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# Identifying Hidden Consumer Needs: A Systematic Literature Review

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## ABSTRACT

A key aspect of innovation is the development of new products (*innovative product development*). Successful innovative product development generates increased revenue and profit for the innovating company. In order to capitalise on these benefits companies must develop ideas and opportunities for new products. Successful new products are those which meet the needs of consumers and the identification of consumer needs therefore gives rise to opportunities for innovative product development. However, the research methods traditionally employed in consumer needs investigations are ineffective in identifying the more subtle and deeply rooted requirements of the consumer. This results in a series of *hidden consumer needs*, the identification of which could highlight previously unrecognised opportunities for innovative product development. Within the literature there exists a lack of clarity surrounding the most effective research methods for identifying hidden consumer needs at the idea generation stage of innovative product development and further research is therefore needed to address this gap in knowledge. The aim of this systematic literature review was to investigate the previous studies of hidden consumer needs in order to generate recommendations for the design of future research initiatives which seek to address this lack of clarity. The literature describing the previous studies of interest was systematically located and reviewed, and conclusions were drawn regarding the most frequently and successfully applied research methods. The concept of a *research orientation* was subsequently developed, which refers to the underlying process of hidden consumer needs identification. The findings from the review give rise to three high level recommendations for future research into the identification of hidden consumer needs at the idea generation stage of innovative product development, which seek to build on the insights arising from this systematic review in respect of the most frequently and successfully applied research methods and the underlying research orientations.

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# CHAPTER 1: INTRODUCTION

## 1.1 INTRODUCTION

In Chapter 1 the background to this systematic literature review is described and the primary area of focus is defined. The aims of the review are subsequently identified. Chapter 1 is structured as follows:

- Section 1.2 provides a background to this systematic review and defines the key area of focus.
- Section 1.3 describes the systematic review aims.
- Section 1.4 provides an overview of the structure of this paper.

## 1.2 BACKGROUND

A key aspect of innovation is the development and launch to market of new products and services (*innovative product development*). Companies in which innovative product development is successful may subsequently benefit from increased revenue (Cooper and Edgett, 2008), growth (Griffin et al., 2009) and profit (Veryzer Jr., 1998) as new products are adopted for use within the market. However, companies operating in mature markets in which innovative product development is infrequent or unsuccessful may experience a reduction in profitability, as competing products become indistinguishable over time in terms of features and specifications. The subsequent reliance on price-based product differentiation for maintaining market share creates a downward pressure on retail prices, squeezing profit margins. In order to address this detrimental situation companies must develop new ideas for innovative product development.

Successful new products and services are those which meet a specific consumer need (Griffin et al., 2009; Leonard and Rayport, 1997). Therefore knowledge and understanding of the needs of target consumers is required to stimulate the generation of ideas innovative product development. The traditional market research

methods of surveys and focus groups are commonly employed in investigations of consumer needs, which aim to generate insights for innovation projects (Goffin and Mitchell, 2005). However, these research techniques are believed to be ineffective in the identification of more deeply rooted, subtle and subconscious needs, which may be unrecognised by the consumer or difficult to articulate (Deszca et al., 1999). Consequently a series of *hidden consumer needs* exists, which remain unidentified by traditional market research methods (Goffin and Mitchell, 2005; Goffin and Lemke, 2004).

The identification hidden consumer needs at the idea generation stage of product design has the potential to stimulate the discovery of new opportunities for innovative product development (Leonard and Rayport, 1997; Deszca et al., 1999), thereby driving increased and more successful innovation and providing companies with some protection against the detrimental dynamics and resulting loss of profits described above. However, there exists within the literature a lack of clarity surrounding the most appropriate and effective research techniques for identifying hidden consumer needs. It is this specific gap within the existing literature on which this systematic literature review is focussed.

### **1.3 SYSTEMATIC REVIEW AIMS**

By carrying out this systematic literature review the goal was to develop a full understanding of the extant knowledge within the literature regarding the research methods which have been successfully applied to the task of identifying hidden consumer needs. This understanding will subsequently guide the development of future research activities, which aim to address the gap in knowledge identified in Section 1.2 by developing robust knowledge of the most effective research methods for identifying hidden consumer needs at the idea generation stage of innovative product development.

Specifically, the systematic review aimed to determine the research methods which it is claimed have been successfully applied to the identification of hidden consumer needs at the idea generation stage of innovative product development, the strength of the evidence underpinning these claims and the conclusions drawn within the literature regarding the characteristics of the research methods which enabled the elicitation of hidden consumer needs. In addition, the review aimed to identify research methods which have been successfully applied to the identification of hidden consumer needs in wider marketing contexts and again examine the evidence for these claims and the key characteristics of the methods. The development of these findings from the literature will guide future research design activities by highlighting the research methods most appropriate for future examination.

#### **1.4 SYSTEMATIC REVIEW STRUCTURE**

The review is structured as follows:

Chapter 2 defines the domains of literature which inform this area of interest and identifies their key contributions to the specific area of enquiry. Two systematic review questions (SRQ's) are subsequently developed from the literature.

Chapter 3 describes the systematic review methodology and details the processes by which publications of relevance were identified, reviewed and selected for inclusion within the review.

Chapters 4 and 5 detail the findings from the systematic review of the literature.

Chapter 6 provides a discussion of the findings from the systematic review and their implications in respect of the goals of this study.

Chapter 7 provides a summary of the insight resulting from this systematic literature, discusses the limitations of this study and identifies the key personal leanings which have resulted.

## CHAPTER 2: POSITIONING THE FIELD OF ENQUIRY

### 2.1 INTRODUCTION

In Chapter 2 the domains of literature which inform the area of research interest described in Chapter 1 are defined and an overview of their key contributions to knowledge is provided. The conclusions arising from these domains of specific relevance to this systematic review are highlighted and the systematic review questions (SRQs) on which this paper is focussed are subsequently developed. Chapter 2 is structured as follows:

- Section 2.2 defines the key domains of literature, identifies their respective contributions to knowledge and describes the conclusions of relevance to this systematic review.
- In Section 2.3 the SRQs are developed from the conclusions arising from the review of the key literature domains.

### 2.2 KEY LITERATURE DOMAINS

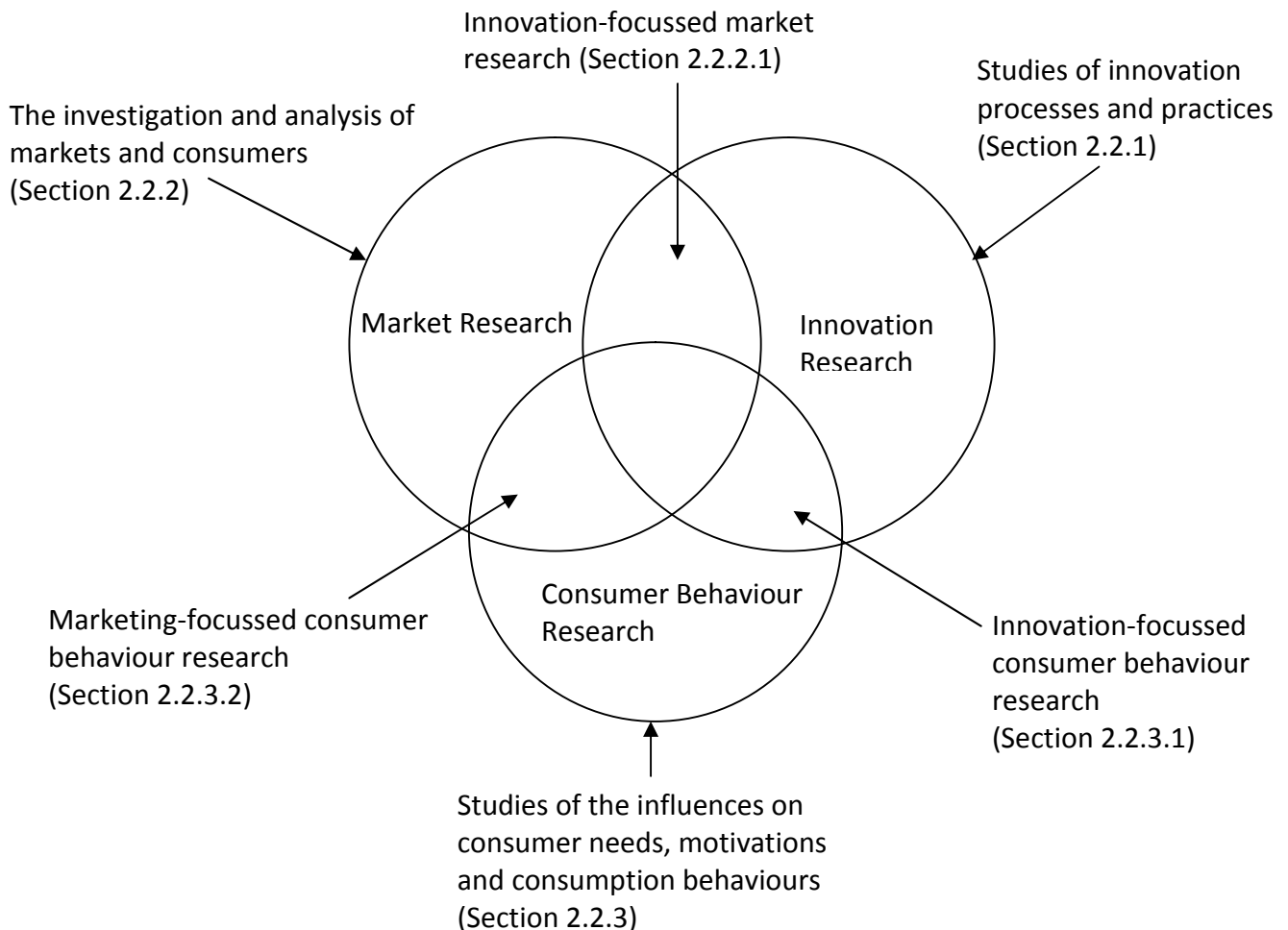
Three distinct domains of literature inform the area of research interest outlined in Chapter 1. These are as follows:

1. The *Innovation Research* domain, detailing studies of innovation processes and practices which aim to develop knowledge and recommendations for practice in order to enhance innovation effectiveness.
2. The *Market Research* domain, describing the investigation and analysis of markets and consumer needs.

3. The *Consumer Behaviour Research* domain, reporting studies of psychological and sociocultural influences on consumer needs, motivations and consumption behaviours.

Figure 1 illustrates these three domains and describes the primary areas of interest within each domain and area of overlap. Figure 1 also highlights the section within this paper in which the literature is discussed in further detail.

**Figure 1: Key Literature Domains & Primary Areas of Interest**



The discussion in Sections 2.2.1 to 2.2.3 describes each of these domains and areas of overlap and defines the contributions from each to the area of research interest.

### **2.2.1 Innovation Research Literature**

The innovation research domain presents a massive volume of literature<sup>1</sup>. Studies within the innovation research literature domain can be classified into three predominant levels of analysis: the *macro level*, the *company level* and the *project level* (Goffin and Mitchell, 2005; Goffin and Pfeiffer, 1999). Macro level studies are concerned with the impact of innovation on economies and industries and its associated measurement. Company level research investigates the processes of innovation management, and seeks to define innovation best practice. Project level studies focus specifically on the management of new product development projects with the aim of enhancing the success and reducing the timescales associated with deliveries (Goffin and Mitchell, 2005; Goffin and Pfeiffer, 1999). As a result of its focus on individual project success this systematic review relates more closely to the project level literature, and consequently the macro and company-level literature will not be discussed in further detail within this summary.

Project level studies examine the management of *new product development* (NPD) projects, with the overall aim of achieving faster and more successful NPD (Goffin and Pfeiffer, 1999). The literature identifies a number of requirements for achieving these goals, such as efficient NPD project management activities (e.g. Cooper and Kleinschmidt, 1993), improved management of the *fuzzy front end*<sup>2</sup> of the innovation process (Khurana and Rosenthal, 1998; Khurana and Rosenthal, 1997; Reinertsen, 1999), and the use of innovation techniques which link product design to the specific needs of the target market, thereby increasing product appeal. Techniques of this nature include ‘voice of the customer’ projects (e.g. Griffin and Hauser, 1993; Paryani et al., 2010) and outcome driven innovation approaches (e.g. Ulwick, 2002; Bettencourt and Ulwick, 2008). This body of research provides evidence of the benefits of identifying and incorporating consumer needs in the process of innovative

<sup>1</sup> A search for “innovation” on EBSCO generates 46,670 scholarly articles, dated from 1888 to 2010.

<sup>2</sup> The term “fuzzy front end” refers to the initial stages of product development in which the initial product concept is developed

product development, and thus the initial conclusion arising from the review of the innovation literature is that the identification of consumer needs is required for successful innovation.

However, while the project-level literature highlights the benefits of incorporating the needs of the target customer into the innovative product development process there is little conclusive evidence regarding the most appropriate techniques for identifying consumer needs. Griffin and Hauser (1993) describe the use of interviews and focus groups, whereas Paryani et al (2010) employed quantitative survey measures in their research. Ulwick (2002) describes the process of outcome driven interviewing whereas Bettencourt and Ulwick (2007) detail a customer centred mapping process as appropriate for this task. Additionally Deszca et al (1999) however, note that “traditional market research and development approaches (have) proved to be particularly ill-suited to breakthrough products” (Deszca et al., 1999, p. 613) and suggest that alternative emerging methods such as lead user analysis, empathic design and customer immersion may be more effective. The second conclusion from the review of innovation literature therefore relates to the lack of clarity surrounding the most appropriate research methods for inclusion in the idea generation stages of innovative product development.

The conclusions from the innovation literature of relevance to this systematic review are as follows:

- An understanding of the needs of target consumers is required for successful innovative product development.
- However, there exists a lack of clarity within the innovation research literature surrounding the most effective research methods for identifying target consumer needs.



## **2.2.2 Market Research Literature**

The market research literature domain presents a huge volume of literature<sup>3</sup>. Two high level categories exist within this domain with studies being classified as either *quantitative* or *qualitative* on the basis of the research methods employed. Quantitative studies represent the majority of those published in the most highly regarded academic journals. For example, in 2009 the *Journal of Marketing Research* (a four-star journal) published 72 reports of academic studies, of which only 2 incorporated qualitative methods. Qualitative studies are carried out in significant numbers, but are customarily published in journals of a lower quality, such as the *International Journal of Market Research* (a two-star journal) and *Qualitative Market Research* (no current star rating).

Of specific relevance to this systematic review is the area of overlap between the innovation and market research literature domains, illustrated in Figure 1. This sub-domain of literature describes a body of *innovation-focussed market research*, in which consumer needs are investigated in order to generate insights in support of innovative product development activities. Section 2.2.2.1 discusses this sub-domain of literature and highlights the conclusions of relevance to this systematic review.

### **2.2.2.1 Innovation-Focussed Market Research**

Innovation-focussed market research includes both quantitative and qualitative studies, and therefore reflects the same two broad classifications as the wider literature domain. Examples of quantitative studies include Wind et al's (1989) use of conjoint analysis in the development of a new design of hotel. Qualitative examples include Durgee's (1987) illustration of the use of focus groups in generating new product ideas from customers, and Rosenthal and Capper's (2006) case studies of ethnographic market research.

As noted in Section 2.2.1 one of the drivers of successful innovation is a clear understanding of customer needs, which can be linked to product design specifications

<sup>3</sup> A search for the phrase "market research" within the EBSCO database generates 22,036 scholarly articles, dated from 1926 to 2010.

as evidenced by the ‘voice of the customer’ (Griffin and Hauser, 1993) and outcome driven innovation initiatives (Ulwick, 2002). There is therefore a need for market research methods which are effective in identifying customer needs with the potential to drive innovative product design. However, like the innovation literature, the innovation-focussed marketing research literature presents varying and inconclusive views regarding the most effective method for this purpose, particularly where the goal is innovation of a radical or discontinuous nature.

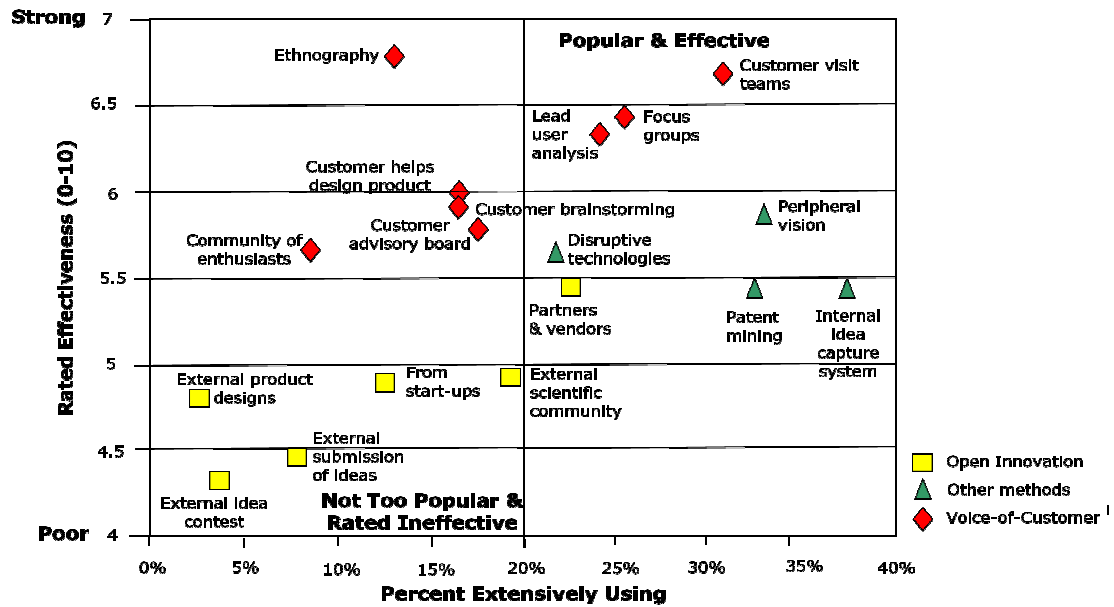
This lack of a clear consensus regarding the most appropriate research methods is illustrated in a study by Cooper and Edgett (2008), who note that “surprisingly little research has been done evaluating the burgeoning number of techniques used in the front end, particularly the ‘ideation’ portion” (Cooper and Edgett, 2008, p. 3). They subsequently describe a survey of 160 firms, which assessed the popularity and perceived effectiveness of 18 different idea generation techniques in order to determine their comparative value. The methods reviewed within Cooper and Edgett’s (2008) study are illustrated in Table 1 below, and include techniques designed to capture the voice of the customer (as described in Section 2.2).

**Table 1: Market Research Techniques studied by Cooper and Edgett**

<b>Voice of the Customer Techniques</b>	<b>Open Innovation Techniques (see e.g. Chesbrough, 2003)</b>	<b>Other Techniques</b>
Ethnographic research	Partners and Vendors	Peripheral vision
Customer visit teams	Soliciting the external scientific/technical community	Disruptive technologies
Customer focus groups for problem detection	Scanning small business and business start ups	Patent Mapping
Lead user analysis	Invite external finished product designs	Idea capture internally
Customer or user designs	External submission of ideas	
Customer brainstorming	External idea contest	
Customer advisory board or panel		
Community of enthusiasts		

The *magic ideation quadrant diagram* (Cooper and Edgett, 2008) was subsequently developed, and is illustrated in Figure 2

**Figure 2: The Magic Ideation Quadrant Diagram**



The sources within the upper right hand quadrant of the magic ideation diagram contain those methods with the greatest popularity and perceived effectiveness, and as such are recommended for use by the authors. Those within the top left hand quadrant are also “definitely recommended” (Cooper and Edgett, 2008, p. 8) and those in the lower half of the diagram, despite lower perceptions of effectiveness “should not be ruled out” (Cooper and Edgett, 2008, p. 8). The authors effectively support the use of all the methods within the magic ideation quadrant and this study subsequently fails to make any robust recommendations for practice, or draw any firm conclusions regarding the most effective methods for use in the idea generation stage of innovative product development. This study therefore provides evidence of a lack of knowledge regarding the most effective methods for capturing customer needs. The first conclusion drawn from the innovation-focussed market research literature is that a lack of clarity exists within the domain regarding the most effective market research methods for accessing consumer needs in support of idea generation for innovative product development.

Other studies within the innovation-focussed market research literature have employed market research techniques in the identification consumer needs which are specifically hidden in nature, in support of front-end innovation processes. For example, Rosenthal and Capper (2006) describe the use of ethnographic market research in identifying the “subtle, often tacit needs of customers” (Rosenthal and Capper, 2006, p. 216) and Matting et al (2004) report the successful identification of latent needs, which they define as “what customers really value or the products and services they need, but have never experienced or would never think to request” (Matting et al., 2004, p. 479), via the use of customer involvement methods. In each of these studies it is claimed that the market research method applied was effective in accessing hidden consumer needs, however, these claims are limited when critically evaluated. In addition, no direct comparison of methods is carried out within these articles. As a consequence any conclusions regarding a particular technique being ‘more effective’ are largely unfounded. The second conclusion resulting from a review of the market research literature therefore, is that in addition to a general lack of a consensus regarding the most appropriate research methods for idea generation, a further and specific lack of clarity exists regarding the most effective market research methods for use in identifying hidden consumer needs at the idea generation stage of innovative product development.

The conclusions from the innovation-focussed market research literature of relevance to this systematic review are as follows:

- There is a lack of knowledge within the innovation-focussed market research literature regarding the most appropriate research methods for use in identifying consumer needs at the idea generation stage of innovative product development.
- In addition, studies which seek to focus specifically on the identification of hidden consumer needs lack clarity in terms of the research methods most appropriate for achieving this goal.

### 2.2.3 CONSUMER BEHAVIOUR RESEARCH LITERATURE

Like the innovation and market research domains described in Section 2.2.1 and 2.2.2 the consumer behaviour research domain of literature includes a very large volume of texts<sup>4</sup>. It is split into two broad categories, based on the perspective of consumer behaviour adopted within the research. The *behaviourist* perspective assumes that behaviours are the direct response of a consumer to an external stimulus (Jenkins, 2002). The *cognitivist* perspective however, posits that individuals engage in an intervening period of information processing when stimulated (Jenkins, 2002; Baker, 2002) during which they “make sense” (Jenkins, 2002, p. 182) of the information received. This processing and interpretation procedure is guided by the person’s underlying interests, values and knowledge of past experiences (Baker, 2002; Gutman, 1982), and results in the formation of attitudes or actions on the basis of these internal influences (Jenkins, 2002). The role of the researcher within cognitivist consumer behaviour research is to uncover and interpret the information processing mechanisms in order to understand how attitudes and behaviours are produced (Baker, 2002). These cognitive processing mechanisms are carried out at a subconscious level (Baker, 2002). Consequently consumers are often unaware of or unable to describe the specific processes in a given situation and the phenomena of interest within cognitivist studies are therefore similar in nature to hidden consumer needs. Consequently, due to its focus on a phenomenon which is similar to that on which this systematic review is focussed, it is the cognitivist approach to consumer behaviour research which is of greatest relevance.

Within the cognitivist studies of consumer behaviour there are two literature sub-domains of specific relevance: the *innovation-focussed consumer behaviour research* and the *marketing-focussed consumer behaviour research*. These sub-domains represent the overlap of consumer behaviour research domain with the innovation and market research domains respectively, as illustrated in Figure 1. Sections 2.2.3.1 and 2.2.3.2 describe these sub-domains in more detail and draw conclusions of relevance to this systematic review.

<sup>4</sup> A search for the phrase “consumer behaviour” within the EBSCO database generates 19,878 scholarly articles, from 1923 to 2010.

### **2.2.3.1 Innovation-Focussed Consumer Behaviour Research**

Innovation-focussed consumer behaviour research involves the study of consumers and their behaviours with the specific aim of generating insights in support of innovative product development. A small sub-domain of literature, previous studies include Sondergaard's (2005) and Squires' (2002) investigations into the purchase behaviours of mothers in respect of children's food, and Sondergaard and Harmsen's (2007) study of consumer's chewing gum preferences. These studies sought to understand the subconscious drivers for product choice and utilise this information to guide product development activities. The subconscious drivers identified within these studies are similar in nature to the hidden consumer needs which are the focus of this systematic review, as consumers are effectively compelled by the need to adhere to these underlying forces through their consumption behaviours. Consequently these studies are of relevance to this systematic review and complement those within the innovation-focussed market research domain by describing an alternative approach to accessing hidden consumer needs in support of innovative product development. The research methods employed within these studies could therefore represent an effective means of identifying hidden consumer needs. However, due to the limited volume of studies within the innovation-focussed consumer behaviour sub-domain there is no conclusive evidence to date that this is the case. The conclusion from this literature sub-domain is therefore as follows:

- The innovation-focussed consumer behaviour research could give rise to research methods of potential use in the identification of hidden consumer needs at the idea generation stage of innovative product development.

### **2.2.3.2 Marketing-Focussed Consumer Behaviour Research**

The sub-domain of marketing-focussed consumer behaviour research literature consists of investigations into the subconscious influences on the product consumption choices made by consumers, with the aim of developing insights of use in marketing strategy development. Examples include Arnould and Wallendorf's (1994) study of

consumers during Thanksgiving, in which the culturally-oriented influences on behaviours were identified and marketing implications were developed. Similarly, Gutman's (1984) investigation into the hidden motivations for beverage choice resulted in recommendations for advertising strategy and Kozinet's (2002) study of coffee drinkers generated knowledge of an underlying subculture and subsequent recommendations for marketing communications.

Due to the focus of these marketing-focussed consumer behaviour studies on the subconscious drivers for consumption, the research within this sub-domain is of relevance to this systematic review. Specifically, the phenomenon of interest is of a similar nature to the hidden needs upon which this review is focussed, as consumers are compelled by a need to adhere to the various subconscious influences through their choices of products to consume. Although these studies do not seek to derive knowledge of specific relevance to innovative product development, due to the similar nature of the insights they seek, the methods employed could prove to be effective when applied to the investigation of hidden consumer needs at the idea generation stage of innovative product development. The conclusion from this literature sub-domain is therefore as follows:

- The examination of consumer behaviour studies in which the subconscious drivers for consumption are investigated could give rise to research methods of potential use in idea generation for innovative product development.

### **2.3 SUMMARY OF CONCLUSIONS FROM LITERATURE AND DEVELOPMENT OF SYSTEMATIC REVIEW QUESTIONS**

As described in Chapter 1, the area of interest within this systematic review is the current gap in knowledge regarding the most effective means of identifying hidden consumer needs at the idea generation stage of innovative product development. The discussion in Section 2.2 defined the key domains of literature which inform this area

of interest and detailed the key contributions and conclusions from each domain. Two systematic review questions (SRQs) were subsequently derived from these conclusions, which were designed to generate knowledge from the literature and support the development of future research which addresses the existing gap in understanding identified in Chapter 1. Table 2 details the SRQs and the conclusions from the literature from which they were derived. Section 2.3.1 defines the key terms within the SRQs and the discussion in Section 2.3.2 provides a rationale for each SRQ.



**Table 2: Conclusion from the Literature and Systematic Review Questions (SRQs)**

Literature Domain	Conclusion	Resulting SRQs
Innovation Research	An understanding of the needs of target consumers is required for successful innovative product development. However, there exists a lack of clarity within the innovation research literature surrounding the most effective research methods for identifying target consumer needs.	<p><b>SRQ 1:</b> What research methods have been successfully applied to the identification of hidden consumer needs during the idea generation stage of innovative product development?</p>
Innovation-Focused Market Research	There is a lack of knowledge within the innovation-focussed market research literature regarding the most appropriate research methods for use in identifying consumer needs at the idea generation stage of innovative product development. Studies which seek to focus specifically on the identification of hidden consumer needs lack clarity in terms of the research methods most appropriate for achieving this goal.	
Innovation-Focussed Consumer Behaviour Research	The innovation-focussed consumer behaviour research could give rise to research methods of potential use in the identification of hidden consumer needs at the idea generation stage of innovative product development.	
Marketing-Focussed Consumer Behaviour Research	The examination of consumer behaviour studies in which the subconscious drivers for consumption are investigated could give rise to research methods of potential use in idea generation for innovative product development.	<p><b>SRQ 2:</b> Within the consumer behaviour literature what research methods have been successfully applied to the identification of hidden consumer needs which drive product consumption choices?</p>

### 2.3.1 Definition of Key Terms

The key terms within the SRQs are defined as follows:

- **Hidden Consumer Needs**

Within the context of this study the terms *hidden consumer needs* and *hidden needs* refer to an individual's needs or drivers for consumption, where those needs are subtle, subconscious or unconscious.

- **Innovative Product Development**

The term *innovative product development* refers to the process of developing and launching new products to market, where the products represent novel solutions to an existing or newly identified need. Also described as *breakthrough* or *discontinuous innovations*, these products can be distinguished from *incremental* developments, such as new colours, sizes or variations of an existing product where the overall functionality remains unchanged. In addition, products designed to replicate an existing customer offering are not deemed to represent innovation or innovative product design for the purpose of this review.

### 2.3.2 Rationale for SRQs

SRQ 1 will investigate all the relevant domains of literature and will locate the previous studies in which hidden consumer needs (or equivalent phenomena within the innovation-focussed consumer behaviour literature) were successfully identified. With a focus on research which seeks to generate insights for application at the idea generation stage of innovative product development, SRQ 1 directly reflects the area of interest within this systematic review. The aim of this SRQ is to derive all the knowledge within the literature regarding the research methods used within this context, in order to support the development of future research which addresses the existing gap in the literature.

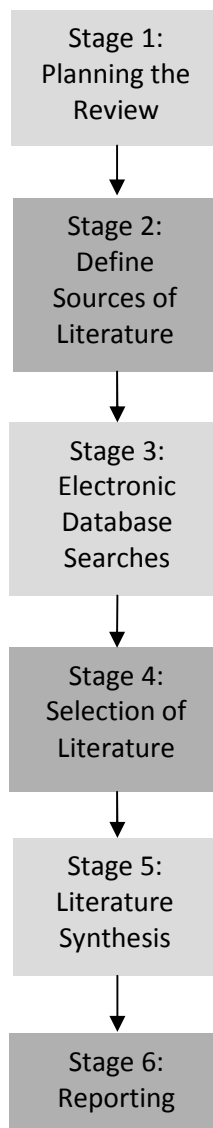
SRQ 2 focuses on the marketing-focussed consumer behaviour research and will identify all the studies in which the subconscious drivers for product consumption choices have been successfully identified. Due to the similar nature of these subconscious drivers and hidden consumer needs the resulting knowledge will be used in conjunction with that arising from SRQ 1 in the development of future research activities.

