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**SWP 12/88 THE CHARACTERISTICS OF NEW
MANUFACTURING FIRMS AND NEW FIRM
FOUNDERS IN WALES, 1979 - 1983**

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THE CHARACTERISTICS OF NEW MANUFACTURING FIRMS AND NEW FIRM FOUNDERS IN WALES, 1979-1983.

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Through the presentation of results from a new firm survey in Wales several aspects of the new firm formation process have been placed on a sounder empirical base. Empirical support is given to the arguments and hypotheses proposed in previous studies.

1. INTRODUCTION.

As the opportunities for attracting mobile manufacturing plants to the depressed regions have declined, so attention has increasingly focussed on the potential for indigenous industrial growth within regions such as Wales. 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, in terms of job generation and 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 in the long run and a panacea for all economic problems.

The objective of this paper is to place several aspects of the new firm formation process on a sounder empirical base. Through the presentation of survey findings considerable empirical support is given to the arguments and hypotheses proposed in previous studies (Table 1). Previous research has shown that new firms are founded for a variety of reasons and some factors have been shown to inhibit individuals from new firm formation whilst others have been found to be more permissive. The analysis of questionnaire results from a new firm survey conducted in contrasting 'ecological incubator environments' in Wales provides a better understanding of the dynamics of the formation process and the interaction between complex personal, business and environmental factors. Also, the processes and factors associated with spatial variations in new firm formation have been viewed from two levels of explanation: for example, from either a inductively developed perspective (reading down Figure 1) or a deductively developed perspective (reading up Figure 1). The survey allowed the two levels of explanation listed in Figure 1 to

be satisfactorily interpreted. This was greatly aided by the adoption of the Gibb and Ritchie (1981) social development model approach which enabled a wide variety of information to be gathered during the new firm survey. The survey, therefore, explored the opportunities for new firm development as well as the constraints confronting the new business. It is, however, important to emphasise that the presented survey deals only with surviving new firms and is biased towards those which, to date, have been successful in exploiting opportunities and overcoming the constraints. Moreover due to the complexity of the new firm formation process an all-embracing explanation is not presented.

Before attempting to fulfil the objectives mentioned above, it is necessary briefly to describe the definition of a new firm and the survey upon which this paper is based. Unfortunately, "the definition of a new firm is not clear-cut or unambiguous issue" (Mason, 1983, p.53). 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. The definition of 'manufacturing' also gives rise to problems; a number of small new manufacturing firms on the service / manufacturing boundary were identified and interviewed.

The only possible source of information about the background of new firm founders, new firms and the actual process of new firm formation is of course the entrepreneur (i.e. the new firm founder) himself. The data for this paper were gathered by personal visit and interview during 1986 to 269 manufacturing firms which had been established in selected 'environments' in Wales during the recessionary period between 1979 (January 1st) and 1985 (December 31st). One of the main concerns of the survey was to gain as large a response rate as was possible in the previously defined contrasting 'ecological incubator environments' in Wales (Westhead, 1987). A manufacturing establishment databank already assembled for the whole of Wales was then used as a basis for field survey in the selected Revised (1978) Travel-To-Work Areas (TTWAs) (Figure 2) and updating as necessary from field inspection. A number of TTWAs were targeted for analysis and from the total number of new firms identified in each of these a fairly large survey of new firm founders was undertaken (Figure 3) with considerable success. Since at the start of the survey the precise and up-to-date total population of new firms in each targeted TTWA was unknown, no attempt was made to control for industry size or type in

the following 'grab' survey. The high response rate achieved (80.3%: 269 out of 335 firms contacted, following an unarranged 'knock-on door' approach, is surprisingly noteworthy, and is as successful as that found in other studies (i.e. 83%: 120 out of 144 firms contacted by Keeble and Gould (1984) in East Anglia).

2. CHARACTERISTICS OF THE NEW FIRMS.

In the twenty 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 only 2,070 jobs. The mean and median employment sizes of the new firms were 7.7 and 4 employees respectively. These statistics reveal that in Wales as elsewhere (Cross, 1981; Lloyd and Mason, 1984, p.218; Keeble and Gould, 1984, p.8; and 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. As was anticipated, the present employment sizes are larger than the initial ones (i.e. mean and median being 2.6 and 2 employees, respectively). Growth has occurred in a number of new firms but the vast majority have remained small. For example, 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) recording the largest levels of entry are indicated in Table 2. Forty-two new firms (15.6%) had entered easy entry sectors (i.e. SIC's 17, 18 & 19) and these firms employed 858 people (41.4% of total new firm employment). Conversely, only 22 new firms (8.2%) had entered the postulated heavy industry sectors with high-barriers to entry (i.e. SIC's 4, 5, 6 & 10) employing only 72 employees (3.5% of total new firm employment). In terms of movement of the new firm from non-manufacturing to manufacturing it was found that 12 founders (4.5%) reported such a move. The transfer between manufacturing orders was also found to be low; over 80.7% of new firms did not change their SIC (1968) Order number.

