NEW SMALL MANUFACTURING FIRM FORMATION & REGIONAL DEVELOPMENT IN EGYPT

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Abstract

This paper sets out to contribute to a better understanding of small firm formation and the role these firms play in the economy in terms of job creation. Moreover, it aims at formulating policy guidelines to assist the formation of Small Manufacturing Firms (SMFs). The research establishes that the formation of new SMFs in Egypt is the product of a number of structural, economic and socio-cultural factors that also characterize the regional environment and that certain factors have different effects at the national and regional levels. Also, while most new SMF entrepreneurs are positively motivated, motivation differs significantly between various settlement types (urban, rural and new settlements) in both personal and managerial attributes. In order to deal with this heterogeneity, it was necessary to group entrepreneurs into clusters sharing similar attributes. The distinction between the four clusters that emerged was further emphasized by dissimilar search patterns for location of enterprise, with education being the most influential factor in the search. In terms of employment generation, the study showed that SMFs make a limited contribution and more jobs are created by the larger firms in the sector. The study advises government agencies to adopt a location specific approach combined with an entrepreneurial specific approach to the development of new small firms. The study also identifies process of decentralization of development decision making and the formulation of a clear policy as vital to the achievement of effective assistance.

ملخص

تسعى هذه الورقة للمساهمة في فهم أفضل لمسألة تأسيس المنشآت الصغيرة وللدور الذي تلعبه تلك المنشآت في الاقتصاد فيما يتعلق بتوفير الوظائف. كما تهدف الورقة إلى صياغة خطوط عريضة للسياسات التي يجب اتباعها لتشجيع تأسيس منشآت التصنيع الصغيرة. ويؤكد البحث أن قيام منشآت التصنيع الصغيرة في مصر كان نتاج عوامل عديدة هيكلية واقتصادية واجتماعية وثقافية التي تتميز بها البيئة الاقليمية، وأن لبعض هذه العوامل آثاراً مختلفة على المستويين الوطني والاقليمي. وبالرغم من الدوافع القوية لدى معظم منشئي الصناعات الصغيرة فإن هذه الدوافع تتباين بشكل ملحوظ بين المواطن المختلفة (الحضر والريف والمناطق العمرانية الجديدة) سواء في السمات الشخصية أو الادارية. وحتى يتسنى معالجة ذلك التباين، فإنه ينبغي تقسيمهم إلى مجموعات لها سمات متشابهة. وقد زاد الاختلاف في أنماط البحث عن موقع المشروع من التباين بين المجموعات الأربعة الناشئة، حيث كان التعليم هو العامل الأكبر تأثيراً في عملية البحث. أما فيما يتعلق بتوفير الوظائف، فتوضح الدراسة أن مساهمة منشآت التصنيع الصغيرة ضئيلة بالمقارنة بعدد الوظائف التي توفرها المنشآت الأكبر حجماً في القطاع نفسه. وتوصي الدراسة الجهات الحكومية بأن تتبنى نهجاً يتصل باختيار الموقع ممزوجاً بالنهج الذي يتبعه أصحاب المنشآت لتنمية الصناعات الصغيرة. كما تؤكد الورقة على ضرورة عدم مركزية اتخاذ القرارات الخاصة بالتنمية وصياغة سياسة واضحة لتوفير دعم فعال.

CONTENTS

1. INTRODUCTION

The focus of this paper is on new small manufacturing firm (SMF) formation and regional development in Egypt. SMF formation is a complex process and depends upon many factors, ranging from the 'locality personality' (human and natural resources) to the 'macro- policy environment' (development policy and the institutional framework). The backbone of the formation process is the entrepreneur, who contemplates opportunities or is attracted by a catalyst factor, develops his ideas, decides on the type of activity and location, looks for means of implementation (technical and financial), and finally, implements and operates.

There is almost a consensus on the importance of the promotion of new small firms as a means to the development of the population and as a tool of reducing unemployment and poverty especially during the period of structural adjustment. Through assisting the formation of small firms, communities could utilize more effectively both human and capital resources.

In this paper, small firms are defined as those that employ less than 50 workers. Firm formation rate is defined as the average number of manufacturing firms established between 1986 and 1991 per 1000 of labor force population in the base year in a particular geographical area (for a more elaborated discussion of the definitions used see Elleithy 1994).

First, the paper discusses SMF formation and its regional variations; motivations and characteristics of new entrepreneurs; entrepreneurs' location search pattern; job creation potential of new SMFs; and the policy and institutional framework. Second, lessons which could be learned from this study are presented and discussed. Third, the question of what needs to be done to assist the formation of small manufacturing firms is addressed. Finally, potentially important and useful areas of future research are suggested.

2. SMALL MANUFACTURING FIRM FORMATION AND ITS SPATIAL VARIATIONS

Despite the fact that statistics on changes over time are hard to find in Egypt (as in most Developing Countries (DCs)), and usually small firms are under-recorded, available studies have suggested that there has been an increase in the share of employment of the small firm sector. Fergany (1991) showed that there was a steady growth in employment in the private sector establishments between 1960 and 1985, of which the employment in establishments with less than 10 workers, increased from about one million to approximately 2.3 million. Another study showed that employment in small firms in Egypt grew by 3.3% annually between 1974 and 1979 and this rate continued to grow by 4.4% per annum between 1980 and 1982 (Arthur D. Little 1982). This trend has its roots in the adoption of the 'open door' policy in 1974, which set the scene for increased private sector participation in economic development. Moreover, in addition to the already registered firms, it was suggested that by including the large number of unregistered firms (operating informally), the growth of the new SMF sector might be even greater. Studies in other DCs have recorded a similar increase in the number of small firms.[1]

The growing evidence of the resurgence of new small firms in many countries has attracted the interests of both politicians and academics, not only because of its causes and variations between regions, but also because of its importance to economic and social development. However, it has not been fully studied. Little et al. (1987) stated that the proliferation of small firms in both developed and DCs has not been fully analyzed. Consequently, few attempts hitherto have been made to provide a theoretical explanation of this phenomenon.

In the literature, four main theoretical reasons have been put forward to explain the increased rate of firm formation. They are: recession push, income growth, technological change, and fragmentation policies of large firms. It is worth noting, however, that most of these attempts were developed and moulded in industrialized nations and are therefore more pertinent to their socio-economic conditions.

2-1 Recession Push Theory

Since the 1960's, the European economy has experienced a long wave of economic recession. The recession has caused many redundancies and has reduced the promotion prospects of employees

in many companies. Job insecurity and lack of alternative opportunities have pushed potential entrepreneurs to the small firm sector. In the UK, Gudgin (1984) has argued that the deepening recession is one major reason that underlies the observed increased number of new small firms.

A study of new firms and change in unemployment levels, in the UK, in the East Midlands, between 1968 and 1975, showed that the recession-push factor might account for the formation of many new companies (Gudgin and Fothergill 1984). This view was supported by (Atkins et al. 1983) who noted a similar relationship in Nottingham between 1978 and 1983.

Similar conclusions were drawn in some African countries. In Ghana, it has been noted that more than 50% of firms, in the two largest agglomerations of small firms, were founded during the late 1970's and early 1980's when the recession was deepening (Dawson 1988). Also in Peru, during years of economic difficulties in the early eighties small firms recorded significant growth (Schmitz 1989). Such findings have supported the notion that small firms in DCs tend to perform better than large firms during periods of economic crisis (Page and Steel 1984, Anderson 1982, Anheier and Seibel 1987, Dawson 1990)

Dissent from this view are the findings of Gould and Keeble (1984), which have not supported the recession-push theory as a cause of the proliferation of small firms. By comparing the unemployment rate and rate of manufacturing firm formation between 1971 and 1981 in East Anglia, in the UK, they have found that the formation rate actually fell from 0.44 to 0.29 when the recession was intense between 1978 and 1980. Also in DCs, the study of Osei et al. (1993) in Ghana has concluded that although small firms enjoyed good business when the economy was declining, they have benefited significantly from the improvement in the economic environment.

The apparent contradiction in these findings, which might be the result of variations in regional capacity, and the fact that the studies with positive results can claim only a partial explanation for the amount of new firm foundation, leaves room for other views to be assessed.

2-2 Income Growth

The main argument here is that it is the increase in demand or the emergence of new demand that encourages the starting-up of many new firms. In this notion, the upward increase in demand is ascribed to the growth of per-capita income and changing cultural tastes (Keeble and Wever 1986). In other words, per-capita income growth and widening cultural tastes lead to the expansion of the market, particularly for those sophisticated and luxury goods of high quality and variety, which would create opportunities for profit (Brusco 1982). Income growth theory has been held to constitute a convincing and plausible structural explanation for the resurgence of new small firms in the affluent west since the 1960's (Keeble and Wever 1986).

Nevertheless, per capita income in DCs has not grown to the same level as it has in developed countries. Figures from most third world countries still show low levels of income aggravated by a high proportion of the population living below the poverty line (UNDP 1992, Colman and Nixson 1986, Weiss 1988).

In terms of GNP per capita, the annual growth rate between 1965 - 1989 in the least developed countries (LDCs) (per capita income less than $610) increased by only 0.1% compared with 2.9% the average of all countries (UNDP 1992, p.37). Also, the UNDP report has shown that between 1960 and 1989, the LDCs' share of global GNP (Gross National Product) shrank from 1% to a miserable 0.5%, and the annual average growth rate in Sub-Sahara Africa declined to minus 1.7%.

Not only is the level of income deteriorating but also the disparity between the rich and poor is growing at the global scale as well as within the countries concerned. Between 1960 and 1990, the richest 20% of the world population doubled their share in the global GNP to reach 60 times (having about 82.7% of global GNP in 1989) more than the poorest 20% (UNDP 1992). Therefore, income growth is unlikely to be the prime causation of firm formation in DCs as it might be in developed countries, which leaves room for other explanations.

2-3 Technological Change

Technological change is assumed to take the form of cycles in line with the Kondratiev hypothesis of economic cycles (Freeman 1983, Maillat 1988). The cycle starts as the result of a burst of new ideas (innovations) followed by a longer period of economic exploitation of these ideas. Eventually, because of the increase in competition and the swamping of the market with product imitations, a longer period of economic decline occurs.

It has been argued that the upsurge of micro-electronic technology in the 1980s, with its concomitant advanced technology and highly skilled and specialized labour, represents a new economic wave or cycle. The speed and nature of this technological revolution have created a great number of new products and market opportunities that have been infiltrated by new small firms (Keeble and Wever 1986).

The impact of cyclical technological change may vary as markedly between regions within a country as between countries. The concentration of high-technology firms around Cambridge in East Anglia, in the UK, is found to be the result of the environmental advantages of the area such as the dominance of non-manual occupational structure, easy information dissemination, and the presence of Cambridge University with its well-known research activities (Keeble and Kelly 1986).

In most DCs where technology is out-dated and research and development (R&D) is lacking, high-technology industries are not common. Empirical studies have shown that a large number of firms still use less than modern technology (Liedholm and Mead 1987, Stewart 1990). Furthermore, DCs have not exercised similar technological advancement as in developed countries to permit high rates of economic growth and investment in new activities. Innovation capacity in DCs is mainly hampered by the lack of capital and research and development management, and inadequate educational systems.

Very often firms in DCs import technology, in most cases old, rather than reinventing the wheel (Leff 1979). Husbands (1991) has argued that the importation of western technology has proven to be inappropriate and against the employment generation objectives of most DCs. On the other hand, evidence has suggested that the few attempts which have been made to promote appropriate technology in DCs have been successful (Stewart 1990). From this discussion, technological advancement is apparently not the main reason that underlies the new firm formation in DCs.

2-4 Large Firm Fragmentation Policies

Recent increases in firm formation can be understood in terms of the restructuring of the operation of large firms. These large firms, responding to increasing innovation risk, declining demand, and the need to reassert control over labour, have pursued three strategies of fragmentation to small units under the parent firm's ownership, and/or into small firms that are independently owned but economically dependent (Shutt and Wittington 1987). These strategies are: Decentralization, development and disintegration (Table 1).

'Decentralization' is the process by which large firms split into a number of decentralized units of relatively small size. While ownership remains in the hands of parent firms, this break down reduces the power of trade unions and enhances management ability. Also, it enables large firms to use closure and opening in order to adjust to economic change and experiment with new products and processes, with little disruption and lower costs. Information technology plays an important role in fostering the ability of management to coordinate such a multi-plants operation.

Under the 'development strategy', large firms transfer the responsibilities and ownership to small firms, while retaining a guaranteed income for themselves. Franchising and licensing are two forms of the development strategy. While the franchisers ensure a steady flow of revenue and at the same time enjoy low risk, the franchisees bear all the responsibility of production and marketing. In the UK, the importance of this strategy is manifest in the increasing number of franchising units that doubled from 8,000 to 16,000 (Mason 1992).

Table 1: Fragmentation strategies of large firms

Large Firm Strategies	To Manage	Outcome	Large/ Small Link
Decentralization	Demand risk Labour process control Innovation risk	Small plants	Ownership
Development	Demand risk Labour process control	Small firms	license/franchise
Disintegration	Demand risk Labour process control Innovation risk	Small firms	Market-power Ability to repurchase

Source: Shutt and Wittington 1987, p.17.

The third fragmentation strategy is 'disintegration', which may take a variety of forms, such as subcontracting and workers buy-outs. Its common element is 'the shifting of responsibilities of ownership onto smaller firms while large firms retain ultimate control either through the market or contractual power or latent, through the ability to re-purchase' (Shutt and Wittington 1987, p.18). Subcontracting is a form of disintegration which gives large firms greater flexibility in coping with fluctuations of demand and in controlling labour. Moreover, through disintegration, large firms can minimize innovation risks by permitting the scientists to develop independently their new technology. The latter bear the responsibilities and the risks while the larger firms retain control over innovation.

This theory opposes the current optimism about the increase in the number of small firms. Shutt and Wittington (1987) have concluded that the recent rise in the small firm sector does not represent an independent source of new employment opportunities, but merely a transfer of employment from large units to smaller ones. Thus, the increase of small firms in a particular area does not necessarily indicate a healthy economy as much as a restructuring of existing production units. However, one of the weaknesses of this theory is it tries to explain firm formation based solely on the change in the British industrial structure providing little empirical evidence in support of their arguments (Barkham 1989).

Despite the fact that large scale industries in DCs are in the process of divestiture and privatization, there is no evidence, so far, to suggest that those fragmentation strategies, as known in the industrialized countries, have been exercised. Therefore, one can conclude that the fragmentation of large firms cannot provide an explanation to the recent increase in the number of small firms in DCs.

A point to be remembered is that these explanations have emerged from research in advanced industrialized countries, and are more relevant to their conditions rather than to developing ones. Other theoretical explanations are needed for the recent increase in the number of small firms in DCs.

2-5 Anderson's List Of Explanations

One attempt is that of Anderson (1982), who advanced the following tentative explanations to the increased number of small firms in DCs.

- First, as the process has occurred when rural activities have been dominating the economy, it is the relative rise in rural income and the dispersed agricultural outputs, which broadened the market to small firms' products, and thus encouraged the creation of new small firms.

- Second, it is the inequality in the availability of infrastructure and transport facilities, and the existence of small local markets that have necessitated a fragmented pattern of production.

- Third, it is the growth of distinct groups of activities, which have low scale economies and serve a small market, such as handicrafts, garment and food industries, which are responsible for the growth of small firms.

- Finally, it is the increase in subcontracting between firms and the strengthening of linkages between different economic sectors that have encouraged the creation of new small firms. Data from various DCs showed that small firms are linked with the rest of the economy in both the supply and demand sides (Liedholm and Mead 1987, Liedholm 1990, Bagachwa and Stewart 1990). Also Wright (1990) showed that there exists a significant collaboration between small firms and multi-national corporations through sub-contracting.

Anderson (1982), who did not use much empirical evidence to support those causes, acknowledged that it is difficult to ascertain in quantitative terms how far each of these reasons explains the apparently high growth rates of small firms. Also, the third reason seems to be a result rather than a cause; the growth of handicrafts and other types of firms reflects an increase in the number of small firms rather than a cause for their increase. Others reasons such as the availability of infrastructure and the dispersed agricultural production could be more relevant to explain the spatial variation in new small firms. Therefore, other theoretical explanations of the proliferation of new small firms in DCs are needed.

2-6 Economic Privatizaion

It is argued that the recent trend towards privatization and the declining role of the government in the economy have created a better business environment and have encouraged the growth of the small firm sector. The desire to alleviate the economic problems coupled with the pressure exerted by international creditors have prompted the change in government development policy.

Review of the economic performance of several DCs in the 1960s and the 1970s showed that despite the fact that some countries under centrally planned economy achieved growth, the use of capital intensive technology with low level of productivity and employment generation, and the production of high cost and low quality products in a highly protected market have created an inefficient industrial sector (Colman and Nixson 1986, Weiss 1988, Mountjoy 1982, among others). In addition, the negligence of the agricultural sector, the inequality in the distribution of income, and other external factors such as the decline in terms of trade, military conflicts and natural disasters have further worsened the situation.

During the eighties while the economy of many DCs was stagnating and large scale industries were declining, the number of small scale industries was growing. For instance, in Ghana, large number of small firms were established and persisted through years of economic hardships (Thomi and Yankson 1985, Anheier and Seibel 1987, Dawson, 1990). Also, in Peru, while large and medium size firms stagnated and declined during economic crises between 1980-1984, small firms fared well and recorded significant growth in the total number of enterprises, employment and value added (Schmitz 1989). This remarkable performance was attributed to the ability of small firms to adapt to extreme crisis. They were assessed to operate more efficiently than large firms and serve national objectives by employing less capital and more labour (Stewart 1990, Liedholm and Mead 1987).

The failure of governments to cope with economic and social problems, which are increasingly deteriorating, and the need for further foreign aid, has demanded a change in their development orientation. Towards an economic reform, a structural adjustment program (SAP) sponsored by the World Bank and the IMF was recently introduced in many DCs. The SAP includes the depreciation of the domestic currency, liberalization of foreign exchange, restructuring of the public sector, and elimination of price control and subsidies. Under this program, the development of the private sector as an alternative to the inefficient state-operated enterprises has been advocated and various incentives have been allocated and offered to the sector. Although, there is little research evidence from DCs about the extent to which this shift in policy has contributed to the establishment of new small firms, Helmsing and Kolstee (1993) have argued that the tendency towards privatization and deregulation of the economy would encourage potential entrepreneurs to start-up.

Nevertheless, a word of caution was echoed by Steel (1993) who has argued that uncertainty created by the change in policy might well make private investors postpone their new investment until they are confident that the new economic regime is both sustainable and profitable.