## CHAPTER 3: SYSTEMATIC REVIEW METHODOLOGY

### 3.1 INTRODUCTION

As described in Chapter 2, the SRQs developed from the review of key literature domains were designed to identify all the previous studies of relevance to this review. Chapter 3 provides a detailed description of the processes by which the literature detailing these studies was systematically identified and reviewed. The systematic review process adopted within this study is illustrated in Figure 3 and consisted of 6 key stages.

**Figure 3: Systematic Literature Review Process**



The process in Figure 3 is adapted from the three-stage systematic review process defined by Tranfield et al. (2003) and was designed to ensure that the literature search was comprehensive and unbiased, thereby enabling the identification and review of all the relevant literature. Stages 1 and 6 in Figure 3 mirror stages 1 (“Planning the Review”) and 3 (“Reporting and Dissemination”) within the Tranfield et al. (2003) process respectively. Stages 2 to 5 in Figure 3 reflect an expansion of stage 2 (“Conducting a Review”) within the Tranfield et al. model (Tranfield et al., 2003, p. 214). The detailed description of Stages 2 to 5 within Figure 3 aims to ensure that the methodology undertaken within this review is both transparent and replicable

Chapter 3 describes each of these stages illustrated in Figure 3 and is structured as follows:

- Section 3.2 describes the planning stage of this systematic review.
- Section 3.3 details the sources of literature used to locate items of relevance.
- Section 3.4 describes the electronic database search processes.
- Section 3.5 defines the processes involved in the appraisal and selection of literature for inclusion within this systematic review.
- Section 3.6 discusses the process by which the resulting literature was synthesised.
- Section 3.7 describes the reporting stage of systematic review process.
- Section 3.8 illustrates the overall methodology and highlights the outcomes of the literature search and select processes.

### **3.2 PLANNING THE SYSTEMATIC REVIEW**

The initial planning stage of the systematic review process involved the formation of a panel of advisors, which was comprised of academics and practitioners with expert knowledge of relevant theory and systematic review methodology. The panel members subsequently supported the development of this review by providing advice in relation to the formulation of the SRQs described in Chapter 2 and the development of the subsequent stages of the review, illustrated in Figure 3 and detailed within this

Chapter. Table 3 shows the members of the systematic review advisory panel and their respective roles. The subsequent discussion describes their contributions to this systematic review.

**Table 3: Systematic Review Advisory Panel**

<b>Person</b>	<b>Role and Organisation</b>
Professor Keith Goffin	PhD Supervisor, Cranfield School of Management.
Dr. Marek Szwejczkowski	PhD Supervisor, Cranfield School of Management.
Professor Simon Knox	PhD Panel Member, Cranfield School of Management
Dr. Emma MacDonald	Senior Research Fellow (Marketing), Cranfield School of Management.
Dr. Stephanie Hussels	Systematic Review Expert, Cranfield School of Management
Heather Woodfield	Information Specialist, Cranfield University Library
Chris Leach	Fellow PhD Student and Strategic Management Consultant with The Partnering Group.

Professor Keith Goffin and Dr. Marek Szwejczkowski are jointly supervising my PhD studies and were consulted at regular intervals throughout the systematic review process. Their contribution consisted of the initial approval of the SRQs and the provision of advice in respect of literature sources. Both Professor Goffin and Dr. Szwejczkowski also assisted in the subsequent production of this report in terms of both structure and content.

Professor Simon Knox is a member of my PhD review panel and was consulted at the start of the systematic review process. Professor Knox provided input into the development of my SRQs, providing specific advice in respect of the consumer behaviour domain and the most appropriate way to ensure that the contribution of this domain to the field of interest was captured.

Dr. Emma MacDonald was consulted during the initial stages of this project and supported the development of the search strategies via the recommendation of key words and phrases, specifically in relation to SRQ 2.

Dr. Stephanie Hussels is an expert in systematic review methodology and was consulted during the initial stages of the systematic review process. Dr. Hussels reviewed my proposed methodology, provided comment and suggested improvements.

Heather Woodfield was also consulted during the early stages of this project. Heather is an information specialist and provided advice in respect of the most appropriate electronic databases for my area of research. In addition she supported the development of the key words and search strings for use in electronic databases searches, ensuring that they reflected the various idiosyncrasies of the individual database search engines and identified the maximum number of literature items.

Chris Leach is a current part time PhD student within the field of Marketing at the Cranfield School of Management and a fellow member of my cohort. Chris also works as a Strategic Management Consultant within the grocery sector and has expert knowledge of blue chip corporations' market research and innovation practices. Consequently, he is in a position to suggest consultancy and corporate publications of interest. Chris was consulted during the early stages of the systematic review and recommended some potential sources of relevant literature.

Having consulted the panel the next stage of the systematic review process involved the definition of the sources through which the literature of relevance to the SRQs would be located. These sources are described in Section 3.3.

### **3.3 SOURCES OF LITERATURE**

The literature of relevance to the SRQs was located via four key sources, which are as follows:

1. Electronic Databases
2. Key Author Websites
3. The Processes of Literature 'Snowballing'
4. Advisory Panel Recommendations

The following discussion describes each of these sources in turn. Section 3.3.5 then details the types of literature arising from these sources and the rationale for their inclusion in the review process.

#### **3.3.1 Electronic Databases**

A range of electronic databases was used in order to locate literature for the purpose of this review. The flexibility of the search functionality provided by databases varies and consequently some served as primary sources of information, where highly structured and detailed searches were possible. Those databases with more basic search capabilities and a resulting limited scope for searching served as supplementary sources of literature. Table 4 lists the databases utilised and describes the rationale for their inclusion, the specific purpose for which they were employed and the SRQs to which they were applied.



**Table 4: Electronic Databases used within the Systematic Review**

<b>Database</b>	<b>Rationale for Inclusion</b>	<b>Purpose of Usage</b>	<b>SRQ</b>
ABI Inform (ProQuest)	ABI Inform is a valuable source of literature as it enables access to a huge volume of journal articles dated from 1970 to present, covering all aspects of management research.	Due to its flexible search functionality this database was used as a primary source of literature, in order to identify as many items as possible through the use of structured search strings, as described in Section 3.4.	1 & 2
EBSCO (Business Source Complete)	EBSCO is also an important source of literature for this review as it provides access to over 2800 scholarly business journals and more than 900 peer-reviewed business publications, dating from 1922 to present.	Due to its flexible search functionality this database was also used as a primary source of literature, with the goal of identifying as many items as possible through the use of structured search strings, as described in Section 3.4.	1 & 2
PsychINFO	PsychINFO provides access to journal articles, books and book chapters within the fields of psychological and behavioural sciences. Due to its area of focus it is of specific relevance to SRQ 2, with the potential to supplement the information source via ABI Inform and EBSCO.	Again the flexible search functionality within this database resulted in its usage as a primary source of literature, in order to identify as many items as possible through the use of structured search strings, as described in Section 3.4.	2
Web of Knowledge	Web of Knowledge is a citation indexing service which provides access to a broad variety of publications across a multitude of academic disciplines. As a citation index Web of Knowledge provides access to items of literature which cite pieces of specific interest.	Due to its restricted search functionality Web of Knowledge was not appropriate for use as a primary source of literature. However, its citation indexing was used to support the processes of 'snowballing' described in Section 3.3.3. In addition, the Web of Knowledge database was used to access items of potential relevance which were not available via ABI Inform, EBSCO or PsychINFO.	1 & 2
Science Direct	Science Direct is also a citation index with access to a large volume of publications, some of which are not accessible via ABI Inform, EBSCO or PsychINFO.	Due to its limited search capabilities the Science Direct database was not appropriate for use as a primary source of literature. However, it was used to access publications identified as potentially relevant to this review, which were not available via other electronic databases.	1

### 3.3.2 Key Author Websites

Where an author was identified as being involved within the area of interest, either through an advisory panel member recommendation or from the results of initial literature searches, a subsequent internet search for a dedicated author website was undertaken. This aimed to locate any further literature of relevance by this author that had not been identified via the electronic databases, such as books, conference papers or working papers. Table 5 details the key author websites located and reviewed during the literature search process and the associated rationale for their investigation.

**Table 5: Key Author Websites Investigated**

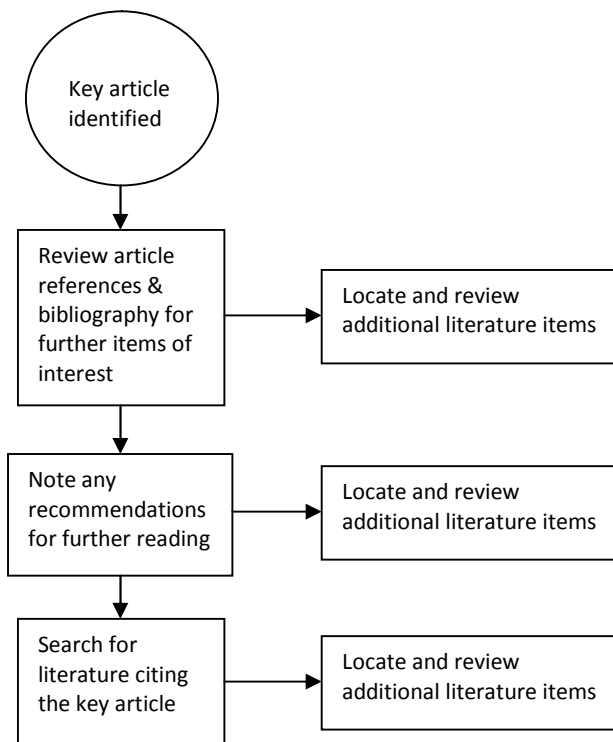
Author	URL	Rationale
Dorothy Leonard	<a href="http://drfd.hbs.edu/fit/public/facultyInfo.do?facInfo=ovr&amp;facId=6499">http://drfd.hbs.edu/fit/public/facultyInfo.do?facInfo=ovr&amp;facId=6499</a>	The author of a Harvard Business Review article on empathic design (Leonard and Rayport, 1997) Dorothy Leonard's web pages were reviewed for further items of interest.
Eric von Hippel	<a href="http://web.mit.edu/evhippel/www/">http://web.mit.edu/evhippel/www/</a>	Eric von Hippel is a leading researcher and writer in the areas of lead user investigation. His website was accessed in order to determine whether any consumer-based studies had been carried out.
Hamid Noori	<a href="http://info.wlu.ca/~wwwsbe/faculty/hnoori/#">http://info.wlu.ca/~wwwsbe/faculty/hnoori/#</a>	Hamid Noori co-authored an article (Deszca et al., 1999) which effectively sets a research agenda in respect of research methods for accessing consumer needs in respect innovative product development. His website was investigated for further items of interest.
Robert Cooper & Scott Edgett	<a href="http://www.prod-dev.com/research_articles.php">http://www.prod-dev.com/research_articles.php</a>	Specialists in new product development practice, Cooper and Edgett's web pages were reviewed in search of literature of relevance to this review.
Booz Allen Hamilton	<a href="http://www.boozallen.com/publications/reports_studies">http://www.boozallen.com/publications/reports_studies</a>	Booz Allen Hamilton is a global development strategy and technology consultancy firm. As such their web pages were reviewed to investigate whether any project reports of relevance to my SRQs (particularly SRQ 1) were available.
Jane Fulton Suri	<a href="http://www.ideo.com/thinking/voice/jane-fulton-suri">http://www.ideo.com/thinking/voice/jane-fulton-suri</a>	As creative director at design consultancy IDEO, Jane Fulton Suri has published a number of articles and books on research for innovative product design. Her web pages were reviewed for further publications.

In addition to the web pages detailed in Table 5 additional searches were carried out in respect of other authors, such as Stephen Rosenthal (Rosenthal and Capper, 2006), Eric J. Arnould (e.g. Arnould and Wallendorf, 1994) and Gene Deszca (Deszca et al., 1999), all of whom have written or co-authored articles of particular relevance to the area of systematic review focus. However, in each case a web page dedicated to the works of these individuals could not be found.

### 3.3.3 Literature ‘Snowballing’

‘Snowballing’ refers to the processes by which literature of interest was identified through the review of an item already sourced, thereby ensuring that the search for literature was comprehensive and located any relevant items not identified through the other sources described in Section 3.3. Snowballing entailed the identification of relevant literature from an article bibliography, or from items recommended by the authors as additional reading. Alternatively, citation indexes were used to locate items in which the article is cited. Figure 4 illustrates the snowballing processes.

**Figure 4: ‘Snowballing’ Processes**



### 3.3.4 Advisory Panel Recommendations

In addition to electronic databases, key author websites and snowballing processes, Prof. Goffin, Dr. Szejczkowski and Dr. MacDonald recommended a series of articles and books of potential relevance to the SRQs.

### 3.3.5 Types of Literature

Table 6 details the types of literature located via the sources described in Sections 3.3.1 to 3.3.4 and provides a rationale for their inclusion within this process.

**Table 6: Types of Literature used within the Systematic Review**

Type of Literature	Rationale for Inclusion
Academic Journal Articles	As they are peer reviewed these pieces of literature present good quality evidence with which to address the SRQs.
Practitioner Journal Articles	As with academic journals articles these are peer reviewed and while they may lack detailed methodological information regarding previous studies, they provide a useful indication of methods being applied within the domains of innovation and market research.
Books	Although the knowledge contained within books is often older than that within academic journal articles, where a particular book is recently published, contains information of relevance or was recommended by a panel member, it was reviewed with a view to potential inclusion within this review.
Conference Papers	Less rigorously peer reviewed than academic journal articles, conference papers should be treated with caution and reviewed very critically. However, the information within them can contain the findings from very recent research, which may not be published in an academic journal for a number of years. Consequently, where a specific paper was of relevance to my review it was considered for inclusion within this review.
Consultancy Papers	Due to the industry focus within my SRQs consultancy papers could supplement practitioner publications and provide a view of relevant themes and trends in various industries. As a result they were considered for inclusion within this review.
Consumer Behaviour Reports	Located via EBSCO these provide further insights into research carried out in the field of consumer behaviour.

### **3.4 ELECTRONIC DATABASE SEARCHES**

As Figure 3 illustrates, the electronic databases detailed in Table 4 were searched to identify literature for inclusion in this systematic review. The identification of literature via electronic databases necessitated the prior development of a series of key words and phrases which reflected the focus of the SRQs. These were subsequently accumulated into 'search strings', which were input into the database search engines in order to search for literature of potential relevance. This section discusses these processes in further detail and describes the following:

1. The key words and phrases defined in relation to the SRQs within this study.
2. The subsequent creation of search strings, application to the databases and the number of literature items subsequently located.
3. The use of additional search and filtering criteria within the databases.

#### **3.4.1 Key Words and Phrases**

Table 7 shows the key words and phrases used within this systematic review in the development of search strings. These words and phrases were developed with the support of the advisory panel and reflected the key areas of focus of the SRQs. Their usage sought to ensure that the subsequent database searches accessed all the appropriate pieces of literature. The use of truncation characters (e.g. '\*') in association with key word stems ensured that all versions and spellings of a particular keyword were included in the search. For example, the phrase "Market\* research" in Table 7 was designed to ensure that texts containing the phrases "market research" and "marketing research" were identified, as both were of relevance to the SRQs. The use of phrase marks denotes a key phrase which was required to appear within the document and the inclusion of the character '?' (e.g. in 'unrecogni?ed') ensured that both UK and US spellings of key words were captured.

**Table 7: Key Words and Phrases**

SRQ	Keywords	Rationale
1	“Market* research”, “customer research”, “consumer research”, “user research”	The use of these key words will ensure that the articles arising from the search will describe previous research into market or consumers, which is of relevance to SRQ 1 due the focus of the question on research methods.
1	Innovat*, “Product Develop*”, “Product Design*”	These key words and phrases reflect the focus of SRQ 1 on product innovation.
1	Need*, Requirement*, Desire*, Want*, Preference*, Demand*	These key words reflect the focus of SRQ 1 on consumer needs.
1	Hidden, Tacit, Subtle, Subconscious, Latent, Unconscious, Unarticulated, Unrecognized	By using these words within my search strings I will be able to identify studies which focus on consumer needs which are of a hidden nature.
2	"Consumer research", "consumer behavio* research", "customer research", "customer behavio* research"	These phrases will ensure that the literature identified describes previous empirical studies of consumer behaviour, as required to address SRQ 2
2	"Consum* need*", "customer need*"	These words and phrases reflect the focus of SRQ 2 on consumer needs.
2	“Personal value*”, “consumer value*”, “means end chain”, “means end analysis”, “means end chain analysis”.	These phrases were recommended for inclusion by members of the advisory panel due to the likelihood of their linking to studies of consumer needs which are hidden in nature.
2	“product choice*”, "product selection*", "product preference*", "product deci*"	These phrases reflect my focus on drivers for product consumption choices.

### 3.4.2 Creation and Use of Search Strings

Table 8 lists the search strings formulated from the key words in Table 7, the databases they were applied to, the SRQ for which they were relevant and the number of items of literature identified in each case.

**Table 8: Search Strings and No. of Items Located**

	Search String	Data-base	SRQ	No. Items
1 <sup>5</sup>	("market* research" OR "customer research" OR "consumer research" OR "user research") AND (innovat* OR "product develop*" OR "product design*") AND (hidden w/3 need*) OR (tacit w/3 need*) OR (subtle w/3 need*) OR (subconscious w/3 need*) OR (latent w/3 need*) OR (unconscious w/3 need*) OR (unarticulated w/3 need*) OR (unrecogni?ed w/3 need*)	ABI Inform	1	351
2	As search 1, but with the word 'need*' replaced with 'requirement*'.	ABI Inform	1	20
3	As search 1, but with the word 'need*' replaced with 'desire*'.	ABI Inform	1	35
4	As search 1, but with the word 'need*' replaced with 'want*'.	ABI Inform	1	18
5	As search 1, but with the word 'need*' replaced with 'preference*'.	ABI Inform	1	40
6	As search 1, but with the word 'need*' replaced with 'demand*'.	ABI Inform	1	88
7	("market* research" OR "customer research" OR "consumer research" OR "user research") AND (innovat* OR "product develop*" OR "product design*") AND (hidden need*) OR (tacit need*) OR (subtle need*) OR (subconscious need*) OR (latent need*) OR (unconscious need*) OR (unarticulated need*) OR (unrecogni?ed need*)	EBSCO	1	5,051
8	As search 7, but with the word 'need*' replaced with 'requirement*'.	EBSCO	1	1,051
9	As search 7, but with the word 'need*' replaced with 'desire*'.	EBSCO	1	12,422
10	As search 7, but with the word 'need*' replaced with 'want*'.	EBSCO	1	1,629
11	As search 7, but with the word 'need*' replaced with 'preference*'.	EBSCO	1	985
12	As search 7, but with the word 'need*' replaced with 'demand*'.	EBSCO	1	2,879
13	("consumer research" OR "consumer behavio* research" OR "customer research" OR "customer behavio* research") AND ("consum* need*" OR "customer need*") AND ("product choice*" OR "product selection*" OR "product preference*" OR "product deci*")	ABI Inform	2	553
14	As search 13	EBSCO	2	18
15	As search 13	Psych-INFO	2	8

<sup>5</sup>The use of the operator 'w/3' specifies that they key words should be located up to 3 words apart within the text.

**Table 8 continued: Search Strings and No. of Items Located**

	<b>Search String</b>	<b>Data-base</b>	<b>SRQ</b>	<b>No. Items</b>
16	“means end chain” OR “means end analysis” OR “means end chain analysis”	ABI Inform	2	101
17	As 16	EBSCO	2	70
18	As 16	Psych-INFO	2	53
19	(“personal value*” OR “consumer value*”) AND (“product choice*” OR “product selection*” OR “product preference*” OR “product deci*”)	ABI Inform	2	377
20	As 19	EBSCO	2	19
21	As 19	Psych-INFO	2	28
Total Hits from Database Searches				25,796

As Table 8 highlights, a similar series of search strings was entered into each of the three primary databases, ABI Inform, EBSCO and PsychINFO. Where minor differences occur between the strings entered into each database (e.g. between searches 1 and 7) it is a reflection of varying search engine functionality. This consistency of approach sought to ensure that the primary databases were interrogated as robustly as possible using all the key words and phrases, thereby enabling the identification of all the literature items of potential relevance to the SRQs.

Where a series of searches were run with only one word difference (e.g. strings 1 to 6) a significant amount of overlap in results occurred. That is, the same items were identified in multiple searches. This was addressed in the subsequent review of item titles and abstracts, described in Section 3.5.

Where a search created a particularly large number of hits (e.g. search 9) the results were sorted by relevance and first 2000 abstracts were reviewed in accordance with the inclusion and exclusion criteria described in Section 3.5. Texts appearing towards the end of this list were found to be irrelevant to the SRQs and no further articles identified by this search were therefore reviewed.



### **3.4.3 Additional Search and Filtering Criteria**

The search functionalities within ABI Inform, EBSCO and PsychINFO enable the user to search for key words and phrases within titles and abstracts or within the whole texts of documents within the databases. Search strings 1 to 15 and 19 to 21 were executed using the 'document and text' or 'all text' filters within the search engines to ensure that every piece of relevant literature within the databases was identified. This was deemed to be necessary due to the potential for articles to have a primary focus on a topic other than that of identifying hidden consumer needs, such as the design of a new product, which may have resulted in key words not appearing in the title or abstract. Searches 16 to 18 were carried out using a 'title and abstract' filter as the goal of these searches was to identify items with a specific focus on means end chain analysis. As such it was felt to be a reasonable assumption that the key words and phrases would appear in the title or abstract of relevant documents.

As illustrated in Figure 3, having identified an initial body of literature of potential relevance to the SRQs an appraisal of all the items was carried out, excluding any which were not appropriate for inclusion within the systematic review. This is described in Section 3.5.

### **3.5 APPRAISAL OF LITERATURE**

The appraisal of the literature identified through the electronic database searches, review of key author websites and advisory panel recommendations involved three key processes, which are as follows:

1. The review of all titles and abstracts in accordance with pre-defined inclusion and exclusion criteria, resulting in the exclusion of a number of items.
2. The review of the remaining full document texts in accordance with further pre-defined inclusion and exclusion criteria and the subsequent exclusion of further items.

3. The appraisal of the quality of the remaining items in accordance with a pre-defined framework, resulting in the final exclusion of poor quality texts.

The following discussion describes each of these processes in detail.

### **3.5.1 Review of Titles and Abstracts**

The title and abstract of each item of literature was reviewed in accordance with the criteria described in Table 9. These criteria reflect the focus of the SRQs and texts were required to meet all the inclusion criteria and none of the exclusion criteria in order to be carried forward into the subsequent full text review stage. The application of such strict criteria reflects the goal of the systematic review to focus on the “best-quality evidence” (Tranfield et al., 2003, p. 216) and isolate all previous studies of direct relevance to the topic of interest. As a result of the review of titles and abstracts 153 texts were carried forward into the full text review stage of the systematic review process.

**Table 9: Selection Criteria for Titles and Abstracts**

SRQ	Criteria	Include	Exclude
1	Area of Focus	Literature which focuses on innovative product development.	Items which focus on incremental product development or any other context.
		Pieces in which the emphasis is on the project level of analysis.	Reports with a macro or company level of analysis.
		Items which describe market or consumer research into consumer needs in support of innovative product development.	Pieces in which no previous research is described or which focus on the identification of an alternative phenomenon.
		Texts in which the research is carried out at the ideation stage of innovative product development projects	Texts in which customer input is occurring at other stages in the development process.
2	Area of Focus	Pieces which focus on consumer needs which drive product consumption choices.	Items which focus on other areas of interest.
		Literature which describes empirical consumer behaviour research.	Articles which do not describe empirical investigations into consumer behaviour
All	Unit of Analysis	The focus of the study should be on the individual consumer, within the business-to-consumer context.	Studies of industrial product design or those carried out in a business-to-business context.
All	Product Type	The product category of interest within the research should require an element of technical design, development and engineering.	Investigations which focus on pure service propositions.
All	Language	The article must be in English, either originally or via translation.	Any other language.
All	Journal Rating	Any is acceptable. Due to an emphasis on quantitative research within the 3 and 4-star market research and consumer behaviour journals, many high quality studies employing qualitative research which may be of relevance are published in 1 and 2-star academic journals. Similarly, many practitioner journals do not have a star rating, yet may still make a valid contribution to this review.	N/A
All	Author	Both academic and practitioner authored papers are acceptable	N/A

### 3.5.2 Review of Full Texts

Following the review of titles and abstracts described in Section 3.5.1 and the subsequent exclusion of a volume of literature which failed to meet the required inclusion criteria, the remaining 153 texts were reviewed for a second time. This process involved an examination of the full text of each item of literature, in order to facilitate the exclusion of further items not appropriate for inclusion in the systematic review. The criteria applied to this process are identical to those described in Table 9. However, two additional inclusion criteria were applied to the full text review. These are described in Table 10 and reflect the focus of the SRQs on the successful identification of hidden consumer needs. As a result of this full text review process 121 texts were excluded from the systematic review. Appendix A lists the 121 excluded items and the reasons for the rejection in accordance with the criteria specified in Tables 9 and 10.

**Table 10: Additional Criteria for Full Texts**

SRQ	Criteria	Include	Exclude
All	Area of Focus	Articles in which the research described aims to identify consumer needs which are hidden in nature.	Items in which the needs of interest are not hidden.
All		Articles in which the research is described as being successful in identifying hidden consumer needs.	Pieces in which studies yield unsuccessful or inconclusive results.

### 3.5.3 Quality Appraisal

Having excluded 121 items of literature initially identified as being of potential relevance to the SRQs, the remaining 32 texts were subject to a process of quality appraisal. The goal of this exercise was to exclude any items of literature which, despite meeting the inclusion criteria in Tables 9 and 10, were of a poor overall quality. The rationale for this quality appraisal process was to maintain the focus of the systematic review on “best quality evidence” (Tranfield et al., 2003, p. 16), in order to ensure that findings and conclusions from the literature are robust and defensible.

The remaining 32 texts were reviewed for a third time and 14 specific features were assessed in accordance with the framework in Table 11. As Table 11 highlights, the features of interest were grouped into the three equally weighted core categories of 'theoretical foundation', 'empirical or case study research' and 'resulting arguments' and were classified as low, medium or high on the basis of the criteria specified in Table 11. Items of literature which were found to contain only high or medium quality features were deemed to be of a suitably high overall quality for inclusion within the systematic review. In the event that an article was found to have one low quality feature in any or all of the three core categories it was also included as, despite minor weaknesses associated with a small number of low quality features, the knowledge within this literature was still of a sufficient quality to contribute to the formulation of robust conclusions. However, items of literature which were found to have two or more low quality features in any given category were excluded from the systematic review, as the presence of multiple low quality features reflected an overall level of quality deemed to be insufficient to support the development of robust and justifiable conclusions in respect of the SRQs. As a result of this quality appraisal process a further three items of literature were excluded. Details of these items and the outcomes of their respective quality appraisals can be found in Appendix B.

**Table 11: Quality Appraisal Framework**

Appraisal Category	Feature	Level of Quality		
		Low	Medium	High
<b>Theoretical Foundation</b>	Article Goals	Goals of article not articulated.	Goals articulated, but not explicitly.	The goals of the article are clearly stated.
	Literature Review	Academic Papers: The literature review lacks an in-depth description of existing theories, knowledge and lines of argument OR Practitioner Papers: no background knowledge or information pertinent to the article is provided.	Academic Papers: The literature review provides some detail of existing knowledge, theories and contributions from other studies and authors, but does not critically appraise them or ignores counter arguments or alternative perspectives. OR Practitioner Papers: A high level background or context is provided for the article, but sources of information are unclear.	Academic Papers: The literature review demonstrates a high level of knowledge and understanding of previous works and their contributions to the field. Counter arguments are presented and their respective contributions critically assessed. OR Practitioner Papers: In depth background information is provided with strong backing and clear sources.
	Area of Focus	The focus of the paper is not clearly positioned within the literature or background information so the contribution to knowledge lacks clarity.	Some focus for the paper is drawn from the background literature or knowledge, but links are weak	The use of background literature or knowledge in shaping the focus of the work is described, resulting in a clear potential contribution.
	Key Concepts	Key concepts are not defined.	Key concepts are poorly or partially defined, or are used inconsistently.	Key concepts are well-defined and used consistently through the paper.
<b>Empirical or Case Study Research</b>	Research Goals	Research goals/questions not articulated	Research goals partially articulated, but lack clarity	Clear description of research goals.
	Research Design	Research design not described.	Research design described at high level, but lacking detail.	Research design and methods employed described in detail.
	Research Methods	Research methods employed not justified in relation to research goals.	Some rationale provided for research design and methods employed.	Usage of research methods justified in relation to research goals.
	Sample	Sample not described or justified	Sample partially described and/or justified.	Sample fully described and justified.
	Coding, Analysis and Interpretation	Coding, analysis and interpretation approaches not described or justified.	Coding, analysis and interpretation approaches described and justified at a high level, but lack detail	Coding, analysis and interpretation processes described in detail and fully justified.
	Research Findings	Findings not reported.	Findings reported but lack details	Findings reported to a high standard.
	Conclusions from Research	Conclusions are poorly formed and do not accurately reflect the findings.	Conclusions are formed but lack detail and/or justification.	Conclusions are detailed and relate clearly to research findings.
<b>Resulting Argument</b>	Claims to Knowledge	Resulting arguments and claims to knowledge not clearly specified, or are flawed or poorly warranted with no author acknowledgement.	Argument is partially backed and claims partially warranted claims.	High quality arguments presented and claims backed with strong evidence.
	Study Limitations	No reflection on study limitations.	Limitations considered	Limitations described in detail
	Further Research	No opportunities for further research defined.	High level opportunities for future research are discussed.	Opportunities for further research described in detail

### **3.6 SYNTHESIS OF LITERATURE**

In order to address the SRQs the literature identified through the processes described in Sections 3.2 to 3.5 underwent a process of synthesis. The synthesis of a body of literature entails “summarising, integrating and, where possible, cumulating the findings of different studies on a topic or research question” (Tranfield et al., 2003, p. 217). Accordingly, within this systematic review the process of synthesis involved two key stages:

1. A process of data extraction whereby key information from the literature was identified and summarised.
2. A subsequent critical review and analysis of the literature, resulting in the development of key themes and conclusions from the integrated review findings.

Sections 3.6.1 and 3.6.2 describe these processes in further detail.

#### **3.6.1 Data Extraction**

The process of data extraction involved an analysis of the literature identified as being of relevance to this review and the extraction of key features from each text. The *data extraction form* (Tranfield et al., 2003) illustrated in Table 12 details the information retrieved from each article and was designed to summarise the literature features of key relevance to the SRQs. This process of data extraction also served to form a “data-repository” (Tranfield et al., 2003, p. 217) from which the subsequent integration and development of key themes emerged.