3. THE ENTREPRENEURIAL MOTIVATION.

Previous research dealing with firm formation in earlier time periods and other geographical areas has shown that the overwhelming motivation for entrepreneurship is an amalgam of ambition and desire for financial betterment, with frustration in the previous job playing a secondary role. In a minority of cases, redundancy or firm closure has provided a particular trigger forcing founders to leave their

previous jobs. In the present study the major motivation was to exploit a perceived market opportunity (31.6%), closely followed by the 'push factor' of being forced into entrepreneurship (26.8%) and the 'pull factor' of the desire for independence motivation. Quite surprisingly, only 10% of founders' main motivation was expressed as a desire to make greater financial rewards. The present study differs markedly from a number of earlier studies due to the inclusion of the 'forced into entrepreneurship' motivation. However, the 'push' factor is lower than that found for Nottingham (47% by Binks and Jennings (1986, p.6) but larger than that found for Cleveland (20% by Storey (1982, p.112)). The disparity in levels is probably in part a consequence of the impact of the recession in the surveyed areas. Moreover, in the present study it was found that the main individual reason indicated by new firm founders for leaving their last employer was the 'push factor' of redundancy, closure and take-over (29.1%). This was followed by the more positive intentions of 16.8% of founders whose main motivation was the desire to set-up a business of their own. Also, unemployment acted as a powerful influence on new firm formation and a number of firms were founded with the prime intention of maintaining the entrepreneur in work. Just prior to start-up 77 founders (28.6%) stated that they had been unemployed. The evidence therefore suggests that the turbulence effect of redundancy and employment loss through plant closure and rundown is a significant 'supply' factor positively 'pushing' people into entrepreneurship.

4. THE LOCATION OF NEW FIRMS AND THE CHARACTERISTICS OF NEW FIRM FOUNDERS.

The survey revealed that founders rarely searched widely for a location for their new plant and 41.3% of founders had last worked in the same TTWA in which they had established their new firm in Wales. A further 13.5% had previously worked in an adjacent Welsh TTWA. This evidence confirms the well established fact that most founders do not make explicit location decisions when choosing the region in which they operate and that most founders set up in the general vicinity of their place of previous employment and residence. This view is also supported by the fact that the 66.8% of founders claimed to have some association with the new firm location. Moreover, 67.2% of founders stated that they had not considered any other TTWA for the location of their business to the one which they eventually located in. The reasons why entrepreneurs set-up their plants in their home TTWA or TTWA in which they last worked has been summarised by Gudgin (1978, p.105-8).

Previous examinations of the geography of new firm formation have indicated that there is considerable spatial variations in new firm formation rates (Gould and Keeble, 1984, p.193). The most successful areas in promoting or attracting new firms have been shown to be predominantly in rural areas and small towns. In the present survey the highest new firm formation rates were similarly identified in rural TTWAs (Figure 4a). Even when a wider employment denominator is used (removing the urban-rural bias in the denominator as suggested by Gudgin and Fothergill (1984, p.205)) it is still apparent that rurality and a low level (or tradition) of manufacturing employment are strong positive / enhancing factors associated with new firm formation as indicated by the higher formation rates in Tywyn, Blaenau Ffestiniog and Lampeter and the lower ones in urban Pontypridd, Shotton and Wrexham (Figure 4b). Evidence from the examination of the specialisation measures e.g. the tress statistic, points to rural areas having a narrow range of employment types (in SIC terms) which produces high scores on the tress statistic (factor 10 in Table 1). Therefore, it can be concluded that the specialised nature of employment in rural TTWAs may promote new firm formation.

The high unadjusted and adjusted formation rates in rural TTWAs is in part a result of the high immigration of founders into these TTWAs and on this characteristic the present study differs markedly from previous studies. In fact, 65.5% of surveyed new firm founders in Wales were born outside the Principality (Figure 5). High immigration was evident in a number of TTWAs but the highest levels were recorded in rural TTWAs (e.g. 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)) and the lower levels in the less environmentally attractive urban TTWAs. However, 58.9% of immigrant founders had had prior employment connections with Wales and the main reasons found for moving to Wales were as follows: previous employment position, family reasons, the environment of Wales and the ability to afford a house in Wales. Perhaps rather surprisingly, there were few significant differences between either the moving or non-moving firms they set-up. It can be concluded that their movement into Wales is beneficial to the region but they did not represent an elite group of founders.

Previous research has shown that new firms in general can operate anywhere but some environments may be more conducive to new firm formation than others. TTWAs with a high formation rate require both an adequate supply of local entrepreneurs and an environment which eases the new firm formation process.

Consequently in the remainder of this section a number of variables / hypotheses indicated in Table 1 will be discussed with regard to their general applicability. It is possible to argue that one of these influences has a dominant role in reality it must be acknowledged it is more likely that they all play a part in contributing to regional variations in new firm formation rates (Watts, 1987, p.150).

(i) Industrial Structure.

First, the industrial activity of a founder's last employer prior to start-up did have a major influence on entrepreneurship because a number of founders had links with the industries they had left. In the new firm literature it has been suggested that differences in industrial structure may explain differences in formation rates between and within regions in the same country. The survey showed that 175 founders (65.1%) came from a manufacturing last employer. Since manufacturing employees accounted for less than 30.9% of employees in these TTWAs in 1978 it can be claimed that employees from manufacturing activities are over-represented in the new firm formation process. Surprisingly, only 98 new firm founders (36.4%) set up their firms in the same SIC (1968) Order as their last employer. Therefore, a number of founders moved to industrial sectors where there were demands for increased output. Also, 15.7% of founders came from postulated easy-entry industries (SIC's 17, 18 & 19) and only 8.2% of founders came from postulated heavy industries (SIC's 4, 5, 6 & 10). Moreover, only 0.7% of founders' last employment was in Mining and Quarrying (SIC 2). These results suggest that previous employment in mining and quarrying and heavy industries are strong negative / impeding influences on new firm formation. In contrast to the positive / enhancing influence of being last employed in manufacturing industries with low barriers to entry.

