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**SWP 30/88 NEW MANUFACTURING FIRMS AND NEW
FIRM FOUNDERS IN WALES, 1979 - 1985**

**DR. PAUL WESTHEAD
Manager, Small Firms Data Base
Cranfield Entrepreneurship Research Centre
Cranfield School of Management
Cranfield University
Cranfield
Bedford MK43 0AL
United Kingdom**

Tel: +44 (0)234 751122

Fax: +44 (0)234 781806

NEW MANUFACTURING FIRMS AND NEW FIRM FOUNDERS IN WALES, 1979-1985.

PAUL WESTHEAD

(Research Assistant, Cranfield School of Management, Cranfield Institute of Technology, Cranfield, Bedford, MK43 OAL).

Through the presentation of results from a survey of 269 surviving new manufacturing firms in Wales over the 1979 to 1985 period several aspects of the new firm formation process are placed on a sounder empirical base. A detailed description of both new firms as well as new manufacturing firm founders is presented. The Revised (1978) Travel-to-Work area spatial framework is shown to be an appropriate definition of labour market areas. Also, the applicability of a wide range of hypotheses and surrogate variables postulated to be negatively or positively associated with new firm formation are analysed. Empirical support is given to the arguments and hypotheses proposed in previous studies.

INTRODUCTION

Over the past ten years the Welsh economy has experienced a severe erosion of its manufacturing base and, with it, a rapid increase in unemployment. In response to this Government has sought new ways to revive industries and create new jobs. One potential solution emerged when David Birch (1979) in the USA reported that small firms were contributing some 80% of net job gains. In the UK, with unemployment rising to unacceptable levels, this result was largely responsible for accelerating the growth of the now well established 'new and small firms industry' - an infrastructure of advice, assistance, legislation and education, most of which is entirely new. Consequently, wholly new independent firms have in the last few years become an increasingly important focus of academic debate and government policy in Britain. Indeed through their postulated role in fostering healthy and diverse local economies, they have been viewed by some commentators as a key to national economic recovery.

Building upon the work of Mason and Harrison (1985), Johnson (1986), Mason (1987) and Watts (1987) there is a need for more detailed research into the nature and extent of spatial variations in new manufacturing firm formation rates; not least because such information is an essential prerequisite in

justifying the case for a spatially selective small firms policy (Storey, 1982). Surprisingly, the contemporary new firm literature fails to include a detailed study of both new firms and new firm founders together in a variety of 'ecological incubator' environments. Although the research literature recognises the importance of 'incubators' (commercial (Gatewood et al., 1985, 1986; Mitton, 1986; Merrifield, 1987) and ecological (Cross, 1981; Storey, 1982)), there is no real evidence of the magnitude of the effect. However, such research is urgently needed as indicated by calls for research by Frank et al (1984). The focus on new manufacturing firms is due to two main reasons. First, manufacturing firms form part of the 'basic' industrial base in a local labour market area (Fothergill and Gudgin, 1982, p.34-37). Second, in the 1980s manufacturing employment change emerged as the dominant influence upon unequal growth in the UK (Fothergill and Gudgin, 1982, p.46).

PREVIOUS RESEARCH

Major differences have arisen between researchers over the factors which 'explain' regional differences in new firm formation rates (Gould and Keeble, 1984; Gudgin and Fothergill, 1984; O'Farrell and Crouchley, 1984; Whittington, 1984). Table 1 illustrates the factors found in the research literature to be associated with new manufacturing firm formation, of which some have been shown to inhibit individuals from new firm formation whilst others have been found to be more permissive. The factors postulated to be either positively or negatively associated with new firm formation are detailed below.

FACTORS

Rurality

Researchers have reported higher rates of new firm formation in rural areas than in older industrial towns (Gudgin, 1978; Fothergill and Gudgin, 1979, 1982; Gudgin et al., 1979; Cross, 1981; Mason, 1982; O'Farrell and Crouchley, 1984; Gould and Keeble, 1984) (Factor 1 in Table 1). Undoubtedly, the residential attractiveness of particular rural areas play a significant role. Indeed, this could of course be the chief explanation of rural bias in new firm formation because rural areas have tended disproportionately to attract managers and higher income workers for reasons of residential amenity and the perceived benefits of living in historic villages and attractive countryside.

y Self-Employment

a O'Farrell and Crouchley (1984) and O'Farrell (1986) hypothesised outside the manufacturing sector itself,
e the greatest pool of new firm founders probably exists among the economically active self-employed
l persons (Factor 2 in Table 1).

/ Occupational Experience

l There is evidence to suggest that skilled manual workers are better equipped than unskilled and semi-
; skilled workers for small firm entrepreneurship because they acquire more of the problem-solving skills
required, while management and professional employees, particularly where they have had some
responsibility for financial matters or some involvement with marketing and sales, seem to better equipped
than manual workers to start a business, though not necessarily to turn out a good product (Cross, 1981;
Fothergill and Gudgin, 1982; Storey, 1982; Lloyd and Mason, 1983; Gould and Keeble, 1984; Johnson,
1986). In the broader context, therefore, another of the general variables conditioning the supply potential
of suitable new firm founders is the occupational spectrum of a region (Factor 3 in Table 1).

Size of 'Incubator' Firm

There does appear to be a relationship between an area's plant size structure and its rate of new firm
formation (Factor 4 in Table 1). Employees who work in small firms it is argued appear more likely to set up
a new business than those working in large firms (Cooper, 1971; Johnson and Cathcart, 1979; Gudgin et
al., 1979; Fothergill and Gudgin, 1982; Storey, 1982; Lloyd and Mason, 1983; Gudgin and Fothergill, 1984;
Gould and Keeble, 1984, O'Farrell and Crouchley, 1984; but see Beesley, 1955, for a dissenting view). It is
suggested that employees working in large factories are not provided with the relevant work experience
necessary for entrepreneurial training and encouragement. In contrast, the presence of a very active small
firm sector can provide plenty of examples for potential founders to follow. For example, contacts with
other small firms may be made as part of an employee's job and informal contacts with potential and actual
founders may be more likely. Therefore, employment in a small firm is assumed to be a better preparation
for founding a business because of the likely wider range of task experience derived.

Turbulence

The supply of potential firm founders may be increased due to large-scale contraction and redundancy of manufacturing employees, a number of which may not have an alternative source of employment, other than self-employment by founding a business for themselves (Factor 5 in Table 1). Employment loss in closures may be suitable surrogate for this turbulence factor (Cross, 1981; Storey and Jones, 1987).

Unemployment

The formation decision may also be influenced by potential founders comparing actual incomes with expected incomes resulting from the establishment of a new business (Creedy and Johnson, 1983). It is often suggested that unemployment in a labour market may stimulate firm formation, and there is some evidence from questionnaire work that the threat of unemployment may sometimes affect the formation decision (Fothergill and Gudgin, 1982; Storey, 1982; Atkin et al., 1983; Binks and Coyne, 1983) (Factor 6 in Table 1).

Entry into Industry

In general terms, new firm formation tends to be low in those regions which specialise in traditional heavy industries, especially where a small number of large plants dominate the local labour market (Chinitz, 1961) (Factor 7 in Table 1). In fact, the role of an area's existing mix of industries in influencing subsequent industrial change is well recognised (Gudgin, 1978; Cross, 1981; Gould and Keeble, 1984). At a labour market level the combination of industrial structure, industrial diversification and concentration and the varying propensity to generate new firms may have an important bearing on subsequent labour market firm formation rates.

Industrial Specialisation

Cross (1981, p261-62) in his study of new manufacturing firm formation at a local office area level in Scotland hypothesised that if an area had a diverse manufacturing employment base (a low entropy specialisation Tress statistic), the greater the number of new firms would be found in that area (Factor 8 in Table 1). He claimed that a Tress statistic could be used as a measure of industrial concentration. However, Cross (1981, p.276) found contrary to expectation that industrial specialisation was positively associated with new firm formation at a local office area level.