Creating a conducive macro-policy environment is considered fundamental to an efficient small firm sector (Stewart 1990). Osei et al. (1993) provided evidence that suggests that the implementation of the structural adjustment in Ghana has encouraged further firm formation. They found that more than 50% of the firms surveyed were established after the steps taken to improve the economy under the structural adjustment. The increase in the number of young firms as a proportion of the total number of small firms after the SAP suggests that the improvement in the economic conditions have encouraged new firm formation.

Based on this discussion, one may argue that the recent efforts to encourage the private sector and to reduce government intervention in the economy may have contributed to the recent resurgence in small firms in most DCs. This theory is also consistent with other findings in developed countries (see Storey 1988).

2-7 Sectoral Migration

It is argued that the migration of population from rural to urban areas might provide an explanation of the increase in the number of small firms in DCs. One cause underlying this type of migration is the rapid and non-manageable increase in population size in almost all DCs since the 1950s, which peaked at approximately 2.4% per annum during the 1970s (World Development Report 1987).

A rapid population growth rate in all DCs has been accompanied by an un-abated high out-migration growth rate from rural areas to urban centers. Between 1950 and 1980, rural-urban migration accounted for about 50% of the urban population growth in DCs, in which the latter grew at 4% per annum, about twice the total population growth rate (Colman and Nixson 1986). Despite the differences in the level of development across DCs, it seems that the rapid rural-urban migration contributed significantly to the process of urbanization in most DCs (measured by the percentage of population living in urban centers).

In Egypt, Jenssen et al.(1981) have argued that spatial and economic imbalances and cultural pre-occupations have led to an extensive out migration from rural areas mainly into the capital (Cairo). A further reason is the fragmentation of agricultural land, which is increasingly unable to provide income to support their owners. They noted that

> "traditional law dictates that land is equally divided among the children and this leads to a steady decline of productive land owned by a single household. Today 70% of all agricultural units are less than 0.43 hectares in size which in many cases is far too small to feed a whole three or four generations family" (p. 202).

Rural-urban migration is implicitly a migration from the agricultural sector to the secondary and tertiary sector or alternatively to a period of unemployment. Given the limited ability of the urban formal sector to absorb the rapidly increasing urban labour force, the new comers are often pushed to actively seek work in the informal sector or the small firms activities (Colman and Nixson 1986). Todaro (1989) emphasized, in a theoretical framework, that although the expected urban income is relatively higher than in rural areas, the long period required for a new migrant to find a job means that poverty remains a serious problem in urban areas and might push many to the self-employed sector.

The physical restriction on the expansion of agricultural land and the increased dependency ratio on cultivated land have driven many hired agricultural workers to seek and find non-farm employment in the agricultural off-season through which they acquire skills which might be relevant to start a business (Richards 1991). Evidence from Bangladesh found that the incidence of new entrants has been high among the landless or near landless (Bakht 1984, and for a similar view, see Amin 1987). Based on the above discussion, it is possible to assume that the lower the income in the agricultural sector, the higher the possibility that surplus labour would be attracted into industrial activities.

Also, Richards (1991) found a relationship between migration and the expansion of non-farm employment in Egypt. Remittances from those of the rural population (which are estimated to be about the third of rural employment) that have migrated to urban centers or to other countries especially in the Gulf have increased the demand for manufactured goods, improving housing and transportation. Hence, the migration of skilled, educated rural labour to urban activities and the new demand pattern of the rural population are assumed to contribute to the increase in the number of new small firms.

This move to self-employment does not come directly after migration. Agricultural labour usually lacks the initial capital and the skills to start a new industrial venture (Bakht 1984). Therefore, most of them seek employment in existing firms for some time. Osei et al. (1993) found that none of the entrepreneurs interviewed in Ghana were working in the agricultural sector immediately before starting their businesses.

Sectoral migration is not only a migration from agricultural to small industrial activities, but it is also a migration from the service sector to small industrial activities. Elkan (1988) argued that one of the sources of new entrepreneurs is the traders or the merchants in the same industrial sub-sector. A timber contractor, who seizes the opportunity to start saw mills or carpentry firms, is one typical example. Evidence from Bangladesh has also suggested that about 15% of entrepreneurs were wholesalers and retailers before starting their manufacturing businesses (Amin 1987).

New small firms can also be formed by entrepreneurs who were previously working in the public and government sector. Employees laid off by large formal enterprises as the result of restructuring might well find their way into the small firm sector. This is supported by evidence from Ghana where 22% of the firms' proprietors mentioned that they were working as civil servants and in large state-owned enterprises before starting their businesses (Osei et al. 1993). Based on this discussion, it is hypothesized that sectoral migration from other economic sectors and particularly the agricultural sector to the industrial sector has contributed to the increase in the number of small firms observed in many DCs.

Having discussed tentatively the theoretical causes assumed to influence the creation of new firms in DCs and the empirical evidence that supports them, it is relevant to look at the theoretical explanations of their spatial distribution.

3. FACTORS INFLUENCING THE SPATIAL VARIATION IN NEW SMALL FIRM FORMATION

3-1 Economic Factors

Costs and availability of production factors and local market demand are assumed to contribute towards the high firm formation rate in a particular area (Hoover and Vernon 1959, Davelaar and Nijkamp 1988, Storey 1982, Fothergill and Gudgin 1982). For example, the availability of land and premises, skilled labour, raw materials, capital, government incentives, infrastructure networks, and business information are thought to positively influence entrepreneurs' decision to start-up and to locate.

As small firms are strongly linked up with the local market, knowledge about the market demand appears to be crucial for the start-up decision (Gudgin 1978, Lloyd and Mason 1984, Storey 1982, Westhead 1989b). If the demand is high, many people who possess the ability to perceive profit opportunities will be tempted into establishing their own businesses. Therefore, the variations in firm formation between regions can be explained by the regional variations in market size and the growth of local and regional demand. Westhead (1989b) has found a relatively strong and positive correlation coefficient (+0.63) between high manufacturing employment change (as proxy to the growth of the market) between 1971- 1981 and manufacturing firm formation rates in Wales. This may be a plausible explanation for the broad differences between the relatively high formation rate in the developed and economically buoyant southern regions (South East and East Anglia) as compared with the depressed northern regions in the UK (Gould and Keeble 1984). While the market seems to

be an important factor in the UK, Reynolds et. al. (1991) found that the spatial variation in firm formation in the US is not associated with the higher density of customers.

In DCs, Liedholm and Mead (1987) have identified four sources of demand for goods and services produced by small firms. They are rural and urban households, production linkages, the government and public sector demand, and foreign markets, of which light household consumer goods and services are the main demand sources for small firm production (e.g. food, textile, and wood products). Typically, local households place specific orders for products or services with small enterprises, thus production takes on the characteristics of a job-shop operation. This type of production is very important insofar as it reduces working capital and minimizes the final goods inventories, and consequently reduces risks. Davies et al. (1992) have found that in Egypt the marketing of small firms is predominantly based on order.

A further economic factor is the influence of local income levels and spending behavior. However, the attempt to relate the disposable income per head (independent variable) to the formation rate (dependent variable) in the UK did not support this notion. Wittington (1984) has found only a weak correlation (+0.22) between the two variables (for all types of firms). As small firms often serve local and regional markets, the increase in the local income will stimulate small firms. Studies in several DCs, Sierra Leone, Bangladesh, Nigeria, and Malaysia, found that the increase in paid income of household, will eventually lead to an increase in the demand for the products of the small firm sector (Liedholm and Mead 1987). However, this relationship appears to be higher in Asia than in Africa. Bagachwa and Stewart (1990) have mentioned that about 10% increase in rural household income will lead to an increase of 20% in expenditure on non-agricultural goods and services in Malaysia, compared with around 13% in Sierra Leone and Nigeria. This difference might be explained by the high propensity to spend on food in Africa.

Furthermore, that the comparison between urban wages and rural income is not accurate because the difference in patterns of consumption and the difference in the amount of work needed to earn a reasonable income. This suggests that low demand in peripheral regions alone cannot be held responsible for the low rates of formation, and that they might be other factors which influence the spatial variation in firm formation.

The lack of capital is almost universally accepted as a major constraint facing small firms (Anderson 1992, Page and Steel 1984, Liedholm and Mead 1987, Little et al. 1987, Gudgin 1978, Storey 1982, Levitsky 1989), which may be sufficient to depress entrepreneurship (Elkan 1988, Casson 1982). This issue is reflected in almost all governmental-led assistance to the sector. However, most studies in DCs have concluded that financial intermediaries are not efficient in the delivery of assistance and most of them are bureaucratically inaccessible (Liedholm and Mead 1987). Also some regions, especially the remote ones, face in addition to bureaucratic constraints, physical constraints in terms of accessibility. Finance is generally available but banks prefer to lend to large established firms rather than to new ventures, especially small ones, which forces the latter to rely on their own savings or to borrow from the informal sector incurring high interest rates, which might be double the banks' rates (Elkan 1988, Levitsky 1989, Seibel 1989). Since most entrepreneurs in DCs rely largely or exclusively on their own finance to start their businesses, it can be suggested that the level of wealth in a region will influence the capacity to generate new firms. Studies in the UK have found a positive relationship between firm formation rates and levels of home ownership (used as a proxy for personal wealth) (Wittington 1984, Moyes and Westhead 1990). Disagreeing with this result, Westhead (1989b) found no relationship between owner occupiers and new manufacturing firm formation in Wales. Also in Germany, Fritsch (1992) found that the percentage of owner occupiers had a moderately inverse relationship with firm formation rates.

An important economic factor, which also influences the firm formation process, is the availability of information. Economic theory has often held that the use of information is in its own right a factor capable of increasing efficiency, and as a means of reducing uncertainty and risks. Because of its cost, large firms are usually more able to obtain information than small firms. Datta (1987) has identified a wide gap in the process of storage and dissemination of information regarding the procedures for starting a small scale industry in India. He has argued that information on procedural matters should

be easily understood and available in order to encourage more firm formation. Data on costs, production, technology, sales, potential markets opportunities and activities of rivalries are vital to the start-up processes. However, it is worth noting that information might be easier to obtain in urban centers than in rural areas and in core regions than in peripheries. Also, larger firms might have more resources and man power to search and access information than smaller firms. The poor stock of information in an area makes it much harder for potential entrepreneurs to perceive business opportunities because of the cost and time spent in searching.

Given the low availability of information and poor means of communication in DCs, information has become an expensive commodity. The majority of entrepreneurs are nevertheless equal with respect to the fact that they establish their businesses and operate in an information poor environment. This is explained by the inclination of the majority of small firms to start in their adjacent locale, where they are acquainted with the local conditions. Alternatively, some firms resort to the informal networks (family, friends) of business and the face-to-face contact to acquire information.

Availability of land and infrastructure is also a crucial economic factor for the development of small firms. Fothergill and Gudgin (1982) have emphasized the importance of land and premises in attracting new firms. Because of the limited financial resources of small firms, the lack of available land suitable for industrial use would be appreciably high, and would constrain the supply of small industrial activities (Perry 1986).

Moreover, the dependency of small firms, to a varying degree, on the availability of infrastructure (roads network, water, electricity and sewage), might partially explain the low level of formation in rural areas compared to urban centers in DCs. For example, modern firms that use machinery, depend to a greater extent on the availability of technical infrastructure especially power networks than firms that use only manual tools. Also, the poor condition of road networks in many DCs limits the location of firms to specific areas. Most studies that investigated the location factors considered by entrepreneurs before establishing showed that the availability of land and infrastructure is an important location factor.

The spatial variation in firm formation is also influenced by the availability of labour. Using the unemployment rate as an indicator of labour availability, areas with high unemployment are expected to attract new firms, especially the labour intensive ones. Results of various studies indicated that this is a debatable issue and there is some disagreement about the impact of unemployment on firm formation. The contradiction between results was explained by the existence of a non-linear relationship between unemployment and firm formation (Hamilton 1989). The results of Moyes and Westhead (1990) in the UK have provided support to this hypothesis. They have found that areas with long standing high rates of unemployment have exhibited low firm formation rates, whereas those with sudden large rises from low bases have demonstrated what they termed push effects. It has also been argued that in area of high unemployment, firms might encounter shortage of specific skills, which can be attributed either to the high demand for particular skills or the limited supply of skilled labour (Lloyd and Mason 1984).

Contrary to what has been found in the UK, Fritsch (1992) in Germany found that unemployment does not have any promotional impact on the spatial variation in formation rates, rather it is the prosperous environment with low unemployment and high wage levels that stimulates the formation process. Also, in some Asian countries (Indonesia, Malaysia, The Philippines, and Thailand), Clapham (1985) found that unemployment or threat of unemployment did not rank high among firms owners' motivations to start a business.

Economic factors per se are not sufficient explanation for the regional variation in firm formation rates. Structural components and socio-cultural characteristics of a region, such as people's motivations, skills, occupation and education background, which are unevenly distributed across regions, also have a bearing upon firm formation rates.

3-2 Structural Factors

The theory encompasses the impact of sectoral composition, plant size, and urban structure on firm formation. Sectoral composition means the mix of types of industries (textile, metal, etc.) in a

particular geographical area, while firm size reflects the size of firms (small, medium, and large) dominating the industrial sector. Urban structure is concerned with the settlement size where firms are operating.

Different regions, with varied industrial sub-sectors and size structure (defined by the number of inhabitants) show varying degrees of small firm formation. The type of industrial sub-sector influences the spatial variations in rates of firm formation because some industries have higher entry rates than others due to the variations in initial capital, technology, cost advantage of existing ones and profit. Also, its influence is exerted by the fact that new entrepreneurs often start in the same industry or in closely related activities, where they have been trained (Gudgin 1978, Storey 1982, 1991 Johnson and Cathcart 1979, and in DCs, Page and Steel 1984, Liedholm and Mead 1987).

For instance, Little et al. (1987) have found differences between rural and urban areas in India in terms of the growth rate of establishments in various industrial sub-sector between 1961-1971. In rural areas, the number of establishments in the textile industry grew faster, while in urban areas it is the number of food, chemicals and electrical equipment manufacturing industries that grew the fastest. In many DCs, small firms tend to be concentrated in the production of light consumer goods, food/beverages, textiles/wearing apparel and wood products, which together account for an average of over three quarters of employment (Liedholm and Mead 1987). Only rarely small firms are found to be engaged in heavy basic industries that are almost entirely in the province of large firms.

Empirical studies showed that regions or areas dominated by large industries (e.g. steel, and heavy engineering) witnessed a low rate of small firm formation, whilst areas with a high proportion of small firms experienced a high rate of formation (Fothergill and Gudgin 1982, Cross 1981, O'Farrell and Crouchley 1984, Westhead 1989a, 1989b, Moyes and Westhead 1990, Fritsch 1992, Johnson 1986). The study of the East Midlands, in the UK, by Gudgin (1978) and Fothergill and Gudgin (1982) have supported this view. In the earlier work of Gudgin (1978), it was argued that the sub-regional differences in firm formation rates are to be accounted for by the degree of dominance of heavy engineering firms. In 1982, the up-dated data confirmed that the variations in firm formation rates are negatively affected by the degree of employment concentrated in large plants (more than 500 employees). The towns dominated by large firms have only one third the average formation rates of other towns. This was rationalized because employment in large firms is more likely to be specialized and will probably lack the wide range of experience required for entrepreneurship. Gudgin and Fothergill (1984) have derived the following regression equation that suggested that a high proportion of employment in large plants employing more than 500 workers (LP), has a strong and very significant depressing effects on new manufacturing firm formation rates (FR). The equation also suggests a significant urban-rural (UR) contrast in firm formation.

$$FR = 5.17 - 0.054\,LP + 2.36\,UR \qquad R(\text{square}) = 0.90$$
$$(27.2)\quad (10.39)\quad (10.50)$$
(t-value in parenthesis)

The positive impact of firm size on new firm formation was challenged by Gould and Keeble (1984) who have found a weak positive correlation (+0.42) between the manufacturing firm formation rate and the percentage of employment in firms of less than 100 employees for all the 14 districts of East Anglia between 1971-1981 in the UK. Also a negative weak correlation (-0.20) was found between the formation rate and the percentage of employment in large scale firms. They have argued that the plant size structure seems to be only of secondary significance and differences in firm formation rates are more due to the proportion of small firms rather than large firms.

O'Farrell and Crouchley (1984), in Ireland, found a strong and significant association between the proportion of manufacturing employment in plants employing below 20 workers in 1973 and the spatial variations in firm formation rates. When the percentage of manufacturing employment in plants employing over 200 workers in 1973 entered the equation, its coefficient became negative and insignificant.8

The analysis of Whittington (1984), using firm formation in all types of firms, as an index of entrepreneurship in the 11 regions of the UK in two years (1980-1981), has confirmed the existence

of a positive relationship (+0.37) between the percentage of the labour force in small manufacturing firms employing less than 10 workers and firm formation. Moreover, the results of Moyes and Westhead (1990) lent support to the positive relationship between firm formation and small firms in the manufacturing sector.

Evidence from DCs is rare and not directly comparable. However, there is evidence that new small firms are attracted to areas of small firm concentration. This is clear from the rapidly growing agglomeration of small firms in many parts of DCs (Dawson 1990, Schmitz 1989). They are attracted to emulate the performance of successful firms and benefiting form the existing linkages between firms. Therefore, it is assumed that areas with a large number of small firms will have a higher rate of firm formation than areas with a tradition of large firms.

The age of small firms in an area is very important too. It was found that younger firms have experienced higher growth rates than older firms (Fothergill and Gudgin 1982). And more rapidly growing industries are more likely to attract new firms than declining industries (Johnson and Cathcart 1979, Gudgin 1978). A similar finding was found in Sierra Leone, where Chuta and Liedholm (1982) found that older firms (fifteen year or more) were declining. It might be concluded that areas with young firms will have a higher rate of firm formation than areas with old firms.

The other main component of the structural theory is the impact of the urban structure. Most of the studies that examined firm formation in the UK, have noted a clear variation within the conurbation (the inner city versus the peripheries) on the one hand, and between the urban and rural areas on the other (Gould and Keeble 1984, Storey 1982, Lloyd and Dicken 1979, Gudgin, 1978, Fothergill and Gudgin, 1982, Fothergill et al.1985, Keeble and Wever, 1986, Mason 1982). As mentioned earlier, regions dominated by large urban agglomerations were found to have a lower firm formation rate than rural regions. This tendency was attributed to the limitations and constraints in space and premises available for establishment and expansion. It is important to note that these constraints affect all firms regardless of who owns and controls them (Fothergill and Gudgin, 1982).

The environmental attraction of rural areas and small towns, manifest in increasing real disposable incomes, improved communication, and a growing dissatisfaction with the quality of life in urban centers have combined to provide a basis for the increased firm formation in previously unindustrialized areas (Gould and Keeble, 1984). As mentioned earlier, Gudgin and Fothergill (1984) have found a significant contrast between urban and rural areas in their study of new firms in the East Midlands in the UK. However, opposing results were found by Westhead's (1989 a, b) study in Wales, which have suggested a strong positive and significant correlation (+0.90) between land density (as a proxy for urbanization) and new manufacturing firm formation.