(ii) Population and Occupational Characteristics.

Not only did regional variations in industrial structure affect new firm formation but it is shown below that population and occupational characteristics of a TTWA did have an influence. It has been suggested that populations may differ in their attitudes to risk and new firm formation may be held back where there is an aversion to risk taking (Watts, 1987, p.152). Moreover, a marked out-migration may remove those willing to take risks, while a marked in-migration as indicated above does bring in potential founders. It has also been argued that entrepreneurship is related to particular age groups or to individuals with particular educational

qualifications. The survey indicated that the majority of founders (66.7%) were aged between 26-45 years of age when they set-up the new firm and the proportion of founders over 45 was 23.0%. The average (mean and median) age of founders (38.03 and 37 years of age, respectively) is similar to those reported by other new firm surveys as a measure of previous experience. Also, it appears that higher levels of education increased the propensity to establish firms. In the survey 4.8% did not start full-time employment until they were 22-25. It is not unreasonable to assume that most of these would have been in higher or further education until their early twenties. A further measure of educational attainment assumed to be associated with entrepreneurial intention is the proportion of founders possessing a university or polytechnic degree. On this measure, founders in Wales are better qualified educationally than was originally anticipated, with 12.3% possessing degrees. This result compares quite favourably with the results from other new firm surveys.

The new firm literature has suggested that people from managerial / professional and self-employed occupations have a greater propensity to set-up new firms. The survey evidence suggests that this propensity does exist. For example, 10.4% of founders had been self-employed prior to start-up and 40.1% of founders had reached managerial positions with their previous employer prior to formation, as against only 23.0% of founders from operative (or manual) occupations (using the scale adopted by Cross (1981)). It would appear that managerial experience is an important prerequisite for new firm formation.

Another characteristic of the new firm founders' last employer prior to start-up viewed as important has been the status of that establishment. The nature of ownership of a plant can be used as a possible surrogate measure of managerial functions carried out at a plant. In fact, it has been claimed that an independent local plant would contain a higher number of risk-taking positions than, say, a branch or a subsidiary plant. The survey indicated that 49.5% of founders had learned their skills in local-Welsh establishments prior to founding, compared to only 23.0% in foreign and UK controlled international establishments. One can therefore conclude that in the aggregate, externally controlled branch plants did not act favourably as incubators and there is evidence to suggest that they exerted a strong negative / impeding influence on new firm formation.

(iii) Plant Size.

Although the industrial, population and occupational characteristics of a labour market may influence the rate of new firm formation another influence is shown to

be a TTWA's plant size structure. It has been generally shown that previous employment in small plants rather than large plants is a more conducive influence on formation. A number of factors have been suggested to explain the relationship (Fothergill and Gudgin, 1982, p.124-8) but it is generally acknowledged small firms provide superior training grounds for the founders of firms. Also, it has been argued that 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 while informal contacts with potential and actual founders are more likely. As found in other regions most surveyed founders' (45.3% - when excluding 44 founders in the not known category) last employer was a small firm with less than 25 employees in size. Only 12.4% of founders were last employed in establishments with more than 500 employees. This is in contrast to the fact that 6.8% and 48.2% of the total manufacturing workforce in 1978 in Wales were employed in establishments with less than 20 employees and with more than 499 employees in size, respectively (Business Statistics Office, 1979). From this strong empirical evidence, it can be concluded that small establishments are positive / enhancing influences on new firm formation and large establishments have a negative impeding influence.

(iv) Other Aspects of the Incubator Environment and the Start-Up Process.

While its particular industrial, occupational and plant-size characteristics give a TTWA its own distinctive features which can influence new firm formation, important too are other aspects of the environment which affect the context within which new firms operate. Access to capital, markets and industrial premises may, to some extent, constrain the opportunities for entrepreneurs to establish new businesses, while some policy environments may be particularly conducive to new firm formation (Watts, 1987, p.155).

The survey results show that 45.7% of new firms were founded by more than one founder and that 56.7% of founders had used more than one source of finance in the formation period. Personal savings (50.3%) and loans from clearing banks (24.8%) were the most cited sources of start-up capital in terms of numbers of mentions. Only 33.1% of founders reported problems in raising outside finance and a number of founders had mortgaged their house as a means of gaining security for a loan.

During the start-up period and during the development of new firms the potential and demand of local market niches was found to be important. 40.3% of

founders claimed that they sold more than 80% of their turnover in Wales and only 27.9% of founders claimed to be exporting any of their production. The type of work done by new firms was equally split between mainly specification orders (50.6%) and mainly own products (43.9%) with the vast majority either being subcontracted to industry or sold direct to the public from the new firm's establishment. Therefore, it appears that consumer (and industrial) demand within a TTWA does influence formation rates.

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 environments in Wales more conducive to new firm formation.

As indicated above, policy effects through the influence of development agencies appear to have had a significant influence on new firm formation in Wales. In fact, 71.4% of founders had tried to gain information from external sources and the WDA, MWD and county councils were the most well known and utilised. Also, it was shown that the most agencies had developed packages in order to promote conducive incubator or seedbed environments for new firm formation and the agencies had advertised their services with considerable success. Moreover, the survey identified that the most frequently mentioned reason for contacting agencies was to gain information about sites and premises. A number of founders did complain that they felt that there were too many sources of advice and there was the notable problem of duplication. This led to a number of founders suggesting that advice should be rationalised into a single agency giving advice.