**Table 12: Data Extraction Form**

<b>Type of Feature</b>	<b>Data Extracted</b>
Bibliographic	Authors, Year of Publication
	Publication Name, Publication Type (Academic Journal, Practitioner Journal, Book)
	Journal Star Rating
	Source (Database Search, Advisory Panel Recommendation, Snowballing)
	Location of Study Described
Methodological	Research Method and Techniques Employed
	Product Category Investigated
	Sample Size, Description and Recruitment
	Process of Interpretation and Analysis
Contribution	Claims in respect of hidden needs identified
	Characteristics of research methods described as enabling the identification of hidden consumer needs
	Claims in respect of the superior effectiveness of a specific research method versus alternative approaches to hidden needs investigations

### **3.6.2 The Development of Key Themes and Conclusions**

The development of key themes and conclusions of relevance to the SRQs involved an initial descriptive review of the literature, which identified all that had been written regarding the topic of interest (Tranfield et al., 2003). A subsequent critical evaluation of the claims within the literature analysed in detail the underlying evidence and conclusions upon which the claims were founded, and the resulting insights were reviewed to identify key themes within the SRQ literature.

### **3.7 REPORTING**

The reporting of the outcomes of the systematic review process is detailed in Chapters 4 and 5. Each SRQ is considered in turn and the findings from both the descriptive and critical reviews of the literature are presented. Themes emerging from within the literature are identified and described in detail, along with their implications for the relevant SRQ.



### **3.8 SUMMARY OF SYSTEMATIC REVIEW PROCESS AND OUTCOMES**

The following diagram (Figure 5) summarises the literature search and review processes described in Sections 3.2 to 3.6 and illustrates the overall method by which the literature of relevance to the SRQs was identified. The grey boxes in Figure 5 reflect the key stages of the systematic review process outlined in Figure 3, Section 3.1.

**Figure 5: Summary of Systematic Review Process**

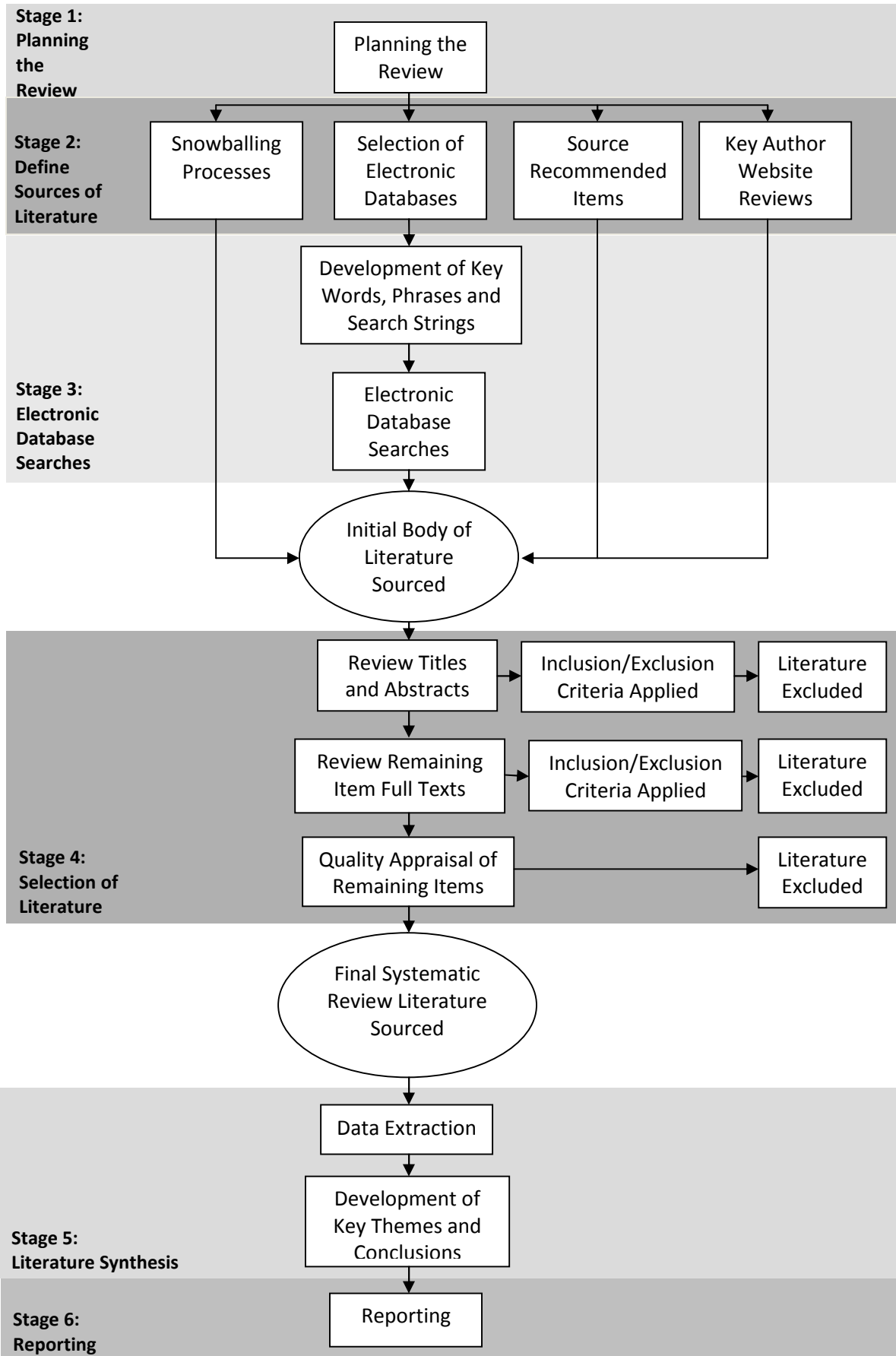
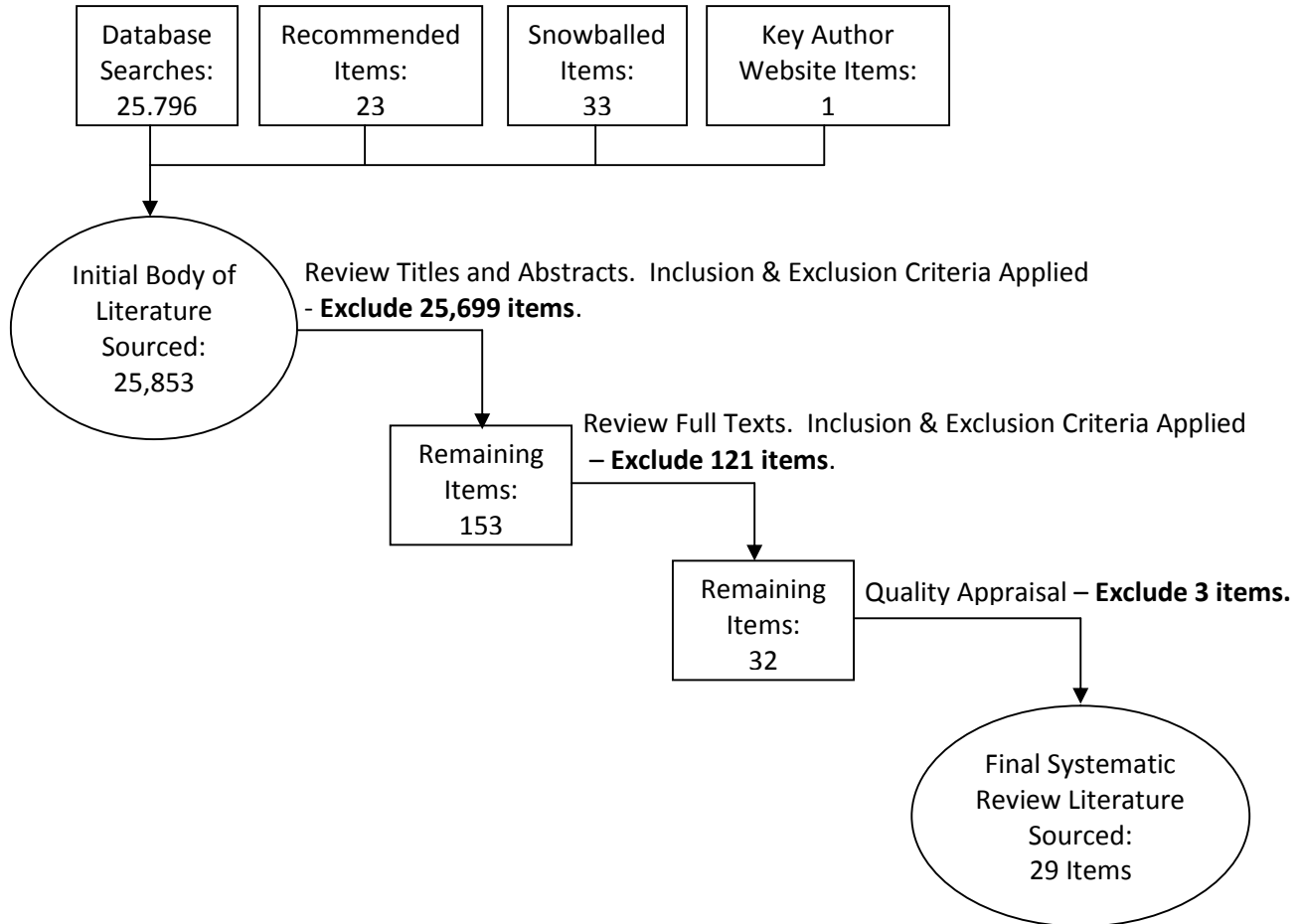


Figure 6 illustrates the number of literature items involved in each stage of the process

**Figure 6: No. of Literature Items Sourced, Appraised and Selected**



Of the 29 items of literature sourced via the systematic review methodology, 13 related to SRQ 1 and 16 to SRQ 2. This SRQ 1 and SRQ 2 literature is described in further detail in Chapters 4 and 5. In addition to this core body of literature a series of items excluded at the full text review stage were retained as they contained information of relevance to the systematic review, despite not fulfilling the criteria for inclusion. These items of literature were used to supplement the information within the SRQ 1 and SRQ 2 literature, and to support the resulting discussion in respect of the themes arising from the literature review. This supplementary literature is detailed in Appendix C.

## CHAPTER 4: SYSTEMATIC REVIEW QUESTION 1

### 4.1 INTRODUCTION

SRQ 1 is as follows:

*What research methods have been successfully applied to the identification of hidden consumer needs during the idea generation stage of innovative product development?*

Chapter 4 addresses SRQ 1 by presenting the literature identified through the search and select methodology described in Chapter 3 and describing the findings from the subsequent analysis of the texts located. Specifically, the literature identified as being relevant to SRQ 1 is described in detail and the conclusions arising from a descriptive and critical review of this body of works are provided. Chapter 4 is structured as follows:

- Section 4.2 describes the SRQ 1 literature in terms of the volume of texts it comprises and the research methods identified as having been successfully applied to the identification of hidden consumer needs within the context of interest.
- Section 4.3 details the findings from a descriptive review of the key features of the SRQ 1 literature, provides an overview of the current body of works within the field of interest and identifies specific themes of relevance to SRQ 1.
- Section 4.4 describes the outcomes of a critical review of the SRQ 1 literature, in which the robustness of the respective claims regarding the success of each research method in identifying hidden consumer needs is assessed.
- Section 4.5 summarises the findings from the literature and draws conclusions in respect of SRQ 1

#### 4.2 SRQ 1 LITERATURE & RESEARCH METHODS IDENTIFIED

13 items of literature were identified in which the authors claim to have successfully applied eight different research methods to the identification of hidden customer needs at the idea generation stage of innovative product development. The research methods are shown in Table 13 and the number of literature items in which their usage is described is highlighted.

**Table 13: SRQ 1 Research Methods Identified and Distribution within the Literature**

Research Method		No of Lit. Items
Ethnographic Methods	Ethnographic Market Research	3
	Ethnography	2
	Empathic Design	1
	Ethnofuturism	1
Customer Involvement		2
Laddering Interviews		2
Probe and Learn		1
Mini-Concept Testing		1
<b>TOTAL</b>		<b>13</b>

As Table 13 shows, research within the context of interest has involved the use of qualitative research methods. However, previous studies have not been dominated by a single research method, as seven of the eight methods identified are described in only one or two pieces of literature. Ethnographic methods represent those most commonly applied within the SRQ 1 literature, with the four ethnographic approaches being applied in seven of the 13 investigations. Of these, ethnographic market research has been most frequently employed although these studies account for only three of the total thirteen.

#### 4.3 DESCRIPTIVE REVIEW OF SRQ 1 LITERATURE

The descriptive review of the SRQ 1 literature involved a detailed analysis of the texts in respect of the following features, in order to provide an overall description of the literature and to identify key themes:

<sup>6</sup>Within the SRQ 1 Literature the ethnographic market research and ethnography research methods are distinguished on the basis of the period of study and insights sought. Ethnographic market research studies involved short term investigations into the usage of existing products by consumers, in order to identify weaknesses with existing solutions. By contrast, ethnography involved longer term immersion in the context of interest, in order to identify cultural influences on consumer needs.

1. Date of publication
2. Type of literature
3. Literature domain
4. Quality of journal
5. Key authors
6. Location of empirical or case study

Table 14 provides further information regarding the SRQ 1 literature and the following discussion considers each of these features in turn. For the purpose of this analysis items of literature describing the same research methods were reviewed as subgroups of the SRQ 1 literature. For example, the two items describing the use of customer involvement methods were analysed as a subgroup. As 13 shows, seven of the articles applied a series of different ethnographic methods and these articles were also reviewed as a sub-category, although any observations in respect of the individual techniques are noted.

**Table 14: SRQ 1 Literature**

Research Method	Authors	Year	Publication	Publication Type	Title	Star Rating	Study Location	Source
Ethnographic Market Research	Berstell & Nitterhouse	1997	Marketing Research	Practitioner Journal	"Looking Outside the Box"	No rating	USA	Database Search
Ethnographic Market Research	Kumar & Whitney	2003	Design Management Journal	Practitioner Journal	"Faster, Cheaper, Deeper User Research"	No rating	Hong Kong	Snowballing
Ethnographic Market Research	Rosenthal & Capper	2006	Journal of Product Innovation Management	Academic Journal	"Ethnographies in the Front End: Designing for Enhanced Customer Experiences"	4*	USA	Database Search
Ethnography	Squires	2002	Creating Breakthrough Ideas	Book	"Doing the Work: Customer Research in the Product Development and Design Industry"	No rating	USA	Advisory Panel Recommendation
Ethnography	Leinbach	2002	Creating Breakthrough Ideas	Book	"Managing for Breakthroughs: A View from Industrial Design"	No rating	USA	Advisory Panel Recommendation
Empathic Design	Leonard & Rayport	1997	Harvard Business Review	Practitioner Journal	"Spark Innovation through Empathic Design"	4*	USA	Advisory Panel Recommendation
Ethnofuturism	Cooper & Evans	2006	Design Management Review	Practitioner Journal	"Breaking from Tradition: Market Research, Consumer Needs and Design Futures"	No rating	UK	Database Search
Customer Involvement	Kristensson, Gustafsson & Archer	2004	Journal of Product Innovation Management	Academic Journal	"Harnessing the Creative Potential Among Users"	4*	Sweden	Snowballing
Customer Involvement	Dahlsten	2004	European Journal of Innovation Management	Academic Journal	"Hollywood Wives Revisited: A Study of Customer Involvement in the XC90 Project at Volvo Cars"	1*	USA	Database Search
Laddering Interviews	Sondergaard	2005	European Journal of Innovation Management	Academic Journal	"Market-Oriented New Product Development: How can a Means-End Chain Approach Affect the Process"	1*	Denmark	Database Search
Laddering Interviews	Sondergaard & Harmsen	2007	Journal of Consumer Marketing	Academic Journal	"Using Market Information in Product Development"	1*	Denmark	Database Search
Probe and Learn	Lynn, Morone & Paulson	1996	California Management Review	Practitioner Journal	"Marketing and Discontinuous Innovation: The Probe and Learn Process"	4*	USA	Snowballing
Mini-Concept Tests	Durgee, O'Connor & Veryzer Jr	1998	Journal of Consumer Marketing	Academic Journal	"Using Mini-Concepts to Identify Opportunities for Really New Product Functions"	1*	USA	Database Search

#### 4.3.1 Review of Date of Publication

The items in Table 14 were published over a period of 11 years, from 1996 to 2007. An 11 year publication period is somewhat short, suggesting that the investigation of hidden consumer needs at the idea generation stage of innovative product design is a relatively recent area of research interest. However, the lack of any relevant publications since 2007 implies it has not received much attention in recent years. Table 15 examines the publication timescales for each of the SRQ 1 research methods.

**Table 15: Publication Periods for SRQ 1 Research Methods**

Research Method		Publication Period	No. Years
Ethnographic Methods	Ethnographic Market Research	1997-2006	9
	Empathic Design	1997	1
	Ethnography	2002	1
	Ethnofuturism	2006	1
Customer Involvement		2004	1
Laddering Interviews		2005-2007	2
Probe and Learn		1996	1
Mini-Concept Testing		1998	1

As Table 15 shows, the literature describing the use of ethnographic methods spans a 9 year publication period, the longest of all the methods identified in Table 13. Within the ethnographic subcategory, those employing ethnographic market research have the longest publication history (nine years) with empathic design appearing early in the time period (1997) and ethnography and ethnofuturism somewhat later (2002 and 2006). This suggests that ethnographic approaches are the most established of the research methods identified in Table 13 although the exact techniques are evolving as time and knowledge progresses. The individual articles detailing probe and learn and mini-concept test research methods were published early in the 11 year time period and the absence of more recent studies involving their usage in the context of interest suggests that their usage has not become popular within the context of interest. Customer involvement and laddering interview studies are published much later in the 11 year publication period however, implying that these methods may yet become established and popular methods for accessing hidden consumer needs.



### 4.3.2 Review of Type of Literature

Table 16 shows the breakdown of SRQ 1 literature by publication type.

**Table 16: Breakdown of SRQ 1 Literature by Publication Type**

Research Method	No. in Academic Journals	No. in Practitioner Journals	No. in Books
Ethnographic Methods	1	4	2
Customer Involvement	2	-	-
Laddering Interviews	2	-	-
Probe and Learn	-	1	-
Mini-Concept Testing	1	-	-
<b>Total</b>	<b>6</b>	<b>5</b>	<b>2</b>

Table 16 highlights an approximately equal split between academic and practitioner publications (six and five items respectively) which reflects the relevance of hidden consumer needs investigations at the idea generation stage of innovative product development to both academic and practitioner audiences. The majority of ethnographic studies and the probe and learn investigation appear in practitioner journals, suggesting that these methods have been tested within industry but not scrutinised in depth within academic research. Conversely customer involvement, laddering interview and mini-concept test research appears only in academic journals, implying a lack of usage within the practitioner sphere.

### 4.3.3 Review of Literature Domain

An analysis of the literature in Table 14 shows that the journal articles within the SRQ 1 literature are published in a variety of domains, as detailed in Table 17.

**Table 17: Breakdown of SRQ 1 Journal Articles by Domain**

Publication Domain	Publication Name	No. Articles	Research Methods Employed
Innovation Research	Journal of Product Innovation Management	2	Ethnographic Market Research, Customer Involvement
	European Journal of Innovation Management	2	Laddering Interviews, Customer Involvement
Market Research	Journal of Consumer Marketing	2	Laddering Interviews, Mini-concept tests
	Marketing Research	1	Ethnographic Market Research
Industrial Design	Design Management Journal	1	Ethnographic Market Research
	Design Management Review	1	Ethnofuturism
General Business and Practitioner	Harvard Business Review	1	Empathic Design
	California Management Review	1	Probe and Learn

Of the journal articles in Table 14 the greatest proportion (seven of the eleven) appear in the innovation and market research domains. This reflects two of the three key domains of literature outlined in Chapter 2 and therefore supports the view of these domains as being highly relevant in informing the overall area of research interest. Studies of interest have also been published within the industrial design literature domain and in general business and practitioner journals, which again is likely to be a reflection of the relevance of hidden consumer needs identification to innovation practice.

#### **4.3.4 Review of Quality of Journal**

Table 18 shows the breakdown of the journal articles in Table 14 by publication star rating (Cranfield, 2010).

**Table 18: Breakdown of SRQ 1 Journal Articles by Star Rating**

Research Method	Journal Star Rating	No. Articles
Ethnographic Approaches	4*	2
	3*	-
	2*	-
	1*	-
	No rating	3
<hr/>		
Customer Involvement	4*	1
	3*	-
	2*	-
	1*	1
	No rating	-
<hr/>		
Laddering Interviews	4*	-
	3*	-
	2*	-
	1*	2
	No rating	-
<hr/>		
Probe and Learn	4*	1
	3*	-
	2*	-
	1*	-
	No rating	-
<hr/>		
Mini-Concept Testing	4*	-
	3*	-
	2*	-
	1*	1
	No rating	-

A review of Table 18 highlights an overall trend within the SRQ 1 literature of publishing in low quality journals, as seven of the eleven articles appear in publications with a 1 or zero-star rating.

#### **4.3.5 Review of Key Authors**

As Table 14 illustrates, a number of different authors produced the literature of relevance to SRQ 1. The only author to publish multiple items is Sondergaard, who

reports two individual laddering interview studies. As such it can be concluded that there are no specific authors who have focussed in depth on the issue of identifying hidden consumer needs at the idea generation stage of innovative product development.

#### 4.3.6 Review of Location of Empirical or Case Studies

The geographical locations of the studies described by the SRQ 1 literature are shown in Table 19.

**Table 19: Breakdown of SRQ 1 Literature by Location of Study**

Location	No. Articles	Research Methods
USA	8	Ethnographic Market Research, Empathic Design, Ethnography Probe and Learn Mini-Concept Tests Customer Involvement.
Denmark	2	Laddering Interviews
Sweden	1	Customer Involvement Methods
UK	1	Ethnofuturism
Hong Kong	1	Ethnographic Market Research

As Table 19 illustrates, studies of consumers in the USA have dominated the field of hidden needs research within the context of interest, with all the methods in Table 13 apart from laddering interviews having been employed in this location. Ethnographic approaches have also been used in the UK and in Hong Kong, reflecting the more extensive and established usage of this method highlighted in Section 4.3.1. The laddering interview studies were both carried out in Denmark which could reflect the location of the author by whom both pieces were reported, as noted in Section 4.3.5.

#### 4.3.7 Summary of Descriptive Review of SRQ 1 Literature.

The review of the key features of the SRQ 1 literature has provided a descriptive overview of the current works within the field of hidden consumer needs investigations at the idea generation stage of innovative product development. As a result of this review three specific themes of relevance to SRQ 1 are observed.

1. The small volume of articles, short publication period and lack of recently published studies indicates that this area of research is under-investigated. In addition, despite the focus on qualitative research the diverse range of methods described within the SRQ 1 literature suggests a lack of any consistent or systematic investigation into the most effective means of identifying hidden consumer needs within the context of interest. Similarly, the lack of any leading authors with an ongoing interest in the field and the low quality of publishing journals implies an absence of in-depth and high quality knowledge. These observations suggest a need for further research into this area and support the proposed development of future high quality research initiatives.
2. The identification of both academic and practitioner publications and various literature domains within the SRQ 1 literature suggests a wide ranging interest in this topic. Also, the previous empirical examination in a variety of geographical locations suggests a global interest in hidden consumer needs identification, confirming the potential value of the knowledge created through future research.
3. The use of different research methods within the academic and practitioner literature (as noted in Section 4.3.2) suggests that diverse and complementary knowledge and experience exists within these spheres. The opportunity therefore exists to combine this knowledge in the development of future research activities.

As described in Section 4.1, following the descriptive review of SRQ 1 literature a critical review of the texts was undertaken. This is described in the Section 4.4.

#### **4.4 CRITICAL REVIEW OF SRQ 1 LITERATURE**

The critical review of the SRQ 1 literature entailed the detailed examination of the claims made within the texts in respect of the successful application of research methods to the identification of hidden consumer needs within the context of interest. The aim of this process was to assess the strength of the evidence upon which these

claims were based. Given the focus of SRQ 1 on the successful application of methods, in order to assess the relevant evidence this critical analysis focussed on three specific areas. These areas relate to the application of the research method and the subsequent interpretation of hidden consumer needs, from which the relevant claims resulted. The three key areas of focus are described in detail in Section 4.4.1.

#### **4.4.1 Critical Review Areas of Focus**

The critical review of the SRQ 1 literature focussed on the following areas:

1. The characteristics of the research methods described by the authors as enabling the identification of hidden consumer needs and the process by which hidden needs are subsequently elicited.
2. The quality of the research described within the text. This was critically evaluated and the strength of the evidence supporting the claims that hidden consumer needs were identified by the use of a given method was assessed. This entailed a focus on the following elements:
  - The sample of the respondents involved in the study and the means by which they were recruited, as samples which are overly small or biased can result in flawed data and weak conclusions. Similarly, recruitment processes which introduce bias can also reduce the quality of the resulting claims.
  - The application of the chosen research method to the collection of data, as the poor execution of research methods or failure to test a research design in advance via a pilot study can lead to poor quality data and unsound conclusions.
  - The described process of data interpretation and subsequent identification of hidden consumer needs, as a lack of transparency, flawed processes or

the failure by the authors to address the risks of bias can also weaken the resulting claims to knowledge.

- The subsequent development of conclusions and claims to knowledge, which could again reduce the quality of the contribution of a given text if this process is flawed.

3. Where the authors claim that their method of choice was superior to alternative methods, the supporting evidence was critically reviewed and the resulting strength of these claims was assessed.

In an approach reflecting that which was adopted for the descriptive review described in Section 4.3, the SRQ 1 literature was grouped by method into subgroups for the purpose of this analysis. The following discussion considers each subgroup in turn and describes the outcomes of the critical review.

#### **4.4.2 Critical Review of SRQ 1 Ethnographic Literature**

Table 14 includes seven items of literature in which it is claimed that ethnographic methods were successfully applied to the identification of hidden consumer needs at the idea generation stage of innovative product development. These items and their respective claims are described in further detail in Table 20.

**Table 20: SRQ 1 Ethnographic Studies**

Research Method	Authors	Techniques Employed in Data Collection	Product Category	Claims in Respect of Identified Hidden Needs	Sample and Recruitment	Interpretation and Analysis
Ethnographic Market Research	Berstell & Nitterhouse, 1997	Observation of shopping behaviours and follow up interviews to clarify purchase rationale.  Duration of study not provided.	Refrigerated Gourmet Meals	A hidden need was identified among office workers for high quality food that could be heated and consumed in the workplace.	Respondents were identified at the point of purchase, when buying the product of interest.	The hidden need was interpreted from consumer insights regarding their purchase motivations. The refrigerated meals were designed for home consumption and the hidden need was derived from the unintended consumption by office workers during the day.
Ethnographic Market Research	Kumar & Whitney, 2003	6 week video observation of the daily life of families (at home, while shopping and in other places related to home activities) and the usage of products.	Tele-communications	Through observation of life routines and product usage hidden needs were identified: <ul style="list-style-type: none"> <li>• For continuous communication with family and loved ones.</li> <li>• For support in educating children at home.</li> <li>• For the ability to shop for fresh foods at convenient times.</li> </ul>	Several families were observed.  No detail regarding recruitment processes.	The authors describe the use of software in which observations are 'tagged' and categorised on the basis of a pre-defined framework. They do not illustrate this process in respect of the data from this study however.



**Table 19 continued: SRQ 1 Ethnographic Studies**

Research Method	Authors	Techniques Employed in Data Collection	Product Category	Claims in Respect of Identified Hidden Needs	Sample and Recruitment	Interpretation and Analysis
Ethnographic Market Research	Rosenthal & Capper, 2006	<p>Study 1: The observation of product category usage in normal contexts and of environmental factors associated with this activity.</p> <p>Follow up interviews and the use of projective techniques to examine motivations for product use.</p> <p>Sessions lasted 60 - 90 minutes per respondent and were carried out over a 2 week period.</p> <p>Study 2: Product usage was observed in context and the research team undertook empathic immersion (i.e. usage of products in context).</p> <p>Follow-up interviews employed metaphor techniques.</p> <p>Sessions lasted between 90 minutes and 2 hours and were carried out over a 6 week period.</p>	<p>Study 1: Electric lady shaver for use in wet and dry conditions.</p> <p>Study 2: Fishing boat motor</p>	<p>Study 1:</p> <ul style="list-style-type: none"> <li>The ethnographic observation identified a latent fear of dropping the shaver in wet conditions and causing damage, linked to the manufacturing materials. A hidden need for damage-proof products was thus identified.</li> <li>Observations of product usage noted difficulties in reaching certain areas, highlighting a hidden need for a new product design.</li> <li>Examining environmental factors identified a hidden need for a product which required little storage space.</li> </ul> <p>Study 2:</p> <ul style="list-style-type: none"> <li>Ethnographic observation noted unarticulated foot and back pain which resulted from current product ergonomics and a hidden need for improved product design.</li> <li>The empathic immersion led to an appreciation of unarticulated sensory requirements.</li> <li>The metaphor exercise highlighted hidden aesthetic needs.</li> </ul>	<p>Study 1:</p> <p>12 female consumers from 3 US regions.</p> <p>Respondents from rural and urban areas were included. The sample was split evenly between current electric shaver users and those who preferred to use blade razors.</p> <p>Study 2:</p> <p>18 respondents who varied in terms of age, range of products currently owned, the type of fishing undertaken and their levels of experience.</p> <p>In both studies participants were screened using a questionnaire based on the required criteria. Details of criteria are not provided.</p>	<p>The processes of interpretation and analysis are not described.</p> <p>Insights are directly related to observations with no consideration of potential researcher bias.</p> <p>No sense-checking procedures are described.</p>

**Table 19 continued: SRQ 1 Ethnographic Studies**

Research Method	Authors	Techniques Employed in Data Collection	Product Category	Claims in Respect of Identified Hidden Needs	Sample and Recruitment	Interpretation and Analysis
Ethnography	Squires, 2002	Observation of family breakfasts, interviews with parents and children.  Duration of study not provided.	Breakfast Foods	They identified the need for a children’s breakfast product which resolved hidden needs for food which was fun, transportable and nutritious.	Middle class American families.  No detail provided regarding recruitment process.	<p>The author describes an interpretive process in which design opportunities are identified. This involves:</p> <ul style="list-style-type: none"> <li>• The development and understanding of the perspectives of the customer group.</li> <li>• Identifying shared beliefs, values and rules.</li> <li>• Understanding the meanings at the core of the system.</li> <li>• Interpreting how these translate to consumer behaviour and product choices.</li> <li>• Identifying disconnects where behaviour doesn’t match values</li> </ul> <p>The conclusions drawn from the study are developed in this manner. No sense-checking processes are described.</p>
Ethnography	Leinbach, 2002	Long term (12 month) immersion in the customer group of interest, observing behaviours and holding casual conversations and formal interviews with consumers.	Recreational Vehicles (RVs)	Observations of the RV culture led to a novel vehicle design. Insights lack detail, but include a preference for short journeys and resentment at paying high fuel costs, both of which implied the need for smaller fuel tanks.	Respondents were member of the RV community within the USA.  No detail regarding selection of interviewees	The patterns of cultural behaviour and user perceptions of RVs guided the design process.