Being aware of the hazards of comparing developing and developed countries, the available data for DCs are consistent with Westhead's findings. High growth rates of establishments are recorded in major urban centers with large number of population as against small towns and rural villages. In Sierra Leone, for instance, while the growth rate of small firms, between 1974- 1980, in the capital 'Freetown' (with more than 250,000 inhabitants) and cities of 20,000- 250,000 inhabitants were 3.7% and 4.3% respectively, the small towns witnessed a decline of -2.85% during the same period (Chuta and Liedholm 1982).10

Other evidence comes from India where Little et al. (1987) have found that, between 1961- 1971, small firms (employing between 1-9 workers) in urban areas grew over twice as fast as in rural areas (the annual growth rate was 2.8% in rural areas and 5.8% in urban areas).

Using the United Nations definition of rural (localities with fewer than 20 thousand inhabitants), Liedholm and Mead (1987) have found that the vast majority of small firms in DCs are located in rural areas. However, in a recent publication, Liedholm (1990) acknowledged that the location of small firms might be changing towards more urban oriented. The availability of production factors and services accounts for this shift.

Sectoral structure, firm size, and urban structure can therefore provide a partial explanation of spatial variation in firm formation. However, the spatial distribution of new firms is also influenced by the social and cultural characteristics of regions.

3-3 Socio-Cultural Factors

It is argued that the existing socio-cultural composition and the characteristics of the population are the major factors influencing spatial variations in firm formation. Regions with favorable socio-cultural conditions are assumed to provide a fertile setting for the growth of new small firms. Two major notions are discussed under this theory: the occupational mix and the tradition of self-employment (Keeble and Wever 1986).

First, it has been argued that areas with a high concentration of non-manual managerial, professional, and technical employees are likely to have higher rates of firm formation and growth. Gould and Keeble (1984) have argued that occupational structure is the chief determinant of spatial variation in manufacturing firm formation. They have found in East Anglia, in the UK, a high and significant positive correlation coefficient (+0.77) between the proportion of employment in managerial, technical, professional and other non-manual occupations and firm formation rates. This result was supported by the findings of other similar studies (Wittington 1984, Barkham 1989, Fothergill and Gudgin 1982).

Also, O'Farrell and Crouchley (1984) in Ireland have found that a high proportion of employment in the agriculture, commerce, wholesaling, and manufacturing sectors are all negatively related and insignificant with respect to firm formation. This supports the view that professional and managerial jobs are conducive to new firm formation. In these jobs, entrepreneurs exposed to a variety of problems, which face any business, can build contact with key persons in banks, with suppliers, and in markets, and have access to vital information.

The negative relationship with manufacturing employment was disputed by Westhead (1989b). He found a positive and modest relationship (a correlation coefficient of +0.41) between firm formation and the growth in manufacturing employment. The increase in the manufacturing employment base represents an increase in demand that can be exploited by new firms. Moreover, the growth in manufacturing employment will increase the pool from which new firm founders are likely to emerge (Cross 1981).

Gudgin and Fothergill (1984) testing the occupational structure hypothesis in the East Midlands, in the UK, using manufacturing firm data at the local authority level between 1968-1975, have found that the non-manual percentage (NM) is of little influence on firm formation and that the differences between urban and rural areas in rates of formation are not caused by the non-manual proportion. They have argued that Gould and Keeble's study considered all non-manual employment, which might be different geographically from manufacturing non-managerial employment. Another criticism is that they fail to consider in depth why there should be a relationship between the proportion of non-manual employment in a location and firm formation rates. The findings of Moyes and Westhead (1990), using data from all regions of the UK, neither have supported the enhancing effects of a high percentage of managers and professionals, nor have refuted the inhibiting effects of a high percentage of manual workers. Both had insignificant correlation coefficients.

In DCs, most empirical studies have almost agreed that a large number of entrepreneurs emerge from manual skilled workers who acquired their skills during apprenticeship. Anheier and Seibel (1987) have found that the majority of new entrepreneurs in Ghana were previously apprentices in the same industry, and only one in ten of the interviewed entrepreneurs performed an administrative function at one time or another, mainly in large or medium scale industries. This was supported by Bakht (1984) who found that in Bangladesh, only 15% of entrepreneurs had administrative and professional jobs before starting their businesses. Thus, the existence of a large number of population in administrative and managerial occupations is not necessarily a condition for the formation of new firms. Conversely, a large number of manual workers may well be conducive to the formation of firms in DCs.

The same conclusion was drawn by Fritsch (1992), who indicated that, in Germany, the share of skilled workers and foremen in the regional labour force seemed to be important in explaining the spatial variations in firm formation rates in the manufacturing sector. The rate of firm formation in Germany was influenced mostly by the share of the total regional work force employed as foremen in establishments with fewer than 20 employees.

Cross (1981) has contributed to this argument by indicating that a large number of entrepreneurs in Scotland started their initial working experience in manual occupations. But by the time these individuals decided to establish their own businesses, they had changed their position and held managerial jobs. He has concluded that the setting up of a new firm appears to be a kind of occupational mobility. It is worth mentioning that not all of those who are in higher occupational groups are highly motivated, but those who are highly motivated tend to move upwards to higher occupations.

In the light of these contradictory results, it is difficult to draw a general conclusion. However, professional acumen and skills acquired in previous jobs or education amongst prospective entrepreneurs are thought to be important factors that underlie the establishment of new small firms (Gudgin et al. 1979, Barkham 1989). In spite of the low level of education among entrepreneurs, often cited in DCs, Elkan (1988) has mentioned that in Nigeria about 60% of the 100 most successful industrialists had at least secondary education and that considerable managerial and administrative experience in general is needed for their operation, a quality that reflects the importance of training and education. Despite the variations in the conditions of DCs, which prevent any generalization, it seems that firm formation rates will be high where the proportion of skilled and educated population are located.

People with high education are more likely to be highly motivated when starting a business. This should not imply that less educated entrepreneurs will be necessarily less motivated. Lafuente and Salas (1989) have found, in Spain, a relationship between the education and entrepreneurial expectations. Nevertheless, Ahwireng-Obeng (1986), from a study in Ghana, has argued that it is the difference between the illiterate and the educated which accounts for the difference in firm performance rather than the various levels of education. From the above discussion, one may conclude that education is likely to be an important factor in influencing firm formation.

The second issue under this heading is the tradition of self-employment. It appears that there is no relationship between local self employment tradition and firm formation. Westhead (1989) in Wales and Moyes and Westhead (1990) in all the UK, found that the self-employment tradition among the population did not influence manufacturing firm formation.

The self-employment tradition is closely related to the cultural fabric of a particular region. On this basis, Brusco (1982) has argued that the absence of small firms in the Mezzogiorno region in Italy is basically explained by the traditional and historic land tenure system and rural social fabric prevailing in that particular region of the country which discourages genuine indigenous economic initiatives. In contrast, according to Brusco, where a system of 'metayage '(share cropping) is in practice, a fertile setting for small firm formation exists. The family under this system takes all the fundamental decisions regarding the management of land. This managerial capacity is clearly a basic requirement for prospective entrepreneurs and thus for small firm establishment.

It should be mentioned that it is not only managerial experience, which is required in small firms but also the technical skills and financial resources that are necessary to start a business. Moreover, the resistance to change in rural areas, particularly in DCs is a well-known phenomenon (Hogg 1984). Jeans et al. (1991) emphasized this issue with regard to the adaptation of new techniques, and stated that a catalyst event is needed to motivate or push rural entrepreneur to invest outside agriculture.

Nevertheless, as entrepreneurs are in essence self-employed, it is expected that areas with a large proportion of economically active self-employed population will be a fertile setting for firm formation. The existence of a strong tradition of self-employment in a society would create the environment that would encourage many to start their businesses.

Structural factors, socio-cultural factors, and economic factors are all likely to provide a basis for the explanation of small firm formation and its spatial variation, to varying degrees, and their influence could be in combination rather than in isolation.In general, the explanation of spatial variation is still highly tentative and requires further analysis.

4. REGIONAL VARIATION IN SMALL MANUFACTURING FIRM FORMATION IN EGYPT

The analysis of the regional distribution of new SMFs in Egypt has indicated that northern regions have produced more new firms per 1000 of labour force than those in the south, highlighting the continuing disparity and widening economic gap between the north and the south (table 2). Cairo, Damietta and Sharkia regions have the highest formation rates in Egypt. Cairo, being the capital, has traditionally been the main location of large public investment; and with its relatively better developed infrastructure, it represents the most attractive location for new investments. The Damietta region is well know for its wood and furniture products, dominated by small production units, with a reputation that extends well beyond the Egyptian boundaries. This region was described, in the context of Egypt, as a region with the highest quality of output, productivity and competitiveness (Rizk 1991). Sharkia has the largest number of new settlements in one region, providing the attraction of new industrial land, as well as having a traditional metal industry whose outputs cater mainly for the agricultural sector. At the other end of the spectrum, the Suez and the South Sinai regions have the lowest formation rates. The first is dominated by large state owned heavy industries (oil refineries and chemical industries) which absorb a large number of the working population. While South Sinai, the only region with no recorded new firms in the entire study period, has a dominant tourist industry which is likely, with its related activities, to have attracted many new investments.

Table 2: New small manufacturing firm formation in Egypt 1986-1991.

Governorate/region	Number of firms[1]	Labour force (,000)in 1986[2]	Rate of firm formation
Cairo	2221	1,872.9	1.18
Alexandria	614	901.5	0.68
Port Said	43	139.8	0.30
Suez	1	97.4	0.01
Damietta	328	222.9	1.47
Dakahlia	306	972.9	0.31
Sharkia	1161	918.7	1.26
Kalyoubia	352	660.3	0.53
Kafr Elsheikh	78	497.8	0.15
Gharbia	340	821.0	0.41
Menoufia	25	597.1	0.04
Behera	156	881.7	0.17
Ismailia	37	150.6	0.24
Giza	621	1,020.6	0.60
Benisuef	23	389.5	0.05
Fayoum	22	431.3	0.05
Menia	48	715.0	0.06
Asyout	186	586.5	0.31
Sohag	61	621.8	0.09
Qena	22	552.4	0.03
Aswan	51	194.9	0.26
Red Sea	19	27.9	0.68
Wadi Elqedid	1	29.6	0.03
Matrouh	3	43.2	0.06
North Sinai	28	40.5	0.69
South Sinai	0	11.9	0.00
Total Egypt	6747	13,400.3	0.50

Source: 1- GOFI(1992). 2- CAPMAS (1990).

Within the Sharkia region (selected as a case study), the formation rates are also unevenly distributed, with districts with high formation rates being near the capital (Zagaziq) (table 3). This is probably

explained by the availability of technical infrastructure, especially road networks. Not surprisingly, the new settlements have the highest formation rates given their high percentage of new firms and a low proportion of resident active population relative to other districts in the region as well as the availability of land suitable for industrial use. Because of their special characteristics, they were excluded from the spatial variation analysis to avoid biased results. Zagaziq has the highest formation rates in the region amongst other districts after excluding the new settlements. It is the regional capital, providing a large market and wide range of other services and infrastructure. Awlad Sakr has the lowest rates of formation in the region. It is a rural area with the majority of the population working in agricultural activities.

Table 3: New Small manufacturing firms and employment in the Sharkia region 1986-1991.

District	Number of firms[1]	Labour force (,000) in 1986[2]	Rate of Firm Formation
Zagaziq	250	111.0	2.25
Abou Hammad	42	54.0	0.77
Abou Kebir	54	55.8	0.96
Hessinia	58	74.8	0.77
Belbis	139	95.6	1.45
Diarb Negm	52	61.9	0.83
Faqous	73	101.5	0.71
Kafr Sakr	29	40.0	0.72
Menia Elkameh	143	101.4	1.41
Hehya	22	37.3	0.58
Mashtoul Elsouk	34	25.1	1.35
Ibrahimia	22	25.6	0.85
Awlad Sakr	11	33.3	0.33
Kennayat	7	8.2	0.85
Kourin	2	9.7	0.20
Subtotal	938	835.2	1.11
10th of Ramadan	210	3.2	64.27
Obour	1	.2	5.20
Salhia	12	.2	60.60
Total Sharkia	1161	838.8	1.36

Source: 1- GOFI(1992).
2- CAPMAS (1990).

On the basis of the review of the literature and the analysis of the observed regional variation in new SMF formation rates in Egypt various hypotheses were derived, reflecting different economic, structural and socio-cultural factors that were thought to influence new SMF formation rates (table 4). Areas, which have a large number of small firms and a large private sector, were hypothesized to attract more new firms than other areas. Also, areas that are more urbanized, are served with infrastructure networks, have a large market demand, have a more diversified industrial sector, and have large areas of available land suitable for industrial use were assumed to be conducive to the growth of new firms. Moreover, a high proportion of the population holding high educational qualifications was hypothesized as a factor that might influence the establishment of new SMFs. The occupational structure of the local population was also hypothesized to be an important determinant of the regional variations in new SMF formation rates. In addition, two further factors were examined to try to account for the age of investment and change in employment over time. Moreover, rising unemployment and sectoral migration, which were found to correspond with the increase in the number of private employment, were tested to examine their influence on the spatial variation in firm formation.

Table 4: Factors hypothesized to influence the spatial variation in firm formation and the hypothesized direction of the relationship

Factors	Variables	Hypothesized Direction
Firm size	high % of establishments employing one worker	+
	high % of establishments employing 2 to 9	+
	high % of establishments employing 10 to 49	+
	high % of establishments employing more than 50	-
	positive change in establish. average size (76-86)	-
	high % of employment in establishments(> 50)	-
Urbanization	high urbanization index	+
	high population density	+
Occupation	high population in managerial and professional jobs	-
	high population in self employment sector	+
	high population in manufacturing employment	+
	high population in agriculture	-
Education	high % of population with high degree	+
	high % of population who can read and write	+
	high % of pop. with no qualification or illiterate	-
Sectoral migration	high population share of agriculture land	+
	large number of owners per land owned	+
Market demand	large population size	+
Unemployment	high % of population seeking work	+/-
Specialization	high location quotient	-
Capital	high % of household owning houses	+
Premises	high % of vacant establishments	+
Private Sector development	high % of population in the private sector	+
	high % of population in the public sector	-
Infrastructure	high % of population connected with water	+
	high % of population connected with electricity	+
	high % of population in services	+
Investment age	high % of establishments set up before 1976	-
	high % of establishments set up between 1976-86	+
Employment growth	high employment growth rate	+
	high employment absolute change [1]	+
	net employment change [2]	+

Sources: Johnson and Cathcart 1979 (a), Cross 1981, Fothergill and Gudgin 1982, Storey 1982, Gould and Keeble 1984, Gudgin and Fothergill 1984, O'Farrell and Crouchley 1984, Lloyd and Mason 1984, Wittington 1984, Westhead 1989(b), Moyes and Westhead 1989, Fritsch 1992).

[1] Absolute employment change= (employment in 1986)- (employment in 1976).

[2] Net employment change = (absolute employment)-[(employment 1976).(national economic growth rate (1976-1986))]

A Pearson correlation analysis was first calculated between rates of formation (dependent variable) and the surrogate variables representing the various factors considered (independent variables); and then a multiple regression analysis was run between the highly correlated variables to ascertain the particular impact of various factors on firm formation rates when considered together (Appendix 1).

The analysis has shown that not all relationships were in the direction hypothesized. Also, the two tiers of analysis (national and regional) showed a different set of variables that influence small firm formation. The most noticeable variation is the difference in the effects of the existence of small firms at both levels. At the national level, the existence of small firms, especially those in the size range of

2-9 workers, was found to be conducive to the formation of SMFs. At the regional level, it was the existence of relatively large small firms (employing between 10-49 workers) and large firms (employing more than 50 workers) which are positively associated with the formation rates. These apparent contradictory results, between the two levels of analysis, are difficult to explain. However, it seems that the existence of large firms (mainly state-owned) has a more pronounced effect at the regional level than at the national level, as many people are engaged in these firms and many activities are inter-related with them.

A different result at the two levels was also found when the impact of the percentage of population in managerial and professional jobs was correlated with firm formation rates. At the national level, it was poorly related with a positive insignificant coefficient, while at the regional level it was positive with significant correlation. It appears that both technical and managerial experience is important in enhancing firm formation.

Another contradictory result between the two levels has resulted from the relationship between firm formation and market demand. While it has almost no effect at the national level, it is strongly associated with firm formation at the regional level. This result emphasizes the importance of local and regional markets to small firms.

Other factors that showed variant results at the two levels are the proportion of population in the self-employed sector, and the proportion of population owning houses as a measure of capital availability. While both had almost no relationship at the national level, they had a negative and significant relationship at the regional level. This result suggests that new entrepreneurs do not characteristically emerge from the self-employed segment of the population, but they are likely to be previously employed. Also the depressing role of capital availability can be ascribed to either the inappropriateness of the use of home ownership as a proxy, or the limited use of houses as a source of funding for small firms.

Similarly, the age of investment has generally a weak relationship with firm formation rates at both levels. The variable, however, showed different signs of coefficients at the two levels. While the establishments founded before 1976 were negatively correlated with firm formation rates at the national level, they were positively correlated at the regional level. Since large firms at the regional level are relatively old investment, this result provides support to the positive impact of large old firms at this level. The relationship with the establishments founded after 1976 have had a reverse effect.

Some factors had similar positive effects at the two levels. These are the population density, the percentage of the population engaged in manufacturing activities, the location quotient, the availability of premises and the increase in absolute employment change. Regions and districts that experienced employment growth have higher firm formation rates. Also, the availability of infrastructure, represented by various surrogates, was found to have positive and significant effects on firm formation at both levels. Urban regions attracted more new firms per head of population than rural areas; this is explained in part, no doubt, by the better provision of infrastructure and services in urban areas and the existence of a relatively large market demand compared to rural areas. Moreover, the analysis suggested that the higher the industrial specialization of a region or a district, the higher the formation rate.

Another variable that had a positive relationship with the rates of firm formation at both levels is education. Firm formation rates tend to be higher in regions or districts that have a large percentage of highly educated people. This result was supported by the negative relationship found at both levels with the proportion of the population classified as illiterate. Further, this conclusion was substantiated by the positive relationship found with the proportion of population in managerial and professional jobs who are likely to be better educated and trained. Also, a positive relationship was found between the rates of formation and the proportion of employment in the manufacturing sector at both levels. This is consistent with a negative relationship between firm formation rates and the proportion of population engaged in agricultural activities.