5. CONCLUSION.

The survey results discussed above have shown that a wide range of influences (and variables) are involved if one wants to gain a better understanding of the formation process. But only through in-depth investigation with new firm founders was it possible to identify major factors influencing the formation decision and the formation process if only in the surveyed cases. A number of the hypotheses stated in Figure 1 have been shown to be appropriate with some influences in a TTWA either promoting or impeding new firm formation. Similarly, the structural theories

and the theories discussing the cause of the spatial variations in new firm formation detailed in Figure 1 have also been found to be generally applicable. Moreover, 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 in Wales. Consequently, this paper has added both to description and the theory surrounding the new firm formation process in 'ecological incubator' environments.

Unfortunately, despite the current enthusiasm for studies of new firm formation the survey detailed above reported that only 2,070 jobs were created in 269 new firms. Even where marked variations in the geography of new firm formation can be shown to exist its influence on net change is overwhelmed by massive employment change in other components. For example, placed in the context of the decision of a single corporation, Guest, Keen and Nettlefolds PLC (in which 6,348 jobs were lost in Wales between 1980-1984) it is clear that the employment impact of new firms in the short-term is minimal. Moreover, 53.1% of surveyed founders reported a current turnover of less than £50,000, with only 7.8% reporting greater than £500,000. This suggests that new firms in Wales are not doing as well as their counterparts, especially in the south of England. However, 60% of founders did claim that they were making a current net profit and only 22.3% stated that they were making a loss. A better level of profitability has been reported in previous studies and the lower level for firms in Wales may be partly explained by the time period of the present survey. From the evidence previously discussed it can be argued that at the moment the new firms are not a major source of wealth creation for Wales and, in fact, a large number could be displacing the work done by existing establishments within the region. Therefore, in the short-term it must be realised that new firms are not the panacea for all national problems. In the long-term new firms may enable the transition from 'smoke stack' to 'sunshine' industry to take place but it would be wrong to suggest that new firms will absorb mass unemployment (Scott et al, 1986, p.xi). At the present time the surveyed new firms are small 'bonsai type' trees which may eventually grow into large 'oak type' trees. On the other hand, the growth and development of new and small firms could lead to a modest level of employment creation, with innovation and with increased efficiency in Wales.

Acknowledgements.

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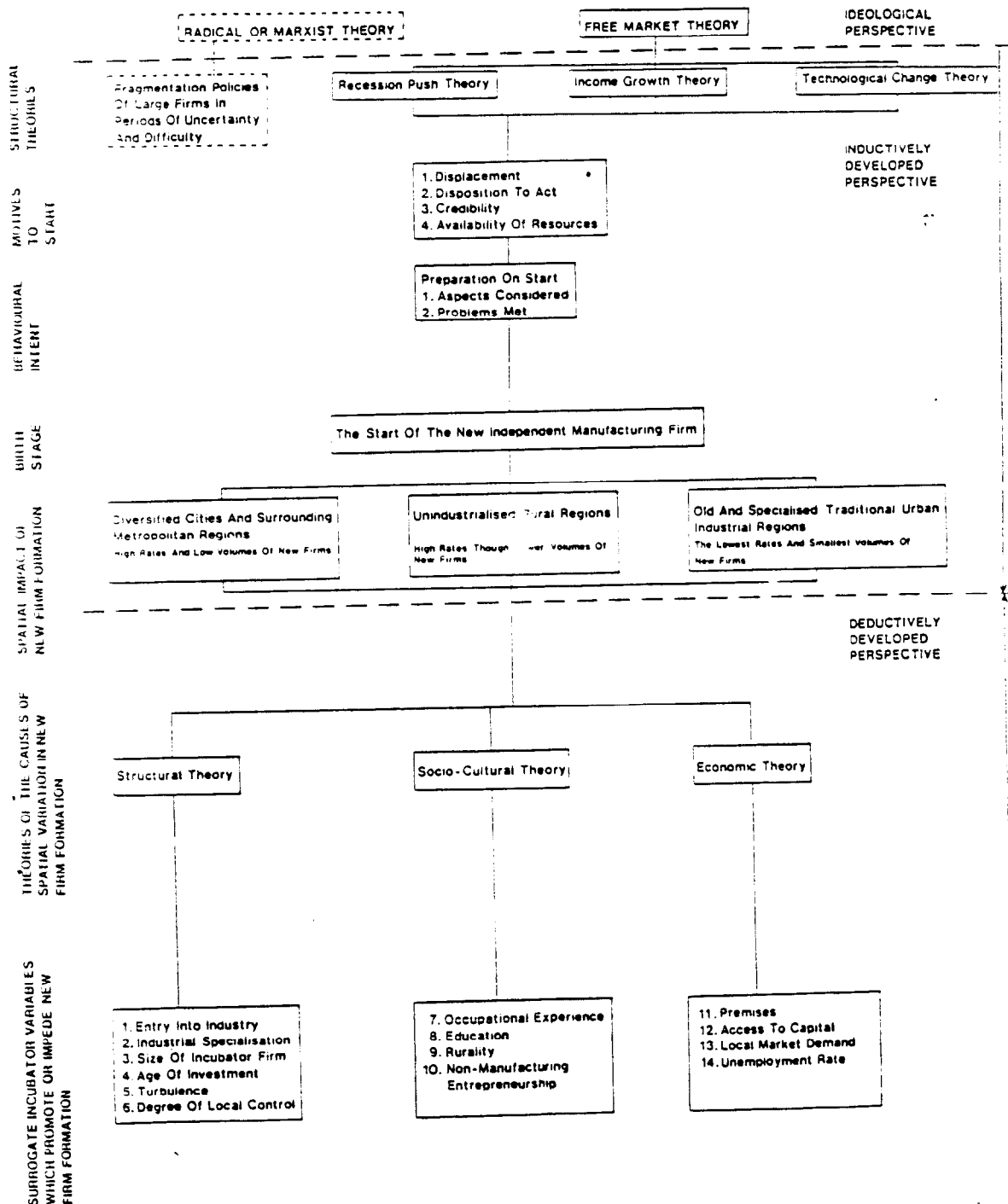
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Figure 1.