Degree of Local Autonomy

It is possible to argue that the incentives given by regional policy to encourage externally-owned branches to move to areas of traditional heavy industry may have further stunted indigenous enterprise (Factor 9 in Table 1). Increasing external ownership may decrease the number of risk-taking managerial positions which reduces the potential supply of founders (Johnson and Cathcart, 1979, p.278; O'Farrell and Crouchley, 1984, p.197). Conversely, complete in-transfers of small or medium sized companies may introduce a considerable number of potential firm founders from growth industries (Gould and Keeble, 1984, p.197) and with appropriate experience for entrepreneurship in particular localities may over time engender high firm formation rates. Therefore, the nature of ownership of an establishment can be used as a possible surrogate measure of managerial function carried out at an establishment. In fact, as suggested above, it could be claimed that independent local establishments could contain a higher number of risk-taking positions than, say, a branch or subsidiary establishment.

Market Demand

Most new firms serve local and regional market areas (Johnson and Cathcart, 1979; Storey, 1982; Lloyd and Mason, 1984; O'Farrell and Crouchley, 1984) (Factor 10 in Table 1). Relatively few first-time enterprises are set up on a basis of a product of their own and most are engaged in sub-contract work for larger companies and institutions (Gudgin, 1978). On both accounts, therefore, the rate of new firm formation and the subsequent growth of such enterprises will tend to be significantly influenced by the level of final and intermediate demand in the local and regional economy which itself will rest upon the performance of corporate 'prime-movers' and public sector agencies. The expansion of a labour market's total and manufacturing employment bases and increased local population demand may lead to the opening up of new markets and expand existing ones thereby providing opportunities for new firms (Cross, 1981, p.263).

Access to Capital

Often prior work experience has provided an awareness of sources of outside finance and of the conventions necessary in presenting successful cases for loan funds (Factor 11 in Table 1). At a personal level, many will have accumulated adequate collateral against which loans can be served (Cross, 1981; Storey, 1982). By contrast, many new businesses which are started by those with basic education and

manual rather than professional backgrounds display low rates of growth, not least because of the limited aspirations of their founders, their lack of personal capital and their frequent reluctance to use outside sources of finance. Such differences in the creditworthiness and access to personal and institutional finance will feed forward to condition levels of launch (Storey, 1982; Whittington, 1984). Higher returns from both second mortgages and from the use of the domestic home as collateral for a bank loan has the effect of rising the threshold of personal capital availability in those regions with relatively higher housing values. On the other hand the cost of entry may be correspondingly higher too. At the present time redundancy payments may provide the role of risk funds for a putative new founder to invest them in his own enterprise rather than insecure savings funds.

Premises

The availability and low cost of premises has been identified (Fothergill and Gudgin, 1982) as being factors which are conducive to enterprise development (Factor 12 in Table 1). The premises issue has in recent years been influenced by development agencies who have been actively involved in constructing and supplying a variety of premises in terms of size as well as cost. In fact, some of the inter-labour market variation, for example, may be due to the varying performance of development agencies as well as the commitment of local authorities in liaising between themselves and the new firm founders.

Education

Another conditioning variable associated with new firm formation is the level of educational attainment in a labour market (Keeble and Gould, 1985; O'Farrell, 1986) (Factor 13 in Table 1). But it must be stated that there is no simple and clear relationship between higher levels of education leading to an increased propensity to establish new firms. However, it has been suggested that firms started by those with a management background, particularly if they have a degree or a professional qualification, show the fastest rates of growth (Fothergill and Gudgin, 1982). Some observers have argued that academic qualifications are a necessary but not sufficient condition for entrepreneurial success (Storey, 1982, p.107).

RESEARCH QUESTIONS

This paper will describe the characteristics of both the new firms established as well as the new firm founders. The Revised (1978) Travel-to-Work area (TTWA) spatial framework will be tested for its applicability as an appropriate definition of labour market areas. Also, the applicability of the hypotheses and the surrogate variables detailed in Table 1 will be explored. Through a micro-level survey of new firm founders in selected parts of Wales a better understanding of the relationship between 'ecological incubator' variables and the new firm formation process is presented.

FINDING THE NEW MANUFACTURING FIRM IN WALES: RESEARCH METHODOLOGY

Definitions

Unfortunately, "the definition of a new firm is not a clear-cut or unambiguous issue" (Mason, 1983, p.53) but in the following discussion, the focus is on wholly new manufacturing firms which are established independently and have no "obvious parent in any existing business organisation" (Allen, 1961, p.28). The start-up-date of the new firm is taken as the date of the commencement of production on a full-time basis. The survey included firms with one (i.e. the founder) or more workers. These choices enabled this research to be based on definitions which are consistent with other studies (Cross, 1981; Mason, 1982; Keeble and Gould, 1984).

The Environment

Some analysts of the new firm formation process, especially non-geographers, have found the concept of the environment elusive but not particularly bothersome. Cooper (1970, 1971, 1973), for example, felt he could leave respondents in Santa Clara County, California free to define 'local' as they thought fit. The 'Cambridge Phenomenon' (Segal, Quince and Partners, 1985) is defined in a territorial sense as encompassing where spinoffs from firms in Cambridge have taken root. The resultant nebular diffusion around a highly productive breeding ground may be perhaps be dismissed simply as 'neighbourhood' effect but this does not tell us much about how replicable these new firm clusters might be, nor why some other areas do not have as high new firm formation rates. Cross (1981, p.247) has argued that, "...the role of the labour market would appear to be of importance in the process of new firm formation". A working presumption adopted in this paper is that most new firms locate close to the founders' place of residence, at least in the earliest days of a new firm (Johnson and Cathcart, 1979; Gudgin, 1978, p.105; Scott, 1976,

p.136). The spatial framework adopted is that of the Revised (1978) Travel-To-Work Areas (TTWAs) (Figure 1) the daily urban system which attempts to define areas within which the majority of most people's activities are acted out, in which they search for work, education and leisure - and by extension premises.

Contrasting 'Ecological Incubator' Environments

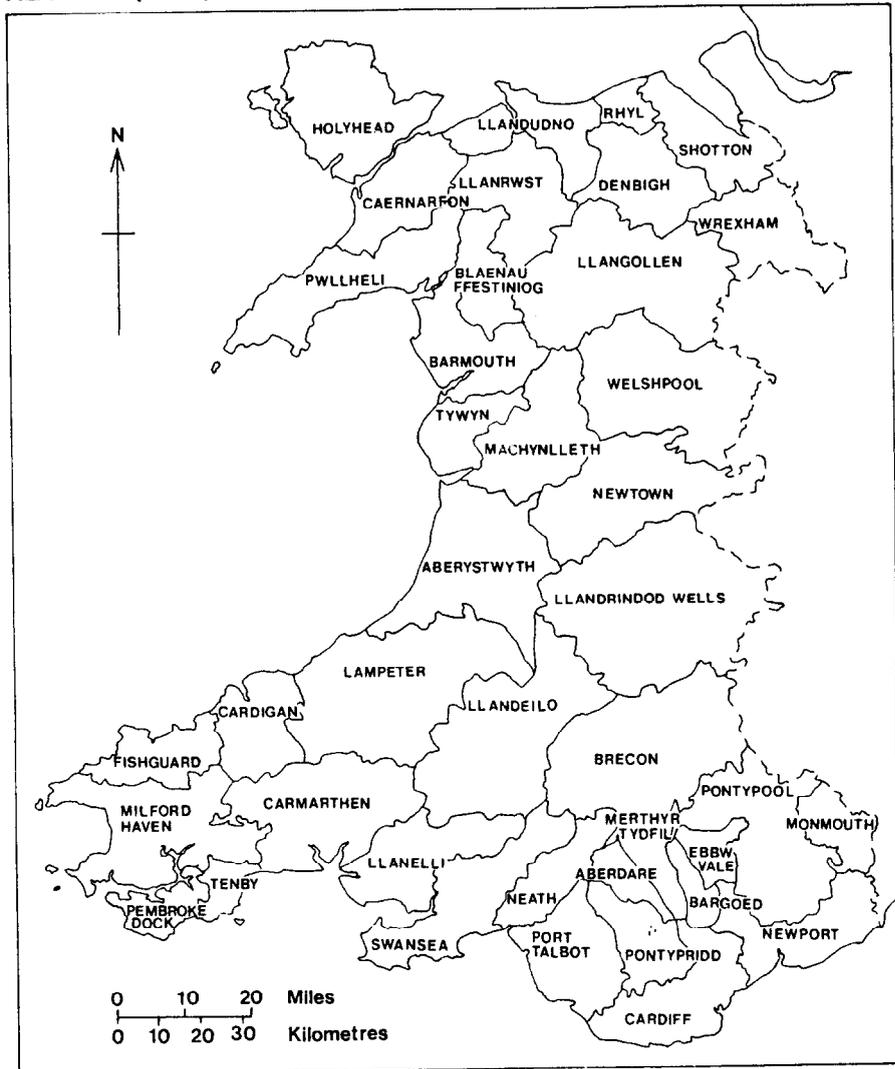
The only possible source of information about the background of new firm founders, new firms and the actual process of new firm formation is the entrepreneur (i.e. the new firm founder). Unfortunately, it was not possible to gain access to an accurate listing of new manufacturing firms in Wales due to the confidentiality constraints of the 1947 Statistics of Trade Act. As a consequence of this data shortage and due to the problems of time and resources as well as the objective of surveying new firms in contrasting environments, it was decided on pragmatic grounds to choose a number of labour markets in Wales and interview as many new firm founders in these environments as possible. In order to overcome this problem the research methodology adopted is described below.