**Table 19 continued: SRQ 1 Ethnographic Studies**

Research Method	Authors	Techniques Employed in Data Collection	Product Category	Claims in Respect of Identified Hidden Needs	Sample and Recruitment	Interpretation and Analysis
Empathic Design	Leonard & Rayport, 1997	The observation of consumers using products in their own environment by company employees with knowledge of organisation's technical and technological capabilities.  Duration of study not provided.	Mobile phones and minivans.	The case studies describe the identification of hidden needs for filtering capabilities on mobile phone and innovative seating configurations in minivans to create carrying space.	No detail of sample or recruitment.  Case studies very high level.	Hidden needs are interpreted from observations of problems or weaknesses associated with current products, which users may overcome through customisation or workaround usage routines.
Ethnofuturism	Cooper & Evans, 2006	The combination of: <ul style="list-style-type: none"> <li>• Observed consumer behaviour via mechanical means, such as cameras and video recorders, and</li> <li>• A futures perspective, which examines trends influencing and changing a culture.</li> </ul> Duration of study not provided.	Cleaning Products	A prototype cleaning machine was developed as a result of a vision of future cleaning needs.	Not stated	The research findings suggested that awareness of home hygiene would increase as health scares prevailed, indicating a need for a product which locates bacteria and confirms its removal.

#### **4.4.2.1 Characteristics of Ethnographic Methods which enable the Identification of Hidden Consumer Needs**

As Table 20 indicates, four ethnographic methods were employed: ethnographic market research, empathic design, ethnography and ethnofuturism. Despite these different approaches to ethnographic enquiry all the studies described by the literature in Table 20 share a common focus on the observation of consumers in a natural setting. This reflects the overall goal of ethnographic enquiry of making “implicit needs explicit” (Rosenthal and Capper, 2006, p. 216) by “camping out” (Cooper and Edgett, 2008, p. 3) with consumers of interest, observing their product usage contexts, behaviours, routines, priorities and values (Suri, 2005) and drawing inferences which guide the development of innovative products. It is therefore the observation of consumer in context that is the common characteristic of ethnographic methods, which enables the identification of hidden consumer needs.

The observational element of ethnographic investigations produces two distinct types of insight from which hidden needs can be identified in support of innovative product development. Firstly, the direct observation of product usage in context can identify hidden needs for new products as people combine or adapt existing items to fulfil unmet needs, or develop workarounds to overcome current product weaknesses. These limitations and processes have been accepted and buried in the subconscious minds of the consumers. (Rosenthal and Capper, 2006; Leonard and Rayport, 1997; Suri, 2005; Mariampolski, 2006) and the underlying need remains both unacknowledged and unarticulated by consumers. These observations therefore generate a direct source of ideas for innovative product development (Suri, 2005) which is the goal of the ethnographic market research, empathic design and ethnofuturism studies described in Table 20.

Despite sharing a common goal in terms of the type of insights sought, the methods of ethnographic market research, empathic design and ethnofuturism differ in their research approach. Ethnographic market research and empathic design are similar in

their focus on current product usage behaviours. However, empathic design involves the observation of consumers by company designers, equipped with the knowledge of what can feasibly be developed by their organisation (Leonard and Rayport, 1997; Poolton and Ismail, 2000; Deszca et al, 1999). The interpretation of hidden needs and idea generation for innovative product development is therefore guided by technological capabilities, whereas ethnographic market research activities seek to highlight needs without the potential curtailment of creativity which results from these design feasibility considerations. Ethnofuturism differs from both these approaches by seeking to combine observational insights with predictions of future market trends and customer preferences (Cooper and Evans, 2006; Millett, 2006) in order to identify both current and future hidden consumer needs.

The second form of insight results from the understanding of cultural systems that guide product choices (Squires, 2002; Leinbach, 2002; Arnould and Price, 2006; Wallendorf and Arnould, 1991). Culture and cultural knowledge provide the basis for human consciousness, beliefs and values. The meanings that people interpret from daily activities are guided by this cultural background (Mariampolski, 1999). Product usage forms part of daily life and as such these culturally-driven influence consumption patterns (Elliott and Jankel-Elliott, 2003) and goals (Squires, 2002). Developing an understanding of the relevant cultural influences on consumption and observing specific “disconnects” (Squires, 2002, p. 107) where current product usage results in a compromise of cultural ideals can result in ideas for innovative product development. The development of this type of insight is the goal of the studies in which ethnography was employed as a research method in the identification of hidden consumer needs.

#### **4.4.2.2 Critical Evaluation of Ethnographic Research**

The research within the literature described in Table 20 was evaluated in accordance with the areas of focus highlighted in Section 4.4.1. The following discussion describes the results of this critical review process.

- **Research Sample and Recruitment**

Of the articles in Table 20 only one (Rosenthal and Capper, 2006) provides detailed information regarding the sample sizes, characteristics and processes of recruitment in the ethnographic studies described. A further one item of literature (Berstell and Nitterhouse, 1997) describes the process by which the research sample was recruited. The remaining items supply either high level information (e.g. describing participants as 'families' (Squires, 2002; Kumar and Whitney, 2003) or 'RV owners' (Leinbach, 2002)) or no information at all. The absence of data regarding the samples and recruitment methods weakens the resulting claims in respect of the successful application of ethnographic research methods to the identification of hidden needs, as there is no confirmation within the literature that bias within the research sample was avoided.

- **Data Collection**

As previously described the goal of ethnographic research is to observe in detail the behaviours of a specific consumer group in respect of a product category of interest. Studies of this nature would therefore be weakened where observation was in some way restricted, e.g. through the application of ethnographic techniques which failed to capture everything of interest. Table 20 illustrates two distinct approaches to observation: direct observation by the researcher and the use of indirect videoing or photography methods. Both have strengths and weaknesses. Direct observation allows the capture of sensory factors such as smells, textures and tastes, which can lead to an enriched understanding of consumption behaviours (Leonard and Rayport, 1997; Mariampolski, 2006), not easily gained from viewing video recordings. However, the presence of a researcher can impact the behaviour of participants, resulting in inaccurate portrayals of consumer behaviour. This risk may be overcome by the use of video recording or photography. Both approaches have the potential to result in flawed data and as the authors do not address this potential weakness within their research it represents a further limitation in respect of the relevant claims.

A second data collection consideration is the period over which observations were gained. Insufficient periods of observation could restrict the insights gained and lead to flawed conclusions. As Table 20 illustrates, researchers spent between 90 minutes (Rosenthal and Capper, 2006) and 12 months (Leinbach, 2002) immersed in the context of interest. Rosenthal and Capper (2006) justify the relatively short observation periods within the studies they report by detailing the structured approach to data collection. However, they do not describe the use of a pilot study in which the approach was tested and any weaknesses resolved. As such the insights gathered may have been less than optimal and their claims are therefore weakened. Of the seven items which describe the use of ethnographic methods in accessing hidden consumer needs, four provide no detail of study duration and as a result conclusions cannot be drawn as to whether sufficient time was allowed for data collection. As such their claims of successful ethnographic research are weakened.

Finally consideration should be given to the involvement of the authors within the research discussed. Squires (2002) and Leinbach (2002) describe the collection of data in which they were directly involved, thereby providing firsthand accounts of observations and insights. The remaining pieces report third party studies in which the authors were not directly involved. As such their accounts may lack detail, contain inaccuracies, or may be drawn from sources in which errors and weaknesses were disguised, thereby weakening their claims.

- **Interpretation of Hidden Consumer Needs**

As described in Section 4.4.2.1, the interpretation of hidden needs in the literature detailed in Table 20 resulted from the observation of weaknesses with current products or of unfulfilled cultural ideals. Only one author (Squires, 2002) describes the process by which hidden needs were interpreted from the observational data. The claims within the remaining studies are subsequently weakened due to a lack of transparency in interpretation, which renders the reader unable to draw conclusions regarding the effectiveness of their interpretive processes. A specific risk associated

with interpretation is that of researcher bias, which arises when a researcher applies their own product experiences and preferences or cultural values to the interpretation of hidden consumer needs, thereby presenting inaccurate conclusions. This risk can be mitigated by the use of triangulation methods, whereby interpretations are critiqued by either a 3<sup>rd</sup> party researcher not involved in the study or by a member of the research sample, thereby ensuring their accuracy and representativeness. However, none of the texts in Table 20 detail this process, weakening all their respective claims as a result.

- **Development of Conclusions**

In all the pieces of literature in Table 20 the development of conclusions in respect of hidden need identified evolved directly from the process of interpretation and did not require any further methodological steps.

#### **4.4.2.3 Claims relating to Superiority of Ethnographic Research Methods**

In six of the seven texts in Table 20 it is claimed that ethnographic research is more effective than alternative methods in accessing hidden consumer needs. Table 21 summarises the claims made by the authors of the SRQ 1 literature.



**Table 21: Claims made within the SRQ 1 Literature in respect of the Superiority of Ethnographic Research Methods**

<b>Authors</b>	<b>Claim</b>
Rosenthal & Capper, 2006	“Formal market research” (Rosenthal and Capper, 2006, p. 216) may fail to identify opportunities for innovation which ethnographic market research can uncover.
Kumar & Whitney, 2003	The use of ethnographic market research overcomes the weaknesses of focus groups and surveys which arise from participant responses being limited by their current knowledge and expectations.
Berstell & Nitterhouse, 1997	Traditional surveys and focus groups can lead to researchers’ investigating the wrong topics or the wrong participants whereas ethnographic approaches can uncover information which is “outside the box of current thinking” (Berstell and Nitterhouse, 1997, p. 5).
Leonard & Rayport, 1997	Surveys, focus groups and interviews are inevitably biased by the involvement of researchers and the information arising from constrained dialogue or statistical techniques lacks critical information. Empathic design overcomes these problems.
Leinbach, 2002	Ethnography is more effective than quantitative demographic and opinion surveys, which “assume they are talking with the right customers and getting accurate information” (Leinbach, 2002, p. 10)

As Table 21 notes, ethnographic research methods are compared favourably by the authors to focus group, survey and interview methods. However, Rosenthal and Capper (2006) refer to “formal market research” (Rosenthal and Capper, 2006, p. 216) yet do not define this term or specify the methods to which they are referring. As such their claim that ethnographic market research is more effective lacks clarity and therefore strength. A further examination of the SRQ 1 literature finds that none of the texts include a direct comparison of methods within the research described. Consequently the insights generated by ethnographic methods are not compared to those from alternative approaches and as any claims that ethnographic techniques are more effective in the identification of hidden consumer needs are not warranted.

#### **4.4.2.4 Summary of Critical Review of SRQ 1 Ethnographic Research**

Table 20 describes a series of seven texts in which it is claimed that, as a result of its emphasis on the observation of consumers, ethnographic market research was successfully employed in the identification of hidden consumer needs at the idea

generation stage of innovative product development. However, a detailed and critical examination of the evidence underpinning these claims identified a series of limitations, which effectively weaken the conclusions drawn by the authors. A summary of the limitations identified is provided in Table 22, where the text within the Table summarises the limitations observed. Areas within Table 22 with no text reflect the absence of a particular limitation.

The conclusion from the review of the ethnographic SRQ 1 literature is that, despite claims of the successful application of ethnographic methods within the context of interest, due to the limitations observed within the studies the literature presents no conclusive evidence that ethnographic methods were effective in identifying hidden consumer needs. Similarly, claims by the authors that ethnographic research methods are superior to alternative approaches to enquiry are not backed with any evidence of a direct comparison of methods.

**Table 22: Summary of Limitations of SRQ 1 Ethnographic Studies**

Authors	Article Limitations							
	Sample Size	Sample Characteristics	Sample Recruitment	Data Collection	Pilot Study	Transparent Interpretation	3 <sup>rd</sup> Party Check on Interpretation	Development of Conclusions
<b>Berstell &amp; Nitterhouse, 1997</b>	No detail provided	No detail provided		Study duration not specified.	No Pilot Study	Process not described	No checks carried out	n/a
<b>Kumar &amp; Whitney, 2003</b>	No detail provided	No detail provided	No detail provided	Risk of lack of detail from video ethnography not addressed.	No Pilot Study	Process not described	No checks carried out	n/a
<b>Rosenthal &amp; Capper, 2006</b>				Risk of researcher influence on behaviour not addressed.  Authors not involved in data capture.	No Pilot Study	Process not described	No checks carried out	n/a
<b>Squires, 2002</b>	No detail provided	No detail provided	No detail provided	Risk of researcher influence on behaviour not addressed. Study duration not specified.	No Pilot Study		No checks carried out	n/a
<b>Leinbach, 2002</b>	No detail provided	No detail provided	No detail provided	Risk of researcher influence on behaviour not addressed.	No Pilot Study	Process not described	No checks carried out	n/a
<b>Leonard &amp; Rayport, 1997</b>	No detail provided	No detail provided	No detail provided	Risk of researcher influence on behaviour not addressed. Study duration not specified.  Authors not involved in data capture	No Pilot Study	Process not described	No checks carried out	n/a
<b>Cooper &amp; Evans, 2006</b>	No detail provided	No detail provided	No detail provided	Risk of researcher influence on behaviour not addressed. Study duration not specified  Authors not involved in data capture	No Pilot Study	Process not described	No checks carried out	n/a

#### **4.4.3 Critical Review of SRQ 1 Customer Involvement Literature**

Table 23 describes in detail the SRQ 1 literature in which customer involvement methods were employed in the identification of hidden consumer needs at the idea generation stage of innovative product development.

##### **4.4.3.1 Characteristic of Customer Involvement Method which enables the identification of Hidden Consumer Needs**

Customer involvement entails the direct and ongoing collaboration of innovating companies target consumers in product development initiatives (Dahlsten, 2004; Roberts et al., 2005). It is this characteristic of direct involvement which enables the identification of hidden consumer needs. The customer involvement method is underpinned by the assumption that consumers effectively assess the value of a new product through its eventual usage (Kristensson et al., 2002). As such it is their expectations and desires in respect of this resulting value which are of relevance to innovative product development. However, specific needs are often difficult to articulate in advance of using a new product. The goal of customer involvement is to capture these needs, which would otherwise be difficult to detect (Roberts et al., 2005; Kristensson et al., 2004), by incorporating the design ideas generated by consumers into the product development process. Hidden needs are likely to be encapsulated in the ideas created by the consumers and therefore translated directly into the resulting product design (Kristensson et al., 2004; Matting et al., 2004).

**Table 23: SRQ 1 Customer Involvement Studies**

Research Method	Authors	Techniques Employed in Data Collection	Product Category	Claims in Respect of Identified Hidden Needs	Sample and Recruitment	Interpretation and Analysis
Customer Involvement	Kristensson, Gustafsson & Archer, 2004	<p>Participants were equipped with sample technology and tasked with creating new mobile phone messaging services over a 12 day period of use within the context of their daily lives.</p> <p>Ideas were captured in a journal and follow-up interviews took place with participants to discuss the ideas generated.</p>	Mobile Phones	<p>This use of the technology within the daily lives of the participants resulted in the reflection of hidden needs within the ideas produced, driven by personal and environmental characteristics which are otherwise difficult to detect.</p> <p>The involvement of target users therefore led to the generation of ideas for innovative product development which were more original and of greater potential value to consumers than those produced by expert users or design professionals.</p>	<p>Three groups were gathered and their ideas compared.</p> <p><u>Normal Users</u></p> <ul style="list-style-type: none"> <li>• 19 business and social science students</li> <li>• Average age of 24.</li> </ul> <p><u>Expert Users</u></p> <ul style="list-style-type: none"> <li>• 16 students of computer science,</li> <li>• Average age of 26.</li> </ul> <p>Students were deemed to constitute a representative sample as they were considered the most frequent users of the technology under development.</p> <p><u>Professional designers</u></p> <ul style="list-style-type: none"> <li>• 12 corporate representatives from the mobile phone industry.</li> <li>• Average age of 36.</li> </ul>	<p>Participants transferred the ideas from their journals into a predetermined format. All ideas were then judged by four panels of judges to determine their originality, value and ease of development.</p> <p>The panels consisted of:</p> <ul style="list-style-type: none"> <li>• 6 Telecom company engineers,</li> <li>• 6 external consultants from the telecommunications industry,</li> <li>• 6 students, 3 of computer science and 3 of business administration, and</li> <li>• 3 marketing experts.</li> </ul> <p>Each judge scored the ideas on a scale of 1 to 10 in terms of their originality, value and ease of development. Mean scores were calculated for each sample group.</p> <p>ANOVA exercises compared the resulting means to determine whether differences in mean scores between the groups were statistically significant.</p>

**Table 22 continued: SRQ 1 Customer Involvement Studies**

Research Method	Authors	Techniques Employed in Data Collection	Product Category	Claims in Respect of Identified Hidden Needs	Sample and Recruitment	Interpretation and Analysis
Customer Involvement	Dahlsten, 2004	<p>A 3-year involvement of consumers in innovative product development.</p> <p>This involved:</p> <ul style="list-style-type: none"> <li>• Informal meetings between research participants and moderator to elicit opinions and expectations regarding the product.</li> <li>• A follow-up focus group discussion where sample materials and videos were presented and discussed.</li> <li>• The presentation of a full-scale mock-up for further examination and comment.</li> </ul>	Sports Utility Vehicles (SUVs)	The authors claim that a process of 'tacit design by customer presence' took place. That is, tacit consumer knowledge was co-opted via the capture of hidden and latent consumer needs at the idea generation stage. This knowledge transfer took place through a process of socialisation between developers and the involved participants.	<p>A sample representative of the product target market was recruited and consisted of affluent professional women in California, who were likely to make independent decisions regarding vehicle purchase.</p> <p>A spread of ages and professions was represented.</p> <p>24 women began the study. 16 remained until the end.</p> <p>Recruitment focussed on one of the researcher's circle of acquaintances.</p>	The opinions and expectations voiced in the informal meetings were incorporated in subsequent concept development phases. Future feedback sessions served to redefine the product to meet the needs of the study participants.

#### **4.4.3.2 Critical Evaluation of Customer Involvement Research**

The research within the literature described in Table 23 was evaluated in accordance with the areas of focus highlighted in Section 4.4.1. The following discussion describes the results of this critical review process.

- **Research Sample and Recruitment**

As Table 23 illustrates, both the SRQ 1 customer involvement studies provide details of the research sample and justify their involvement in accordance with the goals of the research. This supports the development of robust conclusions from both studies. However, a weakness is observed within Dahlsten's (2004) investigation as participants were recruited from within the researcher's circle of acquaintances. This implies an element of familiarity between participants and the researcher, as well as between the participants themselves. This could have resulted in the presence of peer pressure within the group and the subsequent withholding of information or ideas, which may have been inconsistent or potentially embarrassing. Dahlsten (2004) does not address this potential limitation and as a result the claim that customer involvement led to the identification of hidden consumer needs is weakened.

- **Data Collection**

The data collection processes differed between the two studies in Table 23, as Dahlsten (2004) involved consumers in a group setting whereas Kristensson et al (2004) instructed customers to develop ideas on an individual basis. These approaches have both strengths and weaknesses. For example, the group approach created the potential for idea generation through the dynamic interaction of potential consumers, while suffering from the risk of reduced quality of information, should responses be hampered by peer pressure or the inability of quieter participants to articulate their views against more vocal respondents. The individual approach lacks the potential group dynamic but avoids the issues of peer pressure. The authors did not address the potential weaknesses within their chosen approach to data collection and it represents a weakness within both studies.

A further potential limitation is identified within the Dahlsten (2004) article, which relates to the lack of contextual customer involvement. That is, unlike the study by Kristensson et al (2004) the needs and preferences of the consumers involved in the development process were not captured within the context of use. Consequently hidden needs which are derived from environment of product usage (Matthing et al., 2004; Kristensson et al., 2004) may not have been identified. Finally, neither article details the use of a pilot study in which their data collection methods were tested and as a result there is a risk that the process may have been flawed.

- **Interpretation of Hidden Consumer Needs**

The method adopted by Dahlsten (2004) reflects the goals of customer involvement research outlined in Section 4.4.3.1 and effectively incorporated the hidden needs of target consumers in the product design through their design ideas. The long term nature of the project and ongoing involvement of the participants encompasses 'in built' respondent checks. That is, participants were able to assess whether their needs had been correctly interpreted and reflected in the product design as the development progressed. As such no major interpretive weaknesses exist within Dahlsten's (2004) study. Kristensson et al (2004) also employed respondent checks in the form of follow-up interviews in which the researcher's understanding of the design idea created and communicated in writing by the participant was checked.

- **Development of Conclusions**

The conclusions in respect of hidden needs evolved from their interpretation and incorporation in the product design in the study by Dahlsten (2004) and no further analysis was carried out. Kristensson et al (2004) however, statistically analysed the originality of the ideas generated by the involved consumers in order to draw conclusions as to whether target consumer did generate more creative ideas than expert and professional users, which reflected their hidden needs. The authors justify and describe this approach in detail and as such no limitations within the development of conclusions were observed.



#### **4.4.3.3 Claims Relating to the Superiority of the Customer Involvement Method**

The articles in Table 23 do not make explicit claims regarding the superior effectiveness of customer involvement methods in comparison to alternative approaches to hidden consumer needs identification.

#### **4.4.3.4 Summary of Critical Review of SRQ 1 Customer Involvement literature**

Table 23 describes two articles in which it is claimed that, as a result of the direct involvement of target consumers in the product development process, customer involvement research methods were successfully employed in the identification of hidden consumer needs at the idea generation stage of innovative product development. However, a detailed and critical examination of the research identified a series of limitations which effectively weaken these claims. A summary of the limitations identified is provided in Table 24. Unlike the authors of the ethnographic studies, no explicit claims regarding the superior effectiveness of customer involvement methods are made by the authors in Table 23.

**Table 24: Summary of Limitations of SRQ 1 Customer Involvement Studies**

	Article Limitations							
	Sample Size	Sample Characteristics	Sample Recruitment	Data Collection	Pilot Study	Transparent Interpretation	3 <sup>rd</sup> Party Check on Interpretation	Development of Conclusions
<b>Kristensson, Gustafsson &amp; Archer, 2004</b>				Risk of absence of group dynamic not addressed  Lack of contextual involvement with consumers	No Pilot Study			
<b>Dahlsten, 2004</b>			Participants recruited were acquaintances of researcher.	Risk of peer pressure not addressed	No Pilot Study			n/a

#### **4.4.4 Critical Review of SRQ 1 Laddering Literature**

As described in Table 14, two of the SRQ 1 articles claim to have successfully applied the laddering interview research method to the identification of hidden consumer needs at the idea generation stage of innovative product development. Table 25 describes these 2 papers in further detail.

**Table 25: SRQ 1 Laddering Studies**

Research Method	Authors	Techniques Employed in Data Collection	Product Category	Claims in Respect of Identified Hidden Needs	Sample and Recruitment	Interpretation and Analysis
Laddering Interviews	Sondergaard, 2005	Face to face laddering interviews	Children's frozen foods	A parent's choice of food for their children was driven by their hidden needs to adhere to the underlying values of 'well being', 'happiness' and 'family togetherness'.	30 respondents.  No further detail regarding participants or their recruitment is provided.	Interviews were coded and hierarchical value maps were created using a computer programme.
Laddering Interviews	Sondergaard & Harmsen, 2007	Face to face laddering interviews	Chewing Gum	Chewing gum consumption is influenced by the needs of consumers to adhere to the underlying personal values of 'social acceptance' and 'confidence and well being'.	50 respondents.  No detail regarding participants of their recruitment is provided.	Consumer perceptions of product attributes, consequences and life values which motivate purchases were revealed through the interviews, and used to develop aggregated hierarchical value maps which for the respondent sample.

#### **4.4.4.1 Characteristic of the Laddering Interview Method which Enables the Identification of Hidden Consumer Needs**

Within the SRQ 1 studies the laddering interview research method entails the initial identification of product attributes of importance to the interviewee and the subsequent in-depth probing to ascertain the reasons for their importance. The method is underpinned by the assumption that an individual's underlying personal values act as hidden drivers for product choice (Gutman, 1982; Gutman, 1981; Vinson et al., 1977). A value is defined as "a centrally held enduring belief which guides actions and judgements across specific situations and beyond immediate goals to more ultimate end-states of existence" (Rokeach, 1968, p. 161). A person's need to maintain and adhere to their personal values therefore influences the products they choose to consume.

This relationship between personal values and product choice is explained by the means-end theory (Gutman, 1982; Gutman, 1981), which describes how consumers select products (the means) on the basis of their attributes. The consumption of these attributes results in certain consequences for the consumer and it is these consequences which result in the attainment of a desirable and values-driven end state. For example, a customer may choose to eat fruit rather than chocolate as fruit contains vitamins. The consequence of eating fruit is the absorption of these vitamins which leads to improved health. The requirement for healthiness is driven by personal values, which might include the importance of maintaining a healthy body and prolonging life (Gutman, 1982).

The goal of the SRQ 1 laddering interview studies is to identify the attributes on which consumers base their product selections, determine the consequences these attributes provide and isolate the underlying personal values to which the product selection relates. By understanding the values consumers are seeking to maintain and their current means of doing so, new products can be developed which enable the adherence to these personal values in new and innovative ways. The key characteristic

of laddering interviews is therefore the ability of the method to access the personal values of the interviewee. This is achieved by the identification of product attributes of importance and the continued probing to understand the reasons for their importance. This continues until personal values are articulated by the respondent.

#### **4.4.4.2 Critical Evaluation of Laddering Interview Research**

The research within the literature described in Table 25 was evaluated in accordance with the areas of focus highlighted in Section 4.4.1. The following discussion describes the results of this critical review process.

- **Sample and Recruitment**

As Table 25 illustrates, neither of the articles within this literature subgroup includes a detailed description of the research participants or their recruitment. This represents a major weakness within both studies as in addition to the risk of bias from the over-representation of a specific consumer group, factors such as respondent age, gender, socioeconomic or cultural background could influence the underlying personal values of relevance to the investigation. However, the authors do not describe a means of assessing, monitoring or controlling the influence of these factors. As a result their claims in respect of the successful application of laddering interviews to the identification of hidden consumer needs are weakened.

- **Data Collection**

The 2 articles in Table 25 describe the use of face to face laddering interviews in which the interviewees were probed in depth, in order to ascertain the product attributes, associated consequences and underlying influencing values, in accordance with the goal of laddering research. No specific weaknesses exist in respect of data collection.

- **Interpretation of Hidden Consumer Needs**

The process of interpretation within both studies involved the analysis of interview transcripts and the extraction of the desired product attributes, consequences and

personal values. This introduces the risk of researcher error and bias, should a comment be categorised inappropriately, or if the researcher is unduly influenced by their own values and preferences when developing the relevant themes, leading to outcomes which do not accurately reflect the views of the interviewee. These risks can be overcome by involving a third party researcher in a subsequent review of the interpretation process and outcomes, or by involving sample members in a 'sense-checking' exercise. However, neither approach was employed by the studies in Table 25. Consequently the authors provide no mitigation for the risk of flawed interpretation, thereby weakening their claims.

- **Development of Conclusions**

Both the laddering investigations in Table 25 develop conclusions for innovative product development through the aggregation of the research samples' attributes, consequence and values and the creation of hierarchical values maps. Conclusions were drawn from these maps regarding the most strongly desired product benefits and the most influential personal values, which were subsequently used to design innovative products. Sondergaard (2005) describes the use of computer software in creating the hierarchical values maps, which ensures that the aggregated model accurately reflects the consensus of the research sample, as all linkages of statistical relevance are captured and exhibited. However, Sondergaard and Harmsen (2007) are not explicit in describing how their hierarchical values map was produced and as a result there is no clear indication that it reflected all the statistically significant linkages. It may not therefore have been truly representative of the sample population and their conclusions and associated claims to knowledge are subsequently weakened.

#### **4.4.4.3 Claims Relating to the Superiority of the Laddering Interview Method**

The articles in Table 25 do not make explicit claims regarding the superior effectiveness of the laddering interview research method in comparison to alternative approaches to hidden consumer needs identification.

#### 4.4.4.4 Summary of Critical Review of SRQ 1 Laddering Interview Literature

Table 25 describes two texts in which it is claimed that, as a result of its ability to access the personal values of respondents, laddering interviews were successfully employed in the identification of hidden consumer needs at the idea generation stage of innovative product development. However, a detailed and critical examination of the research reported within the literature identified a series of limitations which effectively weaken these claims. A summary of the limitations identified is provided in Table 26. Unlike the authors of the ethnographic studies, no explicit claims regarding the superior effectiveness the laddering interview research methods are made by the authors in Table 25.

**Table 26: Summary of Limitations of SRQ 1 Laddering Interview Studies**

	Article Limitations							
	Sample Size	Sample Characteristics	Sample Recruitment	Data Collection	Pilot Study	Transparent Interpretation	3 <sup>rd</sup> Party Check on Interpretation	Development of Conclusions
<b>Sondergaard, 2005</b>		No details provided	No details provided		No pilot study		No checks carried out	
<b>Sondergaard &amp; Harmsen, 2007</b>		No details provided	No details provided		No pilot study		No checks carried out	Process of hierarchical values map creation not described

#### 4.4.5 Critical Review of SRQ 1 Probe and Learn Literature

As highlighted in Table 14, one of the SRQ 1 items of literature details the use of probe and learn methods in identifying hidden consumer needs at the idea generation stage of innovative product development. Further detail regarding this paper is provided in Table 27.



**Table 27: SRQ 1 Probe and Learn Study**

<b>Research Method</b>	<b>Authors</b>	<b>Techniques Employed in Data Collection</b>	<b>Product Category</b>	<b>Claims in Respect of Identified Hidden Needs</b>	<b>Sample and Recruitment</b>	<b>Interpretation and Analysis</b>
Probe and Learn	Lynn, Morone & Paulson, 1996	The introduction of novel technology to samples target customers, in order to gain feedback and determine its potential application and ideal product design.	Mobile Phones	Motorola successfully used this approach in the 1970s and 80s to develop their prototype mobile phone. Insights into the potential usage patterns dictated specific needs in terms of product size and weight.	A sample of congress men tested the early technology.  No other details are provided.	Feedback from the users testing the prototype products was used to develop the next product concept. The process of iteration continued until a marketable version was created.