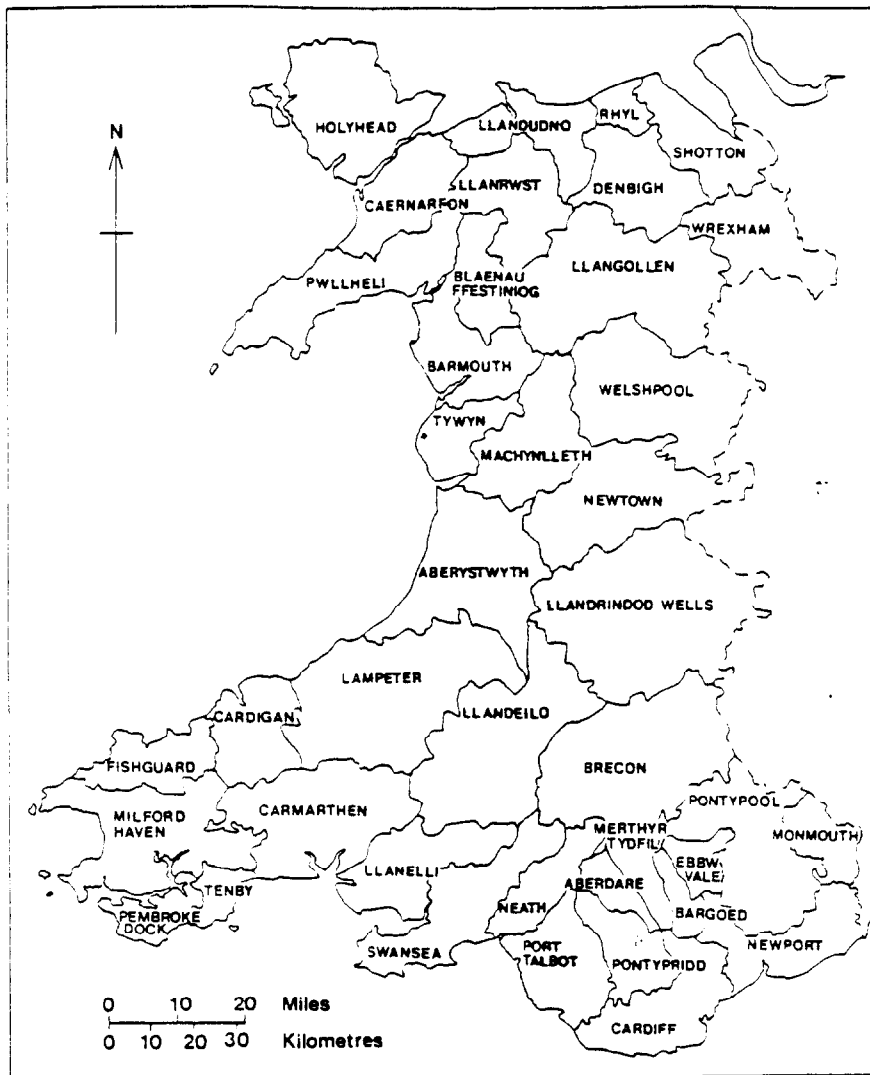
A FLOW DIAGRAM ILLUSTRATING THE PROCESSES AND FACTORS ASSOCIATED WITH SPATIAL VARIATIONS IN THE NEW FIRM RESURGENCE PHENOMENON



Sources: Cross (1981); Fothergill and Gudgin (1982); Gould and Keeble (1984); Gudgin and Fothergill (1984); Keeble and Wever (1986); Lloyd and

Figure 2.