Ninety-seven variables of which the majority were concerned with local employment characteristics were obtained. This data was aggregated to a labour market scale and in this case a variety of published and unpublished data was available at the Revised (1978) TTWA spatial scale. Exploratory correlation analysis was used as a means of guidance to seek measurable important factors in the new firm formation process. Eighteen 'surrogate' variables with high statistical association with the new firm formation process, covering a range of themes were selected from the ninety-seven for a classification of 'ecological incubator' environments in Wales. The eighteen variables selected are listed in Table 2.

Using Principal Components Analysis and Cluster Analysis the forty TTWAs characterised by eighteen variables were reduced into a smaller number of regional types of maximum uniformity or homogeneity. The resultant classification of Wales into five sub-areas is presented in Figure 2 (Westhead, 1987). On the basis of this classification of environments it was possible to survey founders in demonstrably different sub-areas of Wales to be undertaken on an objective basis rather than solely based on intuition. Furthermore, on the basis of the presented classification it was decided on pragmatic and logistical grounds to concentrate the new firm survey on only twenty out of the forty TTWAs. Approximately thirty-five new firm founders in each of the defined 'ecological incubator' environments were interviewed (unfortunately only 9 new firms could be identified and interviewed in the cluster 2 type environment) in

Figure 1

REVISED (1978) TRAVEL-TO-WORK AREAS FOR WALES



order to make reasonable generalisations for Wales as a whole. The applicability of the classification presented in Figure 2 is discussed elsewhere (Westhead, 1988).

The New Manufacturing Firm Survey

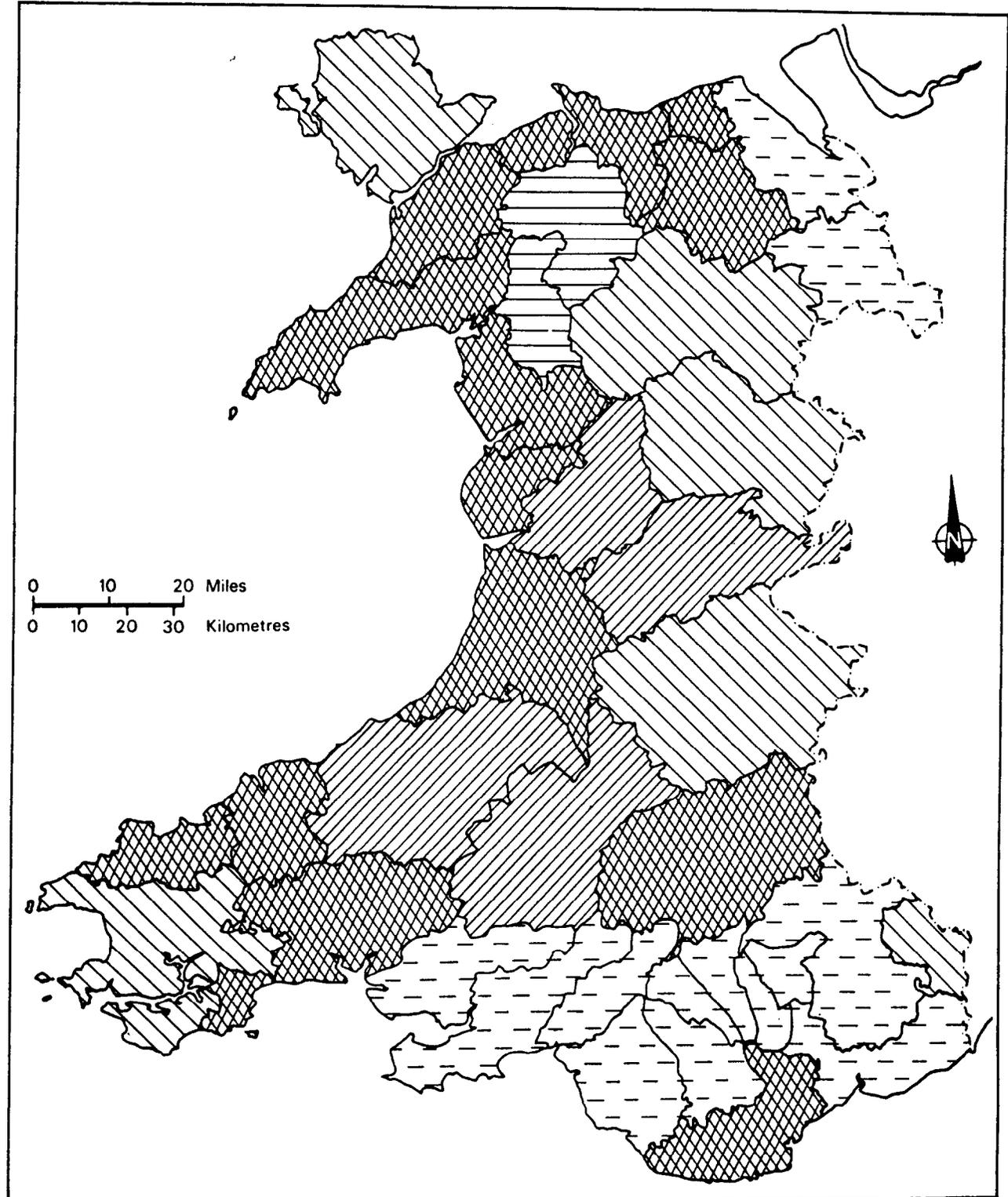
The data for this paper was gathered by personal visit and interview during 1986 to surviving manufacturing firms which had been established in the selected environments in Wales during the period between 1979 (January 1st) and 1985 (December 31st). Twenty out of forty TTWAs were targeted for surveying new firms (selected on a subjective basis). In eighteen of the twenty TTWAs (represented by a proportional symbol in Figure 3) new firms were identified and surveyed (the two TTWAs where no new firms were identified are indicated by the N.I. symbol in Figure 3). The identification of new manufacturing firms was aided by the construction of a manufacturing establishment databank already assembled for the whole of Wales (Westhead, 1988). Also, detailed fieldwork in the selected TTWAs enabled new firms which had been omitted from the establishment databank to be included in the survey design. In all, 269 out of 335 new manufacturing firms were contacted during the 'grab' survey using an unarranged 'knock-on door' approach which produced a noteworthy 80.3% response rate. The response rate for individual TTWAs is presented in Figure 4. From the above discussion of the survey design and implementation it does indicate that a representative survey of new firm founders in a variety of contrasting environments in Wales was undertaken. However, it must be stated at this stage, that the presented survey deals only with surviving new firms and is therefore biased towards those which, to date, have been successful in exploiting opportunities and overcoming constraints.

