantly correlated with the other two roles ( $P < 0.05$ ) and it was therefore deemed appropriate to construct one questionnaire for officers, PCSOs and staff. The 24 respondents who identified themselves as 'other' were eliminated from further analysis since their roles were unclear.

In general, items with impact scores exceeding 1.20 were selected for inclusion in the instrument. This threshold was selected as the value indicated a degree of impairment (ranging from 1 to 5) and accommodated the need to develop a scale that would be quick to complete ( $< 7$  min/50 questions) in future administrations. A total of 52 of the 64 (81%) original items showed impact

scores  $> 1.20$ . Table 1 shows the overall top 5 impact scores prior to item reduction.

In total, 12 items were eliminated owing to impact scores  $< 1.20$ . However, two variables were subsequently reinstated ('Regularly having to come to work on your rest days' and 'Not having a clear understanding of your main work priorities') because of their markedly high impact scores (1.70 and 1.42, respectively) among the officer cohort. The items were found to be normally distributed and examination of item-item correlations ( $r > 0.7$ ) resulted in eight further items being discarded reducing the final number of variables to 46.

As shown in Table 2, the remaining items were examined closely and grouped into nine separate domains: Advancement (ADV)—impact of training and development opportunity needs; Home Work Interface (HWI)—impact of private life needs; Job (JOB)—impact of specific job aspects; Organizational (ORG)—impact of wider aspects of the force, e.g. change; Physical Health (PHY)—impact of physical health needs; Psychological Health (PSY)—impact of psychological health needs; Relationships (REL)—impact of working relationship needs; Workload (WL)—impact of workload needs and Facilities (FAC)—impact of physical environment needs. Sub-scale internal reliability ( $\alpha$ ) was satisfactory [21].

WRWB data findings relating to the participant police force were then examined. Overall, the mean WRWB score was 2.04 (score range 1–5).

A repeated measures ANOVA indicated that there were significant differences ( $P < 0.001$ ) between domains, roles and the interaction between them (Table 3). Residuals were checked and did not deviate from normality.

Fisher's LSD test indicated some significant differences when comparing domains. Differences between the PHY, WL and ADV domains were not significant nor were the differences between the REL and JOB domains or between the PSY and FAC domains. The ORG domain (mean score 2.32) was considered by respondents to be significantly more harmful to well-being than any of the remaining eight domains.

The differences between roles were investigated and Fisher's LSD test showed that officers' well-being (mean score 2.30) was significantly more impaired than that of PCSOs (mean score 2.03) and staff (mean score 1.84). Differences between the well-being scores of PCSOs and staff were not significantly different. The interaction between role and domain showed the same differences in role in the HWI, PSY, WL and FAC domains (Figure 1). However, in the REL and ORG domains, people's well-being was similar across all three roles.

## Discussion

This study identified nine dimensions of police well-being that extended beyond conventional stress measures

**Table 1.** Overall top 5 impact scores prior to item reduction

Rank	Question	Frequency <sup>a</sup>	Mean impact <sup>b</sup>	Impact <sup>c</sup>
1	Feeling overwhelmed by the amount of organizational change within the force	0.86	2.81	2.42
2	Believing that senior officers and managers do not appreciate the challenges you face in your role	0.78	2.99	2.32
3	Believing that your promotion opportunities in the force are limited	0.77	2.98	2.31
4	Being concerned about how your job may change in the future	0.86	2.69	2.31
5	Believing that opportunities to develop your career are limited within the force	0.77	2.96	2.28

<sup>a</sup>Proportion of workers reporting item as important.

<sup>b</sup>Mean importance score in subjects who reported item as important.

<sup>c</sup>Frequency × mean importance (maximum = 5).

**Table 2.** Work and well-being assessment for police: finalized domains and internal reliability

Domain (number of items)	Example item	$\alpha$
Advancement (5)	Believing that your promotion opportunities in the force are limited?	0.74
Home Work Interface (4)	Having to work unsociable hours that impact on family and friends?	0.83
Job (7)	Having a job where there is little day-to-day variation	0.78
Organizational (7)	Feeling overwhelmed by the amount of organizational change within the force?	0.86
Physical (8)	Having a poor diet because of the job that you do?	0.87
Psychological (5)	Experiencing high levels of stress because of your workload?	0.84
Relationships (4)	Not feeling valued for your work by your line manager?	0.80
Workload (3)	Having to work extended hours because of your workload e.g. late nights?	0.80
Facilities (3)	Having inadequate facilities for rest during your working day?	0.76

**Table 3.** Repeated measures ANOVA for police force roles and domains

	Sum of squares	Degrees of freedom	Mean square	<i>F</i> value	<i>P</i>
Role	356	2	178	41	***
Error (within roles)	3436	795	4.3		
Domain	73	8	9.1	23	***
Interaction between domain and role	177	16	11.0	28	***
Error (within individuals)	2509	6360	0.4		

\*\*\**P* < 0.001.

currently available. For the first time, a sophisticated clinical framework used to evaluate the well-being of patients was applied to a police force that offered new practical insights on how working for the police may impair overall well-being. Uniquely, the status of civilian staff was also taken into consideration. A possible study limitation relates to how generalizable the findings are to other police force populations. At the time of the research, the participant force was undergoing significant organizational change; the uncertainty for respondents arising from this situation may have influenced unduly the make-up of the final items.

Unlike existing police stress scales, the variables were determined using both frequency and severity data drawn from a sizeable sample of 822 of which 45% held

police officer positions. The data suggested that the majority of WRWB issues are experienced by all sections of the police that has practical implications for those tasked with shaping and delivering workplace interventions to improve health and performance across the whole force.

Notwithstanding the definition of WRWB that automatically discounts variables such as exposure to death and danger, no existing police stress scale contains the breadth and range of 'modifiable' dimensions highlighted in the present study. For example, the PSQ 36 [5] lacks questions on training, physical health or psychological health and the PSQ-Op and PSQ-Org [6] are deficient in variables relating to advancement or the physical workplace. The 86-item PDHS and 50-item PDUS [10] lack

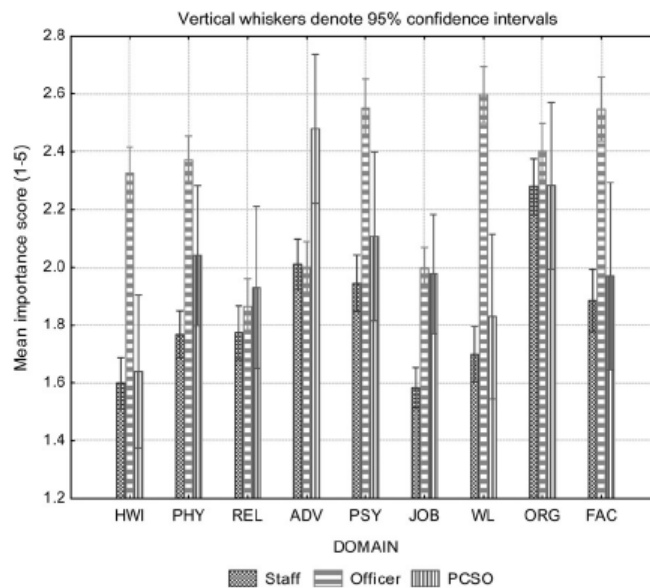


Figure 1. Comparison of mean importance scores for each police role across domains.

variables associated with change and physical health other than eating.

A number of factors may explain these discrepancies.

Firstly, the meaning of WRWB embraces far more aspects of police work than just those that are stress related and therefore elicits a broader spread of issues. For example, 'Believing that your promotion opportunities in the force are limited' is perceived by respondents to be important to their well-being (Table 1) but would not necessarily be considered a source of stress. The nine domains identified in this present study support the claims by Waddell and Burton [12] that well-being comprises multiple dimensions. The findings also share commonality with HRQL instruments such as the AQLQ [15] that are made up of domains ranging from disease symptoms through to activity limitation, environmental problems and emotional disturbance.

Another reason relates to the IA methodology that employs a systematic quantitative approach to the item selection process. Aside from the PDHS and PDUS [10], previous police researchers, for example Brown and Campbell [7], steered clear of methodical quantitative input from officers to aid final item selection. This latter approach carries with it the substantial implication that variables considered to have high impact by police workers may be excluded from a scale because they are not held in similar regard by the developers or the small teams they chose to consult with.

The findings indicate broad agreement between items among officers, PCSOs and staff. Although domain rankings varied, the present data suggest that one questionnaire would be appropriate for all those working within a police force. Being able to deploy a single questionnaire across an entire police force should be a benefit to a senior leadership team. By being able to compare and rank findings across all sections of a force using a uniform scale, management teams are more likely to make better informed evidence-based decisions on appropriate integrated programmes that meet the well-being needs of officers and staff alike. The results relating to the participant police force (Figure 1) indicate how a management team might look to enhance the well-being of their officers, PCSOs and staff.

In terms of measurement properties, content validity was confirmed and internal reliability was satisfactory. Future research will test the reproducibility and construct validity of the instrument. How the findings link to performance measures such as sickness absence will also need to be verified.