The apparently negative influence of the private sector at both levels, compared with the positive effects of the public sector is of particular interest. The existence of state-owned relatively large manufacturing firms and the long tradition of government support to this sector seem to have provided a more fertile environment for the emergence of new entrepreneurs, especially as the areas in which large firms exist were often better connected to technical infrastructure networks compared with other locations. It seems that it is the public sector which is more likely to generate new entrepreneurs, particularly from among former employees who could benefit from the skills and experience gained in working in these large concerns. Their long established personal relationships with the management of the state enterprises will also be of assistance, for example by enabling the purchase of second-hand machinery from a factory or becoming registered as a sub-contracting business. This suggests that policies of retrenchment in public sector employment might encourage an increase in firm formation rates in the long run. Indeed, research evidence from a number of DCs show that large numbers of firms have been established by former government employees and civil servants (Helmsing 1993). Being acquainted with the market, technology, and having the skills and experience required, they are better placed to establish their own firms.

Given the fact that most public sector enterprises are old investment, another positive but weak correlation was found at the regional level between establishments founded before 1976 and firm formation. It is worth noting that almost no relationship was found between new SMFs formation rates and government and public sector employment at the national level.

The results of the spatial analysis of firm formation are not consistent with factors argued to explain the increase in the number of new small firms in Egypt. The correlation analysis did not find a relationship between the unemployment rate and new SMFs formation rate at either spatial level. Despite the fact that an increase in unemployment has corresponded with the increase in the private sector employment, it seems that the unemployment rate per se does not contribute to the explanation of the spatial variation in new SMF rates in Egypt. Tentatively, this might be attributed to the possibility that Egypt has already passed the critical level above which rising unemployment would lead to low firm formation, as suggested in Hamilton (1989). In addition, unemployed generally do not have the resources or the skills to start new businesses. With regard to the sector migration hypothesis, the analysis suggested the existence of a positive significant relationship between the rates of firm formation and surrogate measures of sectoral migration at the national level. Because of the lack of data at the regional level, this factor could not be tested at the regional level.

A multi-regression analysis made the derivation of the most influential factors affecting the spatial variation in firm formation rates in Egypt, when all the variables are taken together and controlling for one or more, possible. It has been revealed that the availability of infrastructure is the most influential factor at the national level. Whereas at the regional level, the capital availability and the existence of a high proportion of small manufacturing establishments emerged as the factors that explain most of the spatial variation.

The analysis has suggested that spatial variation in new SMFs formation cannot be explained by only one factor, rather it is a product of a number of structural factors, economic factors and the socio-cultural factors. The emergence of new SMFs in a region is more likely where several distinctive features of the regional environment are found. It is worth noting that what has been derived here are statistical statements which explain the extent to which the change in firm formation is related to the independent variables. In addition, one must be aware of the limitations associated with using proxies in correlation and regression analysis and of the fact that causality cannot be necessarily inferred.

A policy implication arises from the differences observed between the national and regional levels. Not all policy proposed can be effective at all spatial levels. Efforts and programs targeting new SMFs should recognize these differences in order to ensure their success. If SMF formation is to be encouraged, special assistance has to be offered to areas with low formation rates and this assistance has to be sensitive to the reasons why such areas may have experienced such low rates. For instance, at the national level, improvement in infrastructure networks and encouraging a labor surplus in the agricultural sector would stimulate new SMF formation. At the regional level, in addition to the improvement of infrastructure networks, increasing accessibility to credit and offering various

incentives would be of particular importance in attracting new entrants to the small manufacturing sector.

This section has attempted to focus on the national and regional environment and it has succeeded to some degree in elucidating the various factors associated with new SMFs at the two tiers of analysis. This type of analysis helps in describing a general tendency rather than explaining the individual decisions which are responsible for the formation process. Therefore, studying entrepreneurs' characteristics is vital in order to enhance further our understanding of the variation in the formation process.

5. MOTIVATIONS AND CHARACTERISTICS OF ENTREPRENEURS

In new firms, it is the characteristics of entrepreneurs, rather than the characteristics of firms which can be most readily observed and examined. One of the main objectives of this study is to examine the characteristics and motivations of new SMF entrepreneurs.

What is an entrepreneur? This has been a subject of long debate, and in this study no attempt was made to develop an entirely new definition. However, an entrepreneur can be described as the one who is able to contemplate opportunities for the initiation of a new enterprise, take the risk, and make judgmental decisions about the coordination of scarce resources to that end, whether he was motivated by positive or negative motives. The entrepreneur may use both formal and informal networks to achieve his stated objectives.

The entrepreneur might be an imitator or innovator, and like any other individual is affected by the many aspects characterizing the environment in which he operates. The non- conduciveness of the macro-policy environment, it was argued, has depressed entrepreneurship in DCs and discouraged private ownership. The change in these policies, following the implementation of structural adjustment programs, has created a more favorable environment for entrepreneurship development.

Entrepreneurs vary significantly in their motivations, characteristics and aptitudes. These variations make it difficult for policy makers to assist all of them in a cost-effective manner. Therefore, several attempts have been made to classify them into groups that share common characteristics. The best known classification is the craftsman-opportunist typology (Smith 1967).[2]

From a review of the literature, two particular questions were raised. One is related to the neglect in previous research of the spatial dimension of entrepreneurship. Almost all studies have concentrated (depending on the discipline) on the causes of entrepreneurs behavior, the types and the nature of their activities and the effects of their decisions. It was hypothesized that small firms' entrepreneurs differ spatially in their motivations and characteristics and consequently these differences would have an influence on the formation rates and the types of firm formed.

The second question is related to the adequacy of the craftsman-opportunist typology to explain the variation in entrepreneurship in DCs and consequently the types of firm formed. This study has attempted to fill this gap in knowledge in the context of Egypt by investigating the spatial variation in entrepreneurial attributes and then to classify them into groups. Thus, the analysis was required for two reasons: firstly, to provide an empirical basis for testing the hypotheses; secondly, to elucidate factors that may have a bearing on the success of entrepreneurship development and small firm creation projects.

Some caution should be exercised in making statements about broad regional trends based on sub-regional survey data. The data are based on a questionnaire in a field survey of five districts and cities in the Sharkia region, namely Zagaziq, Menial Elkameh, Faqous, Awlad Sakr, and the new settlement of the 10th of Ramadan; interviewing 116 entrepreneurs in new manufacturing firms stratified on their regional distribution in districts/cities and rural/urban. The districts and cities were selected to reflect different settings in which new firms can be formed. The new settlement represents a setting where a strong growth trend in the manufacturing sector is taking place due to the facilities and the incentives offered, and the availability of land suitable for industrial activities, while the remaining

settlements are selected not only to reflect different categories of firm formation rates but also to represent different settlement sizes.

Interesting conclusions were suggested from the analysis of the motivations of the new entrepreneurs. The push or negative factors, associated with economic hardships, were found to have limited effects on their decisions to start-up. Conversely, positive factors, such as the prospect of good financial income, were the main motive of most of the entrepreneurs. This lends support to the weak relationship found between firm formation rates and unemployment rates. Motivations do not seem to be a discriminatory factor between entrepreneurs, nor do they vary between various settings: urban, rural and the new settlements. Importantly, the minor effects of unemployment, as a negative motive, underline the possibility that unemployment is not a direct reason for firm formation. Usually the unemployed need a period of training either in vocational school or on-the-job training, before starting a business. A possibility remains, therefore, that unemployment as a negative motive could have a long term effect on firm formation.

The analysis has revealed that the characteristics of entrepreneurs vary between the new settlement, urban and rural areas. Two types of attribute were examined in the analysis: personal characteristics (educational level, place of residence, age, source of skills, occupation) and managerial traits (labor organization, labor recruitment, sales and marketing).

Despite the fact that the majority of entrepreneurs interviewed established their businesses where they live, the finding that most of the entrepreneurs found in the new settlement (the 10th of Ramadan) live in Cairo sheds doubt on any possible generalization from this result. Also, the finding does not entirely substantiate the often held view that entrepreneurs of small firms have low formal education. Most of the entrepreneurs have received a certain level of education with new settlement's entrepreneurs having higher levels of education in general, compared with those in the other urban centers and rural areas. Indeed, rural entrepreneurs have the lowest level of education.

The role of the small firm sector as a generator of new firms was emphasized by the high percentage of entrepreneurs that acquired their skills through working in other small firms before establishing their own businesses. Given the fact that almost all the entrepreneurs of new firms have a certain minimum level of educational qualifications, it is possible to argue that it was through both education and on-the-job training that entrepreneurs acquired their skills and experience.

There are differences between urban and rural based entrepreneurs in their professional background. Skilled labor, civil servants and apprentices in small private firms were the previous occupations most commonly found among urban entrepreneurs. Only rural entrepreneurs were found to have predominantly worked previously in agricultural activities with some later training in the manufacturing sector. Entrepreneurs of the new settlement were previously engineers, experts, retailers, and military personnel; a relatively large number of them worked abroad, mainly in oil rich countries, which helped them to save the start-up capital.

Most of the entrepreneurs rely on themselves when they need technical and financial assistance. However, entrepreneurs differ according to settlement-types. New settlement entrepreneurs are more formal and independent when seeking assistance. They are more willing to approach banks, technical financial institutions and consultants compared with urban and rural entrepreneurs who generally prefer to rely on friends and relatives and other businessmen.

In terms of managerial skills, the findings have suggested that entrepreneurs in different types of settlements have different levels of managerial skills. The majority of entrepreneurs in the new settlement assigned specific tasks to their workers. This was practiced less in urban centers, and still less by the entrepreneurs in rural areas. Nevertheless, few of the entrepreneurs overall keep consistent records of their businesses, those being located mainly in the new settlement and urban centers. In terms of labor recruitment, entrepreneurs in the new settlement usually advertise their jobs; while an informal network (through family and friends) is the common method of recruitment used by those in the urban centers. Virtually all the rural area entrepreneurs use this approach and so in general the informal network dominates the way labor is recruited in new SMFs. This, of course, relates to the

common way in which the unemployed look for jobs in the small firm sector, which is primarily by visiting the firms asking for jobs - dealing with formal sources is to a great extent avoided.

Analyzing the market size showed that the majority of entrepreneurs deal with the general public in the region or area where they are located, and to a lesser extent with other local private sector firms. As expected, there is little trade relationship with the public and government sectors. This was explained by the entrepreneurs' aversion to government bureaucracy and complicated regulations. New settlement entrepreneurs serve a wider geographical market and deal with both private and public sectors. Urban and rural entrepreneurs are almost alike in serving a smaller market size and deal with private enterprises and the general public. The small market size of most of entrepreneurs was reflected in the reliance of most of them on orders from specific customers and only a minority produce for the market. This points to the financial difficulty facing most new small firms due to the lack of working capital.

A number of conclusions can be drawn. Not all new entrepreneurs establish where they live, and they vary considerably according to their locations (new settlement, urban and rural) in terms of their personal and managerial characteristics and skills. There is evidence that they face financial problems in producing for the market and therefore produce only after receiving an order from a client. Hence, they serve a small segment of the market and generally deal only with the local public. Moreover, it is clear that entrepreneurs in new settlements are distinctive by virtue of their personal and managerial characteristics.

The variety of characteristics and motivations found among the entrepreneurs of new small manufacturing firms casts doubt on the likely effectiveness of any promotional policy unless these differences can be homogenized. Therefore, an attempt was made to group the entrepreneurs according to a selected number of characteristics using cluster analysis (Appendix 2). Four variables were used for classifying the entrepreneurs (education, labor organization, size of firms and location). These characteristics were selected because they are considered to be the most important insofar as they reflect many other attributes.

The heuristic nature of cluster analysis made it possible to combine objectivity and subjectivity based on an a-priori knowledge of the entrepreneurs in the study area. Four types of entrepreneur emerged. The 'Manager' type encompasses entrepreneurs who are highly educated, operate relatively larger firms (average number of workers in firms is 23), apply a division of labor within the firm, and locate mainly in the industrial zones in new settlements. The second type is the 'Technicians' who are mainly technically educated through which their skills are acquired, and who operate mainly in urban centers. Entrepreneurs in this category tended to start small size firms (an average number of employees of 5.2), practicing division of labor as well as allowing all to participate. The third group of entrepreneurs consists of the 'Artisan' type. In this group, entrepreneurs are mainly school drop-outs who passed through the essential education level. Only a third of them hold a technical diploma. Their skills are acquired solely through on-the-job training and they operate mainly in rural areas. They operate a very small firm with an average of only one or no other workers, and therefore no division of labor is practiced. The last group is the 'Foreman' encompassing entrepreneurs who are school drop-outs or those with no qualifications. Similar to the "Technician' they tend to operate a small firm size, with an average of 5.8 workers, although a few of them employ a large number of employees. No division of labor is practiced in the majority of these firms. They are concentrated mainly in urban centers but rural areas also attract a number of them.

The analysis has suggested that motivations cannot be considered as an important factor in the classification of entrepreneurs. Motivations do not vary significantly between new entrepreneurs in this study. Most of them mentioned positive motives and only a few were motivated by negative factors. This finding is of considerable interest because it is contrary to the theoretical literature on entrepreneurship. Nevertheless, it is acknowledged that it is derived from only a limited investigation and support would be required from further research in other contexts before a general conclusion could be substantiated.

The results have also suggested that different categories of entrepreneurs will start different types of new manufacturing firm. Variables used for the analysis were marketing methods, size of the market,

and sales value of the output as given by the interviewed entrepreneurs. The cross-tabulation showed a discernible variation in the four variables. In terms of sales value it seems that Artisans-led firms achieve a higher average value of output than firms operated by the other three types of entrepreneur. Unfortunately, however, a high degree of prevarication is common on the part of entrepreneurs when responding to sales value questions, especially in the more profitable firms, and it would be unwise to attach much weight to this finding.

From a policy point of view, given the variation in the characteristics and the types of firm formed, the ingredients of support included in promotional policies should vary with the different types of entrepreneur who are to be targeted. This analysis has suggested, therefore, that an effective policy to promote industrialization and employment through increasing new small firm formation will have to target particular type of potential entrepreneur with policy designed to meet their needs. Any entrepreneurship development program should take into account the differentiated nature of new entrepreneurs.

Moreover, from the discussion, an important theoretical conclusion emerged. That is the importance of including the spatial dimension in understanding and defining entrepreneurship.

6. LOCATION SEARCH PATTERN

As it is the summation of individual location decisions which makes the geography of new SMFs, an analysis of the location search pattern of small firms is justified, and adds further to our understanding and knowledge about new SMF formation.

To investigate the pattern of the location search of new SMFs, a number of hypotheses were developed. It was hypothesized that searching entrepreneurs have distinguishing characteristics in terms of the size of firm they create, amount of starting up money, their market orientation, and their educational level and managerial capability. Also, it is expected that the search pattern will differ among different types of entrepreneur.

Moreover, the analysis sought to investigate the location factors and to examine whether they are consistent with factors identified as influential factors in the spatial variation in firm formation analysis. Different location factors are expected to be considered at different levels of a location search, and different types of entrepreneur are expected to have different priorities when location factors are considered.

The results have shown that slightly more than a third of the entrepreneurs in the SMFs searched for a location. The location decision varied among different types of entrepreneur. While a large number of 'Manager' and 'Technician' types searched, most of the other two types did not.

The analysis has revealed that the level of education influences the decision to search. Less educated entrepreneurs are more likely to locate without search, and the percentage of firms that searched increases with the increasing in the level of education of the entrepreneurs. Also, searching entrepreneurs were found to have more managerial skills than non-searching entrepreneurs. They assign specific tasks to their labor and keep business records. They serve a large market area, deal with other private sector companies in many regions as well as with the general public.

Analysis of firm size did not reveal any significant differences. Nevertheless, there is a slight increase in the tendency to search with an increase in the size of firm. A discernible greater tendency to search existed among firms with high start-up capital. In particular, the tendency to search was found to be significantly greater among new settlement entrepreneurs compared with other urban and rural entrepreneurs.

Searchers and non-searchers seem to be alike in relying on private sources of funding for their firm creation. Nevertheless, it seems that official financial institutions are approached more by searching firms.

In order to identify the variables that are important in predicting the probability that either search or non-search will occur, a logistic regression analysis was conducted. Variables which are related to a

location search were considered in the analysis (Appendix 3). Education emerged as the most significant variable in predicting the probability of a location search taking place. Change in the level of education of the entrepreneur from illiterate through to well educated increases the probability that she/he searches for alternative locations. The percentage of firms predicted correctly by the model is more than 67%, showing it to have an acceptable level of reliability.

The rationality underlying the decision not to search among the non-searchers was sought. The decision to locate without a search was mainly the result of two factors: (a) an aversion to getting involved with complex government regulations especially the problems of obtaining licenses to locate in particular places; and (b) the already existing knowledge of the conditions in a particular area. Some entrepreneurs received their premises as a gift or inherited them. These reasons indicated that in general decisions not to search had a rational basis.

For the searching firms, the level of a location search was investigated. In theory, two types of a location search have been discussed. The first is the hierarchical search which involves a sequence of choices made at different geographical levels. The second is the non- hierarchical search in which entrepreneurs examine individual locations in the space regardless of their spatial levels. The analysis of the geographical scale at which alternative locations were searched has revealed that the number of locations considered increases as one moves down the spatial hierarchy (national, regional, district and local), with two locations as the overall average.

The evidence provided by this study called into question the hierarchical hypothesis of a location search. Many firms stopped their search at a particular level and did not investigate further alternatives in any detail. This can be attributed to the significance attached to the location factors by the entrepreneurs at each of the spatial levels of a location search. Once the entrepreneurs find a location that satisfies their needs they stop any further investigation. Entrepreneurs looked nationally when the selection of a region is of importance and searched regionally when it was the district or a city choice which is of interest.

It was also found that larger firms tend to place chief emphasis on the selection of a region within the country, whereas smaller firms attach greater priority to finding a location within a district or local area. Entrepreneurs who searched at the national level are more educated entrepreneurs, operate a large size firm, locate in the new settlement, and serve a wider market. On the other hand, entrepreneurs who searched locally are less educated, operate small size firm, locate in existing urban and rural areas, and serve a small segment of the market.

Moreover, a national search for a location is mainly conducted by Manager- entrepreneurs and Technician-entrepreneurs. Being located in the new settlement provides an explanation for this tendency amongst Managers, as acquiring industrial land in new settlements involves looking at alternative offers in other new settlements at the national scale. On the other hand, district and local levels of a search are dominated by the Foreman and Artisans types, indicating a characteristically low search horizon for these two types of entrepreneur. This conclusion was further supported by the findings that entrepreneurs with relatively high levels of education searched predominantly more at the national level, whereas entrepreneurs with a low level of education tended to search at the lower spatial levels.