RESULTS OF THE NEW MANUFACTURING FIRM SURVEY

Characteristics of the New Firms

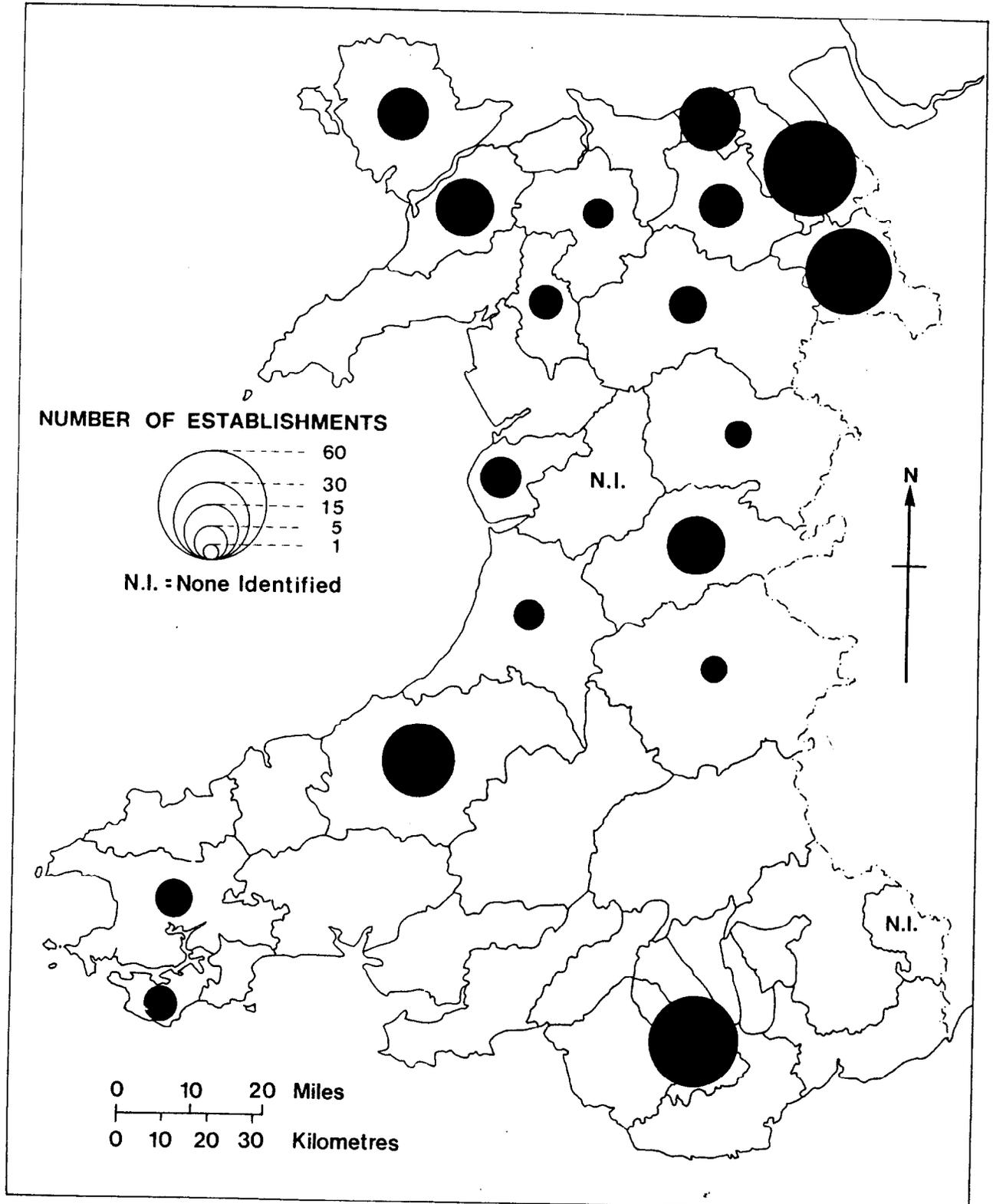
In the eighteen TTWAs where interviews were conducted with the new firm founders' (or the principal new firm founder if the firm was founded by more than one individual) it was found that the 269 new firms surveyed had created 2,070 jobs. The mean and median employment sizes of the new firms were 7.7 and 4 employees respectively. Interestingly, the mean employment level recorded in Wales is similar to the mean number of jobs gained per firm found in the USA by Teitz et al. (1981) in California and Birley (1986) in St. Joseph County, Indiana. These statistics reveal that in Wales as elsewhere (Cross, 1981; Lloyd and Mason,

5 CLUSTER SOLUTION OF WELSH ECOLOGICAL INCUBATOR ENVIRONMENTS



- Cluster 1** **TTWAs With Favourable Industrial Structures Associated With Relatively Small Manufacturing Bases, Low Foreign Ownership And Favourable Socio-Economic Mix.**
- Cluster 2** **Specialised Easy Entry Declining Rural TTWAs.**
- Cluster 3** **Turbulent Rural TTWAs With A Tradition of Self Employment.**
- Cluster 4** **Growth In TTWAs With High Foreign Ownership.**
- Cluster 5** **Traditional Diversified And Urban TTWAs With A Predominance of Manual Employees.**

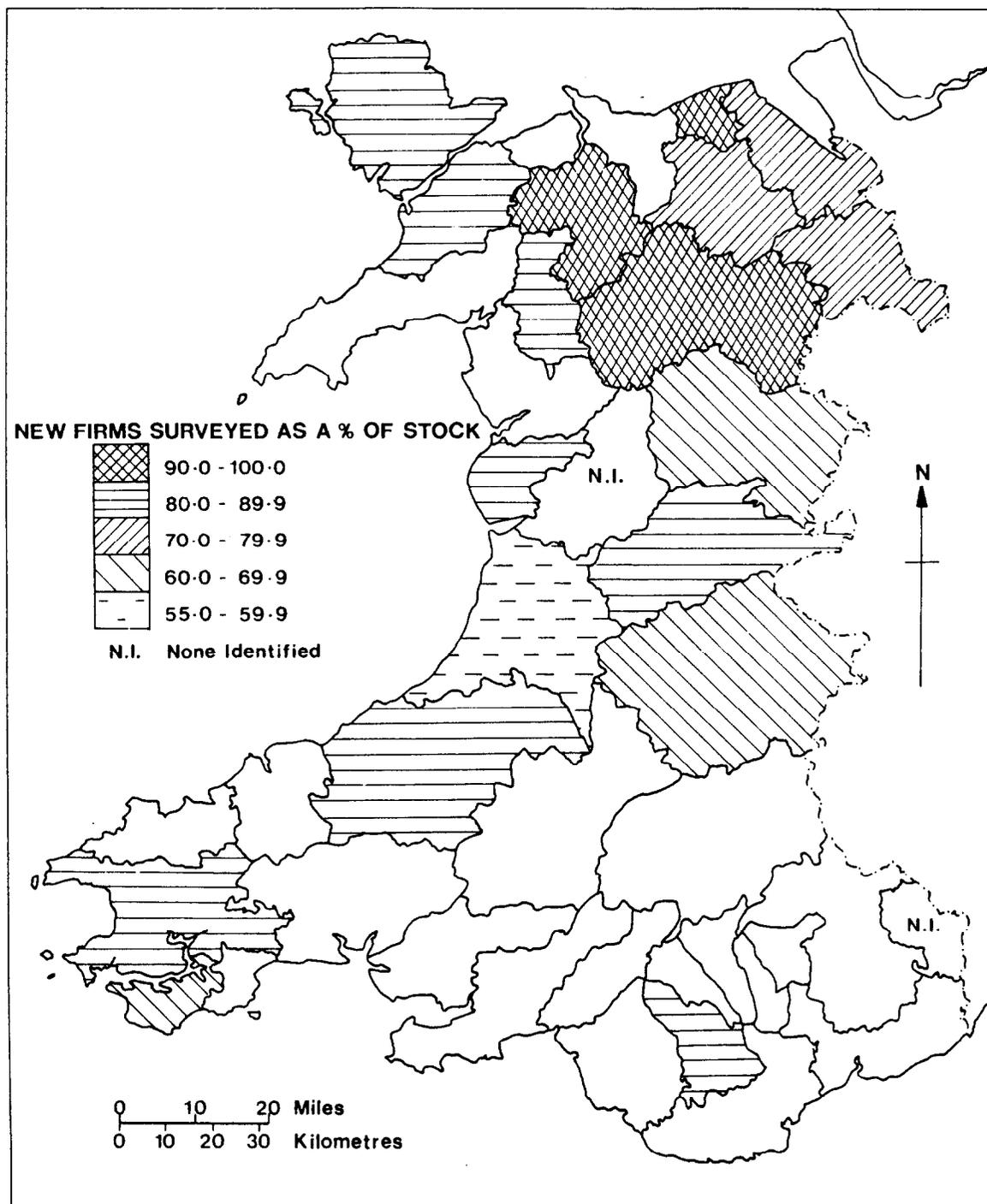
THE LOCATION OF SURVEYED NEW MANUFACTURING FIRMS IN WALES, 1979-1985