#### **4.4.5.1 Characteristic of the Probe and Learn Method which enables the Identification of Hidden Consumer Needs**

Probe and Learn addresses the problems of market uncertainty where a potential new product incorporates novel technology which is unfamiliar to the target consumer (Lynn et al., 1996; O'Connor, 1998). Consumers are often unable to articulate their specific requirements for technology of which they are unaware (O'Connor, 1998) resulting in the relevant consumer needs remaining hidden. Innovating organisations address this challenge by incorporating the new technology within a prototype product and using it to probe the market of interest. The early version of the new product is introduced to a group of target end users and the resulting knowledge of potential usage patterns and specific user needs is applied to the development of subsequent product iterations (Deszca et al., 1999; Lynn et al., 1996; O'Connor, 1998). The probe and learn process can be repeated many times as a detailed understanding of the needs of consumers for the technology of interest is developed (Deszca et al., 1999; O'Connor, 1998). It is the introduction of novel technology to the potential consumer which is the characteristic of the probe and learn method that enables the identification of hidden consumer needs.

#### **4.4.5.2 Critical Evaluation of Probe and Learn Research**

The research within the literature described in Table 27 was evaluated in accordance with the areas of focus highlighted in Section 4.4.1. The following discussion describes the results of this critical review process.

- **Sampling**

As Table 27 illustrates, very little information is provided regarding the samples of consumers on which the new technology and product prototypes were tested or their means of recruitment. This represents a weakness within the evidence of the successful application of the probe and learn method, as conclusions regarding the suitability of the research sample cannot be drawn.

- **Data Collection**

As described in Section 4.4.5.1, the goal of the probe and learn method is to determine the hidden needs of consumers for products incorporating new and unfamiliar technologies. This iterative process negates the need for formal study pilots as subsequent tests can address weaknesses with earlier stages of the process. Lynn et al. (1996) describe the testing of prototypes and the capture of size and weight requirements. However, it's not clear by what means (e.g. observation, interview or survey) this information was captured. As a consequence firm conclusions cannot be drawn regarding the effectiveness of the data collection process. In addition, this article shares a limitation with a number of the ethnographic studies analysed in Section 4.4.2.2 as the authors were not directly involved in the research reported. Consequently their account may lack detail, contain inaccuracies, or may be drawn from sources in which errors and weaknesses were disguised, thereby weakening their claims.

- **Interpretation of Hidden Needs**

Lynn et al (1996) state that an understanding of hidden consumer needs resulted directly from the capture of the research participants' requirements and usage patterns in respect of the technology under investigation. Due to the iterative nature of probe and learn (Lynn et al, 1996) the learnings from a period of probing are reflected in a subsequent product iteration, which is then tested with a sample of target users. Consequently this method effectively incorporates ongoing 3<sup>rd</sup> party checks of the interpretation throughout the product development process. However, this article lacks detail regarding the process by which needs were interpreted from the data collected. This further weakens the claim that the probe and learn method identified hidden consumer needs at the idea generation stage of new product development.

- **Development of Conclusions**

The development of conclusions from the probe and learn research method evolved directly from the ongoing interpretation of needs and subsequent product development processes. No further methodological steps were described.

#### 4.4.5.3 Claims Relating to the Superiority of the Probe and Learn Method

Lynn et al (1996) do not make any explicit claims regarding the superior effectiveness of the probe and learn method when compared to alternative approaches to hidden consumer needs identification.

#### 4.4.5.4 Summary of Critical Review of SRQ 1 Probe and Learn Literature

Table 27 describes a journal article in which it is claimed that, due the focus of probe and learn on introducing new technology to target consumers, the method was successfully employed in the identification of hidden consumer needs at the idea generation stage of innovative product development. However, a detailed and critical examination of the research identified a series of limitations which effectively weaken the supporting evidence. A summary of the limitations identified is provided in Table 28. Unlike the authors of the ethnographic studies, no explicit claims regarding the superior effectiveness of customer involvement methods are made by the authors in Table 27.

**Table 28: Summary of limitations of SRQ 1 Probe and Learn Studies**

	Article Limitations							
	Sample Size	Sample Characteristics	Sample Recruitment	Data Collection	Pilot Study	Transparent Interpretation	3 <sup>rd</sup> Party Checks on Interpretation	Development of Conclusions
Lynn, Morone & Paulson, 1996	No detail provided	No detail provided	No detail provided	Means of data capture not Specified  Authors not involved in data collection		Process of interpretation not described		n/a

#### **4.4.6 Critical Review of SRQ 1 Mini-Concept Test Literature**

Table 24 includes a single item of literature in which the mini-concept test research method was used to identify hidden consumer needs at the idea generation stage of innovative product development. Table 29 describes this article in detail.

##### **4.4.6.1 Characteristic of Mini-Concept Test Method which enables the identification of Hidden Consumer Needs**

During mini-concept tests respondents are exposed to a series of mini-concepts which take the form of written verb-object combinations, designed to describe a possible new product function e.g. “Deodorise-Rug” (Durgee et al., 1998, p. 525). The participants note their level of interest in each mini-concept and follow-up interviews probe the underlying reasons for their responses. Underlying this research approach is the assumption that consumer cannot articulate their needs for products which do not currently exist and as a consequence these needs remain hidden. It is therefore the presentation of novel product functions to target consumers which is the key characteristic of the mini-concept test method, enabling the identification of hidden consumer needs.

**Table 29: SRQ 1 Mini-Concept Study**

<b>Research Method</b>	<b>Authors</b>	<b>Techniques Employed in Data Collection</b>	<b>Product Category</b>	<b>Claims in Respect of Identified Hidden Needs</b>	<b>Sample and Recruitment</b>	<b>Interpretation and Analysis</b>
Mini-Concept Tests	Durgee, O'Connor & Veryzer Jr, 1998	Participants were exposed to 310 mini-concepts (novel product functions) and their levels of interest captured via a scoring system.  Follow up interviews probe the reasoning behind their responses.	Food processing products	A number of novel ideas were found to be very appealing to the respondents. These reflected hidden needs as the problems solved were not articulated in a previous survey exercise designed to capture needs arising from existing problems with food processing.	30 mothers, 30 - 50 years of age.  No recruitment details provided.	Concepts of interest were scored highly by participants with the rationale for this response interpreted from follow up interviews.

#### **4.4.6.2 Critical Evaluation of Mini-Concept Test Research Design**

The research within the literature described in Table 29 was evaluated in accordance with the areas of focus highlighted in Section 4.4.1. The following discussion describes the results of this critical review process.

- **Sampling**

As Table 29 illustrates, Durgee et al. (1998) do not provide detailed descriptions of the consumer sample employed in their study or their method of recruitment. Given the focus of the research on food processing products, factors such as age, health concerns or socio-cultural background may have influenced the needs of the consumers. However, the potential effect of respondent characteristics does not appear to have been monitored or controlled within the study and the data collected may therefore have been flawed.

- **Data Collection**

Durgee et al (1998) describe their data collection processes in depth and no major limitations exist. However, a weakness within their study relates to their lack of a pilot study through which the data collection process could have been tested.

- **Interpretation of Hidden Needs**

The interpretation process is described in Table 29 and illustrated within the article by the use of verbatim quotes from the follow-up interviews, highlighting the manner in which hidden needs were identified from the mini-concept test method. No 3<sup>rd</sup> party checks on this interpretation are reported however, implying that Durgee et al (1998) have not accounted for potential bias within their interpretation. This represents a further weakness within their study.

- **Development of Conclusions**

Durgee et al (1998) conclude that mini-concept tests identified hidden consumer needs by comparing the outcome from the investigation with the findings from a

survey designed to capture needs in respect of the same product category. The mini-concept tests were found to generate insights into needs not articulated by the survey research. However, there is a lack of detail in respect of the survey exercise. For example, no detail of the survey sample is provided and so conclusions cannot be drawn in respect of its similarity to that employed within the mini-concept test research. Consequently the conclusion that mini-concept testing generated hidden consumer needs is weakened.

#### **4.4.6.3 Claims Relating to the Superiority of the Mini-Concept Test Method**

As described in Section 4.4.6.2 Durgee et al. (1998) claim that the mini-concept test research method was more effective in identifying hidden consumer needs than a survey method, which was employed within the same study. This conclusion arises from their identification of a greater number of consumer needs through the mini-concept test than from the survey. However, it is not clear whether the two research instruments were employed on a 'like for like' basis. For example it is not clear whether the respondent samples in each test were equivalent, whether the mode of questioning was coherent across the two measures, or whether the topic was introduced to the participants in a similar manner. As such it cannot be concluded that a true comparison of methods was carried out and the claim that mini-concept tests were more effective than survey measures is therefore not supported.

#### **4.4.6.4 Summary of Critical Review of SRQ 1 Mini-Concept Literature**

Table 29 describes a journal article in which it is claimed that, due the introduction of novel product functions in mini-concept tests, this research method was successfully employed in the identification of hidden consumer needs. However, a detailed and critical examination of the research identified a series of limitations which effectively weaken the supporting evidence. A summary of the limitations identified is provided in Table 30. Similarly, the claim by the authors that the mini-concept test method is superior to survey methods is not warranted due to a lack of detail regarding the process by which the two methods were compared.



**Table 30: Summary of Limitations of SRQ 1 Mini-Concept Test Studies**

	Article Limitations							
	Sample Size	Sample Characteristics	Sample Recruitment	Data Collection	Pilot Study	Transparent Interpretation	3 <sup>rd</sup> Party Checks on Interpretation	Development of Conclusions
Durgee, O'Connor & Veryzer Jr, 1998		No detail provided	No detail provided		No pilot study		No checks carried out	Comparison with benchmark study lacks clarity

#### 4.4.7 Summary of Critical Review of SRQ 1 Literature

Sections 4.4.2 to 4.4.6 described the critical review of the SRQ 1 literature. The evidence underpinning the claims of the successful application of research methods to the identification of hidden consumer needs was examined in detail. Observations arose from this critical review in respect of three key areas, which are as follows:

1. The characteristics of the research methods which enable the identification of hidden consumer needs and the underlying processes of hidden need identification.
2. The evidence of the successful application of the research methods to the identification of hidden consumer needs within the context of interest.
3. Claims of research method superiority.

The following discussion details each of these in turn.

##### 4.4.7.1 Enabling Research Method Characteristics and Underlying Process of Hidden Needs Identification.

All the authors of the SRQ 1 literature described the means by which the research methods accessed the hidden needs of consumers. Specifically, the key enabling characteristics of each method were identified and the process by which hidden needs were subsequently elicited was described in each case. Table 31 summarises the key characteristics of the SRQ 1 methods and their associated processes of hidden needs identification.

**Table 31: Summary of SRQ 1 Research Method Characteristics and Process of Hidden Needs Identification**

<b>Research Method</b>	<b>Characteristic Enabling the Identification of Hidden Consumer Needs.</b>	<b>Process of Hidden Needs Identification.</b>
Ethnographic Market Research	The contextual observation of product usage.	The observation and engagement with consumers in context enables the identification of unarticulated weaknesses with current products, from which hidden needs are interpreted.
Empathic Design	The contextual observation of product usage.	The observation and engagement with consumers in context enables the identification of unarticulated weaknesses with current products, from which hidden needs are interpreted.
Ethnography	The contextual and immersive nature of investigations.	The immersion within a consumer’s personal environment generates insights into the underlying cultural influences on behaviours. Hidden needs arise through the observation of the usage of products which cause discomfort or conflict through failing to support the achievement of culturally-oriented goals.
Ethnofuturism	The combination of ethnographic observation of current consumer behaviour with forecasts of future influences and behavioural trends.	The combination of current and future knowledge of the influences on consumer behaviour enables the anticipation of future hidden consumer needs via the development of future scenarios. These scenarios depict future product usage contexts and define associated consumer needs.
Laddering Interviews	The questioning of interviewees as to why a specific product attribute is important until no further answers can be given.	This mode of questioning identifies the underlying personal values of consumers, thereby providing insights into the hidden needs of consumers for products which support the adherence to these values.
Customer Involvement	The direct involvement of target consumers in the design and development of new products.	The design ideas produced by consumers (either individually or in conjunction with design professionals) encapsulate their hidden needs.
Probe and Learn	The introduction of new technologies to potential consumers.	By introducing new technologies to potential users and gaining their feedback on how it might be of use in their personal environments and daily lives, previously hidden needs are identified.
Mini-Concept Tests	The presentation of novel product functions to target consumers.	Presenting novel product functions raises consumer awareness of their needs for products which do not currently exist, thereby highlighting previously hidden needs.

A review of Table 31 highlights some commonalities in the hidden needs identification processes associated with the different research methods. For example, laddering interviews and ethnography both seek to interpret hidden consumer needs from an understanding of the subconscious values of the consumer. In the case of laddering interview studies these values are the deeply held beliefs of the individual (Rokeach, 1968), whereas in the ethnography research (e.g. Squires, 2002) the focus is on the numerous socio-culturally driven values of the consumer. Despite the slightly different nature of insights sought, both these methods seek to identify values as a precursor to understanding hidden consumer needs and could therefore be classed as sharing a common underlying *values-orientation* to hidden needs research. Similarly, the ethnographic market research and empathic design methods both focus on the identification of problems with current products in order to determine hidden consumer needs, and could therefore be described as sharing a *problem-orientation*.

This concept of a research orientation, such as the problem or values-orientations described above, can be defined as the underlying process by which an investigation aims to identify hidden consumer needs. A review of Table 31 identifies four distinct research orientations within the SRQ 1 literature: a values-orientation, problem-orientation, involvement-orientation and a technology-orientation. Table 32 describes these in more detail and notes the research methods which reflect these orientations.

**Table 32: Summary of SRQ 1 Research Orientations**

Research Orientation	Research Methods	Description
Problem - Oriented	Ethnographic Market Research, Empathic Design	The observation of current weaknesses or gaps in existing product functionality, from which hidden consumer needs are interpreted.
Values-Oriented	Ethnography, Laddering Interviews, Ethnofuturism	Hidden needs identification results from the identification of consumer values. These values can be personal or socioculturally driven.
Involvement-Oriented	Customer Involvement	Hidden needs are captured by the incorporation of design ideas from consumers, which reflect their hidden needs.
Technology-Oriented	Probe and Learn, Mini-Concept Tests.	Hidden needs are identified through the presentation of new technology, which informs the user of the new functionality and its benefits. This raises their awareness of current and previously unacknowledged gaps in current product functions and benefits.

The presence of these underlying research orientations results in three implications for this systematic review. These are as follows:

- The identification of the research orientations suggests that rather than the eight different research methods described in Table 13, the SRQ 1 literature actually describes the application of four research orientations to the identification of hidden consumer needs at the idea generation stage of innovative product development. The specific research methods can therefore be viewed as the means of effecting the desired research orientation, with seemingly similar methods (e.g. ethnography and ethnographic market research) reflecting different orientations.
- A lack of clarity exists surrounding the most effective means of identifying hidden consumer needs. Specifically, it is not clear from the literature which research orientation is most appropriate for research within the context of interest.
- The opportunity exists to investigate the relative effectiveness of these research orientations, rather than focus purely on research methods.

#### **4.4.7.2 The Evidence of Successful Consumer Needs Identification**

The SRQ 1 literature selected for inclusion within this review provided empirical evidence of the successful application of a given research method to the identification of hidden consumer needs at the idea generation stage of innovative product development. As the critical evaluation of the evidence underpinning the claims of successful hidden needs identification has shown however, limitations exist within all the studies and these claims are subsequently weak. There is therefore no conclusive evidence within the SRQ 1 literature that the research methods applied were done so successfully and that hidden consumer needs were accurately identified.

Individual summaries of the limitations within the claims relating to each research method were provided in Sections 4.4.2 to 4.4.6. Table 33 combines these summaries and illustrates the limitations observed within the SRQ 1 body of literature. The text within Table 33 describes the limitations in detail, and an absence of text implies that a limitation did not apply in a specific study. A review of Table 33 highlights a number of key observations, which give rise to recommendations for future research. These are as follows:

- Limitations arising from a lack of detail regarding research samples and their method of recruitment exist within studies employing six of the eight research methods. Seven of the eight methods were employed in research in which no pilot study was carried out. These limitations weaken the evidence of successful hidden needs identification within the previous studies, but could be relatively easily overcome through improved research procedures in future research activities.
- Weaknesses in relation to data collection were present in the ethnography and customer involvement studies, suggesting that these methods were not rigorously tested. Consequently, research which addresses these data collection limitations is required to test the effectiveness of these methods in a robust manner.

**Table 33: Summary of SRQ 1 Limitations**

	Authors	Article Limitations							
		Sample Size	Sample Characteristics	Sample Recruitment	Data Collection	Pilot Study	Transparent Interpretation	3 <sup>rd</sup> Party Check on Interpretation	Development of Conclusions
Ethnographic Market Research	Berstell & Nitterhouse, 1997	No detail provided	No detail provided		Study duration not specified.	No Pilot Study	Process not described	No checks carried out	n/a
	Kumar & Whitney, 2003	No detail provided	No detail provided	No detail provided	Risk of lack of detail from video ethnography not addressed.	No Pilot Study	Process not described	No checks carried out	n/a
	Rosenthal & Capper, 2006				Risk of researcher influence on behaviour not addressed. Authors not involved in data capture.	No Pilot Study	Process not described	No checks carried out	n/a
Ethnography	Squires, 2002	No detail provided	No detail provided	No detail provided	Risk of researcher influence on behaviour not addressed. Study duration not specified.	No Pilot Study		No checks carried out	n/a
	Leinbach, 2002	No detail provided	No detail provided	No detail provided	Risk of researcher influence on behaviour not addressed.	No Pilot Study	Process not described	No checks carried out	n/a
Empathic Design	Leonard & Rayport, 1997	No detail provided	No detail provided	No detail provided	Risk of researcher influence on behaviour not addressed. Study duration not specified. Authors not involved in data capture	No Pilot Study	Process not described	No checks carried out	n/a
Ethnofuturism	Cooper & Evans, 2006	No detail provided	No detail provided	No detail provided	Risk of researcher influence on behaviour not addressed. Study duration not specified	No Pilot Study	Process not described	No checks carried out	n/a
Customer Involvement	Kristensson, et al. 2004				Risk of absence of group dynamic not addressed	No Pilot Study			
	Dahlsten, 2004			Participants were friends of researcher.	Risk of peer pressure not addressed	No Pilot Study			n/a
Laddering Interviews	Sondergaard, 2005		No details provided	No details provided		No pilot study		No checks carried out	
	Sondergaard & Harmsen, 2007		No details provided	No details provided		No pilot study		No checks carried out	Process of hierarchical values map creation not described
Probe and Learn	Lynn et al, 1996	No detail provided	No detail provided	No detail provided	Means of data capture not specified		Process of interpretation not described		n/a
Mini-concept Tests	Durgee et al, 1998		No detail provided	No detail provided		No pilot study		No checks carried out	Comparison with benchmark study lacks clarity

- The critical review of the ethnography and probe and learn research highlighted limitations in interpretation, specifically relating to a lack of transparency. Future studies involving these methods should clarify and capture the process of hidden needs interpretation, overcoming the limitations of previous studies and providing robust evidence in respect of the effectiveness of these methods.
- From the overall review of the SRQ 1 literature limitations it can be concluded that the laddering interview and mini-concept test research methods present the strongest evidence for the successful identification of hidden consumer needs. This conclusion is based on the observation that the limitations observed within these studies did not relate to the more complex issues of data collection or interpretation. Rather the limitations within these studies are those which can be easily overcome through improved sampling procedures and third party checks on interpretation. However, due to the low volume of studies under review this conclusion is tentative and further research is required to determine the effectiveness of these research methods.

#### **4.4.7.3 Claims of Research Method Superiority**

As described in Section 4.4.2 to 4.4.6 it was claimed within the SRQ 1 literature that ethnographic and mini-concept test research methods are more effective than alternative methods in identifying hidden consumer needs within the context of interest. However, the evidence presented in support of these claims is either absent or weak and as a result conclusions regarding the relative effectiveness of these research methods cannot be drawn. This presents a further opportunity for future research into the relative effectiveness of research methods within the context of interest, which could be achieved through a direct comparison of a series of methods.

#### 4.5 SRQ 1 CONCLUSIONS

As described in Section 4.1, SRQ 1 is as follows:

*What research methods have been successfully applied to the identification of hidden consumer needs at the idea generation stage of innovative product development?*

Chapter 4 to addressed this question by describing the findings from the descriptive and critical reviews of the relevant literature. The following discussion describes the two key conclusions which arise from this review of the literature and summarises the findings from which they were drawn.

**Conclusion 1: The SRQ 1 literature identifies eight individual research methods which were previously employed in the identification of hidden consumer needs at the idea generation stage of innovative product development. However, the evidence that these methods were successfully applied is weak.**

This conclusion arises as, of the eight methods identified in Table 13 each method was found to have been employed in only a small number of studies and none have therefore been tested extensively within the context of interest. Consequently the evidence of their successful application is limited. As Section 4.2 describes, ethnographic market research has been most frequently applied, yet only accounts for three of the 13 studies within the SRQ 1 literature.

The critical evaluation of the evidence underlying all the claims of successful hidden consumer needs identification highlighted a series of limitations within every study. As a result, in addition to being limited the evidence within the SRQ 1 literature in respect of the successful application of the eight methods is weak. A comparison of SRQ 1 literature limitations suggest that the laddering interview and mini-concept test methods have been most successfully applied. However, due to the low volume of studies in which these methods were employed this conclusion is tentative.



**Conclusion 2: The review of the SRQ 1 literature indicates considerable scope for further research.**

As described in Section 4.3.7 the identification of hidden consumer needs at the idea generation stage of innovative product development appears to be under-researched, as evidenced by the low volume of studies within the SRQ 1 literature, the short publication period and an absence of any recent articles. Similarly, the dominance of low quality journals and absence of authors with a sustained interest in the field implies scope for further research. Also, the descriptive review of SRQ 1 literature highlighted the potential for a wide ranging interest in the outcomes of future research as previous studies were sourced from a variety of domains and from both academic and practitioner publications.

In addition to these descriptive findings the critical review of the SRQ 1 studies highlighted a series of recommendations for future research in order overcome the limitations of previous studies. In addition, the requirement to examine the application of different research orientations to the investigation of hidden consumer needs was identified. That is, rather than examining the use of various research methods in identifying hidden consumer needs at the idea generation stage of innovative product development, a study of the application of the different underlying research orientations could generate knowledge of interest and value. Finally, the SRQ 1 literature provides no conclusive evidence regarding the superior effectiveness of any of research methods described, which presents a further opportunity for research and knowledge generation through robust comparative studies.

## CHAPTER 5: SYSTEMATIC REVIEW QUESTION 2

### 5.1 INTRODUCTION

SRQ 2 is as follows:

*Within the consumer behaviour literature, what research methods have been successfully applied to the identification of hidden consumer needs which drive product consumption choices?*

Chapter 5 addresses SRQ 2 by presenting the literature identified through the search and select methodology described in Chapter 3 and describing the findings from the subsequent analysis of the texts located. The literature identified as being relevant to SRQ 2 is described in detail and the conclusions arising from a descriptive and critical review of this body of works are provided. Chapter 5 is structured as follows:

- Section 5.2 describes the SRQ 2 literature in terms of the volume of texts it comprises and the research methods identified as having been successfully applied to the identification of hidden consumer needs within the context of interest.
- Section 5.3 details the findings from a descriptive review of the key features of the SRQ 2 literature, provides an overview of the current body of works within the field of interest and identifies specific themes of relevance.
- Section 5.4 summarises the outcomes of a critical review of the SRQ 2 literature, in which the robustness of the respective claims regarding the success of each research method in identifying hidden consumer needs is assessed.
- Section 5.5 summarises the findings from the literature and draws conclusions in respect of SRQ 2.

## 5.2 SRQ 2 LITERATURE & RESEARCH METHODS IDENTIFIED

16 items of literature were identified in which the authors claim to have successfully applied four different research methods to the identification of hidden customer needs which drive product consumption choices. The research methods are shown in Table 34 and the number of texts in which their usage is described is highlighted.

**Table 34: SRQ 2 Research Methods Identified and Distribution with the Literature**

Research Method	No. of Items
Laddering Interviews	6
Ethnography	5
Depth Interviews	3
Surveys	2
<b>TOTAL</b>	<b>16</b>

As Table 34 shows, previous research within the context of interest has employed both qualitative and quantitative research methods. Qualitative methods have dominated studies with the quantitative method (surveys) accounting for a small proportion of the SRQ 2 research. Laddering interview or ethnography research methods represent the largest proportion of the SRQ 2 literature.

## 5.3 DESCRIPTIVE REVIEW OF SRQ 2 LITERATURE

The descriptive review of the SRQ 2 literature involved a detailed analysis of the texts in respect of the following features, in order to provide a description of the literature and to identify key themes:

1. Date of publication
2. Type of literature
3. Literature domain
4. Quality of journal
5. Key authors
6. Location of empirical study

Table 35 provides further information regarding the SRQ 2 literature and the following discussion considers each of these features in turn.

**Table 35: Description of SRQ 2 Literature**

Research Method	Authors	Year	Publication	Publication Type	Title	Star Rating	Study Location	Source
Laddering Techniques	Gutman	1984	Psychology and Marketing	Academic Journal	"Analyzing Consumer Behaviour Orientations Toward Beverages Through Means-End Chain Analyses"	3*	USA	Database Search
	Perkins & Reynolds	1988	Advances in Consumer Research	Academic Journal	"The Explanatory Power of Values in Preference Judgements: Validation of the Means-End Perspective"	2*	USA	Database Search
	Walker & Olson	1991	Journal of Business Research	Academic Journal	"Means-End Chains: Connecting Products with Self"	3*	Not stated	Database Search
	Valette-Florence et al	1999	Journal of Euro-marketing	Academic Journal	"Means-End Chain Analyses of Fish Consumption in Denmark and France: A Multidimensional Perspective"	No rating	Denmark & France	Database Search
	Manyiwa & Crawford	2002	Journal of Consumer Behaviour	Academic Journal	"Determining Linkages Between Consumer Choices in a Social Context and the Consumer's Values: A Means-Ends Approach"	No rating	Not stated	Database Search
	Lundgren & Lic	2010	Journal of Housing and the Built Environment	Academic Journal	"Customers Perspectives on a Residential Development using the Laddering Method"	No rating	Finland	Database Search
Ethnography	Schouten & McAlexander	1995	Journal of Consumer Research	Academic Journal	"Subcultures of Consumption: An Ethnography of the New Bikers"	4*	USA	Snowballing
	Kozinets	2002	Journal of Marketing Research	Academic Journal	"The Field Behind the Screen: Using Netnography for Marketing Research in Online Communities"	4 *	USA	Advisory Panel Recommendation
	Leigh, Peters & Shelton	2006	Journal of the Academy of Marketing Science	Academic Journal	"The Consumer Quest for Authenticity: The Multiplicity of Meanings within the MG Subculture of Consumption"	4*	USA	Snowballing
	Arnould & Price	2006	Journal of Advertising Research	Academic Journal	"Market-Oriented Ethnography Revisited"	2*	USA	Database Search
	Newholm & Hopkinson	2009	Marketing Theory	Academic Journal	"I Just Tend to Wear What I Like: Contemporary Consumption and the Paradoxical Construction of Individuality"	1 *	UK	Snowballing
Depth Interviews	Thompson	1997	Journal of Marketing Research	Academic Journal	"Interpreting Consumers: A Hermeneutical Framework for Deriving Marketing Insights from the Texts of Consumers' Consumption Stories"	4*	USA	Snowballing
	Belk, Ger and Askegaard	2003	Journal of Consumer Research	Academic Journal	"The Fire of Desire: A Multisited Inquiry into Consumer Passion"	4*	Turkey, Denmark and USA	Snowballing
	Holt & Thompson	2004	Journal of Consumer Research	Academic Journal	"Man-of-Action Heroes: The pursuit of Heroic Masculinity in Everyday Consumption"	4*	USA	Snowballing
Surveys	Pitts & Woodside	1983	The Journal of Social Psychology	Academic Journal	"Personal Value Influences on Consumer Product Class and Brand Preferences"	No rating	USA	Database Search
	Kim, Forsythe, Gu and Moon	2002	Journal of Consumer Marketing	Academic Journal	"Cross-Cultural Consumer Values, Needs and Purchase Behaviour"	1*	China and South Korea	Database Search

### 5.3.1 Review of Date of Publication

As Table 35 illustrates, the SRQ 2 articles were published over a period of 27 years and include publications in the present year. A 27 year publication period indicates that the investigation of hidden consumer needs which drive product consumption choices is an established field of enquiry. In addition the identification of articles published in 2010 suggests it is a current area of interest. Table 36 examines the publication timescales for each of the research methods employed within the SRQ 2 literature.

**Table 36: Publication Periods for SRQ 2 Research Methods**

Research Method	Publication Period	Number of Years
Laddering Techniques	1984 – 2010	26
Ethnography	1995 – 2009	14
Depth Interviews	1997 – 2004	7
Surveys	1983 – 2002	19

As the SRQ 2 literature consists of only 16 items the relatively low volume of studies renders any conclusions from the analysis of these publication periods tentative. However, as Table 36 illustrates, studies employing laddering techniques in the identification of hidden consumer needs which drive product consumption choices have been published over the longest time period, and include the most recent publications. This suggests that the laddering interview research method is the most established and consistently applied in this context. Depth interviews have the shortest publication time span of just 7 years, implying that this method is the least established. Studies within in the SRQ 2 literature employing survey research were published over a relatively long period of 19 years. However, the lack of any publications involving survey methods since 2002 could indicate that this method has been superseded by more effective approaches.

### 5.3.2 Review of Type of Literature

All the items of literature detailed in Table 35 are academic journal articles. Unlike the SRQ 1 literature no pieces from practitioner publications or books were identified as meeting all the criteria for inclusion within the systematic review.

### 5.3.3 Review of Literature Domain

The SRQ 2 literature is published in a variety of domains, as detailed in Table 37.

**Table 37: Breakdown of SRQ 2 Journal Literature by Domain**

Publication Domain	Publication Name	No. Articles	Research Methods Employed
Psychology	Psychology and Marketing	1	Laddering
	Journal of Social Psychology	1	Survey
Consumer Behaviour Research	Journal of Consumer Research	3	Depth Interviews and Ethnography
	Journal of Consumer Behaviour	1	Laddering
	Advances in Consumer Research	1	Laddering
Market Research	Journal of Consumer Marketing	1	Survey
	Journal of Euromarketing	1	Laddering
	Journal of Marketing Research	2	Depth Interviews and Ethnography
	Marketing Theory	1	Ethnography
	Journal of Advertising Research	1	Ethnography
	Journal of the Academy of Marketing Science	1	Ethnography
Other	Journal of Business Research	1	Laddering
	Journal of Housing and the Built Environment	1	Laddering

The greatest proportion of the SRQ 2 literature (12 of the 16 articles) appears in the consumer behaviour and market research domains. This reflects two of the three key domains of literature outlined in Chapter 2 and therefore supports the view of these domains as being highly relevant in informing the overall area of research interest. Relevant studies have also been published within the psychology literature and in general business research journals however, which indicates that an interest in the identification of hidden consumer needs which drive product consumption choices in other disciplines.