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

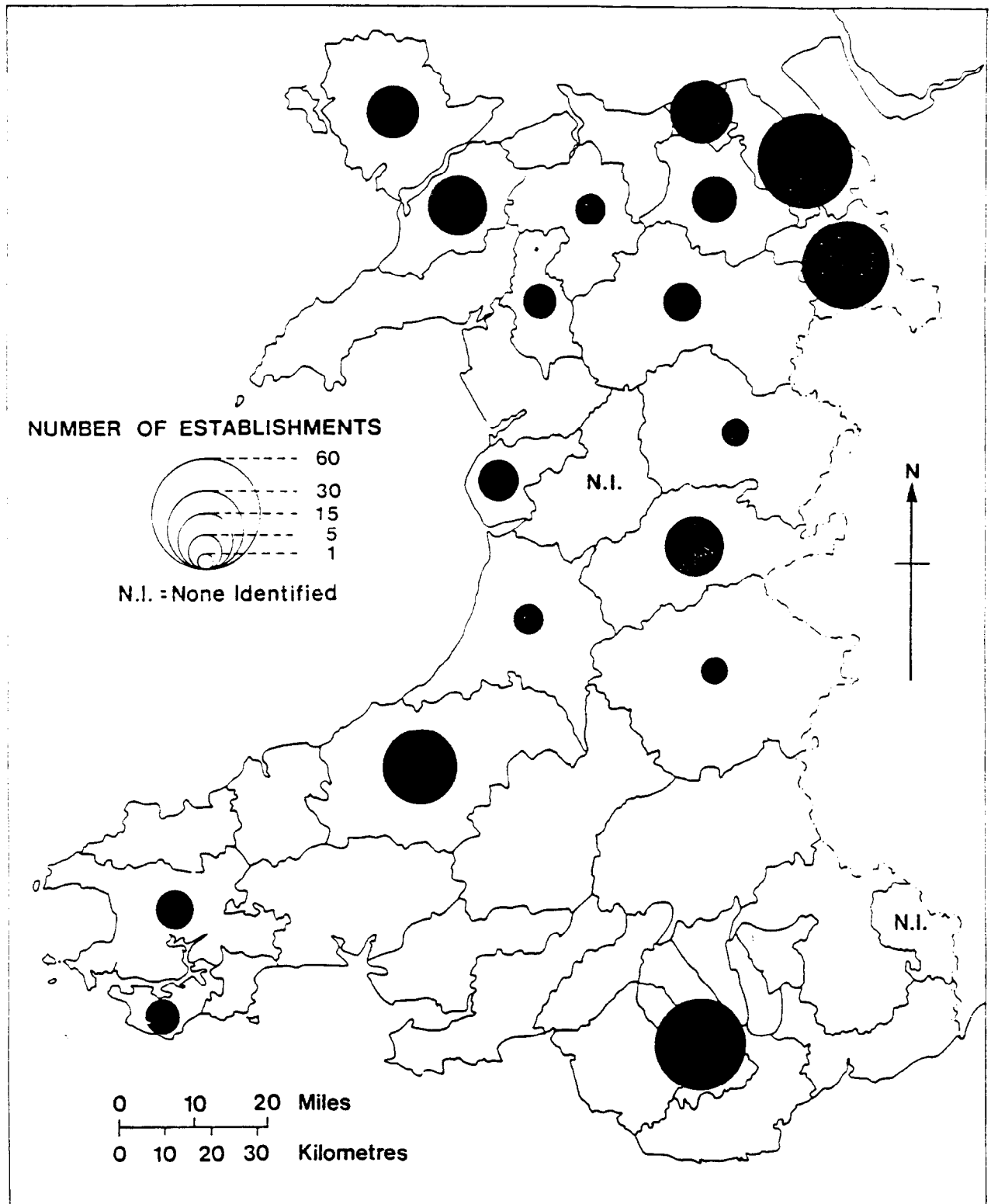


1978 TRAVEL-TO-WORK AREAS (TTWAs), WALES

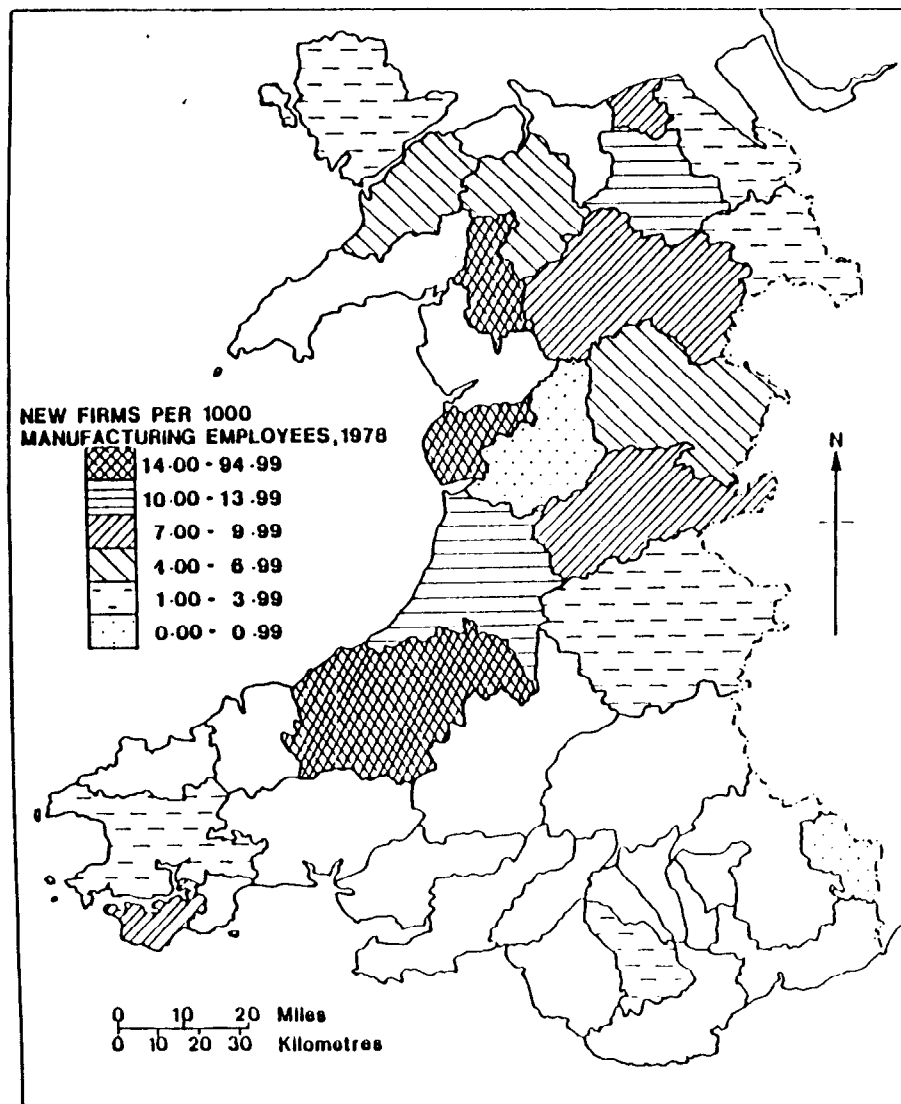
- | | |
|-----------------------|--------------------|
| 1. ABERDARE | 21. LLANRWST |
| 2. ABERYSTWYTH | 22. MACHYMLLETH |
| 3. BARGOED | 23. MERTHYR TYDFIL |
| 4. BARMOUTH | 24. MILFORD HAVEN |
| 5. BLAENAU FFESTINIOG | 25. MONMOUTH |
| 6. BRECON | 26. NEATH |
| 7. CAERNARFON | 27. NEWPORT |
| 8. CARDIFF | 28. NEWTOWN |
| 9. CARDIGAN | 29. PEMBROKE DOCK |
| 10. CARMARTHEN | 30. PONTPOOL |
| 11. DENBIGH | 31. PONTYPRIDD |
| 12. EBBW VALE | 32. PORT TALBOT |
| 13. FISHGUARD | 33. PWLLHELI |
| 14. HOLYHEAD | 34. RHYL |
| 15. LAMPETER | 35. SHOTTON |
| 16. LLANDEILO | 36. SWANSEA |
| 17. LLANDRINDOD WELLS | 37. TENBY |
| 18. LLANUDNO | 38. TYWYN |
| 19. LLANELLI | 39. WELSHPOOL |
| 20. LLANGOLLEN | 40. WREXHAM |