This study proffers a potentially new approach to evaluating the well-being of all those working in law enforcement. Its nine dimensions extend beyond conventional stress measures and may offer a practical alternative way of assessing the overall well-being status of an entire force using a systematic framework that is comprehensive

in its reach and closely aligned to the needs of the overall force.

### Key points

- In this study, the work-related well-being of police officers and staff comprised nine different domains.
- The work-related well-being of police was discernibly different to occupational stress.
- This new approach may offer a senior management team an alternative way of assessing the well-being of its entire force that may be more closely aligned to the needs and priorities of all those working within it.

### Conflicts of interest

None declared.

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## G.3 Leadership and Organization Development Journal (in press)

### ***Testing the performance of a new approach to measuring employee well-being***

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#### **Abstract**

##### *Purpose*

To test the performance of two generic scales designed to evaluate employee well-being against a new well-being scale constructed for a specific sector; call centres.

##### *Methodology*

The method to develop the new scale is based on well-established clinical models used to evaluate the well-being of patients. Potential variables were confirmed using an item selection method known as Impact Analysis which places keen emphasis on the frequency and importance of variables according to employees themselves.

##### *Findings*

From a potential pool of 102 items, Impact Analysis confirmed 43 variables most strongly associated with adverse well-being. These were distributed across 8 separate dimensions. Content validity and internal reliability were satisfactory. The results showed that existing scales were substantially insensitive to aspects of work that were perceived to be important and troubling to call centre employees and could therefore provide incomplete accounts of employee well-being.

##### *Research Limitations*

Confirmation of the assessment's measurement properties will be the subject of future studies. The generalisability of the findings to other call centres will also be investigated.

##### *Practical Implications*

For employers and researchers wishing to evaluate and act on well-being within a particular sector, this approach to measurement may offer a practical, parsimonious alternative to existing, generic options. Impact analysis also addresses criticisms of factor analysis when used in well-being scale construction.

##### *Originality*

The findings suggest support for a new approach to measuring the well-being of sector specific workers that is based on clinical evaluation practices.

Key words: well-being, employee, measurement, health, evaluation, call-centre

Classification: Research Paper

## 1. Introduction

Interest in employee well-being (EWB) is rising (Robertson and Cooper, 2010; Danna and Griffin, 1999). According to Cox and Jackson (2006), the occurrence is driven by a shift in the developed world from a manufacturing economy to one which is more service-based that brings with it a change in the types of threat to health that employees encounter.

EWB is intrinsically different to job satisfaction or employee engagement. As Robertson and Cooper (2010) note, employee engagement describes positive employee behaviour that is of direct interest to the organisation owing to the benefits it is likely to deliver operationally. In contrast, EWB encompasses a much broader concept that is likely to be more important to the workers themselves.

The study of EWB is significant on a number of counts. Firstly, it is related to the health status of individual employees. In their synthesis of the literature trained on health and well-being in the workplace, Danna and Griffin (1999) highlight how work experiences affect the individuals themselves through impact on physical and psychological health and how this can 'spill over' into non-work domains and lead to more serious health complaints.

The second reason relates to the associated impact on productivity and performance in the workplace (Wright et al., 2007; Danna and Griffin, 1999). The costs to the state and the employer of impaired EWB are sizable. Absence due to sickness costs approximately £12 billion per year (Department for Work and Pensions, 2005). The number of people who claim incapacity benefits in the UK has risen from 3% in the 1960s to 7% in 2006 (Dewe and Kompier, 2008).

Like policy makers (for example Black, 2008), employers are keen to see levels of sickness absence drop and productivity improve. One of the ways in which organisations are approaching this is to initiate various EWB programmes for their employee ranks. According to a recent Chartered Institute of Personnel and Development (CIPD) survey, 42% of employers indicated that they had a well-being strategy or similar in place, representing an increase of 26% on the previous year (CIPD, 2007).

With the rising number of employers taking a proactive interest in EWB, many may wish to evaluate the well-being of their workers at the outset so that they are better able to assess opportunities for effective management action. Options available to organisations wanting to do this are in short supply if it is accepted that short, self report questionnaires are the preferred mode of measurement (Levi, 1992), that questions should cover both work and non-work elements (for example Page and Vella-Brodrick, 2009; Van Laar et al., 2007; Sirgy et al., 2001; Danna and Griffin, 1999) and finally, that assessments should reference workplace traits directly associated with EWB so that management teams may formulate effective, targeted interventions.

Two validated EWB questionnaires meet these criteria; Van Laar et al.'s (2007) 23-item Work-Related Quality of Life Scale (WRQoL) and Sirgy et al.'s (Sirgy et al., 2001) 16-item Quality of Work Life (QWL) measure

Both EWB scales are generic. While this allows researchers the ability to conduct cross-sectional studies, there is a risk that the question sets are insufficiently sensitive to EWB issues that are deemed by employees to be important within a particular sector. This inability to capture relevant, sector specific data may mean that employers could inadvertently overlook aspects of EWB that may be intrinsic to an effective well-being strategy.

This same quandary has arisen in the measurement approaches applied to evaluate the well-being of patients. Assessments known as Health Related Quality of Life (HRQL) questionnaires are used to evaluate and track the well-being of patients in a clinical setting (for example Juniper et al., 1996; Guyatt et al., 1986). An HRQL scale asks patients to 'score' how they themselves believe their own well-being has been impacted by their ill-health.

HRQL scales can be disease-specific or generic in content. An example of a generic HRQL scale is the Medical Outcomes Survey Short Form 36 (SF-36) (Stewart et al., 1988). These generic questionnaires can be used across a range of medical conditions and the burden of illness can be compared across different disease states.

Disease-specific HRQL scales have been developed on the premise that different disease conditions may affect different day to day functions and therefore lead to different quality of life problems for patients (Guyatt et al., 1986). These instruments are therefore better able to identify problems that are most troubling to patients which better inform treatment plans and are more responsive to changes in patient well-being over time. An example of a disease-specific questionnaire is the Asthma Quality of Life Questionnaire (AQLQ) which comprises 32 questions across four different domains; symptoms, activity limitation, emotional function and environmental stimuli (Juniper et al., 1992).

The central purpose of this current study is to examine how the principles of well-being measurement practiced in clinical surroundings compare with those currently available in occupational environments. Specifically, it is posited that the two generic scales available to organisations may fail to capture elements of EWB that are most troublesome to workers by virtue of their standardised approach which could compromise an employer's capacity to assess and address matters effectively. This present work will determine those well-being variables that are commonly associated with a specific sector using the disease-specific HRQL approach to questionnaire construction and compare these with items contained within generic EWB scales. By contrasting the sector-specific question set with generic question sets directly, the performance of each approach may be assessed.

The precedent of applying existing clinical methods to the workplace has already been set. The General Health Questionnaire (GHQ) (Goldberg and Williams, 1988) for

example, originally developed to detect minor psychiatric disorders among respondents in community settings, has been used as an indicator of mental health in occupational studies (Banks et al., 1980). The notion also finds support from Loscocco and Roschelle (1991) who conclude in their extensive review of EWB that a frustrating number of organisational psychologists duplicate studies unnecessarily and call for them to embrace theories and methods from other disciplines to advance understanding in this field.

The call centre sector will be investigated for the purposes of this study. There exists a widely-held view that call centres are unpleasant places to work (Holman, 2002). Various referred to as 'electronic sweatshops' and 'human battery farms' (Fernie and Metcalf, 1998; Schlesinger and Heskett, 1991; Hochschild, 1979), this sector has earned an unfavourable reputation for dull, repetitive, low skilled work which is heavily scripted and closely monitored using sophisticated surveillance systems (Holman, 2003).

These features make the sector a fitting environment for the current study and have already led to a number of studies that have examined call centre work within the wider context of employee health and well-being. Generally, scholarly studies have taken the form of generic, self-report questionnaires. For example, Holman's (2002) work on call centre well-being used Warr's (1990) mental health scales for anxiety and depression and Holdsworth and Cartwright (2003) deployed the Occupational Stress Indicator (Cooper et al., 1988).

Criteria for the development of an exploratory well-being assessment for call centres follow those described for HRQL instruments (Juniper et al., 1996; Guyatt et al., 1986) as follows;

1. Work-related well-being (WRWB) items should have content validity i.e. reflect those areas of well-being that are important to call centre workers
2. The finalized scale should be simple and quick to complete for call centre workers (no more than seven minutes to complete)
3. Summary scores should be amenable to statistical analysis

The definition of WRWB is adapted from HRQL practices (Juniper et al., 2009) and can be described as:

*'that part of an employee's overall well-being that they perceive to be determined primarily by their work and can be influenced by workplace interventions.'*

This definition is important in three respects. Firstly, it is employees' subjective perceptions that are key; secondly, the direction of causality considers how work impacts well-being (rather than the reverse) and thirdly, the variables selected are only those that employers are able to modify.