Source: Survey

Figure 4

SURVEYED NEW MANUFACTURING FIRMS AS A PERCENTAGE OF THE TOTAL STOCK OF IDENTIFIED NEW MANUFACTURING FIRMS IN WALES, 1979-1985



Source: Survey

1984, p.218; Keeble and Gould, 1984, p.8; O'Farrell, 1986, p.161), new firms are very small, and there is a tendency for the size distributions to have a strong positive skew (Table 3). Only 54 new firms (20.1%) had more than 10 employees and 167 (62.1%) new firms still had less than 6 employees in 1986.

The industrial sectors (using the 1968 Standard Industrial Category (SIC)) recording the largest numbers of surveyed new firms were Timber, Furniture, etc (SIC 17) 66 new firms, Metal Goods n.e.s. (SIC 12) 29 new firms, Other Manufacturing Industries (SIC 19) 29 new firms and Bricks, Pottery, Glass, Cement, etc (SIC 16) 28 new firms (Table 4). The results in Table 4 indicate in terms of the number of new firms interviewed that there are low-entry-barrier industries (such as SICs 12, 17 & 19) as well as high-entry-barrier industries (such as SICs 5, 6, 8 & 10).

In terms of the financial characteristics of surveyed firms it was interesting to note that 53.1% of surveyed firms reported a current turnover of less than £50,000, with 7.8% reporting greater than £500,000. Sixty per cent of firms claimed that they had made a profit whilst 22.3% stated they had been making a loss. A better level of profitability has been reported in previous studies (Storey, 1982; Keeble and Gould, 1984) and the lower level for firms in Wales may be partly explained by the time period of the present survey.

The Applicability of the Revised (1978) TTWA Spatial Framework

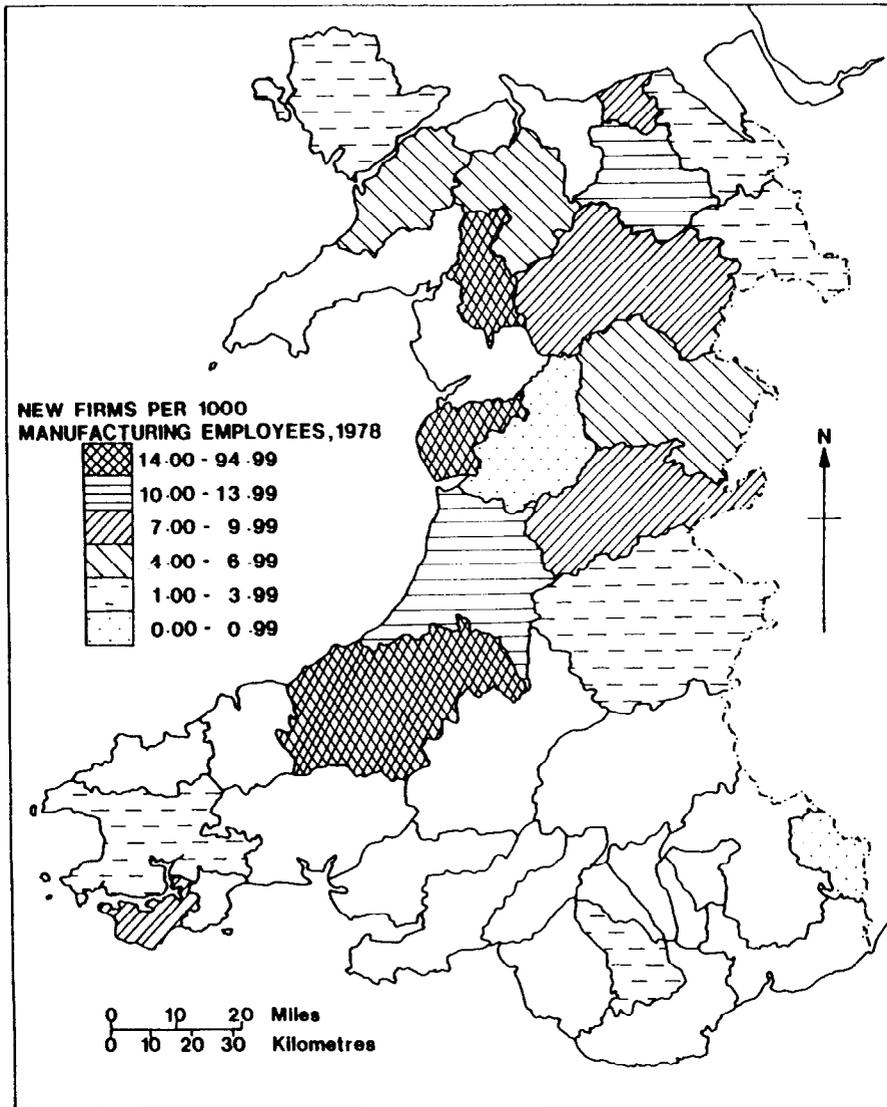
It would have been astonishing if the TTWA framework had defined absolutely self-contained environments in which all new firms had been set up by local residents. Nevertheless, 59% of founders had worked in Wales prior to start up and 41% had worked in the very same TTWA in which they had established their new firm in Wales. A further 14% had worked in an adjacent Welsh TTWA. This evidence confirms the well established fact that new firm founders set-up in the general vicinity of their previous place of employment and residence. Also, 67% of founders had not considered any other TTWA for the location of their business to the one which they eventually located in. On the basis of this evidence it can be suggested that the TTWA was a reasonable definition of an 'environment' or labour market.