Figure 3.

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



**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)**

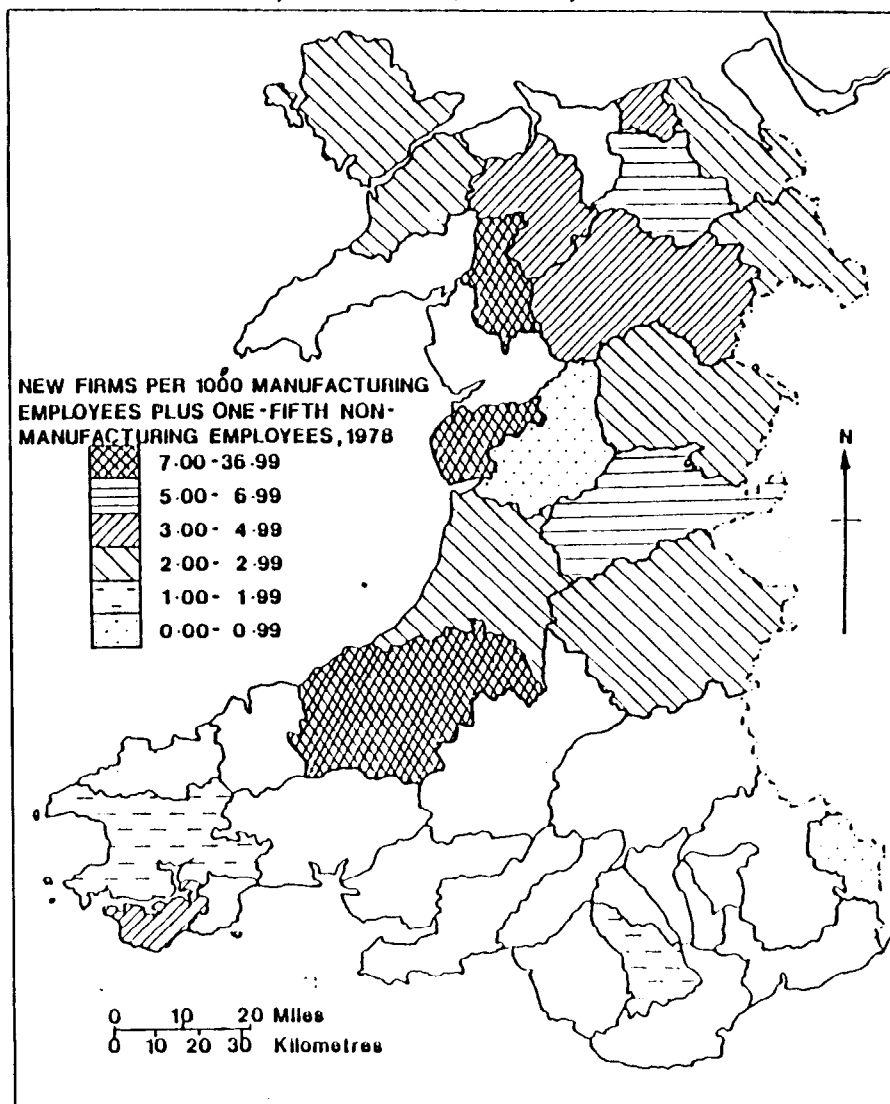


Figure 5 The Route that Founders Followed to Establish a New Firm in Surveyed TTWAs.