### 5.3.4 Review of Quality of Journal

Table 38 shows the breakdown of SRQ 2 literature by journal star rating (Cranfield, 2010).

**Table 38: Breakdown of SRQ 2 Literature by Journal Star Rating**

Research Method	Journal Star Rating	Number of Articles
Laddering	4*	-
	3*	2
	2*	1
	1*	-
	No rating	3
Ethnography	4*	3
	3*	-
	2*	1
	1*	1
	No rating	-
Depth Interviews	4*	3
	3*	-
	2*	-
	1*	-
	No rating	-
Surveys	4*	-
	3*	-
	2*	-
	1*	1
	No rating	1

As Table 38 shows, the SRQ 2 literature is published in a range of journals, rated from 4\* in quality to unrated. The highest proportion of papers (six of the 16) appear in 4\* journals. Of the four research methods, depth interviews and ethnography have been published in journals with the highest star rating. The studies employing surveys appear in the lowest quality journals.

### 5.3.5 Analysis of Key Authors

As Table 35 illustrates, a number of different authors produced the SRQ 2 literature. This suggests an absence of any authors with an in-depth or sustained involvement in the specific field of interest. However, a number of the authors appearing in Table 35 (e.g. Gutman, Thompson and Arnould) are also authors of items within the supplementary SRQ 2 literature (as described in Appendix A) and therefore represent key authors within the area of investigation.

### 5.3.6 Review of Location of Empirical Studies

The geographical locations of the studies described by the SRQ 2 literature are shown in Table 39.

**Table 39: Breakdown of SRQ 2 Literature by Location of Study**

Study Location	No. Articles	Research Method
USA	9	Laddering, Depth Interviews, Surveys and Ethnography
USA, Turkey and Denmark	1	Depth Interviews
Denmark and France	1	Laddering
UK	1	Ethnography
Finland	1	Laddering
China and South Korea	1	Survey
Not stated	2	Laddering

As Table 39 illustrates, studies of consumers in the USA have dominated the field of hidden needs research within the context of interest, with all the methods in Table 39 having been employed in this location. Investigations have been carried out in a variety of alternative countries however, suggesting a global interest in the identification of hidden consumer needs which drive product consumption choices. This is potentially a reflection of the established nature of the field of interest, identified in Section 5.3.1.



### **5.3.7 Summary of Descriptive Review of SRQ 1 Literature**

The review of the key features of the SRQ 2 literature has provided a descriptive overview of the current works which describe the investigation of hidden consumer needs which drive product consumption choices. As a result of this review three themes of interest are identified, which are described below.

1. The 27 year publication period covered by the SRQ 2 literature and presence of articles published in 2010 suggests that the investigation of hidden consumer needs which drive product consumption choices is an established and current field of interest. Consequently a foundation of in-depth knowledge should exist, from which insights can be drawn in support of the development of future research activities. Similarly, the predominantly high quality of journals in which previous studies have been published implies that the existing knowledge should be of a robust nature, further supporting its use in future research design activities.
2. The prevalence of laddering interview and ethnography research methods within the SRQ 2 literature implies that these methods are the most extensively tested within the context of interest.
3. The absence of any practitioner literature suggests that the investigation of hidden consumer needs within the context of interest in SRQ 2 is primarily an academic field of research. However, the presence of a variety of literature domains and studies in numerous locations indicates a broad interest in the topic. Consequently future research has the potential to generate knowledge of value.

As described in Section 5.1, following the descriptive review a critical review of the SRQ 2 literature was undertaken. This is described in the Section 5.4.

## **5.4 CRITICAL REVIEW OF SRQ 2 LITERATURE**

The critical review of the SRQ 2 literature entailed the detailed examination of the claims made within the texts in respect of the successful application of the research methods to the identification of hidden consumer needs which drive product consumption choices. The aim of this process was to assess the strength of the evidence upon which these claims were based. Given the focus of SRQ 2 on the successful application of methods, in order to assess the relevant claims this critical analysis focussed on three specific areas. These areas relate to the application of the research method and the subsequent interpretation of hidden consumer needs, from which the relevant claims resulted. The three key areas of focus are described in detail in Section 5.4.1.

### **5.4.1 Critical Review Areas of Focus**

The critical review of the SRQ 2 literature focussed on the following areas:

1. The characteristics of the methods described by the authors as enabling the identification of hidden consumer needs and the process by which hidden needs are subsequently elicited.
2. The quality of the research described within the text. This was critically evaluated and the strength of the evidence supporting the claims that hidden consumer needs were identified by the use of a given method was assessed. This entailed a focus on the following elements of the research:
  - The sample of the respondents involved in the study and the means by which they were recruited, as samples which are overly small or biased can result in flawed data and weak conclusions. Similarly, recruitment processes which introduce bias can also reduce the quality of the resulting claims.

- The application of the chosen research method to the collection of data, as the poor execution of research methods or failure to test a research design in advance via a pilot study can lead to poor quality data and unsound conclusions.
  - The described process of data interpretation and subsequent identification of hidden consumer needs, as a lack of transparency, flawed processes or the failure by the authors to address the risks of bias can also weaken the resulting claims to knowledge.
  - The subsequent development of conclusions and claims to knowledge, which could again reduce the quality of the contribution of a given text if this process is flawed.
3. Where the authors claim that their method of choice was superior to alternative methods, the supporting evidence was critically reviewed and the resulting strength of these claims was assessed.

In an approach reflecting that which was adopted for the descriptive review described in Section 5.3, the SRQ 2 literature was grouped by method into subgroups for the purpose of this analysis. The following discussion considers each subgroup in turn and describes the outcomes of the critical review.

#### **5.4.2 Critical Review of SRQ 2 Laddering Interview Literature**

As described in Table 35, in six of SRQ 2 articles it is claimed that the laddering interview research method was successfully applied to identification of hidden consumer needs which drive product consumption choices. These articles and their respective claims are described in further detail in Table 40.

**Table 40: SRQ 2 Laddering Interview Studies**

Research Method	Authors	Techniques Employed in Data Collection	Product Category	Claims in Respect of Identified Hidden Needs	Sample and Recruitment	Interpretation and Analysis of data
Laddering Interview	Gutman, 1984	Face to face laddering interviews	Beverage	Beverage choice is driven by need to adhere to the personal values of “happiness”, “self-esteem” and “self confidence”	80 interviewees, 25-35 years of age, equal split of men and women, all from the same town.	Product attributes, consequence and associated values were interpreted from interview transcripts. A computer programme was used to create aggregate hierarchical values maps for each beverage under investigation, which illustrated the values influencing product choice, and their realisation through specific attributes and associated consequences.
Laddering Interview	Perkins Reynolds, 1988	Face to face laddering interviews	Snack Foods	Personal values are stronger drivers of product choice than attributes or consequences, particularly where a product is used frequently.	60 interviewees, two-thirds of which were female.	A regression exercise tested the relative influence of values, product attributes and perceived consequences on product choice.
Laddering Interview	Walker & Olson, 1991	Paper and Pencil laddering exercise.	Greeting Cards	Greeting card choice is influenced by the need to adhere to the personal value of “self-expression” – although this was found to be situation dependent.	30 females.	Laddering exercises were examined to extract the subjects’ end-goals, product attributes and the connections between them. Those mentioned most frequently by the participants were deemed to be most influential
Laddering Interview	Valette-Florence et al, 1999	Face to face laddering interviews	Fish	Fish consumption is driven by the need to adhere to the personal values of “happiness”, “well-being” and “inner harmony”	85 female participants in Copenhagen. 96 female participants in Montpelier. All married with children, all primary preparers of family meals.	Attributes, consequence and values interpreted from interview transcripts. Regression and cluster analysis exercises were carried out to determine the most influential attributes, consequences and values in each of the countries under investigation
Laddering Interview	Manyiwa & Crawford, 2002	Face to face contextual laddering interviews.	Breakfast Foods.	The values which influence the choice of breakfast foods are “happiness”, “pleasure” and “social belonging”.	4 families observed. The key participant was the mother, as the primary purchaser of breakfast foods.	Product attributes, benefits and associated values were extracted from interview transcripts. Hierarchical values maps were created for each case.
Laddering Interview	Lundgren & Lic, 2010	Telephone laddering interviews	Houses	Instrumental values influence the house-buying decision.	32 participants, all of whom had viewed the development under investigation as potential buyers. 14 respondents were purchasers, 18 non-purchasers.	Attributes, consequences and values were extracted from the interview transcripts. Hierarchical value maps were generated via a computer.

#### **5.4.2.1 Characteristic of the Laddering Interview Method which Enables the Identification of Hidden Consumer Needs**

The goal of the SRQ 2 laddering interview studies is to identify the personal values which influence the behaviours of a group of consumers in respect of the products they choose to consume. This is achieved by the identification of the product attributes of importance and the continued probing of consumers to understand the reasons for their importance. This continues until personal values are articulated by the respondent. The key characteristic of laddering interviews is therefore the in-depth and repeated probing which accesses the personal values of the interviewee.

As described in Section 4.4.4.1, the laddering interview research method is underpinned by the assumption that an individual's underlying personal values act as hidden drivers for product choices (Gutman, 1982; Gutman, 1981; Vinson et al., 1977). A personal value is defined as "a centrally held enduring belief which guides actions and judgements across specific situations and beyond immediate goals to more ultimate end-states of existence" (Rokeach, 1968, p. 161). A person's need to maintain and adhere to their personal values therefore influences the products they choose to consume.

#### **5.4.2.2 Critical Evaluation of Laddering Interview Research**

The research within the literature described in Table 40 was evaluated in accordance with the areas of focus highlighted in Section 5.4.1. The following discussion describes the results of this critical review.

- **Sampling**

As Table 40 illustrates, the six laddering interview studies lack a detailed description of the research participants. As a result it's impossible to judge whether factors such as participant lifestyles, histories, cultural background or socioeconomic status influenced their personal values, therefore biasing the data generated. In addition, in only one of the articles (Lundgren and Lic, 2010) is the participant recruitment process described.

The remaining five provide no information of this nature and this represents a further flaw in their resulting arguments as the authors have again not accounted for potential bias within their sample.

Also, Manyiwa and Crawford's (2002) study involved a sample of four respondents. Due to this small sample size their claims in respect of the successful application of the laddering interview method to the identification of hidden consumer needs are weakened further. A sample of only four participants is too small to prove the effectiveness of the research methods, as the insights drawn from such a small sample may be the result of coincidence and may not arise from studies involving larger samples.

- **Data Collection**

As described in Section 5.4.2.1 the laddering interview method involves probing into the consumer's motivations and behaviours until personal values are articulated. Poor data will arise where participants either do not or cannot articulate these subconscious values. This could occur in situations where researchers fail to probe sufficiently, or where a lack of engagement or understanding of the task by the respondent limits their responses. Two of the laddering interview approaches within the SRQ 2 literature are potentially flawed in this respect. Walker and Olson (1991) used a paper and pencil laddering exercise in which customers created a map of their influencing values. This approach does not facilitate in-depth probing and the resulting data could have therefore lacked detail and accuracy in respect of the values identified. Lundgren and Lic's (2010) telephone laddering interviews may have resulted in reduced depth of insight from the participant, if the lack of face to face rendered the interviewer unaware of background distractions or confusion on the part of the interviewee.

In addition, Gutman's (1984) use of multiple interviewers with potentially different approaches, demeanours and methods of probing might have resulted in different standards of data extraction across the sample and varying quality of data. Finally, of

all the studies described only that of Lundgren and Lic (2010) involved a pilot study, in which the laddering interview method was tested in order to ensure the research design was appropriate for the data collection goals.

- **Interpretation of Hidden Needs**

The process of interpretation within the laddering interview research involved the extraction of the product attributes, consequences and personal values from the interviewee responses. This introduces the risk of researcher error and bias, should a comment be categorised inappropriately by mistake, or if the researcher is unduly influenced by their own values and preferences when developing the relevant themes. These risks can be overcome by involving a third party researcher or sample members in a subsequent 'sense-checking' review of the interpretation process and outcomes, enabling mistakes or potential bias to be identified and rectified. Of the six SRQ 2 laddering interview studies only one (Lundgren and Lic, 2010) employed a third party interpreter. This weakens the claims within the remaining articles that laddering methods were successfully applied to the identification of hidden consumer needs.

- **Development of Conclusions**

The laddering interview studies employed different methods of conclusion development, depending on the goal of the research. Where the aim was to identify the underlying values influencing product choice, as is the case in the research reported by Gutman (1894), Lundgren and Lic (2010) and Manyiwa and Crawford (2002) this was achieved by developing aggregated hierarchical values maps. These displayed the important attributes, consequences and values articulated by the respondents and were subsequently used to draw conclusions regarding the personal values of greatest influence. This process of aggregation involved the use of computer software to capture the most frequently stated attributes, consequences, values and linkages and represents an effective means of summarising the data.

Where the aim was to identify which values were most influential, as in the case of the studies by Valette-Florence et al (1999), Perkins and Reynolds (1988) and Walker and Olson (1991), statistical techniques were employed. Regression analyses were carried out by Valette-Florence et al (1999) and Perkins and Reynolds (1988) in order to determine the relative influences of the personal values identified through the laddering interviews. The use of this technique is consistent with the goal of these studies and does not present a limitation in respect of the claims made. Walker and Olson's (1991) approach differs as they determined the most influential values from the calculated frequency of mention by the research participants. However, the process by which these frequencies were calculated is not described and the authors report no statistical testing of the significance of the frequencies or the variations between them. Consequently the findings are not generalisable beyond the sample studied within the research. However, Walker and Olson (1991) generalise their findings to the wider population. The lack of detailed statistical testing results in this generalisation being flawed and presents a further weakness within their study.

#### **5.4.2.3 Claims Relating to the Superiority of the Laddering Interview Method**

The articles in Table 40 do not make claims regarding the superior effectiveness of the laddering interview research method in comparison to alternative approaches.

#### **5.4.2.4 Summary of Critical Review of SRQ 2 Laddering Interview Literature**

Table 40 describes six journal articles in which it is claimed that, as a result of its ability to access the personal values of respondents via in-depth probing, laddering interviews were successfully employed in the identification of hidden consumer needs. However, a critical examination of the research reported within this literature identified a series of limitations which weaken these claims. A summary of the limitations is provided in Table 41, where the text within the Table summarises the limitations observed. Areas within Table 41 with no text reflect the absence of a particular limitation. The authors of the articles in Table 40 do not make any explicit claims regarding the superior effectiveness of the laddering interview research method.



**Table 41: Summary of Limitations of SRQ 2 Laddering Interview Studies**

	Article Limitations							Conclusion Development
	Sample Size	Sample Characteristics	Sample Recruitment	Data Collection	Pilot Study	Transparent Interpretation	3 <sup>rd</sup> Party Check on Interpretation	
<b>Gutman, 1984</b>		No detail provided	No detail provided	Multiple interviewers	No pilot study		No checks carried out	
<b>Perkins &amp; Reynolds, 1988</b>		No detail provided	No detail provided		No pilot study		No checks carried out	
<b>Walker &amp; Olson, 1991</b>		No detail provided	No detail provided	Risk of lack of in-depth insight from pencil and paper mapping method not addressed	No pilot study		No checks carried out	Statistical techniques not defined
<b>Valette-Florence et al, 1999</b>		No detail provided	No detail provided		No pilot study		No checks carried out	
<b>Manyiwa &amp; Crawford, 2002</b>	Small Sample	No detail provided	No detail provided		No pilot study		No checks carried out	
<b>Lundgren &amp; Lic, 2010</b>		No detail provided		Risk of inability to probe during telephone interviews not addressed				

### **5.4.3 Critical Review of SRQ 2 Ethnography Literature**

As Table 35 highlights, in five of SRQ 2 articles it is claimed that ethnography was successfully applied to identification of hidden consumer needs which drive product consumption choices. These articles and their respective claims are described in Table 42.

#### **5.4.3.1 Characteristic of Ethnography which Enables the Identification of Hidden Consumer Needs**

As described in Section 4.4.2.1 ethnography involves the observation of consumers within their natural environment (Mariampolski, 2006). This enables the identification and understanding of the influences of culture on consumer behaviour and on the selection of products for consumption (Wallendorf and Arnould, 1991; Arnould and Wallendorf, 1994). Within the context of identifying hidden consumer needs which drive product consumption choices, cultural influences can arise from the subconscious desire to adhere to national cultural ideals (e.g. Arnould and Price, 2006) or from the unspoken requirements of a subculture to consume products which reinforce membership or status within that subset of society (e.g. Schouten and McAlexander, 1995; Leigh et al., 2006). The characteristic of ethnography which therefore enables the identification of hidden consumer needs is the observation of consumers in their natural environment, often through long term immersion of the researcher in the environment of interest, which leads to an understanding of the cultural influences on product consumption choices.

**Table 42: SRQ 2 Ethnographic Studies**

Research Method	Authors	Techniques Employed in Data Collection	Product Category	Claims in Respect of Identified Hidden Needs	Sample and Recruitment	Interpretation and Analysis
Ethnography	Schouten & McAlexander, 1995	Participant observation (3 year period of immersion), informal and formal interview, photography and a review of relevant publications targeting the subject of interest.	Harley Davidson Motorbike	Members of the Harley Davidson sub-culture experience a need to be viewed as authentic by fellow owners and non-members of the subculture. This is achieved by consuming products which reflect the underlying values and ethos of the subculture.	Purposeful sampling was adopted for interviews in order to represent many different groups of bikers.  No clear indication of number of interviews carried out.	“Conclusions resulted from a constant, iterative process akin to puzzle building” (Schouten and McAlexander, 1995, p. 47). Data was organised into themes from which a holistic framework was developed and hidden needs identified.  The two researchers employed “devil’s advocacy” (Schouten and McAlexander, 1995, p. 47) when reviewing each other’s interpretations in order to ensure robustness.
Ethnography	Kozinets, 2002	Netnography  The observation of cultures and communities via the monitoring of text-based dialogue in online forums.	Coffee	Consumers of coffee and related goods are influenced by deep and subculturally-based needs to attain social distinction through consumption of the most appropriate goods.	179 postings to a single online newsgroup were reviewed.  Sampling was purposeful as only postings of relevance to the research were reviewed.	Postings were categorised into themes according to their focus and content and examined to determine whether any similarities existed.
Ethnography	Leigh et al., 2006	Participant observations (5 year immersion in field of interest), informal and formal interviews and a review of documents and media.	MG Motor Cars	Through delving deep into the MG sub-culture the authors claim to have determined that consumers within the sub-culture are driven by a deeply held need to show authenticity, which in turn influences product and consumption choices.	58 formal interviews took place with informants selected for maximum variation.	The authors “iteratively developed patterned regularities in the data” (Leigh et al., 2006, p. 484) and “created an interpretation ... by making inferences from the data” (Leigh et al., 2006, p. 484).  They presented interim thematic constructions to an MG expert on two occasions for evaluation. Eight member checks took place on the emergent framework.

**Table 42 Continued: SRQ 2 Ethnographic Studies**

Research Method	Authors	Techniques Employed in Data Collection	Product Category	Claims in Respect of Identified Hidden Needs	Sample and Recruitment	Interpretation and Analysis
Ethnography	Arnould & Price, 2006	Extended participant observation of specific events, interviews and the taking of photographs.	Food	Consumers choose food products which support the cultural ideal of “homemade” meal production, due to a need to differentiate the home from the marketplace, to foster historical continuity and to enact roles within the family.	The sample consisted of families.  No detail of sample characteristics or the method of recruitment was provided.	Not described.
Ethnography	Newholm & Hopkinson, 2009	A series of telephone conversations at varying times captured participants in different situations.	Clothing	People’s choices of clothing are driven by the need to create individuality within mass markets in such as way as to both define and reflect their subconscious notions of self.	Undergraduate students (7 female, 8 male) and recently graduated professionals (6 female, 6 male). Informants were from a range of social backgrounds.	Important themes were developed throughout the period of data collection which were tested during follow-up interviews in which a close friend or family member of the respondent joined the discussion and provided a 3 <sup>rd</sup> party check on the interpretation and conclusions drawn.

#### **5.4.3.2 Critical Evaluation of SRQ 2 Ethnography Research**

The research within the literature described in Table 42 was evaluated in accordance with the areas of focus highlighted in Section 5.4.1. The following discussion describes the results of this critical review.

- **Sampling**

All the papers in Table 42 apart from that of Arnould and Price (2006) provide sufficient details of the research sample and process of recruitment, and clarify their selection on the basis of the research objective. Weaknesses exist within the recruitment approach adopted by Newholm and Hopkinson (2009) however, as rather than immerse themselves in the culture of interest they actively recruited research participants for their study. The benefits of long term immersion include the reduced impact of researcher presence on natural consumer behaviour, as participants become accustomed to the researcher's involvement (Arnould and Wallendorf, 1994). Newholm and Hopkinson (2009) do not account for the impact of their presence on the behaviour of the respondents and as a result the insights gained through their study could be biased or inaccurate.

- **Data Collection**

All the papers except that by Arnould and Price (2006) provide a good description of the methods used within their studies and the period spent observing the consumers of interest. Arnould and Price (2006) provide only a high level description of their activities and no indication is given as to the length of time spent with the sample members. This weakens the evidence within this paper that ethnography was used to successfully access hidden consumer needs as it's difficult to judge whether sufficient time was allowed for data collection. Spending an insufficient period with participants can result in a partial understanding of behaviours and associated cultural influences, leading to the generation of inaccurate conclusions regarding the consumers of interest.

The data collection techniques employed varied among the papers and weaknesses could occur with some of the methods employed. For example, Kozinets (2002) use of netnography and Newholm and Hopkinson's (2009) use of telephone interviews both fail to directly observe the participants, and therefore do not capture their body language, interaction with their surroundings or other subtle behavioural cues. In both cases the authors justify the usage of their chosen method in light of the study objectives. However, this lack of this contextually rich data could result in the conclusions drawn within these studies being flawed.

- **Interpretation of Hidden Needs**

With the exception of Arnould and Price (2006) all the five articles in Table 42 describe their data interpretation process in a transparent manner. In all cases this takes the form of an iterative development of themes pertinent to the relevant research question. Similarly, all papers apart from that by Arnould and Price (2006) detailed processes through which their interpretations and resulting conclusions were checked by third parties, in order to prevent researcher bias. In the case of Newholm and Hopkinson's (2009) study however, their chosen method of "triadic interviews" (Newholm and Hopkinson, 2009, p. 444) involved a meeting with the research participant and family member or close friend in order to sense-check the findings. This has the potential to introduce bias if the friend or family member is influenced by either the researcher or the participant and does not give a fair appraisal of the information provided.

Schouten and McAlexander's (1995) study is also flawed in this respect as they adopted a method by which they shared their individual interpretations and adopted a role of "devil's advocacy" (Schouten and McAlexander, 1995, p. 47), whereby each researcher undertook a critical view of the analysis completed by the other. However, the authors themselves note the risk of "going native" (Schouten and McAlexander, 1995, p. 46) after a lengthy period of immersion within a subculture, at which point "it becomes impossible to maintain a balanced, scholarly perspective" (Schouten and

McAlexander, 1995, p. 46). They claim to have overcome this via self-examination and vigilance. However, in reality these measures may have been insufficient and consequently the extent to which Schouten and McAlexander's (1995) interpretation is unbiased could be challenged.

- **Analysis of data and development of conclusions**

In all the studies in Table 42 the development of conclusions evolved directly from the process of interpretation and did not require any further methodological steps.

#### **5.4.3.3 Claims relating to Superiority of Ethnography**

The articles in Table 42 do not make explicit claims regarding the superior effectiveness of the ethnography research method in comparison to alternative approaches to hidden consumer needs identification.

#### **5.4.3.4 Summary of Critical Review of SRQ 2 Ethnography Research**

Table 42 describes five journal articles in which it is claimed that, as a result of the observation of consumers and interpretation of cultural influences on behaviour, ethnography was successfully employed in the identification of hidden consumer needs which drive product consumption choices. However, a detailed and critical examination of the research reported within this literature identified a series of limitations which weaken these claims. A summary of the limitations identified is provided in Table 43. The authors of the articles in Table 42 do not make any explicit claims regarding the superior effectiveness of ethnography.

**Table 43: Summary of Limitations of SRQ 2 Ethnography Studies**

	Article Limitations							
	Sample Size	Sample Characteristics	Sample Recruitment	Data Collection	Pilot Study	Transparent Interpretation	3 <sup>rd</sup> Party Check on Interpretation	Development of Conclusions
<b>Schouten &amp; McAlexander, 1995</b>					No Pilot Study		Devils advocacy approach to interpretation check may have been insufficient to avoid bias	n/a
<b>Kozinets, 2002</b>				Risk of lack of in-depth and contextual insights due to sole focus on online posts not addressed	No Pilot Study			n/a
<b>Leigh et al., 2006</b>					No Pilot Study			n/a
<b>Arnould &amp; Price, 2006</b>	No detail provided	No detail provided	No detail provided	Insufficient detail regarding activities observed and duration of study	No Pilot Study	Process not described	No checks carried out	n/a
<b>Newholm &amp; Hopkinson, 2009</b>			Risk that active recruitment of respondents rather than researcher immersion could have influenced respondent behaviour	Risk of lack of in-depth and contextual insights due to sole focus on telephone interviews not addressed	No Pilot Study		Risk of bias in triadic interviews not addressed	n/a



#### **5.4.4 Critical Review of Depth Interview Literature**

Table 35 includes three items of literature in which the depth interview research method was used to identify hidden consumer needs which drive product consumption choices. These articles and their respective claims are described in further detail in Table 44.

##### **5.4.4.1 Characteristic of Depth Interview Research Method which Enables the Identification of Hidden Consumer Needs**

Depth interviews adopt a semi-structured approach to questioning in which a topic is introduced by the interviewer and the interviewee is invited to describe their consumption experiences. The role of the researcher is to probe for clarity and understanding, to ensure that the lived experience of the consumer is captured in detail (Belk et al., 2003). From the insights provided by the respondents the meanings they derive from their consumption experiences can be identified (Thompson, 1997), which in turn enables their underlying motivations to be understood. The personal, historical and socio-cultural influences (Holt and Thompson, 2004) within the meanings attached by consumers to their experiences and on their underlying motivations can also be interpreted. These subconscious influences drive consumption behaviours and the consumption choices made by consumers are therefore influenced by a hidden need to adhere to them. The characteristic of the depth interview method that enables the identification of hidden consumer needs is therefore the semi-structured approach to questioning in which consumption stories and experiences are described in detail by the interviewee.

**Table 44: SRQ 2 Depth Interview Studies**

Research Method	Authors	Techniques Employed in Data Collection	Product Category	Claims in Respect of Identified Hidden Needs	Sample and Sampling	Interpretation and Analysis of Data
Depth Interviews	Thompson, 1997	Face to face depth interviews.	General product choice	Consumption is driven by the need to adhere to the desired self image of being “balanced” and having a “balanced lifestyle”.	7 female “baby boomers”. All 32-41 years of age, married, with children.	Hermeneutic analysis of interview transcripts, resulting on the interpretation of consumption meanings in relation to the broader personal history of the respondent.
Depth Interviews	Belk, Ger & Askegaard, 2003	Face to face depth interviews supported by projective techniques (collage making, story-telling, fairy tales) and respondent journals detailing past experiences of desire for specific objects.	General product choice.	Intertwined personal and culture forces result in objects of desire, which are implicit conduits to love, status, security, escape or attractiveness.	109 respondents in Turkey, 265 in Denmark and 139 in USA. Equal distribution of male and female participants. 80% were non-students, all young and middle class.	Interview and journal transcripts were reviewed to develop themes which related to the lived experience of desiring a specific object. The collages were analysed for metaphoric expressions of desire.
Depth Interviews	Holt & Thompson, 2004	Face to face depth interviews.	General product choice.	Male consumers choose products in order to adhere to a “man-of-action” identity, which is an unspoken ideal within US culture.	15 white men, working class or middle class, heterosexual.	The “man-of-action” template was developed from a discourse analysis of US media. Interview transcripts were analysed to identify behaviours which reflected this ideal.

#### **5.4.4.2 Critical Evaluation of SRQ 2 Depth Interview Research**

The research within the SRQ 2 literature described in Table 44 was evaluated in accordance with the areas of focus highlighted in Section 5.4.1. The following discussion describes the results of this critical review.

- **Sampling**

As Table 44 illustrates, the study undertaken by Thompson (1997) involved a relatively small sample of seven interviewees. This effectively reduces the strength of the claims made within this study, as a sample of only seven is too small to provide conclusive evidence of the effectiveness of the method in accessing hidden consumer needs. The insights drawn from such a small sample may be the result of coincidence rather than the genuine identification of the hidden needs of the interviewees. A further limitation is observed as all three studies fail to provide a detailed description of the research participants and their recruitment. As a result the claims of all the articles are weakened as the authors have not accounted for potential bias within their samples.

- **Data Collection**

All three studies were carried out on a face to face basis, thereby allowing probing by the researcher and supporting the development of the rapport required to encourage the consumer to speak freely and at length about the topic of interest. While not noted explicitly, the articles by Thompson (1997) and Holt and Thompson (2004) imply the involvement of a single researcher across all interviews, thereby supporting the need for consistency in approach if the findings from individual interviews are to be comparable. Belk et al's (2003) study involved different researchers in each of the countries of interest, which is justifiable given the potential cultural differences and the ability of a 'native' researcher to both recognise the need for and carry out appropriate probing. As such the SRQ 2 depth interview studies do not suffer from any major weaknesses in respect of data collection, apart from a failure to test the research designs in advance via the use of a pilot study.

- **Interpretation of Hidden Needs**

All three articles in Table 44 describe a process of manual interpretation, involving the review of interview transcripts in order to identify common themes which relate to the consumption experiences of and the linking of these experiences to the consumer's hidden needs. This approach is transparent yet at risk of bias, as researchers may be unconsciously influenced by their own ideals and experiences during interpretation, leading to inaccurate findings. This risk can be mitigated by the involvement of a third party interpreter or member of the research sample in checking and challenging the interpretation. However, none of the articles describe this process.