The Applicability of the Surrogate 'Ecological Incubator' Variables

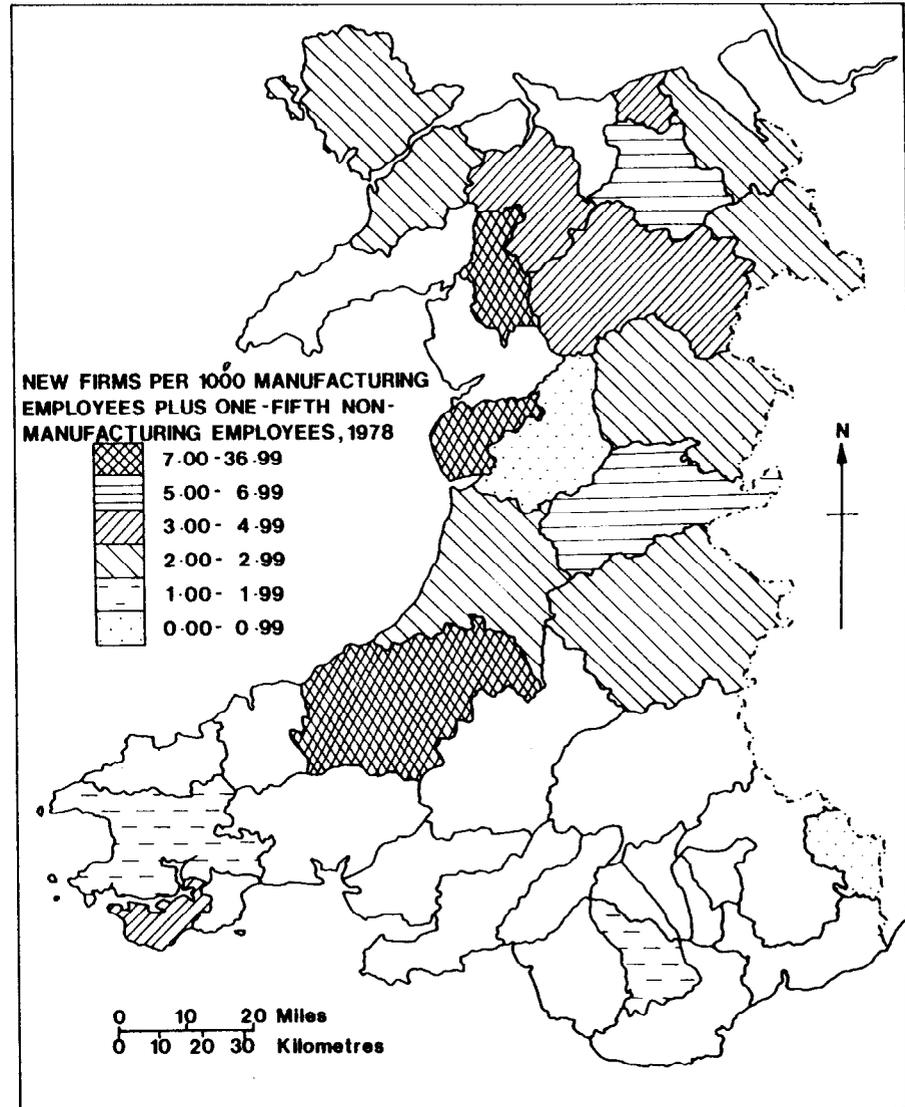
The highest new firm formation rates were recorded in rural TTWAs during the survey (Figure 5a). On a technical point, Gudgin and Fothergill (1984, p.205) have claimed that formation rates based on manufacturing employees alone cause "an arbitrary and misleading exaggeration of formation rates in rural

Figures 5(a) and 5(b)

NEW MANUFACTURING FIRM FORMATION RATES IN SURVEY TTWAs IN WALES, 1979-1985 (RATE 1)



NEW MANUFACTURING FIRM FORMATION RATES IN SURVEY TTWAs IN WALES, 1979-1985 (RATE 2)



Source: Survey and Welsh Office (1983)

areas". They have suggested that formation rates should be recalculated using manufacturing employment plus 20% of other non-manufacturing total employment in order to remove the rural-urban bias in the formation rate denominator. Even when a wider employment denominator was used (Figure 5b) it is still apparent that rurality and a low tradition of manufacturing employment are strong positive / enhancing factors associated with new firm formation, as indicated by higher formation rates in rural TTWAs such as Tywyn, Blaenau Ffestiniog and Lampeter and lower ones in the traditional urban TTWAs of Pontypridd, Shotton and Wrexham. In Wales rural TTWAs tend to be specialised in employment terms whilst urban areas are generally more diversified. Due to the diversified nature of total employment in urban areas (e.g. a low Tress statistic) it is the view of this researcher that diversified urban TTWAs are associated with a negative / impeding influence on new firm formation. These results therefore indicate that rurality is a positive / enhancing influence on new firm formation.

The high formation rates in rural TTWAs is in part a result of the high levels of immigration of founders into these TTWAs. In fact, 65% of new firm founders in Wales were born outside the Principality. In some respects this makes an 'environmental' argument more difficult to operationalise and sustain, since exposure of founders to a local 'environment' is made even more variable. On the other hand, since immigration is usually taken to be related to some sort of attractiveness on the part of the destination area, it reinforces an environmental argument. High immigration was recorded in a number of TTWAs but the highest levels were recorded in rural TTWAs. For example, Newtown and Lampeter attracted considerable numbers of immigrants for a range of reasons, including the pleasant environment and the active policies of Mid Wales Development. (MWD). Immigration levels in the less environmentally attractive urban TTWAs were lower. These immigrant founders mainly came from the North West, the South East and West Midlands of England. However, 59% of immigrant founders had had prior employment connections with Wales and the main reasons found for moving to Wales were as follows: last employment position, family reasons, the environment of Wales and the ability to afford a house in Wales.

With regard to occupational influences it was found that 10.4% of founders had been self-employed prior to start-up (Factor 1 in Table 5). This compares with 10.4% of total economically active persons being self-employed in these surveyed TTWAs in 1971 and 15.2% of total persons in employment being self-employed in these surveyed TTWAs in 1981 (Census of Population, 1971 & 1981). On the basis of these figures it appears that the percentage of founders coming from self-employed backgrounds was similar to

the 1971 pattern of self-employment in the surveyed TTWAs. These results suggest that previously being self-employed is a positive / enhancing influence on new firm formation. Moreover, a further 40.1% of founders had reached managerial positions with their previous employer prior to formation (Factor 2 in Table 5). This percentage is higher than expected on the basis of the 1971 and 1981 distribution of managers and professionals (SEGs 1, 2 & 13) (Census of Population, 1971 & 1981). Also, Factor 3 in Table 5 shows that only 23.0% of founders' last employment positions were operative (or manual) ones. In this instance, the percentage of surveyed founders having operative positions immediately prior to start-up was smaller than that anticipated on the basis of the 1971 and 1981 distribution of manual workers (SEGs 9, 10 & 11) (Census of Population, 1971 & 1981). These results therefore support the premise that managerial experience is a strong positive / enhancing influence on formation in contrast to the more negative / impeding influence of being an operative (or manual) employee.

As found in other regions the dominant size-class of business in which new firm founders had been last employed was small (45.3% had been employed in establishments with less than 25 employees - excluding the 'not known' category) (Factor 4 in Table 5). Table 5 indicates that the percentage of founders having been previously employed in small establishments was far higher than that expected on the basis of the distribution of percentage manufacturing employment in establishments with less than 25 employees in 1985 (the Health and Safety Executive, 1985). Moreover, only 12.4% of founders were last employed in establishments with more than 499 employees (Factor 5 in Table 5 - excluding the 'not known' category). The percentage of founders previously employed in large establishments was considerably lower than that expected on the basis of the percentage of manufacturing employment in establishments greater than 500 employees in 1985 (the Health and Safety Executive, 1985). From this evidence, the assumption that small establishments are generally more positive / enhancing influences on new firm formation and large establishments have a more negative / impeding influence is sustained.

Two major findings of the new firm survey were that 32% of founders set up a new firm to exploit a perceived market opportunity and a further 27% were forced into entrepreneurship. Also, 24.6% claimed the main reason for leaving their last employer prior to start-up was due to actual or threatened redundancy or closure. Although, it is impossible to say whether these percentages are relatively high or relatively low (compared to other studies covering different time periods of study) this evidence endorses the view that certain demand factors (such as total employment structural shift, percentage manufacturing employment

change and percentage total employment change) are positive / enhancing factors with new firm formation. In fact, 12.3% of founders left their last employer prior to start-up because of being made redundant in an establishment closure (Factor 6 in Table 5). The importance of 'push' factors is also stressed when it was noted that 29% of founders were unemployed prior to start-up. From Table 5 it is apparent that the 'push' factor of closure and redundancy was higher than expected on the basis of employment loss in manufacturing establishment closures over the 1980-1984 period as a percentage of the 1978 distribution of manufacturing employment (the Health and Safety Executive, 1985). This evidence suggests that the turbulence effects of redundancy and employment loss through closure are positive / enhancing influences 'pushing' people into entrepreneurship.

The industrial activity of a founder's last employer prior to start-up did have an influence on entrepreneurship because it was found that founders continued to have links with the industries they had left. The survey showed that 175 founders (65.1%) had last worked in a manufacturing business prior to start-up (Factor 7 in Table 5). Since manufacturing employees accounted for 30.9% of total employees in 1978 in the surveyed TTWAs (Welsh Office, 1983) it can be claimed that individuals previously involved in manufacturing activities immediately prior to start-up were over-represented in the new firm formation process. But it must be stated that only 98 new firm founders (36.4%) set-up their firms in the same manufacturing SIC (1968) Order as their last employer. However, these results do indicate that new firm formation is associated with experience in manufacturing activities prior to start-up.