## 2. Method

Approval for the study was awarded by Cranfield University's School of Management Ethics Committee.

The study was based on one call centre organisation spread across six bases in the East and South East regions of the UK. Call centre agent (CCA) work was almost exclusively concerned with taking in-bound calls off a national queue using detailed scripts and algorithms. Three main roles existed; CCAs who fielded calls initially, professionally qualified CCAs who provided technical advice to callers and team leaders who were responsible for the performance of CCAs. Provision of services was 24 hours a day, 365 days a year.

The theoretical framework applied was Impact Analysis (IA) – a proven, clinical methodology used to create disease-specific HRQL instruments (Juniper et al., 1996; Guyatt et al., 1986).

A comprehensive list of 102 possible WRWB issues was generated through a series of 84 semi-structured interviews with CCAs and team leaders where participants were asked to recount how they believed their call centre work had impacted their overall well-being. Participants represented a range of roles, locations and experience. Discussions were also held with managers, occupational health specialists and human resource professionals numbering nine in total. The item pool was supplemented by a literature review of health and well-being studies within the sector. The call centre operation's most recent staff satisfaction survey was also appraised. The item pool reflected a wide array of ways in which call centre employees perceived that their work was detrimental to their well-being.

All CCAs and team leaders were invited to complete anonymously an online questionnaire comprising all items gathered in the earlier phase. The questionnaire was serially piloted with a number of staff to ensure content and instructions were clear.

Respondents were allocated time during their shift to complete the questionnaire. They were asked to complete two demographic questions (role and location) and then indicate which of the WRWB items they had experienced during the past year. A score of '0' denoted items that were not experienced by respondents. For each item that was positively identified, subjects were asked to rate how important and bothersome they considered it to be to their overall well-being on a 5 point scale (1= not at all important and 5 = extremely important). A total of 377 completed assessments were returned, representing 69% of the total workforce approached (n = 550). 124 free text comments were contributed. A review of these yielded no new WRWB themes, not already covered in the item reduction questionnaire.

Results were expressed as 'frequency' (the proportion of people experiencing the issue) and 'importance' (the mean importance for each variable listed). The 'impact score' for each variable was the product of 'frequency' and 'importance'. To check

content validity, respondents were also able to contribute comments in a free text facility if they wished to record additional work-related well-being experiences.

Items were ranked according to impact score. The non-parametric statistic, Kendall's Tau coefficient ( $\tau$ ), was used to measure the level of agreement between item rankings for each role (Kendall, 1938). Significant correlations ( $p < 0.05$ ) would indicate that it was acceptable to use the same set of items to assess the WRWB of people performing all three roles within the call centre operation.

Generally, the variables that showed the highest impact scores were selected and categorized into domains based on methodological experience and established, validated instruments (Juniper et al., 1996; Guyatt et al., 1986). Choice of impact score cut-point was primarily influenced by the wish to limit the final set of items to approximately 50 (in the interests of utility and practicality) and ensure domains contained a minimum of three items to reduce the impact of any idiosyncratic responses to certain questions (Guyatt et al., 1993). If uncertainty arose over which items should be grouped in which domain, correlations with items that clearly fell in particular domains were examined for verification (Juniper et al., 1996).

Consistent with accepted HRQL instrument development, remaining variables that appeared to be measuring the same impairment, e.g. fatigue and tiredness, and were highly correlated (Pearson  $r > 0.7$ ) were either combined or the item with the lowest impact score was discarded (Juniper et al., 1996).

Internal reliability for each domain was assessed using Cronbach's alpha ( $\alpha$ ) (Cronbach, 1951). Acceptable levels of  $\alpha$  are considered to be values greater than 0.7 (Rick et al., 2001).

To help evaluate the performance of IA when applied to the call centre environment, some basic findings pertaining to the well-being levels of the participating call centre operation were examined. To this end, all '0' values recorded for confirmed items were replaced with a '1' value since, in this data set, '0' and '1' scores represented the same general meaning (where 0 = "No, I did not experience this problem" and 1 = "Yes, I did experience this problem but it was not at all important to my overall well-being"). Once the data were amended, differences in impact scores between the different domains and roles were examined using a repeated measure analysis of variance (ANOVA) where the selected domains were the dependant variables. Residuals were tested for normality and Fisher's Least Significance Difference (LSD) test was used to determine the significant differences between group means in an analysis of variance setting.

### **3. Results**

A breakdown of responses ( $n = 377$ ) by role is set out in Table 1.

Role	Count	Percent	Cumulative - Percent
Team Leader	45	11.94	11.94
Technical CCA	199	52.79	64.72
CCA	133	35.28	100.00

**Table1 Respondent breakdown**

An examination of findings overall showed that frequency scores ranged from 0.96 to 0.49; mean importance scores ranged from 3.83 to 1.42 and impact scores (the product of frequency and importance) ranged from 3.62 to 0.75.

Table 2 shows the highest 15 impact scores *prior* to item reduction.

Rank	Question	Frequency *	Mean.Imp †	Impact‡
1	Perceiving the organisation to be more target led than [customer] led	0.94	3.83	3.62
2	Having to read your emails during your break times or before/after your shift	0.93	3.82	3.56
3	Having to book holiday so far in advance	0.95	3.70	3.53
4	Ability to plan ahead with friends and family is restricted because of the rostering system	0.96	3.65	3.49
5	Plans with family and friends being affected by the shift system	0.96	3.54	3.40
6	Finding it difficult to swap shifts	0.94	3.45	3.24
7	Having insufficient time to familiarise yourself adequately with new policies and procedures	0.94	3.36	3.17
8	Poor air conditioning (either too cold or too hot)	0.92	3.38	3.10
9	Experiencing frustration because of the rostering system	0.92	3.29	3.01
10	Having a limited social life because of the shifts that you work	0.91	3.31	3.01
11	Finding it difficult to attend regular courses/classes outside of work because of the shift system	0.90	3.33	2.99
12	Not having enough team meetings to discuss issues and ideas	0.90	3.31	2.97
13	Finding it difficult to arrange weekends off	0.90	3.29	2.96
14	Not having enough team meetings so you know what is going on	0.91	3.22	2.94
15	Lacking adequate control over your choice of shift	0.92	3.18	2.92

\* = proportion of workers reporting item as important and bothersome (maximum = 1)  
† = mean importance score in subjects who reported item as bothersome (maximum = 5)  
‡ = frequency x mean importance (maximum = 5)

**Table 2 Top 15 Highest Ranking Impact Scores Prior to Item Reduction**

Impact scores for each item were ranked for each role and Kendall Tau correlations ( $\tau$ ) of the impact score ranks between the roles were examined (Table 3). Rankings of impact score for each role were significantly correlated with the other two roles ( $p < .05$ ) indicating it was appropriate to construct one questionnaire for all three roles.

Role	Team Leader	Technical CCA	CCA
Team Leader	1.00		
Technical CCA	0.38*	1.00	
CCA	0.43*	0.71*	1.00

Note: \*  $p < 0.05$

**Table 3** Kendall Tau Correlations ( $\tau$ ) for ranking of Impact Scores between Call Centre Roles

In general, items with impact scores that exceeded 2.00 were selected for inclusion in the instrument (range 1-5). A threshold of 2.00 was selected because this value indicated a notable degree of impairment and accommodated the requirement to develop a final scale of approximately 50 items. As with each HRQL scale developed using IA (for example Guyatt et al., 1989), choice of cut-point was contextual to the specific data set under inspection.

In total, 34 items had impact scores of less than 2.00 and were omitted. Item-item correlations for remaining variables were examined and a further 24 items were eliminated ( $r > 0.7$ ). One other item ('Having a different desk space each time you come to work') was also discarded; on reflection, it was deemed a workplace factor that the employer was unable to modify for practical reasons and therefore did not fit with the stated WRWB definition.

Remaining items totalled 43 and were studied at length to identify common sub-categories. Text for some items was shortened or amended to reflect a wider meaning if the item had been combined with another (for example 'Always feeling tired/run down because of shift patterns).

Analysis identified an optimal structure of eight domains. Choice of domain was informed by earlier occupational and clinical well-being research. The two largest domains, both comprising eight items, were Home Work Interface (HWI) and Job (JOB). Respectively, these described how people's work was perceived to impact on home life (because of the shift system) and how specific aspects of call centre job design (such as variation, call flow, heavy scripting) were considered troublesome to well-being. The Organisational domain (ORG) described how wider organisational practices impacted on workers. Items referring to how people considered their work impacted on health were grouped either into the Physical Health (PHY) or Psychological Health (PSY) domain. Interpersonal Relationships (REL) considered associations between colleagues. Advancement (ADV) described opportunities for training and promotion and Workplace Facilities (FAC) captured perceptions relating to call centre accommodation, air conditioning and food-related amenities. Table 4 presents the finalized domains and Cronbach's Alpha coefficients ( $\alpha$ ). The  $\alpha$  coefficients indicated that each domain showed acceptable levels of internal reliability with the exception of the Facilities domain ( $\alpha = 0.63$ ) which was slightly below the recommended threshold of 0.70 (Rick et al., 2001). Owing to reasons of copyright, it is not possible to reproduce the confirmed list of 43 items.