The analysis of location factors has examined the most important characteristics of a particular location and whether these characteristics had been perceived by entrepreneurs and taken into account in their decisions. Apparently most entrepreneurs, correctly perceived the locational advantages of urban centers and new settlements and chose to locate accordingly in these places rather than elsewhere. Road networks, technical infrastructure networks, access to markets, availability of land, access to raw materials, and access to government services are mainly the location factors associated with the location advantages of urban and new settlements. On the other hand, rural entrepreneurs tended to attach higher importance to labor concentration, access to road networks, availability of land and the existence of raw materials.

Overall, availability of a road network and availability of land were found to be the most important location factors. Land suitable for industrial use is in limited supply in Egypt and acquiring it is

evidently an important factor in the decision. Moreover, the entrepreneur's personal preference for a particular locality was an important factor in the decision to locate, especially in urban centers. The existence of large firms at the location chosen was mentioned by some entrepreneurs, which confirms the findings that the existence of large firms is conducive to small firm formation.

The analysis has confirmed that the location factors considered by entrepreneurs are consistent with factors identified as influencing the spatial variation in small firm formation. The availability of road and technical infrastructure, the existence of other firms (especially large concerns), and the existence of a market are all factors mentioned and deemed important by entrepreneurs in their location decisions.

The 'Manager' type entrepreneurs attached importance to government services and incentives, the existence of infrastructure, labor concentration, and the existence of medium and large firms. The exclusive mentioning of government incentives as a location factor by new entrepreneurs in the new settlement reflected the importance of these services when they are known and used.

Technicians attached importance to the existence of small firms, government services and access to the market, while Artisans regarded accessibility to main roads as the only important factor. The responses of Foremen showed that they are attracted to a particular location by the availability of land, raw materials, and personal preference.

The study has shown that rural areas offer few location advantages compared with urban centers and new settlements; therefore, the existence of rural new firms might be explained by the availability of local entrepreneurs who perceived advantages in living and working in a rural setting. A policy response might be one aimed at the development of indigenous entrepreneurs. Also, in order to enhance the comparative advantages of rural areas, a two pronged policy can be envisaged: first to provide the necessary infrastructure (especially by improving road networks and providing land suitable for industrial use); and secondly, to strengthen the power of regional, district and local authorities in order to ensure a better formulation of policy and delivery of services.

This study has found no significant differences between location factors deemed important by firms searching at the four different spatial levels, with the exception of government incentives which are only important at the national level. Accessibility to road networks, the availability of cheap land, the availability of infrastructure networks, the existence of sources of raw materials and the market, were seen as especially important at all levels. It seems that for firms employing less than 10 workers, personal preference is relatively more important in location decisions and consequently they tend to search only at the lower spatial scales.

Investigating the sources of information used by the entrepreneurs before selecting their locations revealed that there are large gaps in the availability of information about property markets and industrial land in Egypt. Visiting alternative locations is the most often used means of collecting information, followed by asking government institutions, and asking friends and relatives. Only Manager-entrepreneurs relied significantly on government institutions in acquiring information. In this regard, it is worth noting that this is the only source of information available with regard to opportunities in new settlements, and entrepreneurs have to deal with the government in order to locate in a new settlement. Other entrepreneurs seemed to prefer to rely on their own initiative in collecting the information rather than seeking information from such property market services as exist. Assistance in this area would help the entrepreneurs to make better informed judgments about the location choice.

To encourage the search for a location among entrepreneurs, a policy response would be to educate potential entrepreneurs about the importance of searching and to improve their ability to balance the cost advantages of searching at different spatial levels. In this context, providing accessible information about different possible locations and the various incentives offered will facilitate the searching process and help entrepreneurs to make a better informed judgment.

7. JOB CREATION IN NEW SMALL MANUFACTURING FIRMS

The aim of this aspect of the study was to examine whether new SMFs have contributed effectively to the employment creation objectives. Because of the unavailability of data on closure, expansion and contraction of existing firms, it was impossible to calculate the net employment growth (i.e. to examine whether the new jobs were created at the expense of loss of existing jobs in the economy). Nevertheless, using the survey data and the available (but sketchy) data about employment in small firms in Egypt, this study has suggested that SMFs have made a relatively limited contribution to alleviating the unemployment problem.

Table (5) reveals that the actual total number of jobs created by new SMFs in the period between 1986-1991 in Egypt was 50,464. As a complete list of all new small firms that were established in Egypt in various economic sectors could not be obtained, it was impossible to examine the relative contribution of various economic sectors to job creation. Nevertheless, new jobs created represent less than 1% of the total population in the private sector and a slim 3.5% of the total number of those seeking work in the base year 1986 (1.43 million according to the 1986 Census).

Table 5: Number of jobs created by new small manufacturing firms in Egypt between 1986-1991.

Governorate	No of jobs created	% of total no of Jobs	Jobs / firm
Cairo	15118	29.96	6.8
Alexandria	5776	11.45	9.4
PortSaid	463	0.92	10.7
Suez	18	0.04	18.0
Damietta	1317	2.61	4.0
Dakahlia	1991	3.95	6.5
Sharkia	7739	15.34	6.6
Kalyoubia	3267	6.47	9.2
Kafr-ElSheikh	499	0.99	6.3
Gharbia	2409	4.77	7.0
Menoufia	419	0.83	16.7
Behera	1615	3.20	10.3
Ismailia	487	0.97	13.1
Giza	6554	12.99	10.5
Benisuef	232	0.46	10.0
Fayoum	176	0.35	7.9
Menia	310	0.61	6.4
Asyout	965	1.91	5.2
Sohag	375	0.74	6.1
Qena	113	0.22	5.1
Aswan	380	0.75	5.8
Red-Sea	82	0.16	4.3
Wadi-Elqedid	8	0.02	8.0
Matrouh	33	0.07	11.0
NorthSinai	118	0.23	4.2
Southsinai	0	0.00	0.0
Total	50464	100.00	7.4

Source: General Organization of Industrialization 1992.

Furthermore, the actual job generation of new SMFs is not evenly distributed across the country. The regional distribution of new jobs created indicates that Cairo is the largest region in providing jobs, with an average of 6.8 jobs per firm. It provides about 30% of the number of jobs created in Egypt. If the Greater Cairo Region (Cairo, Giza and part of Kalyoubia) is considered as one large spatial unit, it

accounts for almost half of the new jobs created. The analysis of firm formation has indicated that the region has the highest rate of firm formation in Egypt.

Sharkia and Alexandria provided 15.3% and 11.4% of the total number of jobs respectively. The urban region of Alexandria is the second largest market in Egypt and has a relatively better developed infrastructure. As has been discussed, Sharkia has one of the highest number of firms established in Egypt. The establishment of new industrial zones in the region attracted large amount of investments, providing a large number of job opportunities. It is worth noting that the three regions have always received a disproportionate share of investment relative to their share in population, compared with other regions.

At the other end of the spectrum, South Sinai has made no contribution to the number of new jobs created by SMFs in the six years (1986-1991). This region has a strong and developing tourism sector which might have attracted most of the new investment. Also, it might well be true that there were a number of firms that were unregistered. Apart from South Sinai, Suez and Wadi Elquedid regions are the lowest regions in providing jobs. The low level of jobs created by new SMFs in Suez, despite its high average firm size, may be attributed to the dominance of large scale industries in the region that might have attracted most of the skilled workers (those who would-be entrepreneurs). On the other hand, it is the remoteness of Wadi Elquedid (about 500 km from the capital) and the strong dominance of the agriculture sector that explain the low level of job generation in the manufacturing sector. Surprisingly, Damietta exhibited the highest firm formation rate in Egypt and made a small contribution to job generation. Tentatively, this might be the result of the small average size of firms in the region.

As has been mentioned earlier, the Sharkia region (the study area) created about 15% of the total number of manufacturing jobs in Egypt (7735 new jobs). The number of jobs created in the Sharkia region represented about 1.3% of the population in the private sector in the region and about 7.6% of the unemployed in 1986.

The regional distribution of jobs in the Sharkia regions depicts a similar picture with more jobs being provided in the capital and in the new settlements than in other districts (table 6). Zagaziq and the new settlements (the 10th of Ramadan, Obour and Salhia) provided about 13.5% and 52.8% of the total number of jobs being created in the region respectively, with the bulk of jobs created being in the 10th of Ramadan. The number of jobs created in the new settlement accounted for about half of all jobs created in the region. Also, Belbis and Menia Elkamah generated a significant number of jobs; providing about 7.3% and 7.9% respectively. Belbis has the largest number of people engaged in the manufacturing sector. Both Belbis and Menia-Elkameh exhibited high rates of firm formation.

In contrast, Kourin contributed the least in terms of job creation. The district has a low firm formation rate and a very small average firm size. This is clear from the high level of self-employment that characterises the district. It is worth noting that the spatial analysis of firm formation has suggested a negative relationship between the existence of a large number of self-employed and firm formation at the regional level.

From the above discussion, it is apparent that during the study period the role of new firms in job creation in Egypt is limited and its impact is unevenly distributed across regions and districts.

As disaggregated data about employment in new SMFs was not available at the national and regional levels, the analysis relied on the data obtained from the sample of firms surveyed in the Sharkia region. The new SMFs interviewed in the Sharkia region provided 1282 new job opportunities in the industrial sector (this includes full and part-time workers). The average number of workers per firm was about 11, larger than the average size of new firms in Egypt and the whole region during the same period. This high average size was influenced by the larger size of firms established in the new settlements during this period.

Table 6: Number of jobs created by new small manufacturing firms in Egypt between 1986-1991.

Governorate	No of jobs created	% of total no of Jobs	Jobs/firm
Zagaziq	1046	13.52	4.2
Abou Hammad	142	1.83	3.4
Abou Kebir	217	2.81	4.0
Hessinia	221	2.86	3.8
Belbis	567	7.33	4.1
Diarb Negm	160	2.07	3.1
Faqous	230	2.97	3.1
Kafr Sakr	117	1.51	4.0
Menia Elkameh	612	7.91	4.3
Hehya	115	1.49	5.2
Mashtoul Elsouk	114	1.47	3.4
Ibrahimia	67	0.87	3.0
Awlad Sakr	23	0.30	2.1
Kennayat	13	0.17	1.8
Kourin	3	0.04	1.5
Subtotal	3647	47.15	3.8
10th of Ramadan	3851	49.79	18.3
Obour	25	0.32	25.0
Salhia	212	2.74	17.6
Total	7735	100.00	6.7

Source: General Organization of Industrialization 1992.

Table (7) unveils an important feature of job creation in new SMFs in Egypt, with a large proportion of jobs being created by a few large firms. About 44% of the jobs were created by 14% of firms employing more than 26 workers. On the other hand, firms employing less than 10 workers and between 11 and 25 workers made an almost equal contribution to job generation accounting for about 27% and 30% respectively.

This conclusion is similar to the findings of other studies. For instance, Little et al. (1987) have found that in 5 out of 6 states studied in India, the smaller size firms (employing between 1 and 49 workers) accounted for a larger proportion of employment despite the wide variation between states in terms of industrial size distribution. Also, Storey and Johnson (1987, pp 16-17) have shown, that in the UK, France and Ireland, less than 10% of small firms have grown out of the smallest size category, and less than 1% of them have grown to become large enterprises (with more than 100 employees). These few firms are responsible for the creation of a significant proportion of new jobs. This has important implications for policy formulation with regard to firms being targeted as potential recipients of assistance.

Table 7: Percentage of jobs created by firm size (1986-1991)

Firm Size	Less than 10	11- 25	26+	Total
No of Firms	75	23	16	114
% of Firms *	65.8	20.0	14.0	100.0
Jobs created No	335	380	567	1282
%	26.2	29.6	44.2	100.0
Average size in year one	4.3	14.7	34.8	7.4
Average size in year six	4.4	16.5	35.5	11.3

Source: Field survey 1992.

The analysis of the change in the average size of firms in different size categories since starting up lends support to the above drawn conclusion. Table (7) shows clearly that in total, the average size of firms increased from 7.4 to 11.3, marking an increase in the employment generated in firms from year one (1986) to year six (1991).[3] Also, the data suggest that the increase is a result of the increase in the size of the larger small firms(firms employing between 11-25 workers and more than 25 workers).

Moreover, the change in employment size was analyzed according to the expansion and contraction of new firms (Table 8). It was revealed that about 53% of firms had increased their labor force, and only 33% of firms had retained their employment size since starting up. Approximately 14% of the firms have shedded labor after starting, these being predominantly smaller firms. Nevertheless, the total employment increased from 813 at the start-up of all firms to 1228 in the year of the survey. This indicates that despite the limited contribution of SMFs to job creation, they could be considered a growing source of employment absorption that should be enhanced.

Table 8: Employment change in new small manufacturing firms by settlement types (1986-1991)(%).

Change in employment		Increase	Decrease	Constant	Total
All Firms *	%	53.1	13.8	33.0	100.0
	No	58	15	36	109
New settlements	%	75	9	15.6	100.0
	No	24	3	5	32
Urban	%	55.6	14.8	29.6	100.0
	No	30	8	16	54
Rural	%	17.4	17.4	65.2	100.0
	No	4	4	15	23

* Seven firms have missing values
Source: Field survey 1992

On the spatial scale, the majority of small firms that increased labor were located in urban areas. The availability of labor, infrastructure and services in these areas compared to others encouraged the growth of small firms. However, those firms that shedded labor were also located in the urban centers. High formation rates in these areas led to increased competition which has in turn led to the closure of many firms.

New jobs generated vary quite considerably in terms of type (full/part time) and skills (skilled/unskilled) required. Skilled labor are those workers who have finished their training or apprenticeship whether they carry out skilled technical or managerial jobs. Unskilled labor include all those who are still undergoing their apprenticeship and training.

In total, full time skilled workers represent about 59% of the total number employed in new firms, while part time skilled workers represent only 3.5%. On the other hand, full time and part time unskilled workers represent about 33.9% and 3.7% respectively. All full-time workers account for 93% of the total number employed regardless of their skills. The data thus suggest that unskilled workers are in less demand in new SMFs, especially those operating on a part-time basis.

In addition, about 70% of respondents employed less than five full-time skilled workers per firm with the rest employing more than six. The maximum number of full-time skilled worker employed by a firm is 36 workers, with a mean of 6.3 worker per firm. It is clear that skilled workers are usually employed on a full-time basis, this being reflected in the average of 0.3 part-time skilled worker found in the surveyed firms, and the maximum of seven part-time skilled workers per firm. Only 37% of the firms were found employing this category (part-time skilled) of employees.

The survey has revealed that almost half of the number of firms employ unskilled workers on a full-time basis. The mean of this category is 3.67 with the maximum number of employees in one firm being 28 workers. On the other hand, about 85% of the firms said they had unskilled workers on a part time basis. They may be apprentices in the period of training or unpaid family workers.

Table (9) shows that SMFs employing less than 10 workers tend to employ more full-time skilled labor than other types of labor. This tendency decreases with the increase in firm size. Firms employing between 11-25 workers and more than 26 workers tend to hire more unskilled full-time labor. In all sizes of firms, part-time employment is almost insignificant, with skilled part- time workers being concentrated in firms employing less than 10 workers and in larger small firms employing more than 26 workers. In addition, unskilled part-time workers are mainly in firms employing between 11 and 25 workers and to a lesser extent in firms with 10 workers and less.

Table 9: Distribution of employment according to the size of the firm and the types of jobs created (%).

Firm Size	< 10		11- 25		26 +		Total		Mean	Standard Dev.
	%	No	%	No	%	No	%	No		
Skilled labor										
Full-time	63.4	204	59.8	217	55.8	303	59.0	724	6.3	7.5
Part-time	5.9	19	-	-	4.4	24	3.5	43	0.3	1.1
Unskilled labor										
Full-time	25.8	83	32.8	119	39.4	214	33.9	416	3.7	6.2
Part-time	4.9	16	7.4	27	0.4	2	3.6	45	0.4	1.7
Total	100.0	322	100.0	363	100.0	543	100.0	1228	-	-

Source: Field survey 1992.

Table 10: Distribution of employment according to the settlement-types and the types of jobs created (%).

Labor	New Settlement		Urban		Rural		Total	
	%	No	%	No	%	No	%	No
Skilled labor								
Full-time	57.7	401	57.5	235	70.4	88	59.0	724
Part-time	1.9	13	7.3	30	-	-	3.5	43
Unskilled labor								
Full-time	36.5	253	32.0	131	25.6	32	33.9	416
Part-time	3.9	27	3.2	13	4.0	5	3.6	45
Total	100.0	694	100.0	409	100.0	125	100.0	1228

Source: Field survey 1992.

A similar picture emerged from the analysis of the distribution of the types of labor according to the location of firms. Table (10) shows that the majority of workers employed in firms in the three settlement types are skilled full-time. Unskilled full-time workers are also employed. Moreover, skilled and unskilled part-time workers, are evidently not in demand in the three types of settlements compared with full-time workers.

To sum up, new SMFs demand more skilled full-time workers and to a lesser extent unskilled full-time workers than part-time workers (both skilled and unskilled). This result is consistent with other research findings about small firms in Egypt particularly that of CAPMAS (1985c). It has revealed that about 43% of the 5000 firms interviewed employ skilled specialized workers compared to about

31% that employ unskilled workers. The same study also showed that about 88% of small firm employees have a full-time permanent job, with only about 5% working less than six hours a day. As a result of the small number of part-time workers that are employed in new SMFs, it is possible to suggest that these firms cannot play a significant role in providing a supplementary source of income.

The results point to the importance of encouraging the formation of more new small firms in order to boost the contribution of the sector to employment generation. This can be done through entrepreneurship development and the retraining of the existing unemployed in technical skills to match the current market demands. As a large number of jobs have been created by few large firms, the study has suggested the importance of encouraging the creation of more labor intensive firms to absorb the labor surplus. For example special incentives could be offered according to the number of new jobs created in the new firms.

It is acknowledged that such policies are unlikely to solve the massive unemployment problem in the immediate future. However, they are likely to enhance the role of new small firms in absorbing labor. Also, attention should be given to the spatial distribution of assistance. For example, areas with high unemployment rates should be designated to receive more assistance and incentives. The effectiveness of such policies towards small firms will depend to a considerable extent upon the institutional framework in which these policies are implemented.

8. POLICIES AND INSTITUTIONAL FRAMEWORK

In this part of the study, the policy and institutional framework within which the formation decision of new SMFs is taken were examined. This includes both financial and technical institutions.

The analysis has shown that very few among the large number of technical and financial institutions claiming to help the small firm sector in Egypt are effectively active and very few are concerned with helping the starting up of small firms. Technical institutions have more or less a regulatory role and in practice their influence is rather minimal, while financial institutions are not flexible enough to supply the sector according to its demand. Lack of a cohesive and clear policy towards the promotion of the small firm sector in Egypt limited the effectiveness of these institutions in terms of the number of entrepreneurs who benefited from their services. These institutions operate under various ministerial umbrellas and are bound by the powers and policies of the ministry in charge. Also small firm entrepreneurs were found to be bewildered by the number of institutions and different types of regulations that organize the registration of a new firm and tended to be discouraged by the time involved in the registration.