The survey results also showed that 15.6% of founders were last employed in the easy-entry manufacturing sectors (SICs 17, 18 & 19) subjectively defined by this researcher (Factor 8 in Table 5). This percentage is slightly higher than the percentage of total manufacturing employment in easy-entry industries in 1971 but slightly lower for the total manufacturing employment in easy-entry industries percentage for 1981 (Department of Employment, 1971 & 1981). Also, 111 new firms (41.3%) were established in the defined easy-entry industries employing 41.5% of total new firm employment (Table 4). Conversely, only 8.2% of founders were last employed immediately prior to start-up in the heavy industries defined by this researcher (SICs 4, 5, 6 & 10) (Factor 9 in Table 5). And only 14 new firms (5.2%) employing 72 employees (3.5%) were involved in these defined heavy industries (Table 4). Table 5 also indicates that the percentage of founders being employed in the defined heavy industries prior to start-up was considerably smaller than the percentage of total manufacturing employment in heavy industries in 1971

and 1981 for the surveyed TTWAs (Department of Employment, 1971 & 1981). Moreover, only 0.7% of founders' last employment was in Mining and Quarrying (SIC 2) (Factor 10 in Table 5). This percentage figure is considerably smaller than the percentage of total employment in Mining and Quarrying in these surveyed TTWAs for both 1971 and 1981 (Department of Employment, 1971 & 1981). These results strongly suggest that employment in Mining and Quarrying and those sectors defined as heavy industries are generally strong negative / impeding influences on new firm formation in contrast to the more positive / enhancing influence of defined easy-entry industries with low barriers-to-entry.

Forty-nine per cent of founders had learned their skills in local-Welsh establishments (excluding the non-manufacturing and 'not known' categories) prior to founding compared to only 13.1% in foreign-controlled establishments (Factor 11 in Table 5 - excluding the non-manufacturing and 'not known' categories). From Table 5 it is apparent in surveyed TTWAs as a whole that the percentage of founders previously employed in foreign-controlled manufacturing establishments immediately prior to start-up is markedly smaller than the percentage of total manufacturing employment in foreign owned establishments in 1983 in the surveyed TTWAs (Industry Department, Welsh Office, 1985). From the above evidence it can be generally concluded that in the aggregate, externally controlled branch plants did not disproportionately generate new business founders and there is evidence to suggest that they exert a strong negative / impeding influence on new firm formation, whilst admitting that they had enlarged the pool of individuals with experience of manufacturing industry which new firm founders were preferentially drawn.

During the start-up period and the subsequent development of the new firms the demand of local market niches in terms of a customer base was indicated by founders to be important. In fact, 40.3% of founders stated they sold more than 80% of their turnover in Wales alone at the time of interview. The majority of the products produced by the new firms were either subcontracted to industry or sold direct to the public from the new firms' establishment. However, 27.9% of founders also claimed that they were exporting abroad some of their production. From this evidence, it can be suggested that consumer (and industrial) demand within a TTWA may have an influence on formation and survival rates.

Most founders used only one source of finance (43.3% of founders) whilst 18.7% of founders had used two or more sources of finance. The main initial source of finance was personal savings (50.3% of founders) but 24.8% of founders had used loans or an overdraft from a clearing bank. Therefore, the

evidence from the survey suggests that access to personal savings or possession of a mortgage for a house were positive / enhancing influences on firm formation.

In terms of the availability of premises it was generally stated that this was not a major problem due to the availability of cheap second-hand buildings as well as the provision of small units by the Welsh Development Agency (WDA), MWD, county and district councils and private developers. In fact, a large number of the surveyed new firms were located in new purpose built industrial estates or in old small workshops (especially in rural areas). Consequently, it can be argued that the provision of suitable premises has made a number of surveyed environments in Wales more conducive to new firm formation. Also, 12.3% of founders possessed a university or polytechnic degree and this evidence suggests that a number of founders with high levels of educational attainment had established new businesses.

CONCLUSION

From the the new firm survey a variety of important conclusions can be drawn. First, new firm formation policies have only made a limited impact, at least in the short term, for industrial restructuring and job generation in Wales. The surviving new firms are generally small in terms of employment size, have low levels of turnover, modest levels of profitability and are essentially established in low barrier-to-entry industries. The new firms established also have a tendency to sell the majority of their turnover within Wales alone which may lead to the displacement of existing businesses within Wales. Second, there are differences between TTWAs in their propensity to generate and retain new manufacturing firms. Rural TTWAs recorded higher levels of new manufacturing firm formation than their urban counterparts and the rural TTWAs also had a greater ability to attract a large number of immigrant founders. Third, only through in-depth investigation with new firm founders was it possible to identify factors influencing the formation decision and the formation process. The hypotheses stated in Table 1 have been shown to be appropriate with some influence in either promoting or impeding new firm formation in TTWAs. From the results detailed above, it can be reasonably argued that the spatial framework (Figure 1) as well as the surrogate variables (Table 3) used in the typology of 'ecological incubator' environments (Figure 4) do have some applicability and provide signals that are associated with the characteristics of new firm founders and their new firms. Fourth, new and small firm policies risk being regionally divisive, more attention must be placed on generating successful new manufacturing firms in the more traditional, diversified and urban TTWAs of

north and south Wales which have a large percentage of their total employment in manufacturing activities which are generally based in large establishments in terms of employment size as well as being externally-controlled branch plants. Finally, the new firm survey has indicated that a considerable number of founders had backgrounds in which they had previously held managerial and professional positions, had worked in small and locally-controlled manufacturing establishments. Therefore, the empirical results presented in this paper have contributed to the establishment of generality and provided a better understanding of the processes which have led to spatial differentiation in new firm formation rates in Wales. Consequently, it can be claimed that this paper has added both to description and the theory surrounding the new firm formation process.

TABLE 1: FACTORS IDENTIFIED BY THE NEW FIRM RESEARCH LITERATURE WHICH ARE ASSOCIATED WITH BEING EITHER POSITIVELY OR NEGATIVELY ASSOCIATED WITH THE RATE OF NEW FIRM FORMATION IN LABOUR MARKETS

Factors	Surrogate Variables	Hypothesis positively or negatively associated with new firm formation
1. Rurality	High % of population living in towns of over 5,000 population.	Negatively
	High land area density (or low population density).	Positively
2. Entry into industry	High % of population in low entry barrier industries.	Positively
	High % of population in heavy industries.	Negatively
	High % of population in mining and quarrying industries.	Negatively
3. Degree of local autonomy	High % of total manufacturing employment in indigenous plants.	Positively
	High % of total manufacturing employment in foreign-controlled plants.	Negatively
4. Size of 'incubator' firm	High % of total manufacturing employment in plants employing fewer than 25 persons.	Positively
	High % of total manufacturing employment in plants employing 500 or more persons.	Negatively
5. Occupational experience	High % of population in managerial and professional groupings.	Positively
	High % of population in manual groupings.	Negatively
6. Self-Employment	High % of population being self-employed.	Positively
7. Turbulence	High employment loss rate in manufacturing plant closures.	Positively
	High rate of manufacturing establishment closures.	Positively
8. Education	High % of population with higher degrees.	Positively
9. Access to capital	High savings per head of population.	Positively
	High house-owning population.	Positively
10. Market demand	High regional income distribution.	Positively
	High rate of change in manufacturing employment growth.	Positively
	High rate of change in total employment growth.	Positively
11. Premises	Availability and low cost of premises.	Positively
12. Unemployment	High % change in the rate of unemployment.	Positively

Sources: Cooper (1971); Johnson & Cathcart (1979); Cross (1981); Fothergill & Gudgin (1982); Storey (1982); Gould & Keeble (1984); Gudgin & Fothergill (1984); Lloyd & Mason (1984); O'Farrell & Crouchley (1984); Whittington (1984); Storey and Jones (1987).