Domain (number of items)	Example item	Cronbach's Alpha $\alpha$
ADV (3)	Having insufficient opportunities for promotion	0.70
FAC(3)	Having inadequate facilities that allow you to eat healthily during your shift	0.63
HWI (8)	Plans with family and friends being affected by the shift system	0.86
JOB(8)	Having to do a job where there is little variation/challenge	0.80
ORG (7)	Perceiving the organisation to be more target led than [customer] led	0.87
PHY (6)	Feeling stiff because of the long spells you have to sit	0.75
PSY(3)	Experiencing high levels of stress because of your targets	0.73
REL (5)	Having insufficient opportunities for social interaction with your colleagues	0.85

**Table 4 Call Centre Domains and Internal Reliability**

In order to consider the WRWB findings for the participant call centre operation, data were amended so that all '0' scores were converted to a value of '1'.

A repeated measures ANOVA indicated that there were significant differences in mean importance scores ( $p < .05$ ) between domains, roles and the interactions between them (Table 5). Residuals were checked and did not deviate from normality.

Effects	Sum of squares	Degrees of freedom	Mean square	F value	$p$
Role	92.35	2	46.18	8.823	< 0.001
Error (within roles)	1957.50	374	5.23		
Domain	34.57	7	4.94	11.788	< 0.001
Interaction between domain and role	31.87	14	2.28	5.433	< 0.001
Error (within individuals)	1096.80	2618	0.42		

**Table 5 Repeated Measures ANOVA of Importance Scores for Call Centre Roles and Domains**

Table 6 compares the mean impact scores for each domain (averaged over roles) using Fisher's LSD test and depicts significant differences ( $p < .05$ ). The mean impact scores for each domain are given in the column headers. The findings show that, overall, call centre workers perceived that the impact their work had on their lives outside of work (HWI, mean = 2.98) impaired their well-being significantly more than all other domains. Conversely, workers perceived that impact of work on their physical well-being (PHY, mean = 2.51) was significantly less than other domains.

DOMAIN (mean)	ADV (2.61)	HWI (2.98)	REL (2.64)	JOB (2.84)	ORG (2.73)	PHY (2.51)	PSY (2.68)	FAC (2.76)
ADV								
HWI	0.000***							
REL	0.507	0.000***						
JOB	0.000***	0.004**	0.000***					
ORG	0.007**	0.000***	0.051	0.018*				
PHY	0.037*	0.000***	0.006**	0.000***	0.000***			
PSY	0.148	0.000***	0.434	0.000***	0.242	0.000***		
FAC	0.002**	0.000***	0.014*	0.063	0.619	0.000***	0.095	

Note: \* $p < 0.05$  \*\* $p < 0.01$  \*\*\* $p < 0.001$

Table 6 Fisher's LSD Test – Differences in Importance Scores between Call Centre Domains

Fisher's LSD test also established significant differences between team leaders and both other roles (Table 7). Differences between advisory roles were not significant. Values in the body of Table 7 show  $p$  values for pair-wise comparisons of roles.

Role	Mean importance score for each role given in brackets		
	Team leader (2.28)	Technical CCA (2.82)	CCA (2.72)
1 Team Leader			
2 Technical CCA	0.000***		
3 CCA	0.001**	0.283	

Note: \*\* $p < 0.01$  \*\*\* $p < 0.001$

Table 7 Comparison of impact scores between Call Centre Roles using Fisher's LSD Test

Further investigation of the interaction between domains and roles showed significant differences in mean importance scores for the REL and JOB domains in respect of team leaders and their subordinates (Figure 1).

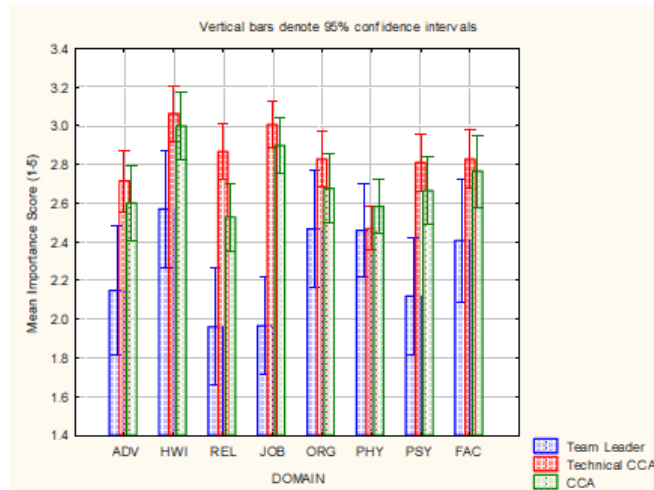


Figure 1 Comparison of Well-Being Domains by Role

#### 4. Discussion

This study sought to establish how call centre staff perceived their work to impact their well-being using a tried and tested clinical approach and compare the confirmed items against those established in the WRQoL scale (Van Laar et al., 2007) and the QWL measure (Sirgy et al., 2001). The current findings present a WRWB pilot scale comprising 43 variables grouped into 8 different domains. Content validity was confirmed and generally, internal reliability was verified.

How do these findings compare with existing EWB scales? Owing to copyright restrictions, it is only possible to discuss the factors contained within the WRQoL scale rather than individual items.

The WRQoL scale (Van Laar et al., 2007) comprises six factors; Job and Career Satisfaction (JCS), General Well-Being (GWB), Home-Work Interface (HWI), Stress at Work (SAW), Control at Work (CAW) and Working Conditions (WCS). The WRWB domains originating from the current study indicate general overlap with four of the WRQoL scale factors (ADV = JCS, HWI = HWI, PSY = SAW and FAC = WCS). However, the REL, JOB and PHY domains find no commonality with the WRQoL scale and only minimal traces of the ORG domain are apparent. Aspects of the WRQoL's CAW factor are evident in a number of the different domains (for example JOB and ORG). The GWB factor refers to elements of context-free well-being and is therefore outside of the remit of WRWB, which focuses only on work-related issues.

The QWL measure (Sirgy et al., 2001) is designed to evaluate employees' satisfaction with seven major needs arising from the workplace. These are represented as seven factors: Health and Safety, Economic and Family, Social, Esteem, Actualization, Knowledge and Aesthetic. The measure is theoretically based and draws on need satisfaction and spill-over theory. With only 16-items in the QWL measure, cross-over with the current findings is inevitably limited. The strongest association between the two sets of items arises between the REL domain and social needs factor. Two direct references to economic and family needs and esteem needs may be found in the ORG domain. Items pertaining to actualization and knowledge needs may be found in the ADV domain. The QWL measure (Sirgy et al., 2001) fails to cover, in any way, the five remaining domains revealed in the present study; HWI, JOB, PHY, PSY and FAC.

The significance of these differences is considered. As noted, the WRQoL scale (Van Laar et al., 2007) lacks factors that consider intrinsic aspects of a job or workplace relationships when compared to the WRWB of call centre people. To an extent, this is to be expected since the JOB domain captures elements of work that are specific to working in a call centre environment and is akin to symptom domains contained within disease-specific HRQL questionnaires (for example Juniper et al., 1992). The REL domain describes the state of interpersonal relationships at work, indicating that feelings of isolation are important and troublesome to the well-being of respondents. This sense of loneliness is likely to be characteristic of call centre work where headsets are worn and interaction between colleagues is discouraged in order for call flow targets to be met. The absence of these dimensions from the WRQoL scale (Van Laar et al., 2007) is

appreciable in view of their relatively high rankings among CCAs as shown in Figure 1. Also lacking in the WRQoL scale are most of the elements captured within the ORG domain. This includes the variable referencing a target led culture which showed the highest score (impact score = 3.62) out of all 102 initial items (Table 2) and was therefore considered by respondents to be highly important and bothersome to their overall well-being. A physical health factor is absent from the WRQoL scale as well. For this present study, the PHY domain ranked lowest out of all eight domains in mean importance values (Table 6) and is therefore less concerning.

The QWL measure (Sirgy et al., 2001) bears only negligible resemblance to the domains established in the current findings. The largest and most important domains (HWI and JOB) (Table 6) have no equivalence in the QWL measure although it does reference social needs which CCAs do consider important (Figure 1).

For a call centre operator wishing to evaluate and act on the well-being of staff, these shortcomings could be considerable. As with disease-specific HRQL instruments, the QWL measure (Sirgy et al., 2001) and, to a large extent, the WRQoL scale (Van Laar et al., 2007) fail to include some aspects of call centre work that are shown to be troubling to those who would be the prime focus of any well-being programme. Certainly, for the present call centre cohort, an absence of data cataloguing concerns in respect of job design, colleague relationships and the target-led culture would provide a somewhat incomplete and inaccurate account of the most important issues affecting the well-being of workers which could render any subsequent wellness programme deficient.