A further specific weakness applies to Holt and Thompson's (2004) investigation into the guiding forces of male consumption. Their interpretation involves the examination of transcripts for evidence of a specific influence, that is, the desire by men to adhere to a man-of-action cultural ideal. This cultural template (Arnould and Price, 2006) was itself interpreted by the researchers from a discourse analysis of mass US media. This pre-determined interpretive framework could have resulted in alternative findings (e.g. different subconscious influences) being overlooked.

- **Development of Conclusions**

In the studies reported by Holt and Thompson (2004) and Thompson (1997) the development of conclusions in respect of hidden need identified evolved directly from the process of interpretation and did not require any further methodological steps. Belk et al (2003) undertook a cross-cultural check in which an accumulation of findings took place to produce a consensus across the three countries in which the research was carried out. As with their initial interpretation stages no independent 3<sup>rd</sup> party checks were carried out, which could have resulted in further bias within their conclusions.

#### **5.4.4.3 Claims Relating to the Superiority of the Depth Interview Method**

The articles in Table 44 do not make explicit claims regarding the superior effectiveness of the depth interview research method in comparison to alternative approaches to hidden consumer needs identification.

#### **5.4.4.4 Summary of Critical Review of SRQ 2 Depth Interview Literature**

Table 44 describes three journal articles in which it is claimed that, as a result of its ability to derive insights into the consumption experiences of consumers, the depth interview research method was successfully employed in the identification of hidden consumer needs which drive product consumption choices. However, a detailed and critical examination of the research reported within this literature identified a series of limitations which effectively weaken these claims. A summary of the limitations identified is provided in Table 45. The authors of the articles in Table 44 do not make any explicit claims regarding the superior effectiveness of the depth interview method.

**Table 45: Summary of Limitations of SRQ 2 Depth Interview studies**

	Article Limitations							
	Sample Size	Sample Characteristics	Sample Recruitment	Data Collection	Pilot Study	Transparent Interpretation	3 <sup>rd</sup> Party Check on Interpretation	Development of Conclusions
<b>Thompson, 1997</b>	Small sample	No detail provided	No detail provided		No pilot study		No checks carried out	n/a
<b>Belk, Ger &amp; Askegaard, 2003</b>		No detail provided	No detail provided		No pilot study	The use of a pre-defined template may have biased the outcome	No checks carried out	The summary and formation of a cross-cultural view was not ratified by 3 <sup>rd</sup> party interpreters
<b>Holt &amp; Thompson, 2004</b>		No detail provided	No detail provided		No pilot study		No checks carried out	n/a

#### **5.4.5 Critical Review of SRQ 2 Survey Literature**

Table 35 includes two items of literature in which the survey research method was used to identify hidden consumer needs which drive product consumption choices. These articles and their respective claims are described in further detail in Table 46.

##### **5.4.5.1 Characteristic of the Survey Method which enables the Identification of Hidden Consumer Needs**

The two studies in which survey research methods were employed within the context of interest reflect similar goals to the laddering interview research described in Section 5.4.2 as they sought to identify consumer values as subconscious drivers for product choice. These projects differ in their approach to value identification however, as rather than probe the consumers directly to uncover their personal values, they use pre-defined values scales (Rokeach, 1968; Kahle 1983) to determine the values of relevance. The key characteristic of the survey methods employed within the SRQ 2 literature which enables the identification of hidden consumer needs is therefore the use of pre-defined measures of personal values.

**Table 45: SRQ 2 Survey Studies**

Research Method	Authors	Techniques Employed in Data Collection	Product Category	Claims in Respect of Identified Hidden Needs	Sample and Recruitment	Interpretation and Analysis
Surveys	Pitts & Woodside, 1983	Questionnaires designed to measure values, product preference, choice criteria and buying behaviours.	Automobiles and underarm deodorants.	Consumers with different value structures have different choice criteria.	A panel of 830 were contacted. Not clear how many responded. The sample reflected the general characteristics of households within urban areas of the US state of South Carolina. All had a gross annual income of over \$6,000	Hierarchical cluster analysis formed groups with similar values. The choice criteria, product preferences and buying characteristics of the clusters were then examined to determine whether any relationships existed between these variables.
Surveys	Kim, Forsythe, Gu & Moon, 2002	Questionnaires designed to measure values, needs, purchase behaviour (amount spent and brand loyalty) and demographic information.	Clothing choices.	Values are culturally driven and guide behaviour. Chinese and Korean women buy clothing to fulfil different subconscious needs.	399 females in Shanghai, 418 females in Seoul. Respondents were intercepted in a shopping centre and asked to participate in the study.	Factor analyses were carried out on values and needs data to determine key themes. A subsequent regression analysis tested the relative influence of the resulting factors on amount spent and brand loyalty.



#### **5.4.5.2 Critical Evaluation of Survey Research**

The research within the SRQ 2 literature described in Table 46 was evaluated in accordance with the areas of focus highlighted in Section 5.4.1. The following discussion describes the results of this critical review.

- **Sampling**

As Table 46 reports, the study by Kim et al (2002) involved a large research sample of 817 respondents, however, the article by Pitts and Woodside (1983) fails to clarify how many responses they received from the panel of 830 who were contacted. This represents a weakness within Pitts and Woodside's (1983) article as the number of responses from which their conclusions were drawn is not provided. Kim et al. (2002) provide very little detail regarding characteristics of the survey respondents despite capturing personal information within their questionnaire. As a result it's not clear how they dealt with any resulting bias. Recruitment processes are clear within both articles. However, the "shopping centre intercept" (Kim et al., 2002, p. 490) procedure adopted by Kim et al. (2002) could have reduced the quality of the data collected if respondents were distracted or in a hurry, or introduced bias into their sample if certain people with specific values were unwilling to participate.

- **Data Collection**

Both the SRQ 2 survey studies utilised pre-defined scales within their respective questionnaires, through which the values of respondents were measured. Pitts and Woodside (1983) incorporated a recognised measure designed by Rokeach (1968) yet note that it's not clear how the values within the scale were derived. They justify the usage of the scale on the basis of previous research that has proved it be a valid measure. However, this justification is backed by only one reference, casting doubt on the appropriateness of the measure employed within their study. Kim et al. (2002) incorporated Kahle's list of values (Kahle, 1983) in their questionnaire, and justify its inclusion by citing a series of studies in which it has been successfully applied to the measurement of consumer values. Their approach is therefore more robust than that

of Pitts and Woodside (1983). Neither study describes the use of a pilot study. As a result the findings could be flawed if the surveys contained weaknesses or lacked clarity. In addition, Kim et al. (2002) report the use of a number of researchers in the data collection process. This could have resulted in a lack of consistency in data collection, for example if different researchers targeted different types of shopper in the intercept process.

- **Interpretation of Hidden Needs**

In both studies the values of consumers were captured directly and required no detailed interpretation. Third party and respondent member checks were not carried out in either project. However, due to the direct data elicitation methods employed this is not deemed to be a major weakness in these articles.

- **Development of Conclusions**

Both studies employ statistical techniques which are justified within the text and result in appropriate conclusions.

#### **5.4.5.3 Claims Relating to the Superiority of the Survey Method**

The articles in Table 46 do not make explicit claims regarding the superior effectiveness of the laddering interview research method in comparison to alternative approaches to hidden consumer needs identification.

#### **5.4.5.4 Summary of Critical Review of SRQ 2 Survey Literature**

Table 46 describes two articles in which it is claimed that, as a result of its ability to capture the personal values of consumers, survey research methods incorporating pre-defined scales were successfully employed in the identification of hidden consumer needs. However, a critical examination of the research within this literature identified a series of limitations which weaken these claims. A summary of the limitations identified is provided in Table 47. The authors of the articles in Table 46 do not make any explicit claims regarding the superior effectiveness of the depth interview method.

**Table 47: Summary of Limitations of SRQ 2 Survey Studies**

	Article Limitations							
	Sample Size	Sample Characteristics	Sample Recruitment	Data Collection	Pilot Study	Transparent Interpretation	3 <sup>rd</sup> Party Check on Interpretation	Development of Conclusions
<b>Pitts &amp; Woodside, 1983</b>	Number of responses not provided			The use of a predefined yet untested scale may have resulted in poor quality data	No pilot study		n/a	
<b>Kim, Forsythe, Gu &amp; Moon, 2002</b>		Lack of detail	Shopping intercept procedure may have introduced bias into sample	Multiple researchers	No pilot study		n/a	

#### **5.4.6 Summary of Critical Review of SRQ 2 Literature**

Sections 5.4.2 to 5.4.5 described the critical review of the SRQ 2 literature. The evidence underpinning the claims of the successful application of research methods to the identification of hidden consumer needs was examined in detail. Observations arose from this critical review in respect of three key areas, which are as follows:

1. The characteristics of the research methods which enable the identification of hidden consumer needs and underlying processes of hidden needs identification.
2. The evidence of the successful application of the research methods to the identification of hidden consumer needs within the context of interest.
3. Claims of research method superiority.

The following discussion details each of these in turn.

##### **5.4.6.1 Enabling Research Method Characteristics and Underlying Process of Hidden Needs Identification.**

All the authors of the SRQ 2 literature provided a description of the means by which the research methods are believed to access the hidden needs of consumers. Specifically, the key enabling characteristics of each method were identified and the process by which hidden needs were subsequently elicited was described in each case. Table 48 summarises the key characteristics of the SRQ 2 methods and their associated processes of hidden needs identification.

**Table 48: Summary of SRQ 2 Research Method Characteristics and Process of Hidden Needs Identification**

<b>Research Method</b>	<b>Characteristic Enabling the Identification of Hidden Consumer Needs.</b>	<b>Process of Hidden Needs Identification.</b>
Ethnography	The contextual and immersive nature of investigations.	The immersion within a consumer’s personal environment generates insights into the underlying cultural influences on behaviours. Hidden needs arise through the observation of the cultural influences on product consumption choices.
Laddering Interviews	The questioning of interviewees as to why a specific product attribute is important until no further answers can be given.	This mode of questioning identifies the underlying personal values of consumers, thereby providing insights into the hidden needs of consumers for products which support the adherence to these values.
Depth Interviews	The semi-structured approach to interviewing in which consumption stories and experiences are described in depth by the interviewee.	These wide ranging and interviewee-led discussions capture detailed descriptions of the lived consumption experiences of the consumer (Belk et al., 2003) and the meanings they interpret from these events (Thompson, 1997). The interpretation of these meanings can highlight the influence of personal, historical and culturally-driven needs on purchase motivation; thereby identifying hidden consumer needs which drive product consumption choices.
Surveys	The use of pre-defined measures to capture the personal values of respondents.	As with laddering interviews, the identification of consumer values presents insights into their hidden needs for products which support the adherence of the consumer to these values.

Section 4.4.7.1 in Chapter 4 described the concept of a research orientation, which describes the process by which the study aims to identify hidden needs. As Section 4.4.7.1 notes, the review of the SRQ 1 literature led to the development of four distinct research orientations, described in Table 32 (Chapter 4). A review of the processes underpinning the studies within the SRQ 2 literature (as described in Table 48) highlights a common approach across all the investigations. Specifically, all the SRQ 2 studies adopted a values-orientation within their approach, seeking to identify the underlying values of the consumer in order to determine the resulting hidden needs which drive product consumption choices. In the case of the laddering interview and survey research the values of interest were the personal values defined by Rokeach (1968) as deeply held beliefs which influence consumer judgement and behaviour. The ethnography and survey studies focussed on the multitude of socio-cultural values which subconsciously influence consumer needs. Despite these slightly different areas of focus, Table 48 indicates a common approach within the SRQ 2 literature to the identification of hidden consumer needs which drive product consumption choices.

#### **5.4.6.2 The Evidence of Successful Consumer Needs Identification**

The SRQ 2 literature described in Table 35 provided empirical evidence of the successful application of a given research method to the identification of hidden consumer needs which drive product consumption choices. As the critical evaluation of the evidence for these claims has shown however, limitations exist within all the studies and these claims are subsequently weak. There is therefore no conclusive evidence within the SRQ 2 literature that the research methods applied were done so successfully and that hidden consumer needs were accurately identified.

Individual summaries of the limitations within the claims relating to each research method were provided in Sections 5.4.2 to 5.4.5. Table 49 combines these summaries and shows the limitations observed within the SRQ 2 body of literature. A review of Table 49 highlights a number of key observations which give rise to recommendations for future research. These are as follows:

- Limitations arising from a lack of detail regarding research samples and their recruitment exist within the studies employing the laddering interview and depth interview methods. All of the four research methods were employed in research in which no pilot study took place. Consequently, future research is required which incorporates robust sampling and pilot testing in order to overcome these limitations and provide stronger evidence of the effectiveness of these research methods.
- Weaknesses in respect of data collection were observed in the laddering interview, ethnography and survey studies. In order to test the effectiveness of these methods in a robust manner, future research is therefore required which overcomes the specific weaknesses observed within these previous investigations.
- The majority of the SRQ 2 studies provided a transparent report of the processes of interpretation. However, the laddering interview, depth interview and a number of the ethnography studies failed to include 3<sup>rd</sup> party checks of the outcomes. Future hidden needs investigations should therefore ensure this limitation is addressed, in order to provide more conclusive evidence of the effectiveness of these three research methods.
- From the overall review of the SRQ 2 literature limitations it can be concluded that none of the four research methods is supported by notably stronger evidence. An examination of the individual studies however, highlights that the study by Leigh et al. (2006) contained the fewest limitations, providing some very tentative support for ethnography as the most successfully applied research method within the SRQ 2 literature.

**Table 49: Summary of SRQ 2 Limitations**

		Article Limitations							Conclusion Development
		Sample Size	Sample Characteristics	Sample Recruitment	Data Collection	Pilot Study	Transparent Interpretation	3 <sup>rd</sup> Party Check on Interpretation	
Laddering Interviews	Gutman, 1984		No detail provided	No detail provided	Multiple interviewers	No pilot study		No checks carried out	
	Perkins & Reynolds, 1988		No detail provided	No detail provided		No pilot study		No checks carried out	
	Walker & Olson, 1991		No detail provided	No detail provided	Risk of lack of in-depth insight from pencil and paper mapping method not addressed	No pilot study		No checks carried out	Statistical techniques not defined
	Valette-Florence et al, 1999		No detail provided	No detail provided		No pilot study		No checks carried out	
	Manyiwa & Crawford, 2002	Small Sample	No detail provided	No detail provided		No pilot study		No checks carried out	
	Lundgren & Lic, 2010		No detail provided		Risk of inability to probe during telephone interviews not addressed				
Ethnography	Schouten & McAlexander, 1995					No Pilot Study		Devils advocacy approach to interpretation check may have been insufficient to avoid bias	n/a
	Kozinets, 2002				Risk of lack of in-depth and contextual insights due to sole focus on online posts not addressed	No Pilot Study			n/a
	Leigh et al., 2006					No Pilot Study			n/a
	Arnould & Price, 2006	No detail provided	No detail provided	No detail provided	Insufficient detail regarding activities observed and duration of study	No Pilot Study	Process not described	No checks carried out	n/a
	Newholm & Hopkinson, 2009			Risk that active recruitment of respondents rather than researcher immersion could have influenced respondent behaviour	Risk of lack of in-depth and contextual insights due to sole focus on telephone interviews not addressed	No Pilot Study		Risk of bias in triadic interviews not addressed	n/a



**Table 49 continued: Summary of SRQ 2 Limitations**

		Sample Size	Sample Characteristics	Sample Recruitment	Data Collection	Pilot Study	Transparent Interpretation	3 <sup>rd</sup> Party Check on Interpretation	Conclusion Development
Depth Interviews	Thompson, 1997	Small sample	No detail provided	No detail provided		No pilot study		No checks carried out	n/a
	Belk et al., 2003		No detail provided	No detail provided		No pilot study	The use of a pre-defined template may have biased the outcome	No checks carried out	The summary and formation of a cross-cultural view was not ratified by 3 <sup>rd</sup> party interpreters
	Holt & Thompson, 2004		No detail provided	No detail provided		No pilot study		No checks carried out	n/a
Surveys	Pitts & Woodside, 1983	Response rate not provided			The use of a predefined yet untested scale may have resulted in poor quality data	No pilot study		n/a	
	Kim et al., 2002		Lack of detail	Shopping intercept procedure may have introduced bias into sample	Multiple researchers	No pilot study		n/a	

#### **5.4.6.3 Claims of Research Method Superiority**

None of the articles within the SRQ 2 literature report any explicit claims in relation to the superior effectiveness of any given research methods in the investigation of hidden consumer needs which drive product consumption choices. This presents a further opportunity for future research into the relative effectiveness of research methods within the context of interest, which could be achieved through a direct comparison of a series of methods.

### **5.5 SRQ 2 CONCLUSIONS**

As described in Section 5.1, SRQ 2 is as follows:

*Within the consumer behaviour literature, what research methods have been successfully applied to the identification of hidden consumer needs which drive product consumption choices?*

Chapter 5 addressed this question by describing the findings from the descriptive and critical reviews of the literature identified as relevant to SRQ 2. The following discussion describes the two key conclusions which arise from this review of the literature and summarises the findings from which they were drawn.

**Conclusion 1: The SRQ 2 literature highlights four individual research methods which have previously been employed in the identification of hidden consumer needs which drive product consumption choices. However, the evidence that these methods were successfully applied is weak.**

This conclusion arises from the observation that, of the four research methods identified two (depth interviews and surveys) were employed in a small number of studies (three and two respectively). Limited evidence therefore exists regarding the successful application of these research methods to the identification of hidden consumer needs. In addition, the critical review of the depth interview and survey

studies highlighted a series of limitations within the claims of successful hidden needs identification. Consequently, the evidence in relation to these methods is both limited and weak.

The remaining two research methods, laddering interviews and ethnography, were applied in a greater number of investigations (six and five respectively) and a larger body of evidence therefore exists in relation to the successful employment of these methods in hidden consumer needs identification. However, the critical review of the laddering interview and ethnography literature identified a series of limitations, weakening the strength of the supporting evidence. The most robust claims would appear to be in relation to the use of ethnography. However, the basis of this observation on a single study renders this conclusion tentative.

#### **Conclusion 2: The Findings from the SRQ 2 Literature indicate Opportunities for Future Research**

The findings from the critical review of the SRQ 2 literature highlighted a series of recommendations for future research in order to overcome the limitations of previous studies and determine the effectiveness of the various research methods. In addition, the opportunity exists to investigate the relative effectiveness of each of the research methods, through a direct comparison of the methods of interest. Finally, the observation from the critical review that all the SRQ 2 studies adopted a values-orientation gives rise to further opportunities for research. Alternative research orientations could be tested, thereby determining their suitability for the identification of hidden consumer needs which drive product consumption choices.

## **CHAPTER 6: DISCUSSION**

### **6.1 INTRODUCTION**

As described in Chapter 1, the aim of this systematic review was to develop an understanding of the research methods successfully applied to the identification of hidden consumer needs. The resulting insights will guide the development of future research design activities, designed to address the current gap in knowledge regarding the most effective research methods for identifying hidden consumer needs at the idea generation stage of innovative product development. Accordingly, SRQ 1 sought to capture the extant knowledge of research methods applied within the specific context of interest. By contrast, SRQ 2 investigated studies of hidden consumer needs which drive product consumption choices, due to the similar nature of the phenomenon under investigation. SRQs 1 and 2 were formally addressed in Chapters 4 and 5. Chapter 6 discusses the overall findings and implications for the development of the desired future research activities and is structured as follows:

- Section 6.2 describes the key findings from the review of SRQ 1 and SRQ 2 literature and the implications of these findings for future research.
- Section 6.3 details the resulting recommendations for future research design.

### **6.2 KEY FINDINGS FROM THE SYSTEMATIC REVIEW OF SRQ 1 AND SRQ 2 LITERATURE & IMPLICATIONS FOR FUTURE RESEARCH**

The key findings are as follows:

1. Previous hidden consumer needs research consists of a low volume of studies.
2. A range of research methods has previously been applied to the identification of hidden consumer needs, with limited overlap of those within the SRQ 1 and SRQ 2 literature.
3. Certain research methods were more frequently employed within previous studies.

4. The claims of the successful application of certain methods were more strongly backed than those of other methods.
5. A series of underlying research orientations is observed within the SRQ 1 and SRQ 2 studies.

Sections 6.2.1 to 6.2.5 discuss each of these findings in turn and describe the resulting implications for this systematic review.

### **6.2.1 A Low Volume of Previous Studies of Hidden Consumer Needs**

As described in Chapters 4 and 5, the SRQ 1 and SRQ 2 literature consisted of 13 and 16 individual studies respectively. This results in a total of only 29 previous investigations into hidden consumer needs within the contexts of relevance. The implications of this finding for future research are twofold and are as follows:

- The lack of a large volume of previous investigations suggests significant scope for further studies of the identification of hidden consumer needs, thereby supporting the overall proposal for further research.
- The small volume of previous studies suggests the presence of limited knowledge from which to draw insights in support of future research design. Consequently, while current knowledge provides high level recommendations for subsequent investigations it is not sufficient to provide firm or detailed specifications for future research design.

### **6.2.2 A Range of Research Methods were Previously Applied with Limited Overlap between SRQ 1 and SRQ 2.**

The review of the SRQ 1 and SRQ 2 literature highlighted the previous application of eight and four research methods respectively to the investigation of hidden consumer needs. The ethnography and laddering interview research methods were common to both SRQ 1 and SRQ 2 studies, representing a limited 'overlap' between the two

contexts investigated. Accounting for this overlap a total of ten different methods was therefore applied in the research analysed within this systematic review. This represents a relatively large range of research methods within a body of only 29 studies. This and the minimal overlap of methods in the SRQ 1 and SRQ 2 studies give rise to 2 implications for future research, which are as follows:

- The large range of previously applied research methods suggests an inconsistent approach to hidden consumer needs investigations. This supports the conclusion from Chapter 2 that a lack of clarity exists surrounding the most appropriate means of accessing hidden consumer needs and supports the proposal for further research to identify the most effective research methods for hidden consumer needs identification.
- The limited overlap of methods applied in the SRQ 1 and SRQ 2 literature suggests that research into hidden consumer needs within the two domains has customarily employed different research methods. Consequently, the examination of the consumer behaviour research literature within SRQ 2 has provided insights in addition to those arising from the review of SRQ 1 literature, enhancing the knowledge from which to derive guidance for future research designs. This highlights the benefits of studying literature from a related context in order to inform the primary area of focus.

### **6.2.3 Frequently Employed Research Methods**

The identification of the most frequently applied research methods gives rise to recommendations for future research design. The incorporation of the most commonly used methods would enable future studies to build on the foundation of existing knowledge within the literature, draw comparisons with previous studies and overcome the observed weaknesses of past research activities. The descriptive review of the SRQ 2 literature identified ethnography and laddering interview methods as the most frequently employed in the investigation of hidden consumer needs which drive

product consumption choices. By contrast, the review of the SRQ 1 literature indicated that no specific research method had dominated the previous research into hidden consumer needs at the idea generation stage of innovative product development. However, as described in Section 6.2.2, the ethnography and laddering interview research methods were applied to studies in both SRQ 1 and SRQ 2, and are therefore the most frequently applied methods within the overall systematic review literature. The implication of this is as follows:

- As the most frequently applied research methods, ethnography and laddering interview research methods should be employed in future investigations into hidden consumer needs at the idea generation stage of innovative product development.

#### **6.2.4 Methods with the Strongest Evidence of Successful Hidden Needs Identification**

The identification of research methods for which there is the strongest evidence of their successful application to hidden needs identification gives rise to recommendations for future research. The incorporation of the most successful research methods should enhance the quality of the results gained in future studies and provide a benchmark against which the effectiveness of alternative methods can be assessed. From the critical review of the SRQ 1 literature it was observed that the laddering interview and mini-concept test methods were supported by the strongest evidence of successful hidden consumer needs identification. The critical review of the SRQ 2 literature did not identify any method with notably strong evidence. However, a review of individual studies resulted in the tentative conclusion that the success of ethnography was most strongly supported. The resulting implication is as follows:

- The identification of laddering interview, mini-concept test and ethnography as the research methods with the strongest evidence of their successful application to the identification of hidden consumer needs supports their

inclusion in future investigations into hidden consumer needs at the idea generation stage of innovative product development.

### **6.2.5 Underlying Research Orientations**

The studies within the SRQ 1 and SRQ 2 literature reflect underlying research orientations, which refers to the process by which hidden consumer needs are identified. The SRQ 1 research was found to have adopted one of four orientations: values, problem, involvement or technology. The SRQ 2 studies all reflected a values-orientation. As discussed in Chapter 4, the observation of these distinct research orientations results in the specific research methods being viewed purely as a means of effecting the orientation of choice within an investigation. This suggests that the selection of the specific research methods within future research may therefore be of less importance than the initial choice of a research orientation. The implications of this are three-fold and are as follows:

- The identification of distinct research orientation suggests that, rather than focussing solely on the different research methods, future research into the most effective means of identifying hidden consumer needs at the idea generation stage of innovative product development should seek to investigate the most appropriate research orientation.
- The prevalence of a values-orientation within the systematic review literature implies that this orientation should be included in future studies. The specific research methods applied could be drawn from those previously tested within the context of interest. Alternatively, values-oriented research methods which have not previously been applied to hidden consumer needs investigations could be employed.
- In addition, due to the evidence of the successful application of the mini-concept test method within the SRQ 1 literature, the findings from this review suggest that



technology-oriented research should be also included in future investigations into hidden consumer needs.

### **6.3 SUMMARY OF FINDINGS AND RECOMMENDATIONS FOR FUTURE RESEARCH DESIGN.**

As Section 6.2 illustrates, this systematic review has developed a number of recommendations for the design of future research. As described in Section 6.2.1, due to the low volume of literature identified within this review the resulting recommendations for future research design are tentative, and consist of high level proposals rather than detailed research specifications. Three recommendations for future research design are identified, which are as follows:

1. Design a programme of research which focuses on the effectiveness of the research methods most frequently applied in previous studies. This would entail a study which incorporated ethnography and laddering interview methods.
2. Design a programme of research which focuses on the relative effectiveness of those methods for which there is the greatest evidence of previous success in use. This would involve the investigation of laddering interview, mini-concept test and ethnography and research methods, as the strongest evidence of the effectiveness of these methods was presented by the literature.
3. Design a programme of research which focuses on the relative effectiveness of the differing research orientations rather than the specific research methods, in order to determine the influence of the research orientation on overall study effectiveness.

## **CHAPTER 7: CONCLUSIONS**

### **7.1 INTRODUCTION**

Chapter 7 summarises the conclusions from the systematic review and the resulting contributions made by this study to the area of research interest described in Chapter 1. The limitations of this work are discussed and the personal learning which has resulted from the completion of this study is highlighted. Chapter 7 is structured as follows:

- Section 7.2 defines the contribution of this work to the area of interest.
- Section 7.3 discusses the limitations associated with this work
- Section 7.4 highlights the personal learning which has resulted from this systematic literature review exercise.

### **7.2 CONCLUSIONS**

The completion of this systematic review of literature described within this paper resulted in four distinct contributions to knowledge. These are as follows:

1. As a result of the systematic review a full understanding of the research methods successfully applied to the identification of hidden consumer needs has been developed, specifically within the contexts of interest in SRQ 1 and SRQ 2.
2. The findings from the review confirm the need for further research into the most effective means of identifying hidden consumer needs at the idea generation stage of innovative product development.
3. The output from the review generated in three high level possibilities for the direction of future research activities. These are:

- Design a programme of research which focuses on the effectiveness of the research methods most frequently applied in previous studies. This would entail a study which incorporated ethnography and laddering interview methods.
  - Design a programme of research which focuses on the relative effectiveness of those methods for which there is the greatest evidence of previous success in use. This would involve the investigation of laddering interview, mini-concept test and ethnography and research methods, as the strongest evidence of the effectiveness of these methods was presented by the literature.
  - Design a programme of research which focuses on the relative effectiveness of the differing research orientations rather than the specific research methods, in order to determine the influence of the research orientation on overall study effectiveness.
4. The findings from the systematic review illustrated the benefits of studying previous research within a different context, as the output from the review of the SRQ 2 literature made a valid contribution to the development of the high level recommendations described in point 2.

The overall aim of this systematic review was to develop a fully informed view of the current knowledge regarding the use of research methods in the identification of hidden consumer needs and to use this knowledge to develop recommendations for the design of future research. As a result of the insights developed through the review of the SRQ literature and the resulting contributions to knowledge described above, it can be concluded that the systematic review has successfully achieved this aims.

### 7.3 LIMITATIONS

As series of limitations exist within this study, which are as follows:

1. SRQ 1 and 2 focussed on the identification of research methods which had successfully been applied to the identification of hidden needs. In reality alternative research methods may exist, which due to poor application or interpretation did not successfully identify hidden consumer needs. Literature describing these methods would therefore have been excluded from this review. However, the research methods may prove to be effective in identifying hidden consumer needs if incorporated within a robust programme of research and therefore require further investigation.
2. The focus of the SRQs on previously applied methods results in a further weakness, as literature describing new and emerging research methods which have yet to be rigorously tested within the context of interest was excluded from the review. An example of such a method is functional magnetic resonance image scanning (Miller, 2006). These methods could also prove to be effective in identifying hidden consumer needs and require further investigation.
3. A further limitation within this study relates to the focus on literature describing studies within the business-to consumer domain. Research methods such as the Lead User method (e.g. von Hippel, 1986; Urban and Von Hippel, 1988) and outcome driven interviewing (Ulwick, 2002) have been successfully applied to the investigation of hidden customer needs within the business-to-business field. These methods may be effective in the investigation of hidden consumer need. However, due to a lack of previous studies within the business-to-consumer field the literature describing these methods was excluded from this review.
4. The processes of literature selection, appraisal and review within this paper subjective at risk of bias in respect of interpretation and the conclusions drawn.

This could have been overcome by the use of a 3<sup>rd</sup> party reviewer who challenged the assumptions and resulting analysis. However, this was not carried out within this systematic literature review.

#### **7.4 PERSONAL LEARNINGS**

The completion of this systematic literature review has furnished me with excellent experience of designing and carrying a detailed review of literature in relation to a specific topic of interest. I have improved my literature search and review skills significantly, which will be of major benefit as progress my PhD studies.

In addition, the process of reviewing the literature has resulted in an increased familiarity with the key works which inform my field on interest, providing a foundation of knowledge from which to develop further insights.

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## APPENDIX A

### Items of Literature Rejected at Full Text Review Stage

The table below details the items excluded at the full text review stage of the systematic review process and the reasons for their rejection. The reasons for rejection reflect the acceptance criteria in Tables 9 and 10.