TABLE 2: DEFINITION OF VARIABLES

VARIABLE	
RURALITY	- Area of TTWA (h.a.) / Usually Resident Population, 1981
POPCHANGE	- Percentage of Change of Population Present on Census Night, 1971-1981
MFRPC	- Percentage of Total Employment in Manufacturing, 1981
TOTDI5	- Endogenous Diversification Entropy Statistic for Total Employment, 1981
TOTSTSHPC	- Percentage Total Employment Structural Shift, 1971-1981
MININGPC	- Percentage of Total Employment in Mining and Quarrying (SIC 2), 1981
HEAVYINDPC	- Percentage of Total Manufacturing Employment in Heavy Industries (SICs 4, 5, 6 and 10), 1981
EASYENTRYPC	- Percentage of Total Manufacturing Employment in Easy Entry Industries (SICs 17, 18 and 19), 1981
MFRCHPC	- Change in Absolute Manufacturing Employment 1971-1981 as a Percentage of Absolute 1971 Absolute Employment
TOTCHPC	- Change in Absolute Total Employment, 1971-1981 as a Percentage of Absolute 1971 Total Employment
FOREIGNPC	- Percentage of Total Manufacturing Employment in Foreign Owned Manufacturing Establishments, 1983
P25PC	- Percentage of Total Manufacturing Employment in Establishments Less Than 25 Employees, 1985
P500PC	- Percentage of Total Manufacturing Employment in Establishments Greater Than 500 employees, 1985
CLOSRATE	- Number of Manufacturing Establishment Closures, 1980-1984 Divided by 1978 Manufacturing Employment Stock and then Multiplied by a Thousand
ELCLOSRATE	- Employment Loss in Manufacturing Establishment Closures, 1980-1984 as a Percentage of the 1978 Manufacturing Employment Stock
MANPROFPC	- Percentage of Persons in Employment Being Managers and Professionals (SEGs 1, 2 and 13), 1981
MANUALPC	- Percentage of Persons in Employment Being Manual Workers (SEGs 9, 10 and 11), 1981
SELFEMPLOYPC	- Percentage of Persons in Employment Being Self-Employed, 1981

Source: Westhead (1987).

TABLE 3: THE EMPLOYMENT SIZE OF SURVEYED NEW FIRMS IN 1986

Employment Size Groups	Number of New Firms	Percentage of New Firms
1-5	167	62.1
6-10	48	17.8
11-15	24	8.9
16-20	11	4.1
21-25	7	2.6
26-30	5	1.9
31-50	4	1.5
>50	3	1.1
TOTAL	269	100.0

**TABLE 4: SURVEYED NEW MANUFACTURING FIRMS IN WALES, 1979-1985:
INDUSTRIAL DISTRIBUTION**

SIC (1968) Order		Number of New Firms		New Firm Employment, 1985	
		No.	%	No.	%
3.	Food, Drink and Tobacco	11	4.1	97	4.7
5.	Chemicals and Allied Industries	9	3.3	61	2.9
6.	Metal Manufacture	1	0.4	6	0.3
7.	Mechanical Engineering	23	8.6	252	12.2
8.	Instrument Engineering	5	1.9	16	0.8
9.	Electrical Engineering	15	5.6	147	7.1
10.	Shipbuilding and Marine Engineering	4	1.5	5	0.2
11.	Vehicles	9	3.3	79	3.8
12.	Metal Goods n.e.s.	29	10.8	199	9.6
13.	Textiles	13	4.8	112	5.4
14.	Leather, Leather Goods and Fur	1	0.4	3	0.1
15.	Clothing and Footwear	10	3.7	123	5.9
16.	Bricks, Pottery, Glass, Cement, etc	28	10.4	112	5.4
17.	Timber, Furniture, etc	66	24.5	311	15.0
18.	Paper, Printing and Publishing	16	5.9	84	4.1
19.	Other Manufacturing Industries	29	10.8	463	22.4
TOTAL		269	100.0	2,070	99.9

TABLE 5: FACTORS ASSOCIATED WITH THE NEW FIRM FORMATION PROCESS IN THE EIGHTEEN TTWAs SURVEYED - ACTUAL AND EXPECTED DISTRIBUTIONS

Factors associated with the new firm formation process		Total (%)
1. Self Employment		
	Percentage of founders being self-employed immediately prior to start-up.	10.4
	Percentage of total economically active persons being self-employed, 1971.	10.4
	Percentage of total persons in employment being self-employed, 1981.	15.2
2. Managers and Professionals		
	Percentage of founders being managers prior to start-up (Cross (1981) scale).	40.1
	Percentage of total economically active persons being managers and professionals (SEGs 1,2 & 13), 1971.	9.0
	Percentage of total employees in employment being managers and professionals (SEGs 1,2 & 13), 1981.	11.9
3. Manual Workers		
	Percentage of founders having had an operative employment position immediately prior to start-up (Cross (1981) Scale).	23.0
	Percentage of total economically active persons being manual workers (SEGs 9,10 & 11), 1971.	38.9
	Percentage of total employees in employment being manual workers (SEGs 9,10 & 11), 1971.	34.3
4. Small Establishments		
	Percentage of founders being employed in establishments with less than 25 employees immediately prior to start-up.	37.9
	Percentage of founders being employed in establishments with less than 25 employees immediately prior to start-up (excluding the 'not known' category).	45.3
	Percentage of total manufacturing employment in establishments with less employees immediately prior to start-up	9.9
5. Large Establishments		
	Percentage of founders being employed in establishments with more than 499 employees immediately prior to start-up.	10.4
	Percentage of founders being employed in establishments with more than 499 employees immediately prior to start-up (excluding the 'not known' category).	12.4
	Percentage of total manufacturing employment being employed in establishments with more than 500 employees, 1985.	31.9
6. Employment Loss in Closures		
	Percentage of founders leaving previous employer prior to start-up because of establishment closure.	12.3
	Percentage of founders leaving previous employer prior to start-up because of being made redundant.	12.3
	Manufacturing employment loss, 1980-1984 as a percentage of 1978 manufacturing employment.	22.6
7. Manufacturing Background		
	Percentage of founders being last employed in a manufacturing establishment immediately prior to start-up.	65.1
	Percentage of total employment in manufacturing, 1971.	34.1
	Percentage of total employment in manufacturing, 1978.	30.9
	Percentage of total employment in manufacturing, 1981.	25.1
8. Easy Entry Industries		
	Percentage of founders being employed in easy-entry industries (SICs 17,18 & 19) immediately prior to start-up.	15.6
	Percentage of total manufacturing employment in easy-entry industries (SICs 17, 18 & 19), 1971.	14.0
	Percentage of total manufacturing employment in easy-entry industries (SICs 17, 18 & 19), 1981.	17.2
9. Heavy Industries		
	Percentage of founders being employed in heavy industries (SICs 4, 5, 6 & 10) immediately prior to start-up.	8.2
	Percentage of total manufacturing employment in heavy industries (SICs 4, 5, 6 & 10), 1971.	27.3
	Percentage of total manufacturing employment in heavy industries (SICs 4, 5, 6 & 10), 1981.	19.4
10. Mining and Quarrying		
	Percentage of founders being employed in Mining and Quarrying (SIC 2) establishments immediately prior to start-up.	0.7
	Percentage of total employment in Mining and Quarrying (SIC 2) immediately prior to start-up.	4.2
	Percentage of total employment in Mining and Quarrying (SIC 2), 1981.	2.6
11. Foreign Manufacturing Employer		
	Percentage of founders being employed in a foreign controlled manufacturing establishment immediately prior to start-up (excluding non-manufacturing and the 'not known' categories).	13.1
	Percentage of total manufacturing employment in foreign owned manufacturing establishments, 1983.	15.7

Sources: Census of Population, 1971 and 1981 data, OPCS, Fareham and SASPAC; Department of Employment, 1971 and 1981, ER2 data, Watford; The Health and Safety Executive, Cardiff; Industry Department, Welsh Office, Cardiff, 1985; Welsh Economic Trends, No. 8, 1982/83, Welsh Office, Cardiff; Present New Firm Survey.

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