The WRQoL scale (Van Laar et al., 2007) and QWL measure (Sirgy et al., 2001) gauge levels of EWB by asking how much respondents agree/disagree with the item statements listed in their respective scales. This marks a different approach to the current study where, consistent with HRQL practice, subjects are asked how important and bothersome to their well-being, they perceive particular items to be. This may present a considerable advantage over the response options used by earlier authors since it allows subjects to quantify the degree to which a particular issue is perceived to be troublesome. This point is reiterated by Costanza et al. (2007) who notes that any measurement strategy should identify how *well* a need is met and assess the *importance* of that need to the respondent in terms of their well-being.

Both Van Laar et al. (2007) and Sirgy et al. (2001) used factor analysis to establish the underlying constructs of their respective scales. Interestingly, the use of factor analysis in the measurement of well-being has been challenged by some authors active in HRQL. According to Fayers et al. (1998) and Fayers and Hand (1997), results based on FA may be misleading. These authors claim that, unlike traditional psychometric instruments, which comprise effect indicators (for example anxiety), HRQL scales contain both effect indicators and causal indicators. Fayers et al. (1998) and Fayers and Hand (1997) claim that these latter indicators may cause a drop in HRQL for those patients experiencing them but the reverse relationship need not automatically apply; a poor level of HRQL need not mean that the patient suffers from that causal symptom. The argument follows that FA modeling is fundamentally flawed for HRQL applications because it implicitly assumes that factors are composed of effect indicators only and



changes in HRQL are likely to be reflected in corresponding changes across *all* scale items. These same concerns may be leveled at the WRQoL scale (Van Laar et al., 2007) and the QWL measure (Sirgy et al., 2001) which both include causal and effect indicators.

Also emphasized by these commentators is the need for breadth of coverage in HRQL scales development in order to ensure that *all* important, HRQL-impairing symptoms and effects are included. Fayers and Hand (1997) note that a lack of mathematical correlation with other items (as happens with FA) does not provide sufficient grounds for excluding ones that are considered important by the patient populations. An HRQL study by Juniper et al. (1997) that compared factor analysis with IA provided support for the claims by Fayers and Hand (1997). Again, these observations may also be directed towards the WRQoL scale (Van Laar et al., 2007) and QWL measure (Sirgy et al., 2001) and their factor analytical construction methods.

## **5. Conclusion**

The application of the IA HRQL approach to EWB highlights some possible inadequacies in current practices. The pilot scale constructed for a call centre environment captures issues specific to this sector. This is to be anticipated. However, this study demonstrates that this applied approach allows for the systematic identification of the most important items that cannot automatically be assumed to be contained within generic questionnaires. This therefore challenges the content validity of the latter and carries consequences for the relevancy and effectiveness of any well-being programmes developed as a result. The IA approach also addresses possible drawbacks associated with the conventional use of factor analysis when used to evaluate well-being.

If the academic community wishes to carry out well-being research where comparisons with other sectors are important, then the use of existing, standardised models is appropriate. If, on the other hand, the aim of a study is to evaluate the well-being of a particular organisation or sector, with a view to identifying parsimoniously, ways in which this may be enhanced practically, the IA approach may be more suitable.

The pilot assessment's measurement properties (construct validity, reproducibility and responsiveness) will be the subject of a future study. A limitation of this study is the presumed ability of the selected items to represent broadly the WRWB issues of all call centre workplaces. The generalisability of the findings to other call centre operations will be examined further.

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## G.4 Journal of Librarianship and Information Science (accepted subject to minor revisions)

### *Evaluating the well-being of public library workers*

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#### **Abstract**

This study aimed to develop and pilot a questionnaire to determine the ways in which working in a UK public library system can impact the well-being of those deployed in the sector. The methodological framework was based on an approach used to evaluate the well-being of patients in a clinical setting. Based on the responses of 466 employees, the results identified eight dimensions of library worker well-being; organisational, advancement, job design aspects, physical health, psychological health, interpersonal relationships, workload and facilities. Analyses indicated that organisational aspects most impaired well-being and longer-serving employees were worst affected. The findings offer a new, evidence-based perspective on the wellbeing issues that public library workers perceive to be most important and challenge earlier claims regarding stress and burnout. Also considered is the relevance of employer-sponsored wellness programmes where improvement in organisational performance is the prime reason behind provision.

#### **Keywords**

Well-being, library, employees, health, stress, evaluation, measurement

#### **Introduction**

There are increasing numbers of academic studies that are interested in establishing a direct relationship between the well-being of employees and their attendance and performance at work (for example Wright and Cropanzano, 2000; Sparks et al., 2001; Donald et al., 2005). The UK government has also directed attention towards this area with the recent publication of a report on the health of Britain's working age population 'Working for a healthier tomorrow' (Black, 2008). While the report considers medical issues such as musculoskeletal disorders and lifestyle trends (for example, dietary habits), Black (2008) also notes that the nature of the work itself is important when evaluating the health and well-being of a workforce. According to a recent survey on workplace wellness programmes (Buck Consultants, 2009), most employers view improved productivity as the key reason for such initiatives, of which the most popular include employee health screenings, fitness club membership discounts, immunisations, health fairs and on-site health classes.

A report by the Office of National Statistics (ONS) (2008) estimates annual sickness absence levels for librarians and related professions at 3.2% and ranks this group 14<sup>th</sup> out of a total of 81 different occupations where absence ranges from 0.8% to 4.8%. The report suggests that sickness levels among library workers appear relatively high

compared to other occupations such as the teaching profession (ranked 39<sup>th</sup>) and protective service occupations (ranked 74<sup>th</sup>). The options currently available to examine the well-being of library workers and identify how their work may impact absence and performance are restricted. It is this limitation that provides the justification for the present study.

To date, scholarly studies into the health and well-being of librarians have generally been confined to the examination of stress (for example Bunge, 1987; Schneider, 1991; Topper, 2007) and burnout (for example Haack et al., 1984; Smith and Nielsen, 1984; Togia, 2005). Stress may be defined as '.....the adverse reaction people have to excessive pressure or other types of demand placed on them at work' (Health and Safety Executive, 2009). This compares to burnout which refers to a syndrome involving emotional exhaustion, depersonalisation, and reduced personal accomplishment (Haack et al., 1984).

Research papers by Bunge (1987) and Schneider (1991) represent the only published studies to consider library stress using empirical, research methods. Other accounts comprise the speculative views of the authors ( for example Topper, 2007; Bold, 1982; Burke et al., 2009) that lack data to validate the opinions that they share. The study by Bunge (1987) involves some 850 employees working in a range of different US library settings and claims that library work can be highly stressful. Bunge (1987) cites a number of stressors including work overload/underload, skills shortage, dealing with library users, poor recognition, inadequate management, low quality workspace and limited career opportunities. Schneider's (1991) research on occupational stress amongst 100 Canadian public library staff concurs with many of Bunge's (1987) findings, noting that issues particularly to do with organisational climate (for example, management behaviour and morale levels) are the main antecedents of workplace stress in a library workplace environment.

Library burnout studies all use generic scales to evaluate the degree to which respondents experience the syndrome (for example Haack et al., 1984; Smith and Nielsen, 1984; Togia, 2005; Birch et al., 1986; Affleck, 1996; Hamilton, 2006). These examinations therefore consider the prevalence of burnout rather than ascertain its causes. Moreover, they provide a confusing, inconsistent picture on the levels of burnout experienced.

It seems reasonable to surmise that scholarly assessment of health and well-being within the library sector is narrow both in the number of rigorous, empirical studies and the range of issues examined. Studies are confined to the investigation of potential stressors and levels of burnout which are considered a threat to well-being rather than its equal (Dewe and Kompier, 2008). No study that examines the wider elements of well-being across a library population exists. Research is also dominated by work carried out in North America that may not be necessarily applicable to the experiences of those deployed in library jobs in the UK.

These limitations echo the views of Fisher (1990) whose review of library-based stress and burnout studies concludes that there is a shortage of well designed, empirical investigations and an absence of findings delivering a conclusive picture. Further, he disputes the use of generic burnout scales by challenging whether the types of questions used are relevant to a library setting ( Fisher, 1990).

The present study is designed to address these existing shortcomings. It aims to develop and pilot an instrument to evaluate the well-being of library workers and respond to some of the criticisms levelled at previous authors. It intends to purposely and specifically identify aspects of well-being that are directly relevant to library workers and consider how they may link to attendance and performance in this sector. Further, it is intended that this work will go some way to redressing the surfeit of North American studies by examining a sizeable cohort of public library workers based in the UK.

An approach known as Impact Analysis (IA) (Guyatt et al., 1986; Juniper et al., 1996) is used to construct a well-being assessment for library staff. IA is a proven methodology employed to develop Health Related Quality of Life (HRQL) questionnaires to evaluate the well-being of patients in a clinical setting. The scales are constructed to measure the overall impact of a disease on the well-being of patients. Examples of HRQL scales include the Quality of Life in Stage II Breast Cancer Questionnaire (Levine et al., 1988) and the Asthma Quality of Life Questionnaire (Juniper et al., 1992). IA invites patients to 'score' how they believe their own well-being has been impacted by their ill-health based on frequency and perceived importance.