No.	Author(s)	Year, Vol/ Issue	Publication	Title	Reason for Rejection at Full Text Review Stage									
					SRQ 1 Criteria			SRQ 2 Criteria	SRQ 1 & 2 Criteria			Unit of Analysis	Product Type	Language
					Not Innovative Product Development	Not Project Level of Analysis	Research not at Ideation Stage	Not Consumer Needs which Drive Product Choice	No Empirical Research	Needs of Interest not Hidden	Study Unsuccessful or Inconclusive	B2B	Focus on Pure Services	Paper not written in English
1	Adams, D. & Hublikar, S.	2010 Mar-Apr	Research Technology Management	"Upgrade Your New-Product Machine"								X		
2	Almquist, E., Kon, M. & Bock, W.	2004 Mar-Apr	Marketing Management	"The Science of Demand"			X							
3	Alonso, L.S. & Marchetti, R.Z.	2008 Vol. 2	Latin American Advances in Consumer Research	"Segmentation and Consumption of Luxury Fragrances: A Means-End Chain Analysis"	X					X				
4	Arken, A.	2002 Vol. 14/2	Marketing Research	"The Long Road to Customer Understanding"	X					X				

No.	Author(s)	Year, Vol/ Issue	Publication	Title	Reason for Rejection at Full Text Review Stage									
					SRQ 1 Criteria			SRQ 2 Criteria	SRQ 1 & 2 Criteria			Unit of Analysis	Product Type	Language
					Not Innovative Product Development	Not Project Level of Analysis	Research not at Ideation Stage	Not Consumer Needs which Drive Product Choice	No Empirical Research	Needs of Interest not Hidden	Study Unsuccessful or Inconclusive	B2B	Focus on Pure Services	Paper not written in English
5	Arnould, E. & Wallendorf, M.	1994 Vol. 31/4	Journal of Marketing Research	"Market-Oriented Ethnography: Interpretation Building and Marketing Strategy Formulation"				X						
6	Band, W.A.	1995 Vol. 4/3	Marketing Management	"Customer-Accelerated Change"					X					
7	Barrett, H.	1996 Oct 7th	Marketing News	"Ultimate Goal is to Anticipate the Needs of Market"					X					
8	Bigne, J.E., Mattila, A.S. & Andreu, L.	2008 Vol 22/4	Journal of Services Marketing	"The Impact of Experiential Consumption Cognitions and Emotions on Behavioural Intentions"				X						
9	Blazevic, V. & Lievens, A.	2008 Vol. 36	Journal of the Academy of Marketing Science	"Managing Innovation through Customer Coproduced Knowledge in Electronic Services"						X				

No.	Author(s)	Year, Vol/ Issue	Publication	Title	Reason for Rejection at Full Text Review Stage									
					SRQ 1 Criteria			SRQ 2 Criteria	SRQ 1 & 2 Criteria			Unit of Analysis	Product Type	Language
					Not Innovative Product Development	Not Project Level of Analysis	Research not at Ideation Stage	Not Consumer Needs which Drive Product Choice	No Empirical Research	Needs of Interest not Hidden	Study Unsuccessful or Inconclusive	B2B	Focus on Pure Services	Paper not written in English
10	Bloch, P.H.	1995 Vol. 59	Journal of Marketing	"Seeking the Ideal Product Form: Design and Customer Response"					X					
11	Bogue, R & Ritson C	2006 Vol. 30/1	Intl Journal of Consumer Studies	"Integrating Consumer Information with the new product development process"						X				
12	Burton, A. & Patterson, S.	1999 Vol. 41/1	Journal of the Market Research Society	"Integration of Consumer Management in NPD"					X					
13	Bruce, M. & Whitehead M.	1988 Vol. 30/2	Journal of the Market Research Society	"Putting Design into the Picture"						X				
14	Chain, K.W., Yim, C.K. & Lam S.S.K.	2010 Vol. 74	Journal of Marketing	"Is Customer Participation in Value Creation a Double-Edged Sword?"	X									
15	Chay, R.F.	1989 Vol. 32/2	Research Technology Management	"Discovering Unrecognized Needs with Consumer Research"						X				

No.	Author(s)	Year, Vol/ Issue	Publication	Title	Reason for Rejection at Full Text Review Stage									
					SRQ 1 Criteria			SRQ 2 Criteria	SRQ 1 & 2 Criteria			Unit of Analysis	Product Type	Language
					Not Innovative Product Development	Not Project Level of Analysis	Research not at Ideation Stage	Not Consumer Needs which Drive Product Choice	No Empirical Research	Needs of Interest not Hidden	Study Unsuccessful or Inconclusive	B2B	Focus on Pure Services	Paper not written in English
16	Chen, Y-H. & Su, C-T.	2006 Vol. 17/5	Total Quality Management	"A Kano-CKM Model for Customer Knowledge Discovery"						X				
17	Chitturi, R., Raghunathan, R. & Mahajan, V	2008 Vol. 72	Journal of Marketing	"Delight by Design: The Role of Hedonic Versus Utilitarian Benefits"						X				
18	Ciccantelli, S. & Magidson, J.	1993 Vol. 10	Journal of Product Innovation Management	"From Experience: Consumer Idealized Design: Involving Consumers in the Product Development Process"					X					
19	Claeys, C., Swinnen, A. & Abeele, P.	1995 Vol. 12	International Journal of Research in Marketing	"Consumers' means-end chains for "think" and "feel" products"	X									
20	Clarke, N.	2008 May	Brand Strategy	"Thinking Outside the Brand"					X					

No.	Author(s)	Year, Vol/ Issue	Publication	Title	Reason for Rejection at Full Text Review Stage									
					SRQ 1 Criteria			SRQ 2 Criteria	SRQ 1 & 2 Criteria			Unit of Analysis	Product Type	Language
					Not Innovative Product Development	Not Project Level of Analysis	Research not at Ideation Stage	Not Consumer Needs which Drive Product Choice	No Empirical Research	Needs of Interest not Hidden	Study Unsuccessful or Inconclusive	B2B	Focus on Pure Services	Paper not written in English
21	Cooper, R. & Edgett, S.	2008 Vol. 32/1	PDMA Visions Magazine	"Ideation for Product Innovation: What are the Best Methods?"					X					
22	Court, D., Elzinge, D., Mulder, S	2009 Iss. 3	McKinsey Quarterly	"The Consumer Decision Journey"	X				X	X				
23	Czinkota, M. & Kotabe, M.	1990 Nov/ Dec	The Journal of Business Strategy	"Product Development the Japanese Way"	X					X				
24	Davis, R.E.	1993 Vol. 10	Journal of Product Innovation Management	"FROM EXPERIENCE: The Role of Market Research in the Development of New Consumer Products"			X		X					
25	Davis, R.J. & Ueyama, S.	1996 Iss. 3	McKinsey Quarterly	"Developing customers before products"								X		
26	Deszca, G., Munro, H. & Noori, H.	1999 Vol. 17/6	Journal of Operations Management	"Developing Breakthrough Products: Challenges and Options for Market Assessment"					X					



No.	Author(s)	Year, Vol/ Issue	Publication	Title	Reason for Rejection at Full Text Review Stage									
					SRQ 1 Criteria			SRQ 2 Criteria	SRQ 1 & 2 Criteria			Unit of Analysis	Product Type	Language
					Not Innovative Product Development	Not Project Level of Analysis	Research not at Ideation Stage	Not Consumer Needs which Drive Product Choice	No Empirical Research	Needs of Interest not Hidden	Study Unsuccessful or Inconclusive	B2B	Focus on Pure Services	Paper not written in English
27	Devlin, D., Birwistle, G. & Macedo, N	2003 Vol. 105/ 9	British Food Journal	"Food retail positioning strategy: A means-end chain analysis"				X						
28	Droge, C., Stanko, M.A. & Pollitte, W.	2010 Vol. 27	Journal of Product Innovation Management	"Lead Users and Early Adopters on the Web: Role of Technology Blogs"	X									
29	Druehl, C.T. & Schmidt, G.M.	2008 Vol. 17/1	Production and Operations Management	"A strategy for Opening a New Market and Encroaching on the Lower End of the Existing Market"						X				
30	Duke, C.R.	1994 Vol. 3/1	The Journal of Product and Brand Management	"Understanding customer abilities in product concept tests"					X					
31	Durgee, J.	1987 Vol. 4/4	Journal of Consumer Marketing	"New Product Ideas from Focus Groups"					X					
32	Durgee, J. & O'Connor, G.C.	1995 Vol. 22	Advances in Consumer Research	"Why some Products "Just feel right", Or, The Phenomenology of Product Rightness"					X	X				

No.	Author(s)	Year, Vol/ Issue	Publication	Title	Reason for Rejection at Full Text Review Stage							Unit of Analysis	Product Type	Language
					SRQ 1 Criteria			SRQ 2 Criteria	SRQ 1 & 2 Criteria					
					Not Innovative Product Development	Not Project Level of Analysis	Research not at Ideation Stage	Not Consumer Needs which Drive Product Choice	No Empirical Research	Needs of Interest not Hidden	Study Unsuccessful or Inconclusive			
33	Durgee, J., O'Connor, G.C. & Veryzer, R.	1996 Nov-Dec	Journal of Advertising Research	"Observations: Translating Values in Product Wants"						X				
34	Ealey, L. & Mercer, G.	1992 Iss. 3	McKinsey Quarterly	"Assembly as Design"	X		X			X				
35	Easingwood, C.J. & Storey, C.	1991 Vol. 9/1	International Journal of Bank Marketing	"Success Factors for New Consumer Financial Services"			X		X					
36	Elliott, R. & Jankel-Elliott, N.	2003 Vol. 6/4	Qualitative Market Research: An International Journal	"Using Ethnography in Strategic Consumer Research"	X				X					
37	Elmqvist, M., Fredberg, T. & Ollis, S.	2009 Vol. 12/3	European Journal of Innovation Management	"Exploring the Field of Open Innovation"			X							
38	Letelier, M.F.F., Spinosa, C. & Calder, B.J.	2000 Winter	Marketing Research	"Taking an Expanded View of Customers' Needs: Qualitative Research for Aiding Innovation"	X						X			

No.	Author(s)	Year, Vol/ Issue	Publication	Title	Reason for Rejection at Full Text Review Stage									
					SRQ 1 Criteria			SRQ 2 Criteria	SRQ 1 & 2 Criteria			Unit of Analysis	Product Type	Language
					Not Innovative Product Development	Not Project Level of Analysis	Research not at Ideation Stage	Not Consumer Needs which Drive Product Choice	No Empirical Research	Needs of Interest not Hidden	Study Unsuccessful or Inconclusive	B2B	Focus on Pure Services	Paper not written in English
39	Foxall, G.	1993 Vol. 2/1	Marketing Intelligence & Planning	"Predicting Consumer Choice in New Product Development: Attitudes, Intentions and Behaviour Revisited"			X							
40	Grunert, K.G. & Bech-Larson, T.	2005 Vol. 26	Journal of Economic Psychology	"Explaining choice option attractiveness by beliefs elicited by the laddering method"				X						
41	Gurley, T., Lin, S. & Ballou, S.	2005 Vol. 33/3	Strategy and Leadership	"Consumer decision process modelling: how leaders can better understand buyers' choices"					X					
42	Gutman, J.	1981 Vol. 8/1	Advances in Consumer Research	"A Means-End Model for Facilitating Analyses of Product Markets Based on Consumer Judgement"					X					

No.	Author(s)	Year, Vol/ Issue	Publication	Title	Reason for Rejection at Full Text Review Stage									
					SRQ 1 Criteria			SRQ 2 Criteria	SRQ 1 & 2 Criteria			Unit of Analysis	Product Type	Language
					Not Innovative Product Development	Not Project Level of Analysis	Research not at Ideation Stage	Not Consumer Needs which Drive Product Choice	No Empirical Research	Needs of Interest not Hidden	Study Unsuccessful or Inconclusive	B2B	Focus on Pure Services	Paper not written in English
43	Gutman, J.	1982 Vol. 46/2	Journal of Marketing	"A Means-End Chain Model Based on Consumer Categorisation Processes"					X					
44	Hall, J., Lockshin, L. & O'Mahony, G.B.	2001 Vol. 13/1	International Journal of Wine Marketing	"Exploring the Links Between Wine Choice and Dining Occasions: Factors of Influence"				X						
45	Harari, O.	1994 Vol. 83/3	Management Review	"The Tarpit of Market Research"					X					
46	Hauser, J., Tellis, G.J. & Griffin, A.	2006 Vol. 25/6	Marketing Science	"Research on Innovation: A Review and Agenda for Marketing Science"						X				
47	Healy, M.J., Beverland, M.B., Oppewal, H. & Sands, S.	2007 Vol. 49/6	International Journal of Market Research	"Understanding Retail Experiences: the Case for Ethnography"				X						
48	Hillmer, S. & Kocabasoglu C.	2008 Vol. 15/2	The Quality Management Journal	"Using Qualitative Data to Learn About Customer Needs"								X		

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					SRQ 1 Criteria			SRQ 2 Criteria	SRQ 1 & 2 Criteria			Unit of Analysis	Product Type	Language
					Not Innovative Product Development	Not Project Level of Analysis	Research not at Ideation Stage	Not Consumer Needs which Drive Product Choice	No Empirical Research	Needs of Interest not Hidden	Study Unsuccessful or Inconclusive	B2B	Focus on Pure Services	Paper not written in English
49	Holbrook, M.B & Hirschman E.C.	1982 Vol. 9	Journal of Consumer Research	"The Experiential Aspects of Consumption: Consumer Fantasies, Feelings and Fun"					X					
50	Hollywood L.E., Armstrong G.A. & Durkin,M.	2007 Vol. 35/9	International Journal of Retail and Distribution Management	"Using behavioural and motivational thinking in food segmentation"					X					
51	Huertas-Garcia, R. & Consolacion-Segura,C	2009 Vol. 51/6	International Journal of Market Research	"A framework for designing new products and services"						X				
52	Jang, S., Yoon, Y., Lee, I & Kim, J.	2009 Mar-Apr	Research Technology Management	"Design-Oriented New Product Development"					X	X				
53	Johne, A.	1994 Vol. 11/1	International Marketing Review	"Listening to the Voice of the Market"						X				
54	Johnson, G.J. & Ambrose, P.J.	2009 Winter	Marketing Research	"Welcome to the Bazaar"	X									
55	Kahle, L.R.	1983	Social Values and Social Change (Book)	N/A				X						

No.	Author(s)	Year, Vol/ Issue	Publication	Title	Reason for Rejection at Full Text Review Stage									
					SRQ 1 Criteria			SRQ 2 Criteria	SRQ 1 & 2 Criteria			Unit of Analysis	Product Type	Language
					Not Innovative Product Development	Not Project Level of Analysis	Research not at Ideation Stage	Not Consumer Needs which Drive Product Choice	No Empirical Research	Needs of Interest not Hidden	Study Unsuccessful or Inconclusive	B2B	Focus on Pure Services	Paper not written in English
56	Kristensson, P., Gustafsson, A. & Matthing, J.	2002 Vol. 11/1	Creativity and Innovation Management	"Users as a Hidden Resource for Creativity: Findings from an Experimental Study on User Involvement"	X									
57	Kristensson, P, Matthing, J. & Johansson, N.	2008 Vol. 19/4	International Journal of Service Industry Management	"Key strategies for the Successful involvement of customers in the co-creation of new technology-based services"			X			X				
58	Krystallis, A. & Ness, M.	2003 Vol. 16/2	Journal of International Consumer Marketing	"Motivational and Cognitive Structures of Greek Consumers in the Purchase of Quality Food Products"						X				
59	Kumar, V.	2009 Vol. 30/2	Journal of Business Strategy	"A process for practicing design innovation"					X					

No.	Author(s)	Year, Vol/ Issue	Publication	Title	Reason for Rejection at Full Text Review Stage									
					SRQ 1 Criteria			SRQ 2 Criteria	SRQ 1 & 2 Criteria			Unit of Analysis	Product Type	Language
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60	Kumar, A., Kim, Y-K. & Pelton, L.	2009 Vol. 37/6	International Journal of Retail & Distribution Management	"Indian consumers' purchase behaviour toward US versus local brands"						X				
61	Langford, R. & Schulz, K.	2006 Vol. 34/2	Strategy & Leadership	"Gaining a 3-D customer insight to drive profitable growth"	X									
62	Lowengart, O.	2010 Vol. 16/1	Journal of Business and Management	"Heterogeneity in Consumer Sensory Evaluation as a Base for Identifying Drivers of Product Choice"						X				
63	Lundkvist, A. & Yakhlef, A.	2004 Vol. 14/2	Managing Service Quality	"Customer involvement in new service development: a conversational approach"					X					
64	Luo, L., Kannan, P.K. & Ratchford, B.T.	2008 Vol XLV	Journal of Marketing Research	"Incorporating Subjective Characteristics in Product Design and Evaluations"						X				

No.	Author(s)	Year, Vol/ Issue	Publication	Title	Reason for Rejection at Full Text Review Stage									
					SRQ 1 Criteria			SRQ 2 Criteria	SRQ 1 & 2 Criteria			Unit of Analysis	Product Type	Language
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65	Luthje, J.	2004 Vol. 24	Technovation	"Characteristics of Innovating Users in a Consumer Goods Field. An Empirical Study of Sport-Related Product Consumers"			X							
66	Lusch, R.F., Vargo, S.L. & O'Brien, M.	2007 Vol. 83/1	Journal of Retailing	"Competing through service: Insights from service-dominant logic"	X					X				
67	Magnusson, P.R.	2003 Vol. 6/4	European Journal of Innovation Management	"Benefits of Involving Users in Service Innovation"									X	
68	Maklan, S., Knox, S. And Ryals, L.	2008 Vol. 50/2	International Journal of Market Research	"New trends in innovation and customer relationship management"	X									
69	Mariampolski, H.	1999 Vol. 41/1	Journal of the Market Research Society	"The Power of Ethnography"	X			X	X					
70	Mariampolski, H.	2006	Ethnography for Marketers (book)	N/A	X					X				



No.	Author(s)	Year, Vol./ Issue	Publication	Title	Reason for Rejection at Full Text Review Stage										
					Area of Focus: SRQ 1 Criteria			SRQ 2 Criteria	Area of Focus – SRQ 1 & 2 Criteria			Unit of A'sis	Product Type	Language	
					Not Innovative Product Development	Not Project Level of Analysis	Research not at Ideation Stage	Not Consumer Needs which Drive Product Choice	No Empirical Research	Needs of Interest not Hidden	Study Unsuccessful or Inconclusive	B2B	Focus on Pure Services	Paper not written in English	
71	Mascarenhas, O.A., Kesavan, R. & Benacchi, M.	2004 Vol. 21/7	Journal of Consumer Marketing	"Customer value-chain involvement for co-creating customer delight"				X							
72	Masten, D.L. & Plowman, T.M.P.	2003 Vol. 14/2	Design Management Journal	"Digital Ethnography: The Next Wave in Understanding the Consumer Experience"					X						
73	Matthing, J., Sanden, B. & Edvardsson, B.	2004 Vol. 15/5	International Journal of Service Industry Management	"New Service-Development: Learning From and With Customers"									X		
74	McCracken, G.	1990 Vol. 32/1	Journal of the Market Research Society	"Culture and consumer behaviour: an anthropological perspective"					X						
75	Mello, S.	2001 Vol. 44/1	Research Technology Management	"Right Process, Right Product"							X				
76	Miller, R.K.	2006	Consumer Behavior (Book)	"Neuro-economics"	X			X	X						
77	Miller, R.K. & Washington, K.	2009	Consumer Behavior (Book)	"Chapter 1: Influences on Consumer Behavior"							X				

No.	Author(s)	Year, Vol/ Issue	Publication	Title	Reason for Rejection at Full Text Review Stage									
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78	Miller, R.K. & Washington, K.	2009	Consumer Behavior (Book)	"Chapter 9: Why People Buy"						X				
79	Miller, W.	1995 Vol. 38/6	Research Technology Management	"A Broader Mission for R&D"					X					
80	Millet, S.M.	2006 Vol. 34/3	Strategy & Leadership	"Futuring and Visioning: Complementary Approaches to Strategic Decision Making"	X				X					
81	O'Connor, G.C.	1998 Vol. 15/2	Journal of Product Innovation Management	"Market Learning and Radical Innovation: A Cross Case Comparison of Eight Radical Innovation Projects"			X			X				
82	Ortt, R.J. & Schoormans, J.P.L.	1993 Vol. 35/4	Journal of the Market Research Society	"Consumer Research in the Development Process of a Major Innovation"								X		

No.	Author(s)	Year, Vol/ Issue	Publication	Title	Reason for Rejection at Full Text Review Stage									
					SRQ 1 Criteria			SRQ 2 Criteria	SRQ 1 & 2 Criteria			Unit of Analysis	Product Type	Language
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83	Patwardhan, M., Flora, P. & Gupta, A,	2010 Vol. IX/1	The IUP Journal of Marketing Management	"Identification of Secondary Factors that Influence Consumer's Buying Behavior for Soaps and Chocolates"						X				
84	Paul, M., Hennig, T., Gremler, D.D., Gwinner, K.P. & Wiertz, C.	2009 Vol. 37	Journal of the Academy of Marketing Science	"Toward a theory of repeat purchase drivers for consumer services"							X			
85	Paustian, C.	2001 Vol. 42/3	MIT Sloan Management Review	"Better Products Through Virtual Customers"						X				
86	Perry, B.	1998 Vol. 21/6	Journal for Quality and Participation	"Seeing your Customers in a Whole New Light"	X				X					
87	Pincus, J.	2004 Vol. ¾	Journal of Consumer Behaviour	"The Consequences of Unmet Needs: The Evolving Role of Motivation in Consumer Research"				X						

No.	Author(s)	Year, Vol/ Issue	Publication	Title	Reason for Rejection at Full Text Review Stage									
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88	Pohjanheim o, T., Paasovaara, R., Luomala, H. & Sandell. M.	2010 Vol. 54	Appetite	"Food choice motives and bread liking of consumers embracing hedonistic and traditional values"						X				
89	Poolton, J. & Ismail, H.	2000 Vol. 15/8	Journal of Managerial Psychology	"New Developments in Innovation"					X					
90	Prahalad, C.K. & Ramaswamy, V.	2004 Vol. 18/3	Journal of Interactive Marketing	"Co-creation Experiences: The Next Practice in Value Creation"	X	X								
91	Prahalad C.K. & Ramaswamy, V.	2003 Vol. 44/4	MIT Sloan Management Review	"The New Frontier of Experience Innovation"									X	
92	Prasad, B.	1998 Vol. 1/3	Qualitative Market Research	"Synthesis of Market Research Data through a Combined Effort of QFD, Value Engineering and Value Graph Techniques"			X							
93	Rao, H.	2009 Iss. 2	McKinsey Quarterly	"Market Rebels and Radical Innovation"					X					

No.	Author(s)	Year, Vol/ Issue	Publication	Title	Reason for Rejection at Full Text Review Stage									
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94	Rhey, W.L. & Gryna, F.M.	2001 Vol. 43/1	Quality Progress	"Market Research for Quality in Small Business"					X					
95	Roberts, D., Baker, S. & Walker, D.	2005 Vol. 47/4	International Journal of Market Research	"Can We Learn Together? Co-creating with Customers"	X			X						
96	Rokeach, M.	1986	Beliefs Attitudes and Values: A Theory of Organisation and Change	N/A	X			X						
97	Romero de la Fuente, J. & Guillen, M.J.Y.	2005 Vol. 47/6	International Journal of Market Research	"Identifying the Influence of Product Design and Usage Situation on Consumer Choice"						X				
98	Rowley, J., Kupiec-Teahan, B. & Leeming, E	2007 Vol. 25/2	Marketing Intelligence & Planning	"Customer Community and Co-creation: A Case Study"	X									
99	Ryans, A.	1974 Vol. 11	Journal of Marketing Research	"Estimating Consumer Preferences for a New Durable Brand in an Established Product Class"						X				

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100	Sawhney, M., Wolcott, R.C. & Arroniz, I.	2006 Vol. 47/3	MIT Sloan Management Review	"The 12 Different Ways for Companies to Innovate"						X				
101	Sherry Jr, J.F.	2008 Vol. 80	Journal of Business Ethics	"The Ethnographer's Apprenticeship: Trying Consumer Culture from the Outside In"	X			X						
102	Simanis, E. & Hart, S.	2009 Vol. 50/4	MIT Sloan Management Review	"Innovation from the Inside Out"	X									
103	Simonson, I.	1993 Vol. 35/4	California Management Review	"Get Closer to your Customers by Understanding how they Make Decisions"						X				
104	Suri, J.F.	2005	Thoughtless Acts? (Book)		X			X	X					
105	Teare, R.E.	1998 Vol. 10/2	Journal of Workplace Learning	"Interpreting and Responding to Customer Needs"					X		X			
106	Thomke, S. & Von Hippel, E.	2002 April	Harvard Business Review	"Customers as Innovators"							X			

No.	Author(s)	Year, Vol/ Issue	Publication	Title	Reason for Rejection at Full Text Review Stage									
					SRQ 1 Criteria			SRQ 2 Criteria	SRQ 1 & 2 Criteria			Unit of Analysis	Product Type	Language
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107	Tietz, R., Morrison, P.D., Luthje, C. & Herstatt, C.	2005 Vol. 2/4	International Journal of Product Development	"The Process of User-Innovation: A Case Study in a Consumer Goods Setting"						X				
108	Tucker, B.	2003 Vol. 37/2	The Futurist	"7 Strategies for Generating Ideas"					X					
109	Ulwick, A.	2002 Vol. 80/1	"Turn Customer Input Into Innovation"									X		
110	Ulwick, A.	2004 May-Jun	Strategy & Innovation	"Lost in Translation"						X				
111	Ulwick, A. & Bettencourt, L.A.	2008 Vol. 49/3	MIT Sloan Management Review	"Giving Customers a Fair Hearing"			X							
112	Urban, G.L. & Hauser, J.	2004 Vol. 68	Journal of Marketing	"Listening In to Find and Explore New Combinations of Customer Needs"	X					X				
113	Valentin, E.K.	1994 Vol. 3 / 4	Journal of Product and Brand Management	"Commentary: Marketing Research Pitfalls in Product Development"					X					

No.	Author(s)	Year, Vol/ Issue	Publication	Title	Reason for Rejection at Full Text Review Stage									
					SRQ 1 Criteria			SRQ 2 Criteria	SRQ 1 & 2 Criteria			Unit of Analysis	Product Type	Language
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114	Van der Meerwe, D. & Campbell, T.	2008 Vol. 32	International Journal of Consumer Studies	"Profiling Consumers in Home Ware Stores According to their Decision-Making Process: An Exploratory Study"				X						
115	Verma, R, & Plaschka, G.	2005 Vol. 47/1	MIT Sloan Management Review	"Predicting Customer Choices"						X				
116	Vermaas, K. & Van Der Wijngaert, L.	2005 Vol. 7/1	Journal of Information Technology Theory and Application	"Measuring Internet Behaviour: Total Time Diary and Activity Diary as Research Methods"	X									
117	Veryzer, R.W.	1999 Vol. 16/6	Psychology & Marketing	"A Nonconscious Processing Explanation of Consumer Response to Product Design"				X						
118	Vinson, D.E., Scott, J.E. and Lamont, L.M.	1977 Vol. 41/2	Journal of Marketing	"The Role of Personal Values in Marketing and Consumer Behaviour"					X					



No.	Author(s)	Year, Vol/ Issue	Publication	Title	Reason for Rejection at Full Text Review Stage									
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119	Von Hippel, E.	1986 Vol. 32/7	Management Science	"Lead Users: A Source of Novel Product Concepts"								X		
120	Wallendorf, M & Arnould, E.J.	1991 Vol. 18/1	Journal of Consumer Research	"We Gather Together: Consumption Rituals of Thanksgiving Day"				X						
121	Wikstrom, S.	1996 Vol. 30/4	European Journal of Marketing	"The Customer as Co-Producer"					X	X		X		

## APPENDIX B

### Items of Literature Rejected at Quality Appraisal Stage

The table below details the items excluded at the quality appraisal stage of the systematic review process and the reasons for their rejection. The reasons for rejection reflect the criteria in Table 11.

No.	Author(s)	Year, Vol/ Issue	Publication	Title	Reason for Rejection at Quality Appraisal Stage		
					Theoretical Foundation	Empirical or Case Study Research	Resulting Argument
1	Afors, C. & Michaels, M.Z.	2001, Vol. 34/7	Quality Progress	"A Quick, Accurate Way to Determine Customer Needs"			<b>X</b> Claims to knowledge are poorly warranted with no acknowledgement of this by authors. No discussion of study limitations is provided.
2	Kim, J-O., Forsythe, S., Gu, Q. & Moon, S.J.	2002, Vol. 19/6	The Journal of Consumer Marketing	"Cross-cultural consumer values, needs and purchase behaviour"		<b>X</b> Research goals are not clearly articulated. Conclusions from the research do not accurately reflect the reported findings.	<b>X</b> Claims to knowledge are flawed with no author acknowledgement. No opportunities for further research are discussed.
3	Kumar, V. & Whitney, P.	2007, Vol. 28/4	Journal of Business Strategy	"Daily Life, Not Markets: Customer-Centered Design"		<b>X</b> Research design not described. Sample not described. Coding, analysis and interpretation not described.	

## APPENDIX C

### Supplementary Literature

Authors	Contribution of Literature
Arnould and Wallendorf, 1994	The provision of background information in respect of the ethnography research method.
Cooper and Edgett, 2008	The provision of background information in respect of ethnography and ethnographic market research
Deszca et al., 1999	The provision of background information in respect of the empathic design and probe and learn research methods.
Elliott and Jankel-Elliott, 2003	The provision of background information in respect of the ethnography research method.
Gutman, 1981	The description of the means-end chain theory.
Gutman, 1982	The description of the means-end chain theory.
Kahle, 1983	The development of the personal values scale used within the SRQ 2 survey literature.
Kristensson et al, 2002	The provision of background information regarding the customer involvement research method.
Mariampolski, 1999	The provision of background information in respect of the ethnography research method.
Mariampolski, 2006	The provision of background information in respect of the ethnography research method.
Matting et al., 2004	The provision of background information regarding the customer involvement research method.
Magnusson, 2003	The provision of background information regarding the customer involvement research method.
Millet, 2006	The provision of background information regarding the process of futuring within market research.
O'Connor, 1998	The provision of background information regarding the probe and learn research method.
Poolton and Ismail, 2000	The provision of background information regarding the empathic design.
Rokeach, 1968	The definition of personal values which underpin the laddering interview method and the development of the personal values scale used within the SRQ 2 survey literature.
Roberts et al., 2005	The provision of background information regarding the customer involvement research method.
Suri, 2005	The provision of background information in respect of the ethnography research method.
Vinson et al, 1977	The provision of background information regarding personal values and their influence on consumer behaviour.
Wallendorf and Arnould, 1991	The provision of background information in respect of the ethnography research method.