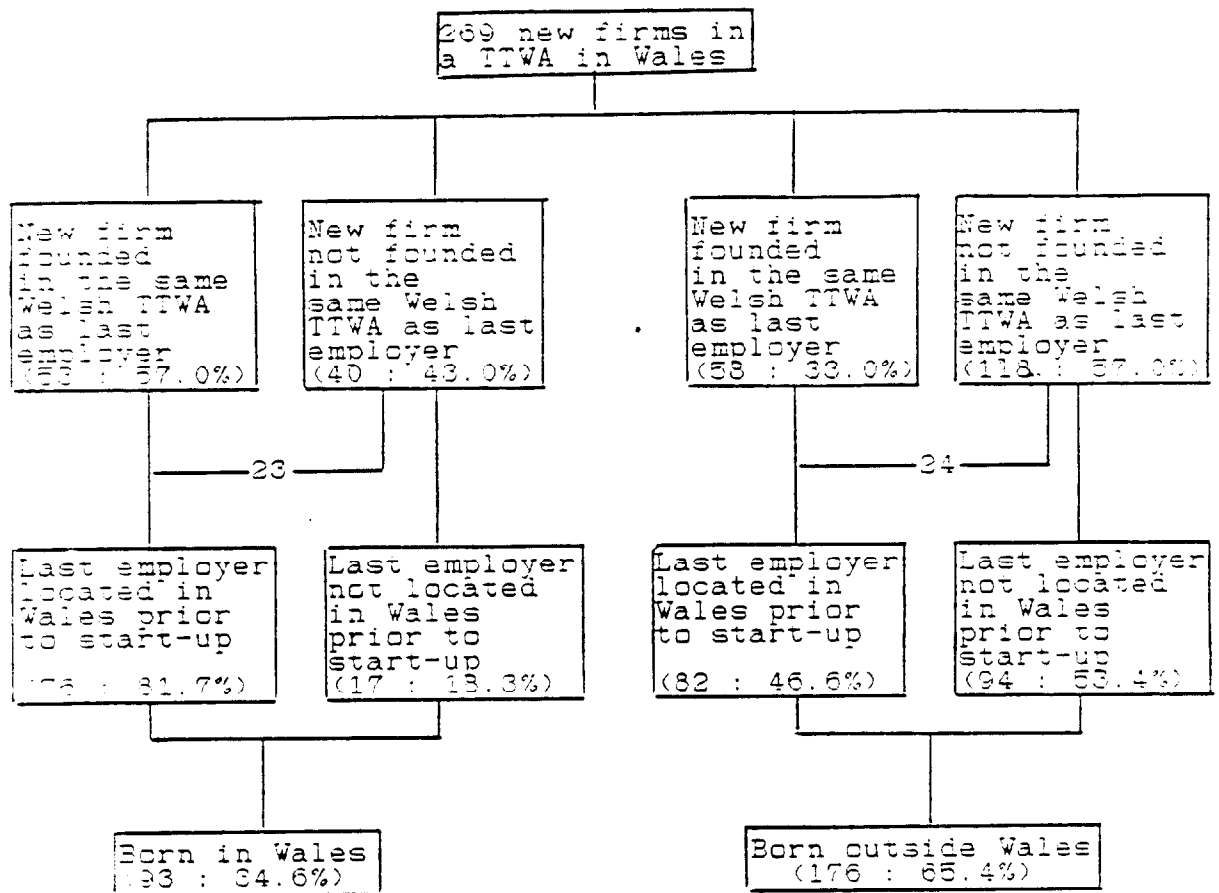


Table 1 Factors Identified by the New Firm Research Literature which are Associated with Either Promoting or Impeding New Firm Formation in Labour Markets

Factors	Surrogate Variables	Promoting/ Impeding
1. Size of 'incubator' firm	High % of total manufacturing employment in plants employing fewer than 25 persons	Promoting
	High % of total manufacturing employment in plants employing 500 or more persons	Impeding
2. Occupational experience	High % of population in managerial and professional groupings	Promoting
	High % of population in manual groupings	Impeding
3. Education	High % of population with higher degrees	Promoting
4. Access to capital	High savings per head of population	Promoting
	High house-owning population	Promoting
5. Entry into industry	High % of population in low entry barrier industries	Promoting
	High % of population in heavy industries	Impeding
6. Market demand	High regional income distribution	Promoting
	High rate of change in manufacturing employment growth	Promoting
	High rate of change in total employment growth	Promoting
7. Degree of local autonomy	High % of total manufacturing employment in indigenous plants	Promoting
8. Age of investment	High % of total manufacturing employment in 'young' plants	Promoting
9. Turbulence	High employment loss rate in manufacturing plant closures	Promoting
10. Industrial specialisation	High Tress specialisation statistic	Promoting
11. Premises	Availability and low cost of premises	Promoting
12. Non-Manufacturing entrepreneurship	High % of total employment in commerce, retailing and wholesaling	Promoting
13. Unemployment	High % change in the rate employment	Promoting
14. Rurality	High % of population living in towns of over 5,000 population	Impeding

Sources: Cross (1981); Fothergill & Gudgin (1982); Gould & Keeble (1984); Gudgin & Fothergill (1984); Lloyd & Mason (1984); O'Farrell & Crouchley (1984); Storey (1982); and Whittington (1984).

Table 2 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