There are parallels between the assessment of impact of disease on patient well-being and the impact of work on employee well-being that this study seeks to explore. In support of this, an earlier pilot study examines the viability of applying the HRQL methodology to the workplace with encouraging results (Juniper et al., 2009). For the purposes of this study, the definition of work-related well-being (WRWB) is adapted from HRQL practices as 'that part of an employee's overall well-being that they perceive to be determined primarily by their work and can be influenced by workplace interventions' (Juniper et al., 2009).

This definition is important because it emphasises the importance of employees' own perceptions and only includes those variables that may be modified through intervention by an employer.

Criteria for the development of the Work and Well-Being Assessment for Libraries follow those described for HRQL instruments (Guyatt et al., 1986; Juniper et al., 1996) and are as follows;

1. The finalised scale should be simple and quick to complete for library staff (no more than seven minutes to complete)
2. Items should have content validity i.e. reflect those areas of well-being that are important to library workers

3. Summary scores should be amenable to statistical analysis
4. The scale should be reliable i.e. repeated administrations in a stable workforce should elicit similar findings
5. The questionnaire must have construct validity i.e. results should correlate with findings from a previously validated measure

This present study focused on criteria 1 – 3. A further study will consider the remaining measurement criteria.

### **Methods**

Approval for the study was provided by the Cranfield University School of Management Ethics Committee.

#### *Item Generation Phase*

The purpose of the Item Generation Phase (IGP) was to develop an exhaustive pool of variables associated with the WRWB of library workers. Consistent with the construction of HRQL instruments, a list was generated through a series of semi-structured interviews with a range of library workers. Participants from the Library and Information Service (LIS) that supported the study were invited to contribute their views on how they perceived their library work impacted on their general well-being. Additional WRWB variables were collected from managers and other qualified professionals associated with the LIS who had experience of working with library personnel. The item pool was also augmented by a literature review and additional management information collected by the LIS.

All variables generated in the IGP were loaded into an online questionnaire. Demographic questions including role, location, grade and length of service were added and a free text response was included in the event that respondents wished to record additional WRWB experiences not already covered by the variables presented. The questionnaire was pre-tested with a number of library staff to ensure content and instructions were clear.

#### *Item Reduction Phase*

The second phase of IA was the Item Reduction Phase (IRP). The purpose of the IRP was to reduce the number of variables yielded in the earlier phase to those that were most prevalent and important to the well-being of most library workers.

All employees within the LIS were invited to complete, anonymously, the online questionnaire. Respondents were asked to indicate which of the items they had experienced during the past year. A score of '0' denoted that the respondent had not experienced the issue. For each item that was positively identified, they were asked to 'score' how important and bothersome it was to their overall well-being on a 5 point

scale (1=not at all important and 5 =extremely important). Results were expressed as 'frequency' (the proportion of people experiencing the issue) and 'importance' (the mean importance for each variable listed). The 'impact score' was the product of 'frequency' and 'importance'.

Items were ranked according to their impact score. The non-parametric test, Kendall's Tau ( Kendall, 1938), was used to compare item rankings between the main LIS roles to ascertain if the same set of items could be applied to all sub-groups. Probability values ( $p$ ) less than .05 indicated significant correlations in the rankings between roles.

Items were examined using Pearson's correlation coefficient ( $r$ ). Items that appeared to be measuring the same impairment, for example, fatigue and tiredness, and were highly correlated ( $r > .7$ ) were either combined or the item with the lowest impact score was discarded (Juniper et al., 1996). The remaining highest scoring variables were selected and categorized into domains based on methodological experience and dimensions documented in established instruments (Guyatt et al., 1986; Juniper et al., 1996). Where domain membership was ambiguous, correlations of items with items that clearly fell in particular domains were examined (Juniper et al., 1996). Internal reliability was assessed using Cronbach's alpha coefficient ( $\alpha$ ) (Cronbach, 1951). Internal reliability was considered adequate if  $\alpha$  exceeded .7 (Rick et al., 2001).

To help assess the well-being levels for the LIS workforce, response data were examined further. To do this, all '0' values recorded for confirmed items were replaced with a '1' value since the two values denoted the same general meaning ( where 0 = 'No, I did not experience this problem' and 1 = 'Yes, I did experience this problem but it was not at all important or bothersome'). Variable and domain importance scores would therefore range from 1-5 (where 1 = Did not experience/Not at all important or bothersome and 5 = Extremely important and bothersome).

Differences in importance scores between domains and between different roles and different lengths of service were investigated using a repeated measures analysis of variance (ANOVA) where the importance scores for the selected domains were the dependant variables. Residuals were tested for normality and the significance of pair-wise comparisons was examined using Fisher's Least Significant Difference (LSD) test to determine meaningful differences between group means in an ANOVA setting.

## Results

The LIS that participated in the study was the Hampshire County Council public service based in Southern England. This particular LIS managed 51 public libraries and two Discovery Centres; a recently developed concept to provide a wider variety of community-based services in addition to the traditional library service. The LIS also operated two prison libraries and 28 mobile facilities. As well as offering a wide selection of books, CDs and DVDs, some 570 computers with internet access were available to library visitors. Nearly 800 employees worked for the LIS. The majority of these were deployed in front-line services in libraries and mobile functions. The



remainder provided support in the shape of general support to library staff, outreach services, administration and management.

A comprehensive list of all possible WRWB issues was generated through a series of semi-structured interviews with 70 individuals from the participant LIS. A total of 56 discussions were held across six libraries across the county. The remainder were located at the service's head office. A wide range of roles and different size libraries were represented and the union representative was kept informed of progress. Participants included library assistants, officers, supervisors and service managers. Five mobile library drivers and van drivers also took part in the IGP. Additionally, discussions were held with the LIS head of service, the HR and training managers, the health and safety manager and the county council's head of occupational health. Discussion formats were a mix of focus groups and individual meetings. Choice of format depended on the LIS staff in question and what best accommodated their work commitments. Previous literature was reviewed for potential items. This included a search of peer-review journals and sector specific media. The county council's most recent staff satisfaction survey was also reviewed.

The item pool resulted in a total of 71 possible variables associated with WRWB in the LIS. Each of the 71 items was listed in the IRP questionnaire. The draft questionnaire was pre-tested with five LIS employees. In total, the questionnaire took approximately 10 minutes to complete. Email notices containing the URL that linked to the assessment site were issued to all LIS staff from the head of service. Details were placed on the LIS intranet home page and poster notices were displayed in library rest areas to remind people of the study and encourage response levels. Staff were given a period of three weeks to complete the assessment.

A total of 466 completed questionnaires were returned which represented a 58% response rate. A breakdown of responses by role is shown in Table 1 and was broadly representative of the LIS population.

Free text responses were also received from 139 respondents. A review of the free text responses yielded no new WRWB themes not already covered in the questionnaire. An examination of findings overall showed that frequency scores ranged from .37 to .93 (range 0-1); mean importance scores ranged from 1.43 to 3.58 (range 1-5) and impact scores (the product of frequency and importance) ranged from 0.53 to 3.32 (range 0-5).

**Table 1 Frequency Rates by Role for Library Staff**

Role	Count	Percent
Library Assistant	138	29.61
Senior Assistant or Information Officer	122	26.18
Library Supervisor or Assistant Supervisor	72	15.45
Other	61	13.09
Library or Group Manager	23	4.94
Library Officer	21	4.51
Service Development Officer	17	3.65
Mobile Driver	9	1.93
Van Driver	3	0.64

Table 2 shows frequency data for participants' length of service with LIS. The findings indicated that over two-thirds of the respondents ( $n = 302$ ) had been with the service for more than six years.

**Table 2 Frequency Rates for Length of Service**

Length of service	Count	Percent	Cumulative – Percent
Less than 1 yr	30	6.44	6.44
1 - 3 yrs	70	15.02	21.46
4 - 6 yrs	64	13.73	35.19
6 - 10 yrs	89	19.10	54.29
Over 10 yrs	213	45.71	100.00

A record of the highest 15 items ranked by impact score, prior to item reduction, are presented in Table 3. An examination of the items signified that respondents perceived that their WRWB was made up of a wide array of dimensions that ranged from issues to do with changes in the LIS through to thermal comfort, workload and views on management.