Each ministry has its own objectives and policy which are not coordinated with other ministries. It is only the orientation of the government that is known and that is not always trusted by entrepreneurs of new small firms. Policy documents examined in this research have not been followed by programs incorporating the methods required to implement them. Also, policy documents are more concerned with improving the conditions of small firms and assisting them to grow, rather than encouraging the establishment of new firms, which is important for regional and national development. Even laws, which were enacted to encourage the participation of private sector investment, have had little effect on small firms, because they were mainly enacted to encourage foreign private inward investment and large-scale joint-ventures between the public sector and the private sector. They did not address the problems of small firms or provide any effective measures to encourage their formation.

The review of the work of financial institutions suggested that they are not effective in assisting small firm formation. Despite the fact that the Egyptian Industrial Development Bank (EIDB) is nominally a development bank, it is operating as a commercial bank and provides no special facilities for financing the establishment of new firms. Generally, lending policies applied by all banks seem to encourage large firms; those firms that are able to offer the collateral security demanded. Also, the Credit Guarantee Scheme offers its services upon the banks' recommendation. Therefore, an inability to satisfy the bank's requirements means that no credit will be guaranteed by the scheme.

The only program that has targeted rural entrepreneurs, namely the 'Local Development Fund' has had little effect on rural industrialization. Agro-based industries received only a marginal part of total

loans on offer, leaving most of the assistance to be given to basic agricultural activities. In this environment, rural small firms are far less supported than urban and new settlement firms.

As this study was primarily concerned with firms established between 1986 and 1991, the impact of the Social Fund for Development (established to mitigate the negative impact of adjustment)was not investigated. However, the available data indicate that the Fund has made remarkable achievement in alleviating the financial problem of new firms and promoting their establishment in both urban and rural Egypt.

The findings that most of the firms use private money or funding from friends, suggest that encouraging savings may be an effective scheme to follow. Also, encouraging banks to adopt informal lending systems would help in alleviating financial constraints and provide a way to avoid the religious aversion to interest rates among entrepreneurs.

It was recommended that private sector technical and financial institutions and NGOs should be encouraged to provide support services, perhaps by guaranteeing them fiscal concessions and tax breaks on their operations to assist small firms. The privately operated Youth Enterprise Society has managed since its foundation and despite its limited resources to offer training opportunities and loans to new industrial projects. These new projects have been successful to date.

The analysis has shown emphatically that the majority of new small entrepreneurs ignore the existence of technical and financial institutions and consequently have not heard of their services. Therefore, it is possible to argue that assisting institutions may not be an influential factor in explaining SMF formation in Egypt.

Not surprisingly, none of the technical institutions were approached at the start-up stage. For technical assistance, the new entrepreneurs relied on friends and relatives, the manufacturer of machines or the service agencies, and consultants. Also, few entrepreneurs approached financial institutions and very few were able to get assistance. High interest rates and the excessive collateral security required were the main complaints of almost all new entrepreneurs.

Also, the analysis indicated that different types of entrepreneurs vary in their use of financial assistance. Most of the Manager-type entrepreneurs applied for bank loans, while only few Foreman-type entrepreneurs did so. Manager-type entrepreneurs were generally more successful than the other types in getting loans. It is worth mentioning that none of the Artisan-type, consisting mainly of rural entrepreneurs, approached technical institutions and none of them had a successful application for financial assistance.

New settlement entrepreneurs were more active in applying for loans and more successful in getting what they applied for. Conversely, rural entrepreneurs applied the least and only half of those received what they applied for. Urban entrepreneurs fell between those two categories with a large number of them acquiring the assistance requested.

Most of the entrepreneurs that did not apply for loans, mentioned reasons such as the anticipation of problems and a low expectation of getting the service. Also, ignorance of the procedure and refusal to borrow money with interest on religious grounds were mentioned. The first reflects the fact that some new entrepreneurs are in the dark about how to apply for assistance. There were no differences between the four types of entrepreneurs in the reasons mentioned.

Different types of entrepreneurs had different suggestions as to how to increase firm formation rates. 'Manager' entrepreneurs emphasized the importance of the dissemination of information about new production lines, training, and the promotion and establishment of planned industrial locations. In addition, assistance in marketing and exemption from taxes at the set-up stage were recommended by this type of entrepreneur. For 'Technician' and 'Artisan' types, it was the assistance in marketing and a supply of raw materials, which were perceived as of major importance in assisting the formation of new small firms. For 'Foreman' entrepreneurs, it was financial assistance that mattered; providing loans and exemption from taxes were seen as the key to helping newly established firms, and encouraging others to establish. The provision of industrial sites was also recommended by the 'Foreman'-type. Moreover, the majority of 'Foremen' stated that the establishment of one institution to

provide all services and assist in gaining all the necessary permissions would greatly reduce the bureaucratic procedures, hence encouraging the creation of more firms.

The views held by these new entrepreneurs in Egypt should be of assistance to the government in deciding how best to encourage the formation of new SMFs. Nevertheless, caution should be taken to ensure the cost-effectiveness of such assistance and that these policies do not conflict with national development objectives.

9. LESSONS AND POLICY RECOMMENDATIONS

9-1 Lessons To Be Learned

A major current aim of the government in Egypt is to develop the small firm sector and encourage new firm formation. Potentially consistent with both poverty alleviation, job creation, and growth oriented development strategies, SMFs are firmly placed on the Egyptian government's development agenda. However, this policy commitment is coupled with little knowledge of how it can best be implemented.

Policy suggestions discussed below are also based on the idea that new SMF formation, with all its associated dimensions (spatial, economic and social), has important implications for the performance of the national economy in terms of employment growth, industrial production, and income generation. It must be mentioned, however, that it is not by any means the complete answer or the only line for tackling all the economic problems. Equally important, for example, is the promotion of medium and large scale industries. Also because of the restrictions of the data and the limited size of the sample underpinning this study, the findings have to be qualified and cannot be presented as necessarily being of general applicability. With this caveat in mind, a number of important lessons about assisting new SMFs can be learned.

First, the spatial distribution of the new manufacturing firms has shown significant variations. Ignoring such variations will lead to an unbalanced and insufficiently responsive pattern of assistance in relation to needs, leading to undesirable results. This calls for a *'location specific'* type of assistance. For example, areas which historically have exhibited low rates of new SMF formation should be treated by means that are relevant to their characteristics in order to attract potential entrepreneurs and encourage indigenous ones. In such areas, providing improved infrastructure networks to certain locations of greatest potential associated with a program of developing local entrepreneurship may be successful in accelerating firm formation rates.

Second, entrepreneurs are heterogeneous in their characteristics, aptitudes, and needs, and dealing with their idiosyncrasies is a formidable task and increasingly faces the risk of being unsuccessful. Therefore, categorizing them into groups helps by improving our understanding of their characteristics and facilitates the devising of more appropriate promotional policies. This calls for linking an *'entrepreneurial group specific'* approach with the *'location specific'* approach. In other words, entrepreneurship assistance is likely to be most successful when it is offered to a well-defined group of entrepreneurs who share the same characteristics and operate under broadly the same conditions. The analysis has identified groupings of entrepreneurs who not only share similar personal and managerial attributes, but also have similar locational orientation. Given that entrepreneurs differ significantly according to their locations, the importance of incorporating the spatial dimension of entrepreneurial decision in understanding and defining entrepreneurship emerged strongly from this study. Effective policy to boost new firm formation in the small firm sector will have to be sensitive to the needs of the actual type of potential entrepreneur that is likely to benefit from such policy.

Third, the regional variations in new SMF formation point to the crucial role regional policy can play in this context. The study has also shown that some new SMFs are aware of the different advantages associated with various locations, and hence conduct a location search. The large number of entrepreneurs who only searched at the national level and the small number that searched at the regional and district levels call attention to the limited power of regional level authorities in Egypt in providing assistance to small firms. This was also clear from the finding that most assisting institutions have only central existence. This points to the need for a more *'decentralized role for the*

assisting institutions and more power delegated to the regional, district and local authorities'. Many of the location factors associated with firm formation rates and mentioned by the entrepreneurs as influencing factors are related to regional resources and endowments. Also, given that rural areas seem to be comparatively disadvantaged when compared with urban and new settlements, enhancing authority at the regional and local levels would ensure that resources are allocated for the improvement of conditions in rural areas. Moreover, encouraging the activities of NGOs and private institutions would improve the efficiency of the delivery of services.

Fourth, '*education and training*' emerged as one of the most powerful factors affecting the decisions of entrepreneurs. It differentiated in the grouping of various types of entrepreneur, and proved to be the most significant variable in predicting the probability of a location search. The existing education system in Egypt has led to an accumulation of educated unemployed, yet many neither have the skills nor the financial resources to start a new SMF. Part-time and unskilled workers were not found to be in demand as far as new SMF employment is concerned.

What can be done to generate an accumulating number of prospective entrepreneurs, is the question which needs to be addressed. One way to secure improvement is to support the apprenticeship system in Egypt, probably by recognizing and developing it as a technical qualification and by providing financial incentives to masters to accept more apprentices. Also, the creation of enterprise culture amongst the population, especially the youth, would stimulate entrepreneurship.

Fifth, policies aiming at the promotion of SMFs and assisting institutions are fragmented and not at all well coordinated. The procedure of 'officially' establishing a new firm, and applying for assistance, is rather complicated and lengthy, which discourages many of the would-be entrepreneurs. Moreover, small firms appeared to be in the dark about the assistance on offer. In order to ensure an effective assistance, there is first a need for a '*clear and informed Policy*' for the promotion of new small firms that is integrated into the general economic policy of the country, followed by an implementation plan that is supported by an active and flexible institutional framework. Secondly, there is a need for publicized and simplified procedures regarding the establishment of a new firm and obtaining an operating license.

9-2 Policy Recommendations

The findings and lessons learnt from this research provide a basis for recommending policies to encourage more small manufacturing firm formation in Egypt, and hence, enhance its developmental role in the economy. The aim is to suggest the broad lines along which policies could be developed, rather than producing any definite policy blue-print. A complete new policy framework would require additional detailed study of national macro-policy (trade policy, fiscal and financial policy, agricultural policy), which is clearly beyond the scope of this study. Indeed, the study does not suggest that massive change is required in the policies currently directed at the small firm sector; rather it calls for amendments and additions to policies and assistance measures to make them more effective in promoting firm formation. Improvements to institutional and administrative arrangements will be an integral part of the policy thrust, especially as the prevailing view from entrepreneurs involved in the study seemed to be that less government intervention and regulation is preferred.

The future of this sector will depend to a great extent on general economic policies and conditions, whether they are conducive or not. Therefore, policies aiming at encouraging new SMFs need to recognize the wider macro-economic context in which the sector is operating. Small firms coexist with and depend on other sectors in the economy. The major concern is under what national and regional conditions (both indigenous and exogenous) the formation rates could be accelerated.

New SMF entrepreneurs argued that, in order to influence the rate of firm formation positively, government should ease bureaucratic procedures, provide loans with low interest rates and long grace periods, exempt new firms from certain forms of taxation and legislation (or reduce their impact), and assist in the procurement of raw materials. Other suggestions included the provision of industrial locations and technical services, provision of marketing services, and provision of information about possible production capacities for small firms. Some entrepreneurs argued that this can best be done by the establishment of a single institution with well-publicized activities to deal with all the affairs of

SMFs. These suggestions are taken into consideration as representing what the entrepreneurs identified as the need. The question of whether such measures are in the interest of the national economy is less than clear. The answer would lie in their success in promoting and increasing the rates of formation and consequently achieving the development objectives. It is worth noting that these suggestions cast almost all the responsibility for action on the government. Given the limited availability of resources and the fact that many firms have been formed without government assistance, and given the various priorities the government should consider, this emphasis on widespread government intervention is questionable. In fact, this research concluded that only limited intervention is preferable. This can be achieved through the allocation of resources to specific areas of intervention.

The policy recommendations for action to promote new SMF formation fall into four broad divisions:

- Improving Regional Policy Environment.
- Entrepreneurship Development.
- Technical and Financial Institution Development.
- Information Dissemination.

A- Improving Regional Policy Environment

The regional contrast in formation rates emphasized the importance of the existence of regional policy. A weak regional policy is without doubt a major factor in the widening of regional disparities in the rates of new SMF formation.

It follows that one obvious policy recommendation is that the government could be well advised to strengthen the regional authorities. There should be a policy of regional development concerning the small firm sector coordinated with the national industrial development policy, and in which measures to encourage the formation of new SMFs are expressed. More power should be given to the regional and local levels by delegating administrative responsibility and encouraging the mobilization of local financial resources. Further, regional branches of banks should have the power to decide on loans and credit facilities for small firms subject to certain financial ceilings. Nevertheless, one must be aware of the fact that achieving a widespread institutional network, a decentralized pattern of decision making and a staff adequately trained to exercise discretion within a system of practical and flexible procedures will be expensive and need time (Levitsky 1987).

Boosting market demand, fostering specialization, providing land suitable for industrial use were all found to be important factors in influencing firm formation. These forms of assistance can be proffered and managed at the regional and local levels. For instance, many new firms rely almost entirely on the local market at least in the first few years of establishment, and marketing assistance at the local level is likely to be most effectively delivered by local authorities. Exhibition centers, technical help with product design, information on government purchase, participating in regional and national fairs, and subcontracting arrangements with large firms are the most frequent areas mentioned for marketing assistance.

Central government in cooperation with regional level authorities can play an important role in improving infrastructure networks. Infrastructure (electricity, water, sewerage, and particularly the road networks) emerged as the most influential variable in firm formation and also as one of the most important location factors. Moreover, providing land for industrial development and incentives for location should be delegated to the regional level.

Regional authorities should capitalize on the comparative advantages of their regions and enhance specialization in this direction. This can be done by offering special incentives to a particular type of industry or a set of related industries. Similar incentives to those offered for the establishment of firms in new planned industrial settlements can be offered to small firms in other selected districts within the region, the selection being on the basis of identified special potential. As rural areas were found to be less locationally advantageous compared with urban and new settlements, offering incentives and assistance to these areas and strengthening their local authorities will be of vital importance in encouraging firm formation.

In order to achieve the objectives of promotional policies, it will have to be recognized that action should not be distributed evenly either across the country or within a region. In particular, it is recommended that areas with high unemployment rates should receive favorable financial incentives in order to assist would-be entrepreneurs among the population. HIPCO's job creation program attempts to offer various levels of assistance to regions according to their unemployment rates, population size, and the number of existing small firms is a positive step forward in the direction outlined.

B- Entrepreneurship Development

While increasingly, policy makers are coming to believe that future development in economically poor countries rests with indigenous entrepreneurs, there are uncertainties about how entrepreneurship can be stimulated to fulfill this role. This research identified education and training as key factors in leading would-be entrepreneurs to engage in SMF formation and creating an enterprise culture.

A recommendation of this study is that more effort and resources should be directed to the education and training of would-be entrepreneurs. Programs from other countries, which have aimed at raising the entrepreneurial potential of certain regions where entrepreneurship has been notable for its absence, have shown signs of success. The entrepreneurship Development Program operating in India is a typical example (Bhatt 1986). The success of such a program requires: firstly, a careful selection of trainees; secondly, an intensive training program which is oriented towards the real life situation including interaction with the market (other producers and providers of production factors). Thirdly, a rigorous appraisal of the business plan of trainees to reduce the chances of failure after start-up.

Some further lessons can be drawn from an evaluation of the Formation of Entrepreneurs (CEFE) program run by the GTZ (German Cooperation for Technical Development) in Asia. These lessons are:

- some rigorous criteria for the selection of candidates are required in order to ensure a high success rate.
- a recognition that entrepreneurs can do it alone without assistance.
- a careful selection of services that are offered and it should be recognized that not every body can be served.
- efforts should be made to ensure that the program is designed to work with entrepreneurs not for them.
- efforts should be made to keep the organization as small as possible so that all staff are acquainted with all services and assistance.

The CEFE experience showed that business and entrepreneurial skills can be delivered effectively to small firm entrepreneurs, even those with very low levels of education. Also, the CEFE evaluation exercise showed that the most important components of an entrepreneurial development program, from the point of view of entrepreneurs, consist of: opportunities identification, planning, creativity, money raising, and marketing and salesmanship. Furthermore, the program should enhance the motivations of the would-be entrepreneurs by stressing the advantages and the positive aspects of starting a new business.

Universities, technical schools and colleges, with their resources and location in almost all regions, are well placed to play an important role in providing the sort of training discussed above. To encourage them to participate, grants could be offered to institutions covering fees and maintenance for those participating on courses, and also for buying equipment. Free education in Egypt has supplied the labor market with an inflow of many graduates, indeed creating a surplus. It is believed that paying the fees of or offering grants to participants in technical education and training coupled with media propaganda might redirect higher educational aspirations towards more technically-oriented training and thus lead eventually to a larger pool of potential entrepreneurs. This type of assistance is urgent in areas with low small firm formation rates such as the South Sinai and Suez regions and in areas with high surplus of rural labor. Unemployed graduates might be encouraged to join such programs and this might stimulate further entrepreneurship among them. In a wider sense, a

review of the existing education curriculum seeking to better match its products to the labor market demand along with the restructuring of the economy, would be of great importance.

Another policy recommendation is that small firms should be encouraged to accept more apprentices. The apprenticeship system needs to be recognized as a technical education qualification providing that the incoming apprentices have finished their essential compulsory education. Incentives such as tax reduction or grants offered to the work-shop masters could encourage them to take and train more apprentices.

There are different views on which type of entrepreneur can be most effectively supported in order to promote the small firm sector; managers, foremen, artisans or technicians. Marsden (1992) has argued that it is support of modern entrepreneurs which can be most effective, while informal sector entrepreneurs, as a vehicle for growth, look less promising. This present research suggests that the different nature of various types of entrepreneur demands a varied policy response.

In order to ensure an effective delivery of assistance in entrepreneurship development programs, the would-be entrepreneurs could be classified into homogeneous groups along side the groups suggested in this study. This will ensure that each group will receive the assistance needed in harmony with their characteristics and requirements. For example, potential 'Manager' type entrepreneurs will require training and education quite different from that necessary for the 'Artisans' or the 'Foremen' or the 'Technicians'. Different types of entrepreneur also vary in respect of their requirements for assistance in other aspects of business development. 'Manager'-type entrepreneurs emphasized the importance of the dissemination of information about new production lines, the establishment of planned industrial locations, marketing advice and exemption from taxes; while the 'technician' and 'Artisan' types suggested market assistance, and action to secure a steady supply of raw materials, together with the provision of industrial sites, as the areas of greatest help to them. For the 'Foreman' it is financial assistance that matters most. Thus, assisting institutions and training programs should recognize and address these different needs. Entrepreneurial group selectivity and geographical selectivity will both be important approaches in securing cost-effective assistance.