**Table 3 Top 15 Impact Scores Prior to Item Reduction**

Rank	Question	Frequency*	Mean.Imp±	ImpactΔ
1.	Feeling frustrated with the Library Service's management system?	.93	3.58	3.32
2.	Poor air-conditioning at work (either too hot or too cold)?	.90	3.40	3.06
3.	Believing that the public service offered by libraries is of a reduced quality?	.85	3.37	2.88
4.	Being uncertain about how your job may change in the future?	.88	3.11	2.73
5.	Worrying how changes in the Library Service may impact your job?	.88	3.01	2.65
6.	Being overwhelmed by the amount of organisational change within the Library Service?	.86	2.98	2.55
7.	Being unclear about the Library Service's future plans?	.84	2.88	2.41
8.	Feeling uncomfortable with how the Library Service is diversifying its public offering?	.83	2.84	2.36
9.	Believing that Library Management Team do not appreciate the challenges that you face?	.76	3.01	2.29
10.	Feeling frustrated because of your work?	.79	2.80	2.22
11.	Feeling overwhelmed by the volume of work?	.79	2.78	2.18

Rank	Question	Frequency*	Mean.Imp±	ImpactΔ
12.	Feeling stressed because of your work?	.79	2.76	2.18
13.	Having too many demands on your time to be effective in your job?	.79	2.78	2.18
14.	Not feeling appreciated by the wider Hants County Council senior team?	.73	2.95	2.17
15.	Thinking that your career prospects are limited?	.72	2.99	2.15
* = proportion of workers reporting item as bothersome ± = mean importance score in subjects who reported item as bothersome Δ = frequency x mean importance (maximum = 5)				

Impact scores for each variable were ranked by role and Kendall Tau ( $T$ ) correlations were examined. Assessments completed by those who identified their role as 'Other' ( $n = 61$ ) were eliminated from this analysis since their positions were unclear and could confound results. The rankings for each of the remaining eight roles ( $n = 405$ ) were significantly correlated ( $p < .05$ ) with each other aside from the relationship between van drivers and library and group managers ( $T = .10$ ). Given that only three van drivers completed the assessment and only a total of four van drivers worked for the LIS in total it was deemed appropriate to construct one questionnaire for all those working in the LIS.

Impact scores were examined closely. Typically, items with impact scores exceeding 1.00 were selected for inclusion in the final instrument. A threshold of 1.00 was selected as this signified a degree of impairment and, importantly, accommodated the need to develop a scale that would take future respondents less than seven minutes to complete (approximately 50 items).

A total of nine items were eliminated owing to impact scores of less than 1.00. A question relating to commuting ('Having a regularly difficult journey to and from work') was also deleted; with hindsight the employer reasoned that this was an issue it was unable to address and it therefore failed to fit with the stated criteria for WRWB attributes.

Examination of item-item correlations resulted in 19 further items being discarded ( $r > .7$ ). The final number of variables was therefore finalised at 42.

After careful and extensive consideration, the 42 items were divided into eight domains. Choice of sub-category was informed by earlier occupational and clinical well-being research. The largest domain was Organisational (ORG) ( $n=8$ ) and described issues associated with organisational change and the wider library and council bodies. The second largest domain was linked to training and development and was therefore labelled Advancement (ADV) ( $n=7$ ). The job domain (JOB) ( $n=5$ ) captured issues relating to specific aspects of library work while the Physical Health (PHY) ( $n=5$ ) and Psychological Health (PSY) ( $n=3$ ) sub-groups were linked to how work impacted on people's physical and mental health respectively. Issues with people's line manager and colleagues were grouped into the Interpersonal Relationships (REL) domain ( $n=5$ ) and perceived problems with workload were categorized into the Workload (WL) ( $n=5$ ).



domain. The Facilities (FAC) ( $n=4$ ) domain considered well-being issues associated with the provision of amenities such as air conditioning and rest areas.

The distribution of the importance score data across the eight domains was examined using probability plots and skewness and was found to be normal (Table 4).

**Table 4 Domain Data Distribution for Library Study**

	Mean importance score	Confidence - 95.00%	Confidence - 95.00%	Skewness
ADV	1.57	1.48	1.67	0.49
FAC	1.87	1.77	1.97	0.43
JOB	1.86	1.77	1.96	0.24
ORG	2.24	2.13	2.36	0.12
PHY	1.50	1.40	1.60	0.65
PSY	1.98	1.87	2.09	0.17
REL	1.27	1.17	1.37	0.82
WL	1.65	1.55	1.76	0.56

Internal reliability was calculated. Alpha ( $\alpha$ ) values for each sub scale ranged from .92 to .72. Table 5 provides  $\alpha$  values and an example item from each domain.

**Table 5 Library Domains - Internal Reliability and Sample Items**

Domain (number of items)	Cronbach's Alpha $\alpha$	Example item
ORG (8)	.92	Being overwhelmed by the amount of organisational change within the Library Service
ADV (7)	.85	Lacking the necessary skills to meet the changing needs of library users eg PC queries
REL (5)	.85	Not feeling supported by your immediate line manager
WL (5)	.84	Being unable to take time off in lieu, owed to you
PHY (5)	.81	Experiencing problems with your legs and feet because of your work
PSY (3)	.74	Feeling stressed because of your work
FAC (4)	.74	Having poor quality staff facilities eg kitchen, rest areas
JOB (5)	.72	Lacking flexibility over your working times and patterns

Data were revised so that all '0' values were altered to a value of '1'. Domain mean importance scores ( $M$ ) ranged from 1.67 to 2.45. Analyses indicated that, overall, the Organisational (ORG) elements of library work were perceived to impact people's well-being the most ( $M = 2.45$ ). People's relationships at work were viewed as least troublesome to their levels of well-being ( $M = 1.67$ ). The overall mean score for work-related well-being within the library service was 2.06. A list of the 10 highest scoring items is presented in Table 6.

**Table 6 Highest Scoring Items**

Rank	Items	Domain	Mean Importance Score*
1.	Feeling frustrated with the Library Service's management system?	JOB	3.39
2.	Poor air-conditioning at work (either too hot or too cold)?	FAC	3.16
3.	Worrying how changes in the Library Service may impact your job?	ORG	2.77
4.	Being overwhelmed by the amount of organisational change within the Library Service?	ORG	2.70
5.	Being unclear about the Library Service's future plans?	ORG	2.58
6.	Feeling uncomfortable with how the Library Service is diversifying its public offering?	ORG	2.53
7.	Believing that Library Management Team do not appreciate the challenges that you face?	ORG	2.53
8.	Not feeling appreciated by the wider Hants County Council senior team?	ORG	2.43
9.	Thinking that your career prospects are limited?	ADV	2.43
10.	Feeling frustrated because of your work?	PSY	2.43

\* range 1-5

A repeated measures ANOVA indicated that significant differences ( $p < .05$ ) in mean importance scores between domains and roles existed (Table 7). Interactions between domains and roles were also significant. Those that identified themselves as 'Other' ( $n = 61$ ) were omitted from analysis as their role was unclear. Mobile drivers ( $n = 9$ ) and van drivers ( $n = 3$ ) were also excluded owing to small sample sizes. Residuals were checked and did not deviate from normality.

**Table 7 Repeated Measures ANOVA for Library Roles and Domains**

Effects	SS	d.f.	MS	F	p
Role	100.94	5	20.19	5.37	0.00***
Error (within roles)	1455.93	387	3.76		
Domain	112.89	7	16.13	53.02	0.00***
Interaction between domains and roles	75.80	35	2.17	7.12	0.00***
Error (within individuals)	823.90	2709	0.30		

\*\*\* $p < .001$   
 SS = Sum of Squares      MS = Mean Square      p = probability  
 d.f. = degrees of freedom      F = F ratio

Table 8 compares the mean importance scores for each domain using Fisher's LSD Test and indicates the significant differences ( $p < .05$ ) between domains. The mean importance scores for each domain are provided in the column headers. Values in the body of Table 8 show  $p$  values for pair-wise comparisons of domains. The data confirmed that Organisational (ORG) issues had an importance score ( $M = 2.45$ ) significantly higher than all other domains showing that this element was perceived to have the most detrimental effect on well-being. By comparison, issues relating to relationships at work (REL) had significantly less effect ( $M = 1.67$ ) than all other aspects.

**Table 8 Fisher's LSD for Library Domains**

DOMAIN	Mean importance score value for each domain							
	1 - 1.91	2 - 1.67	3 - 2.45	4 - 1.96	5 - 1.87	6 - 2.22	7 - 2.17	8 - 2.17
1 ADV								
2 REL	.00***							
3 ORG	.00***	.00***						
4 WL	.19	.00***	.00***					
5 PHY	.27	.00***	.00***	.02*				
6 PSY	.00***	.00***	.00***	.00***	.00***			
7 JOB	.00***	.00***	.00***	.00***	.00***	.23		
8 FAC	.00***	.00***	.00***	.00***	.00***	.26	.94	

\* $p < .05$  \*\* $p < .01$  \*\*\* $p < .001$   
 $p$  = probability

Material differences between the six main library roles were investigated using Fisher's LSD test. Table 9 presents the results and shows that statistically significant differences between the six roles were limited; library assistants and library supervisors/assistant supervisors exhibited the most differences to other role categories. The mean importance scores for each role are reported in the column headers. Values in the body of Table 9 show  $p$  values for pair-wise comparisons of roles.