Education and training are important in creating entrepreneurship in the short run. To sustain a long term supply of entrepreneurship, rigorous efforts have to be made to inculcate enterprise culture in the young generations. This can be achieved through enhancing the image of entrepreneurial success, and credibility and recognition of self-employment and entrepreneurship. Moreover, creating an effective institutional support capable of lowering barriers to entry into small scale activities will be of vital importance.

C- Technical And Financial Institution Development

This study has identified a number of shortcomings in the activities of the technical and financial institutions presently concerned with small manufacturing firms. The assistance provided by the institutions has been bureaucratically and physically inaccessible to entrepreneurs. The fragmentation of the institutions and policies has impeded the design and implementation of policies and projects to support the small firm sector in Egypt. In the past, action for the development of small firms was based on a number of specific programs delivered by various governmental institutions, without any effective coordination of activities. Therefore, a recommendation of this thesis is that well-coordinated policies and carefully designed projects are needed in order to ensure that the potential contribution of small enterprises to the development process is fully realized.

Moreover, new entrepreneurs complained about the length and complication of the registration procedures, especially because of the large number of institutions involved. Therefore, simplifying this procedure would encourage many firms to start, and bring many existing firms into government records. Instituting a tax break or reduction for perhaps five years in specific locations, or for a particular type of industry or for a particular type of entrepreneur (similar to that offered in new settlements), and the relaxation of other regulations at the start-up stage would not only encourage many to establish, but also would increase their survival rates. Indeed, encouraging the establishment of more firms and increasing the survival rates of firms will enhance the job creation capacity of small firms.

In the literature, three models for assistance programs for small firms were identified: the integrated, minimalist and sub-sector approach. Despite the fact that the integrated approach has been widely criticized for being inefficient and costly, with a limited return in terms of long term growth, profit and job generation (Kilby 1977, Levitsky 1989, Liedholm and Mead 1987), many projects world-wide are still designed on the integrated model.

For assisting small firms, a compromise could be achieved, for instance, by offering an integrated package of assistance of which only missing ingredients could be taken up by particular entrepreneurs according to their needs. This approach should be flexible to allow each new entrepreneur to select the assistance required. However, unless the cost- effectiveness and the accountability of the administering institutions are ensured, assistance is likely to be less than successful. Harper (1987) has identified four main characteristics of successful projects:

1- They are not run by governmental institutions; emphasizing the importance of the involvement of NGOs and private sector institutions.
2- They make maximum use of local staff who are well trained
3- They are run by people who share some of the attributes of the entrepreneurs they serve.
4- They remain small and resist the temptation to grow.

Hailey (1991) has summarized successful programs as those that involve themselves in the community, decentralize their operations, employ local people and adopt a financially sustainable business-orientated culture. Another attempt to identify the characteristics of successful institutions by Liedholm and Mead (1987) has been made. The findings were that successful projects tend to have been built on existing institutions offering only a single missing ingredient that needed to be supplied to the firm. The successful projects have also tended to be industry and task specific; and to start by conducting a reconnaissance survey to uncover the effective demand for the aspect of assistance in question. However, a word of caution is necessary about the existing, mainly public, institutions which tend to be overstaffed with inexperienced personnel, suffer from high management and staff turnover, and tend to be subject to political pressure (Harper 1987). Experience shows that trade and industry associations, non governmental organizations and private sector enterprises sub-contracting from government can be successful in delivering cost-effective assistance.

The question is how to achieve the effectiveness of these institutions. Project benefits are difficult to quantify and most evaluations of these schemes provide only qualitative assessments or indicators of intermediate outputs, such as the number of firms assisted. An exception was the work of Kilby (1979), who evaluated eleven small scale technical assistance projects undertaken by the ILO/UNDP. Using cost-benefit analysis, he has found that the benefit exceeded the cost in only three of them. Also in Botswana, in Africa, Haggblade (1984) has found that the benefits exceeded costs in less than a third of the technical projects he evaluated.

Cost-effectiveness can be achieved, however, through leveraging intervention (Boomgard et al.1992). For instance, contacting hundreds of small firms in seeking to deliver assistance can be very expensive. Leveraging promotional efforts, by intervening in ways that affect a large number of small firms at a single stroke, reduces unit cost. Similar to the sub- sector approach to promotion, by focusing on a single location, and group of entrepreneurs, the potentials and operational constraints can be more clearly identified, and the best and most cost effective assistance can be offered.

Another policy recommendation is to establish a 'One Stop-Shop', an independent institution in each region, with the main objective of facilitating the establishment procedures, by liaising between the various agencies and governmental offices, against the background of specialized knowledge of that regions' potential and problems. The idea behind the One- Stop Shop is that the present structure of support for establishing small firms is fragmented and the establishment procedure is complicated, so that many potential small businessmen are bewildered and put off from taking an initiative. With a One-Stop Shop, entrepreneurs would know where to go to find out what is on offer.

The one-stop institution might be staffed by representatives of the various agencies that have the authority to take decisions on particular aspects of assistance. It might also include a part time adviser to local businessmen able to assess their business plans, so establishment procedure complications

could be reduced and time could be saved. Critics would argue that the one stop institution could become another layer of bureaucracy suffering from the same problems as existing institutions; that it might do little to raise confidence in the quality of service offered; and that what is sought by the one-stop mechanism can be achieved through the development of existing institutions. This thesis supports the view which calls for the development of existing institutions. However, encouraging the establishment of new firms merits a new institution of the one-stop type concerned not only with the administrative and legal procedures of establishment but also with offering continuing advice and counseling in the first three to five years of operation (the most difficult period of a new firm's life). Many small firms are enduringly skeptical of government initiatives and support. Dealing with these institutions means entering the government domain and hence becoming embroiled with such unpopular matters as tax, labor regulations, etc. This new institution could play an important role in lowering barriers to entry into business and offering advice and information on various aspects related to the start-up stage. Also, it could start compiling data on the new establishments, their growth and failure, so as to become a source of data for research and monitoring development policy in the region concerned.

The foregoing recommendations relate to technical advice and regulatory institutions. The analysis showed that the existing financial institutions are no more effective than the technical and regulatory institutions in promoting and supporting small firm formation. Liedholm and Mead (1987) identified a number of criteria for successful programs of financial assistance:

1- The successful projects provide working capital rather than fixed capital. (However, it should be noted that in the start-up stage, fixed capital is also needed. In order to ensure a growing small firm sector, both types of capital need to be made accessible).

2- The delivery mechanisms differ significantly from those associated with conventional credit projects. Different criteria are used in granting credit, such as the characteristics of the entrepreneurs, and also loan decisions are made quickly.

Business associations, and non-governmental organizations, could be involved in delivering financial assistance. Such agencies are likely to be less formal and more accessible than banks. However, commercial banks through their branches can deliver the services but only if they are less risk-averse, less-demanding on collateral, and give more attention to project merits and prospective cash flow.

The banks can play an intermediary role between these organizations that offer credit to small firms and entrepreneurs themselves. In this scenario, they would earn a fixed fee for drawing up the formal loan and collecting the repayments of interest and capital from the entrepreneurs on behalf of the NGOs. This intermediary role will build confidence and banks will be encouraged to offer loans to new entrepreneurs and those with good payment records whose businesses grow.

Since employment creation is usually a major objective of the promotion of small firms, several projects in other DCs have emphasized the degree of capital intensity and particularly, the capital cost per new job created, as a criterion for eligibility for financing. The findings of this study support this policy. It was found that larger firms account for the majority of jobs created and have made the most impact in the reduction of local and regional unemployment. Hence, levels of financial assistance could be related to the prospective levels of jobs to be provided.

Experience from lending institutions in other countries (e.g. Gramen Bank in Bangladesh) showed that a subsidized interest rate encouraged investment in machinery and worked against labor intensive production systems. Hence, it is recommended that interest rates in programs of support for SMFs be maintained at market levels and subsidies should be offered at minimal scale (Nowak 1989).

Self-employed entrepreneurs and those with only one or two (usually family) workers rarely tried to borrow from formal financial institutions. Overwhelmingly, these very small firms rely on their own or family savings. Therefore a policy of encouraging savings amongst the population will help people to save the initial capital for starting a small business. Also, credit delivery could be linked to savings.

As new graduates will have problems in securing loans or providing their own resources, encouraging the 'Social Development Fund' to continue to target this group by providing funds to

banks or NGOs supported by the Credit Guarantee Scheme would alleviate such problems. Also, a special fund could be provided for the new institutions proposed in this study to pay a kind of subsistence allowance to the entrepreneurs during the period of establishment to encourage them to take the risk.

In addition, the Credit Guarantee Scheme should be made more effectively available to new small firm entrepreneurs in general. This more active role could be promoted by directing more financial resources to the scheme so more loans can be guaranteed and by increasing the percentage of the loans guaranteed.

D- Dissemination of Information

As has been found in this study, new entrepreneurs are often in the dark as to the types of assistance offered by existing financial institutions and they had to rely on themselves and informal networks to collect information. Because of the lack of business experience at management level amongst many new entrepreneurs and the lack of resources to gather information, the dissemination of information would be of great importance. Demand for an information service has been high but has hitherto been insufficiently recognized.

Another important recommendation of the research, therefore, is that steps should be taken to improve the availability of information and ensure its dissemination. The justification of this policy is that many entrepreneurs have emphasized the importance of information in searching for financial and technical support, in deciding for a location, and in evaluating market demand.

Five main types of information can be offered: market demand, sources of assistance, establishment procedures, location advantages, and acquisition of technology. All the various aspects of information required by new SMFs can best be offered through entrepreneurship development programs and through the recommended new 'one stop institution'. Indeed, the media in general can be an important source of information and can help in the dissemination role.

Moreover, the information can be provided by other various institutions. For instance, the GOFI, with its already established data base, is well placed to offer a variety of information with regard to production capacity, markets, new industrial locations and establishment procedures. Also, the EIDC with its well trained extension service officers, can also play a useful role in the dissemination of information about technology and markets. Financing this service could be made through the Social Development Fund.

In order to be close to people and to encourage them to use the information, the decentralization of institutional services is crucial. Experience from other DCs showed that face to face contact with entrepreneurs builds confidence between the institutions and entrepreneurs and brings the service as close as possible to the intended beneficiaries.

Finally, the research identified a gap in the availability of spatial and time series data about new small firm formation. Hence, a recommendation of this thesis is that data about newly established firms should be compiled year by year by the Industrial Operation Chamber and the proposed new one stop-shops. Checks should be made every two years after formation to confirm the continued existence or absence of each firm or any change in its production.

9-3 Possible Future Research

The parameters of this research have necessarily been limited in scope, its empirical findings being related predominantly to the experience of new SMF formation in parts of only one region of Egypt. To substantiate and further extend the findings of this research similar studies elsewhere in Egypt are needed. Perhaps, a detailed analysis of a region with low formation rates would draw other conclusions about the firm formation process. Through these studies a more general conclusion can be drawn and hence more effective policy in Egypt can be formulated.

Moreover, establishing conclusions about firm formation in DCs based on one study in one country are surrounded with uncertainty resulting from the peculiarities and idiosyncrasies of each country.

Therefore, similar and comparative studies in other DCs are of crucial importance for policy formation and theoretical development.

While the study has concentrated on aspects of new small manufacturing firm formation and their contribution to job generation, little is known in DCs about the survival, growth and failure of new small firms. Also little is known about the types of entrepreneur and the growth and failure of firms generally. Given that the government should be informed of what firms are likely to be successful and the conditions under which firms fail, it is important to understand the characteristics of the survivors and those that fail. This type of research will be vital to investigate the net employment contribution of newly established firms.

In addition, this study has investigated the formation of new firms in the manufacturing sector. Extending such studies to cover various sectors of the economy will be of considerable importance in assessing the contribution of new firms to the economy as a whole. It is also important to identify and inform the government on the sector(s) that contributes best to the economy.

The finding that entrepreneurs in new settlements are distinctive because they are more educated than the others and have better managerial skills needs to be substantiated by more detailed studies in other parts of the country. This research could be designed to test the ability of the tool of planned industrial locations in new settlements to attract a distinctive type of entrepreneur. Also, the classification of entrepreneurs in Egypt in various groups that share common characteristics merits further study. These studies will test the variables used and the results of this research. Also similar studies in other DCs are urgently needed in order to improve our understanding of entrepreneurs in DCs and hence contribute to the efforts being made to develop them.

The positive motives found among almost all new entrepreneurs deserves further detailed studies in other regions and other countries. In particular, the limited effects of unemployment as a motive and as a factor in explaining the spatial variation in new SMF formation revealed in this study, as compared to the recession-push theory, merits further investigation.

Finally, in this study a number of analytical tools were used in an exploratory framework. Therefore, the results of this study can be seen as tentative and can be used as hypotheses for other research in Egypt or other DCs. Using other analytical tools and other sources of information, will test the results of this study and add to the knowledge about new small firms. It is with this aim in mind that this research has been tackled and this paper has been written.

ENDNOTES

[1] The available evidence from other DCs shows that small firms are significant and indeed a dominant component of the industrial sector. Liedholm and Mead (1987), reviewing data from fourteen DCs, found that in thirteen of them small firms accounted for more than 50% of the total industrial employment (the mean of the share of small firms in these countries was 71%). Not only has this phenomenon persisted over time, but there is evidence to suggest that it is tending to increase (Anderson 1982). Anderson (1982) found, in four countries identified to be at the same phase of development (India, Philippines, Colombia and Turkey) with the exception of Colombia, a high growth rate of employment in small firms.

Little et al. (1987) mentioned that in the Philippines between 1967 and 1975, the number employed in small firms with less than 19 workers increased faster than in larger firms. But when the share of very small establishments (fewer than 10 workers) in manufacturing employment was taken alone it fell, suggesting that it is firms of size 10-19 workers that had grown substantially. An increase in the share of small manufacturing sector employment was also found in Colombia and India. In Colombia between 1953 and 1973, employment in small firms grew slowly compared with medium and large firms, but a reverse trend occurred after 1973 and small firms began to grow faster. In India, between 1961-1971, data showed a rapid growth of about 6% per annum in the number of establishments in the range of 10-49 workers. This trend continued, and in the period between 1974-1977, employment in establishments in the wider range of 10-99 workers also increased their share at the expense of larger firms (500 and more workers). Moreover, small firms (employing less than 10 workers) increased their share in total manufacturing employment from 70% in 1967 to 79% in 1975.

A similar trend was observed in other DCs. Osei et al. (1993) found that about 62% of firms surveyed in Ghana (1365 small firms employing less than 50 workers) were founded between 1980 and 1990. Schmitz (1989) called the remarkable growth in small firms in Ghana during the 1980s 'an explosion'. Also, in Jamaica the share of small firm employment of total employment increased in a short period (1977-1979) from 61.1% to 72.3%, of which the manufacturing sector increased its share from about 38% to 50% during the same period (Doeringer 1988). Data from Kenya, showing a similar increase, indicated that the small scale manufacturing sector increased its share of total employment from 21.5% in 1985 to 28.0% in 1988 (Livingstone 1991)

The growth of small firms has been also noted in developed countries, where the relatively better organized data, have allowed the examination of this phenomenon. Studies in different parts of developed countries have shown that after a period of decline in the 1960s, a substantial increase in the number of small size manufacturing firms has been observed (Storey 1982, 1988, Keeble and Wever 1986, Aydalot 1986, Gudgin et al.1979, Fothergill and Gudgin 1982, Wever 1986, Mason 1992). Storey (1982) found that in the UK, the stock of firms expressed per thousand of the working population has increased in the post-war period. Between 1968 and 1976, the percentage of manufacturing employment in small firms in the UK has increased from 20.8% to 22.6% of total employment. This trend continued in the early eighties, and the stock of new companies after excluding the number of closures (birth minus death), most of them small and independent, increased considerably by 8% annually, of which the manufacturing firm sector increased by 10% per annum (Keeble and Wever 1986). Mason (1992), using the value added tax (VAT) registration data, has indicated that the surplus businesses registering in the UK between 1980 - 1989 (new businesses registering minus those deregistering) increased from 16,000 firms to 66,000 firms.

The comparison of employment in different manufacturing enterprise size in major OECD (Organization of Economic Cooperation and Development) countries between 1970- 1983, has shown that in almost all countries, a larger proportion of employment is accounted for by the small size group (employing less than 20 workers) (Storey 1988, table 8-1). For instance, Del Monte (1987) has shown that in Italy in the 1970s, the employment in the large firm sector declined by 13.1%, whilst the share of small firm employment increased by 23.1%. Also, in France, the stock of new firms has increased considerably since the mid 1970s with the annual number of new firms in both manufacturing and construction increasing by almost 30% between 1980 and 1982 (Aydalot 1986).

[2] Smith (1967) distinguished between three types of entrepreneurs: the craftsman, the opportunist and the boffin.

The craftsman-entrepreneur tends to come from a skilled blue-collar background. He gains his skills through on-the-job training or technical education that usually does not extend beyond school level. His background does not allow him to have management skills. Therefore, he is more successful and efficient in technical operations rather than in running the financial and administrative tasks. A paternalistic management approach is usually adopted in dealing with the employees, who are often recruited from the family or close friends. Such an entrepreneur has no strong prior ambition to start his own business, rather he is pushed into business by catalyst events such as the unavailability of viable alternatives to earn income or the need to further develop his talent. In some cases, he starts on a part-time basis. At the start-up stage, the craftsman typically does not seek loans from banks or give much attention to marketing, which is often done through personal contact. He is commonly not affiliated to any organization. With limited management skills, Craftsman-entrepreneur exhibits little flexibility or confidence in his ability to deal with the economic and social environment.

Opportunist-entrepreneur typically comes from a middle class family who usually already own a small business. His education level is relatively higher than the craftsman and sometimes rises to degree level. The opportunist's technical skills are mixed with management knowledge. He is ambitious and waits eagerly for the opportunity to start his business. Thus, no catalyst events are needed. The opportunist-entrepreneur is flexible and uses all available means to raise capital (banks, family and friends, money lenders, etc.). He is open-minded, a risk taker and may start his business in an unfamiliar trade or location where a profitable opportunities and growth prospects appear. Usually, an active policy for marketing is used. The manager-employee relationship is impersonal and non-paternalistic. In contrast to the craftsman, he is willing to delegate some of his responsibilities to others.

Inventor-entrepreneur (or the boffin) in the third type and he is characterized by being particularly highly educated and is mainly motivated by the frustration that his/her ideas or scientific achievements do not receive the attention they deserve. The sheer pleasure of seeing his ideas realized pushes him into business. More attention is paid to production rather than to financial or marketing aspects of the business.

[3] One should be aware that not all firms were established in the same year. Some firms were new, less than one year old, whilst others were already six years old at the time of the survey.