**Table 9 Comparison of Library Service Roles using Fisher's LSD Test**

Role	Mean importance score value for each role					
	1 - 1.90	2 - 2.38	3 - 2.03	4 - 2.35	5 - 2.04	6 - 2.25
1 Library Assistant						
2 Library Officer	.00**					
3 Library or Group Manager	.40	.09				
4 Library Supervisor or Assistant Supervisor	.00***	.85	.05*			
5 Senior Assistant or Information Officer	.12	.03*	.96	.00**		
6 Service Development Officer	.05*	.55	.31	.58	.23	

\* $p < .05$  \*\* $p < .01$  \*\*\* $p < .001$   
 $p$  = probability

Significant differences in mean importance scores between length of service categories were also examined. Using a repeated measures ANOVA, the findings indicated that people who had been with the service for less than one year ( $n = 30$ ; 6%) reported significantly better well-being ( $M = 1.34$ ) than all other colleagues. Staff who had served with LIS for over 10 years ( $n = 213$ ; 45%) indicated that their levels of well-being were significantly worse ( $M = 2.24$ ) than all other sub-groups apart from those who had 6-10 years of service. The findings are shown in Figure 1 with the mean importance scores for each sub-group indicated in the body of the graph.

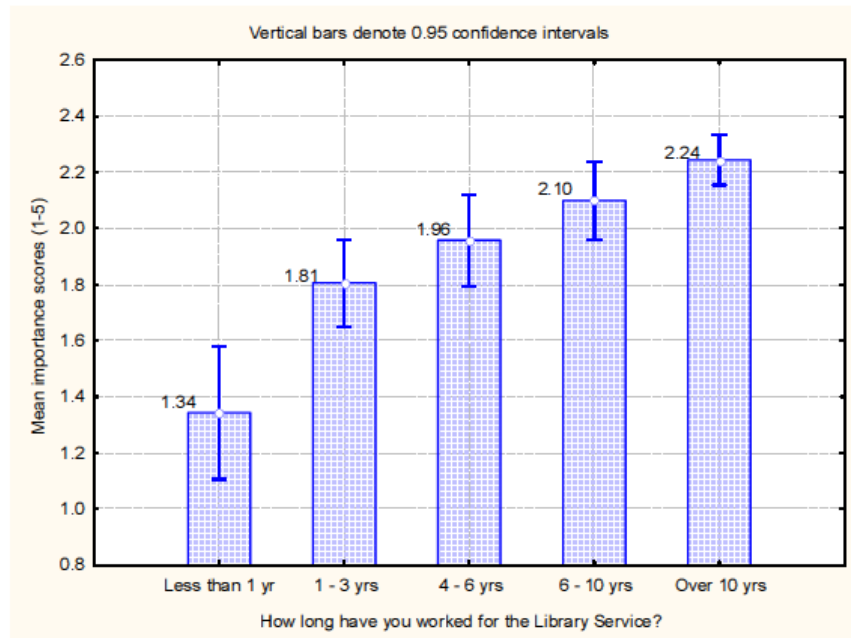


Figure 1 Well-Being Levels by Length of Service

## Discussion

A review of the findings suggests that the WRWB of library employees comprises a wide range of elements as represented by the eight domains identified. The internal reliability for the finalised scale is acceptable (Rick et al., 2001) and the free text comments failed to uncover new areas of WRWB thereby indicating that content validity is satisfactory.

The types of domain are akin to those found in HRQL instruments. For example, the study to develop the Quality of Life in Stage II Breast Cancer questionnaire (Levine et al., 1988) identifies seven areas of health-related well-being; the consequences of hair loss, emotional dysfunction, physical symptoms, trouble and inconvenience associated with treatment, fatigue, nausea and positive well-being. HRQL scales contain questions pertaining to symptoms associated with a medical condition as well as questions regarding the consequences of those symptoms. The same is true of the findings resulting from this present study; they cover particular aspects of the job (symptoms) such as 'Experiencing problems with your legs and feet because of your work' and outcomes (consequences) of certain job aspects such as 'Worrying how changes in the Library Service may impact your job'.

How do these findings compare with the library literature on health and wellness? Firstly, the theoretical basis for this study (IA), represents a different approach to those

used in earlier studies. The findings reported by Bunge (1987) are founded on contributions from library workers attending stress management workshops who were asked to name aspects of their work that were stressful. These statements were then grouped into categories and then ranked by the author according to frequency of mention ( Bunge, 1987). Schneider (1991), on the other hand, constructed a library-specific scale for the purposes of researching library stress. Schneider (1991) uses a selection of library stressors that are based on lengthy (1-2 hours) one-to-one interviews with some 32 library staff. No explanation on the final item selection process for the 58-item questionnaire is offered by the author ( Schneider, 1991). Participants are asked to respond to items using a 5-point Likert-scale ranging from 'strongly agree' to 'strongly disagree'. Data are factor analysed into five factors; job content, organisational climate, workload, relationships with colleagues and relationships with supervisors ( Schneider, 1991).

The IA approach adopted for this present study contrasts sharply with these earlier methods and addresses some of the research method concerns noted earlier (Fisher, 1990). It offers a systematic procedure to item selection which tests for frequency and severity and therefore helps to ensure that the finalised items are those that are perceived to be most important to the majority of library workers. Neither Bunge (1987) or Schneider (1991) adopt such a methodical process. Bunge (1987) is only able to associate rather blunt frequency readings to his list of stressors while Schneider (1991) appears to select questionnaire items arbitrarily and her use of agree/disagree response options do not permit the researcher to evaluate quantitatively the incidence or relevance of an event.

Notwithstanding the differences in research approach, themes arising from this present study overlap with the main empirical studies published. For example Bunge's (1987) list of stressors for public service librarians include problems with patrons, workload, feelings of inadequacy, lack of positive feedback, physical environment and scheduling which all share agreement with some of the domains established herein. Likewise, Schneider's (1991) stress-related factors all concur with the current findings as far as they go. However, neither study presents such an extensive range of issues indicated by the present research. For example, references to problems relating to organisational change, physical health and advancement opportunities are absent from Bunge's (1987) claims. Schneider (1991) neglects questions on organisational change, advancement prospects, physical health and the physical workplace in her 58-item scale. Variables relating to organisational change appear to be a material omission by both Bunge (1987) and Schneider (1991) given the mean importance scores recorded for this aspect of work (Table 6). This may be explained by the fact that large scale change within the library sector has increased significantly since Bunge (1987) and Schneider (1991) conducted their work and therefore supports the views of Tinsley and Heesacker (1983), who suggest that theoretical models in the field of employee experience can become outdated within 10 years because of changes in the workplace.

With the bulk of empirical studies in the library sector focussing on stress and burnout, more items relating to these areas might have been expected. In the event, none of the variables determined during the IGP or the free text responses collected in the IRP cited burnout. Interestingly, only one variable from the IGP referenced stress directly which generated an impact score of 2.18 and ranked 12<sup>th</sup> overall (Table 3).

With an overall score of 2.06, the findings show that, overall, public library workers deem that their well-being is slightly impacted by the work that they do. For library officers (Table 9) and those who have been with the service for a long time (Figure 1), the situation appears worse although mean score values remain below a value of three and therefore seem to suggest that, for these workers, levels of well-being are not impaired to a dramatically high degree.

This study also supports the views of Black (2008) regarding the importance of the work itself when evaluating employee health and well-being. These findings show a great many of the well-being issues identified by library employees are of an organisational nature rather than a medical one. Although a direct link between the drivers of well-being and absence cannot be drawn from the current findings, it is possible that there exists a correlation between attendance and some of the variables and domains identified. If this is the case, then the types of wellness programmes referred to earlier ( Buck Consultants, 2009) appear extraneous to the well-being concerns of those working in a public library environment. It is difficult to see how discounted membership to a gym could benefit the well-being of people who have served in the LIS for over 10 years and are worried about their job security. Instead, a concerted effort by the senior management to address some of the high-scoring domains (Table 5) or items (Table 6) may reap most reward both in terms of improving the WRWB of employees, optimising productivity and reducing sickness absence.

Future work will seek to confirm the construct validity and test-retest properties of the finalised scale. Potential relationships between the confirmed library domains and performance indicators such as attendance will also be examined.

A limitation of this study may be the ability to generalise the findings to other library operations. The results are based on the recorded perceptions of employees within one public library service. A re-organisation had taken place six months prior to the study which had involved a large-scale redundancy programme. Additionally, a new, integrated library management system, which automated many traditional library functions, had been recently introduced. Factors such as these may have influenced the data unduly.

### **Conclusion**

In summary, these findings present an up to date and more comprehensive range of elements associated with health and wellness in library work than has been documented to date. They add an extra dimension to current literature by establishing the prevalence and magnitude of aspects of library work that may be associated with



performance and attendance indicators. Additionally, these results put into perspective earlier claims on stress and burnout and appear to suggest that these conditions are not as widespread as some authors have suggested previously. The results also offer a response to the main criticisms of earlier studies; the study is a sizeable, evidence-based study of people working in UK public libraries which establishes and ranks variables using a methodical, quantitative approach. It is hoped that these initial findings will provide the basis for more research into the general health and performance of library personnel that will benefit both the employers and the workers themselves.

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