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APPENDICES

APPENDIX 1

1- LIST OF VARIABLES

SPSS for MS WINDOWS Release 6.0

FIRMFORM	FIRM FORMATION RATE.
NESTWONE	% OF ESTABLISHMENTS EMPLOYING ONLY ONE WORKERS.
NEST2T9	% OF ESTABLISHMENTS EMPLOYING BETWEEN 2-9 WORKERS.
NEST1049	% OF ESTABLISHMENTS EMPLOYING BETWEEN 10 -49 WORKERS
NESTM50	% OF ESTABLISHMENTS EMPLOYING 50 AND MORE WORKERS
CHAVERSZ	% CHANGE IN AVERAGE FIRM SIZE 1976-86
NEMPM50	NO OF EMPLOYMENT IN ESTABLISHMENTS WITH 50 WORKERS AND MORE
URBINDEX	% OF URBAN POPULATION IN 1986
POPDENSI	POPULATION DENSITY IN 1986
MAGTPROF	% OF POPULATION (6+) IN MANAGERIAL AND PROFESSIONAL JOBS IN 1986
SELFEMPL	% OF POPULATION (6+) IN SELF EMPLOYMENT IN 1986
MANUFEMP	% OF POPULATION (6+) IN THE MANUFACTURING SECTOR IN 1986
POPAGRIC	% OF POPULATION (6+) IN THE AGRICULTURAL SECTOR IN 1986
SEEKWORK	% OF POPULATION (6+) SEEKING WORK IN 1986
HIGHDEGR	% OF POPULATION (10+) WITH UNIVERSITY OR HIGHER DEGREES IN 1986
NOQUALIF	% OF POPULATION (10+) ILLITERATE IN 1986
READWRIT	% OF POPULATION (10+) WITH LESS THAN ABOVE INTERMEDIATE SCHOOL LEVEL IN 1986
LANDPERS	POPULATION SHARE OF AGRICULTURE LAND
OWNLAND	RATIO BETWEEN NUMBER OF OWNERS AND AGRICULTURAL LAND OWNED
TOTPOP	TOTAL POPULATION IN 1986 (,000)
LOCQUOT	LOCATION QUOTIENT
HHOWNHOU	% OF HOUSEHOLDS WHO OWN HOUSES IN 1986
VACANTB	% OF VACANT BUILDINGS IN 1986
PRIVSECT	% OF POPULATION WORKING IN THE PRIVATE SECTOR IN 1986
PUBLSECT	% OF POPULATION WORKING IN THE PUBLIC SECTOR IN 1986
WATERNET	% OF POPULATION CONNECTED TO WATER NETWORK IN 1986
ELECTNET	% OF POPULATION CONNECTED TO ELECTRICITY NETWORK IN 1986
EMPSERVI	% OF POPULATION WORKING IN FIN,INSUR,REAL ESTATE & BUSINESS SERVICE 1986
ESTB1976	% OF ESTABLISHMENTS SET UP BEFORE 1976
EST76T86	% OF ESTABLISHMENTS SET UP BETWEEN 1976-1986
EMPGRORT	EMPLOYMENT GROWTH RATE IN ESTABLISHMENTS (1976-1986).
EMPABSCH	EMPLOYMENT CHANGE (1976-1986) IN ABSOLUTE NUMBER
NETEMPCH	NET EMPLOYMENT CHANGE
CASES	NUMBER OF CASES
LOCATION	NAME OF THE REGION/DISTRICT

Table A.1: Correlation coefficients between firm formation rates (1986-1991) and the independent variables at the national level (Egypt) (All variables).

Independent Variables	R	R(sq)	SE	Sig(t)
-Firm Size				
X1: NESTWONE	-0.1558	0.0243	0.4178	0.4470
X2: NEST2T9	0.4556	0.2076	0.3765	0.0193
X3: NEST1049	-0.0329	0.0010	0.4227	0.8730
X4: NESTM50	0.0163	0.0002	0.4229	0.9337
X5: CHAVERSZ	-0.1666	0.0277	0.4171	0.4159
X6: NEMPM50	0.0163	0.0003	0.4229	0.9371
-Urbanization				
X7 : URBINDEX	0.2013	0.0406	0.4143	0.3239
X8 : POPDENSI	0.4017	0.1614	0.3873	0.0419
-Occupation				
X9: MAGTPROF	0.1118	0.0125	0.4203	0.5804
X10: SELFEMPL	0.0048	0.0000	0.4230	0.9816
X11: MANUFEMP	0.4280	0.1833	0.3823	0.0291
X12: POPAGRIC	-0.3063	0.0939	0.4027	0.1280
-Education				
X13: HIGHDEGR	0.3086	0.0953	0.4023	0.1250
X14: READWRIT	0.3702	0.1370	0.3929	0.0627
X15: NOQUALIF	-0.3769	0.1420	0.3918	0.0577
-Sectoral migration				
X16: LANDPERS	0.1815	0.0329	0.3894	0.3850
X17: OWNPLAND	0.3962	0.1570	0.3884	0.0451
-Market demand				
X18: TOTPOP	0.2140	0.0458	0.4132	0.2937
-Unemployment				
X19: SEEKWORK	0.1788	0.0319	0.4162	0.3821
-Specialization				
X20: LOCQUOT	0.4145	0.1718	0.3849	0.0353
-Capital availability				
X21: HHOWNHOU	0.1182	0.0139	0.4200	0.5651
-premises availability				
X22: VACANTB	0.1431	0.0204	0.4186	0.4856
-Local autonomy				
X23: PRIVSECT	-0.1092	0.0119	0.4205	0.5952
X24: PUBLSECT	0.0313	0.0009	0.4228	0.8793
-Infrastructure				
X25: WATERNET	0.4853	0.2355	0.3498	0.0120
X26: ELLECNET	0.3510	0.1232	0.3961	0.0787
X27: EMPSERVI	0.2637	0.0695	0.4080	0.1930
-Investment age				
X28: ESTB1976	-0.0750	0.0056	0.4218	0.7157
X29: EST76T86	0.1640	0.0269	0.4172	0.4232
-Employment growth				
X30: EMPGRORT	0.0941	0.0088	0.4231	0.6546
X31: EMPABSCH	0.3963	0.1570	0.3883	0.0450
X32: NETEMPCH	0.0634	0.0040	0.4222	0.7583

Table A.2: Correlation coefficients between firm formation rates (1986-1991) and the independent variables at the regional level (the Sharkia region) (All variables).

Independent Variables	R	R(sq)	SE	Sig(t)
-Firm size				
X1: NESTWONE	-0.5443	0.2962	0.4415	0.0359
X2: NEST2T9	0.4966	0.2466	0.4568	0.0597
X3: NEST1049	0.5723	0.3275	0.4316	0.0258
X4: NESTM50	0.3768	0.1419	0.4875	0.1662
X5: CHAVERSZ	0.1605	0.0257	0.5195	0.5676
X6: NEMPM50	0.6424	0.4127	0.4033	0.0098
-Urbanization				
X7: URBINDEX	-0.1117	0.0124	0.5230	0.6918
X8: POPDENSI	0.8136	0.6619	0.3061	0.0002
-Occupation				
X9: MAGTPROF	0.6489	0.4211	0.4004	0.0089
X10: SELFEMPL	-0.5803	0.3367	0.4287	0.0233
X11: MANUFEMP	0.5802	0.3366	0.4287	0.0234
X12: POPAGRIC	-0.5675	0.3221	0.4333	0.0273
-Education				
X13: HIGHDEGR	0.6851	0.4694	0.3834	0.0048
X14: READWRIT	0.4705	0.2214	0.4645	0.0767
X15: NOQUALIF	-0.4861	0.2363	0.4600	0.0662
-Market demand				
X16: TOTPOP	0.7596	0.5771	0.3423	0.0010
-Unemployment				
X17: SEEKWORK	0.0105	0.0001	0.5263	0.9704
-specialization				
X18: LOCQUOT	0.6901	0.4762	0.3809	0.0044
-Capital availability				
X19: HHOWNHOU	-0.8206	0.6734	0.3008	0.0002
-Premises availability				
X20: VACANTB	0.2344	0.0549	0.5117	0.4004
-Local autonomy				
X21: PRIVSECT	-0.6132	0.3760	0.4157	0.0151
X22: PUBLSECT	0.3343	0.1117	0.4960	0.2233
-Infrastructure				
X23: WATERNET	0.0296	0.0008	0.5261	0.9164
X24: ELLECNET	0.4068	0.1655	0.4808	0.1323
X25: EMPSERVI	0.5297	0.2806	0.4464	0.0422
-Investment age				
X26: ESTB1976	0.1407	0.0198	0.5211	0.6170
X27: EST76T86	-0.1425	0.0203	0.0203	0.6124
-Employment growth				
X28: EMPGRORT	0.2347	0.6551	0.5311	0.5181
X29: EMPABSCH	0.8495	0.7216	0.2882	0.0019
X30: NETEMPCH	0.4498	0.2023	0.4879	0.1920

Multiple Regression Results

At the National Level:

Listwise Deletion of Missing Data
N of Cases = 26

Equation Number 1 Dependent Variable.. FIRMFORM FIRM FORMATION RATE

Block Number 1. Method: Stepwise Criteria PIN .0500 POUT .1000
POPDENSI NOQUALIF LOCQUOT WATERNET SECTMIG NEST2T9 EMPABSCH

Variable(s) Entered on Step Number
1.. WATERNET % OF POP CONNECTED TO WATER NETWORK

Multiple R	.48532
R Square	.23553
Adjusted R Square	.20368
Standard Error	.36987

Analysis of Variance

	DF	Sum of Squares	Mean Square
Regression	1	1.01157	1.01157
Residual	24	3.28322	.13680

F = 7.39446 Signif F = .0120

---------- Variables in the Equation ----------

Variable	B	SE B	95% Confdnce	Intrvl B
WATERNET	1.017401	.374144	.245206	1.789596
(Constant)	-.326507	.264985	-.873410	.220396

---------- Variables in the Equation ----------

Variable	T	Sig T
WATERNET	2.719	.0120
(Constant)	-1.232	.2298

End Block Number 1 PIN = .050 Limits reached.

Equation Number 1 Dependent Variable.. FIRMFORM FIRM FORMATION RATE

Casewise Plot of Standardized Residual

*: Selected M: Missing

Case #	-3.0 0.0 3.0	FIRMFORM	*PRED	*RESID
1	. . * .	1.18	.6360	.5440
2	. * .	.68	.6685	.0115
3	. * . .	.30	.6431	-.3431
4	. * . .	.01	.3501	-.3401
5	. . * .	1.47	.6227	.8473
6	. *. .	.31	.4650	-.1550
7	. . * .	1.26	.3145	.9455
8	. . * .	.53	.2921	.2379
9	. *. .	.41	.4772	-.0672
10	. * . .	.04	.4142	-.3742
11	. *. .	.17	.2799	-.1099
12	. * . .	.11	.3653	-.2553
13	. . * .	.60	.3521	.2479
14	. * . .	.05	.3389	-.2889
15	. *. .	.15	.3236	-.1736
16	. * . .	.05	.5230	-.4730
17	. * .	.06	.1191	-.0591
18	. .* .	.31	.2046	.1054
19	. * .	.09	.0754	.0146
20	. * .	.03	.0265	3.4691E-03
21	. * . .	.26	.4956	-.2356
22	. .* .	.68	.5515	.1285
23	. * . .	.03	.5424	-.5124
24	. *. .	.06	.1303	-.0703
25	. . * .	.69	.4111	.2789
26	. .* .	.00	-.0925	.0925
Case #	-3.0 0.0 3.0	FIRMFORM	*PRED	*RESID

At the Regional Level:

Listwise Deletion of Missing Data
No of Cases = 15
Equation Number 1 Dependent Variable.. FIRMFORM FIRM FORMATION RATE

Block Number 1. Method: Stepwise Criteria PIN .0500 POUT .1000
NEST1049 POPDENSI SELFEMPL PRIVSECT HIGHDEGR TOTPOP EMPSERVI
LOCQUOT HHOWNHOU

Variable(s) Entered on Step Number
1.. HHOWNHOU % OF HOUSEHOLDS WHO OWN HOUSES IN 86

Multiple R	.82060
R Square	.67338
Adjusted R Square	.64825
Standard Error	.30083

Analysis of Variance

	DF	Sum of Squares	Mean Square
Regression	1	2.42550	2.42550
Residual	13	1.17648	.09050

F = 26.80156 Signif F = .0002

---------- Variables in the Equation ----------

Variable	B	SE B	95% Confdnce Intrvl B	
HHOWNHOU	-6.190436	1.195752	-8.773702	-3.607170
(Constant)	6.151807	1.010610	3.968517	8.335097

---------- Variables in the Equation ----------

Variable	T	Sig T
HHOWNHOU	-5.177	.0002
(Constant)	6.087	.0000

Variable(s) Entered on Step Number
2.. NEST1049 NO OF ESTABLISHMENTS EMPLOYING BETWEEN

Multiple R	.90926
R Square	.82675
Adjusted R Square	.79788
Standard Error	.22804

Analysis of Variance

	DF	Sum of Squares	Mean Square
Regression	2	2.97794	1.48897
Residual	12	.62403	.05200

F = 28.63250 Signif F = .0000

---------- Variables in the Equation ----------

Variable	B	SE B	95% Confdnce Intrvl B	
HHOWNHOU	-5.481365	.932171	-7.512392	-3.450338
NEST1049	77.280729	23.710474	25.620049	128.941409
(Constant)	5.145224	.825991	3.345544	6.944904

---------- Variables in the Equation ----------

Variable	T	Sig T
HHOWNHOU	-5.880	.0001
NEST1049	3.259	.0068
(Constant)	6.229	.0000

End Block Number 1 PIN = .050 Limits reached.

Casewise Plot of Standardized Residual
*: Selected M: Missing

Case #	-3.0 0.0 3.0	FIRMFORM	*PRED	*RESID
27	. * .	2.25	2.2392	.0108
28	. * . .	.77	.8851	-.1151
29	. *. .	.96	1.0137	-.0537
30	. * .	.77	.7754	-5.4280E-03
31	. .* .	1.45	1.3559	.0941
32	. . * .	.83	.6532	.1768
33	. * . .	.71	.9582	-.2482
34	. * . .	.72	1.0229	-.3029
35	. . * .	1.41	1.2147	.1953
36	. * . .	.58	.7544	-.1744
37	. . * .	1.35	1.0572	.2928
38	. . * .	.85	.5226	.3274
39	. * . .	.33	.6926	-.3626
40	. . * .	.85	.7053	.1447
41	. * .	.20	.1796	.0204
Case #	-3.0 0.0 3.0	FIRMFORM	*PRED	*RESID

APPENDIX 2

Cluster Analysis

Four basic steps characterise all cluster analysis. These are: the selection of the sample, the definition of the set of variables to be used, the computation of similarities between cases, and then the creation of groups of similar characteristics. In this context, a few precautionary generalizations about cluster analysis should be mentioned:

- Cluster analysis is based, to some extent, upon heuristic and reasoning procedures. Hence in most cases, subjectivity is involved in the group formation.
- Cluster analysis is used in and evolved from many disciplines and therefore is subjected to biases of different disciplines resulting from the different questions asked and the type of data and classification sought.
- The use of different variables and methods can produce different solutions for the same data set.

In social sciences, the convention is to describe the data set as a matrix consisting of 'N' cases (rows) and 'M' variables (columns). The choice of variables to be used in the analysis is one of the most critical steps in the classification process. Variables are ideally selected within the context of explicitly stated theory. However, the collection of as many variables as possible in the hope that the structure will emerge is dangerous because of the heuristic nature of the analysis and the standardization of data, weighing and transformation of variables for the analysis.

The concept of similarity and the procedures of the analysis are far from simple. The quantitative estimation of similarity has been dominated by the concept of metrics: this approach to similarity represents cases as points in a coordinate space such that the observed similarities, and dissimilarities of the points correspond to metric distances between them.

There are a number of different distance measures of association between data: such as correlation coefficient and Euclidean distance. For nominal variables another set of distance measures of association is used such as Chi- square, Phi-square, and Lambda measures (Anderberg 1973).

One of the most often used methods in cluster analysis is the hierarchical agglomerative method. This method searches for an (N*N) similarity matrix and sequentially merges the most similar cases. The sequence of merging of clusters can be visualized by a tree diagram (dendrogram). At the lowest level of the tree all cases are independent and treated as individual clusters and at the last level all are joined in one large group.

Each cluster can be subsumed as a member of a larger and more inclusive cluster at a higher level of similarity. Problems of this method are: the storage and the calculation of similarities for a large number of cases, making only one pass through the data, can generate different solutions simply by reordering the data in the similarity matrix.; and clusters may not be stable when cases are dropped out of the analysis.

Some of the techniques used in grouping in hierarchical clustering are the single linkage, complete linkage, average linkage between and within groups, centroid, and ward methods. Since the merging of clusters at each step depends on the distance measure, different distance measures can result in a different cluster solution for the same cluster method.

The data were analysed using the BMPD statistical package. The phi-square (known as the mean square contingency) measure was used. The hierarchical clustering method was used and the cases were clustered based upon the distance between centroids or mean vectors. At each stage the two

clusters with the most similar mean vectors or centroids are merged; the centroids are weighted equally regardless of how many cases are in the cluster and the distance between two centroids is measured by the squared Euclidean distance.

Table A. 3: Characteristics of the four types of entrepreneur.

MANAGER	TECHNICIAN	ARTISAN	FOREMAN
-Education Highly educated (university)	Technical and inter- mediate education	Limited education (school level)	No qualifications and School drop- outs
-Firm size Large firm size (11+ workers)	Small size (less than 10 workers)	Very small size (1 or no workers)	Small size (less than 10 workers)
-Management skills Advanced labor organization	Mixing division of labor and no division	NA	All participate in the work
-Market Serve a larger market (private and public sectors and general public, export)	Limited market (private and general public)	Very limited (general public)	Limited market (private and public)
Produce for open market and on order	on order and to less extent market	predominantly on order	mix
-Advertising methods Use the media	Personal relation- ships	Personal relation- ships and the products reputation	products reputation
-Impact on the economy High contribution to job generation	(Job Creation) Limited contribution	Insignificant contribution	Limited contribution

Source: Data analysis.

Table A. 4: Percentage of entrepreneurs within each type of entrepreneur by education level, settlement-type, type of labor organization and size of firm (N=110).

	Manager	Technician	Artisan	Foreman	Total
Education levels					
No qualification	-	-	-	28.3	13.6
School drop-out	-	-	33.3	47.2	24.5
Essential education	-	-	33.3	20.8	11.8
Secondary school	11.4	6.3	-	1.9	5.5
Technical diploma	11.4	75.0	33.3	1.9	17.3
Vocational school	2.9	12.5	-	-	2.7
University	74.3	6.3	-	-	24.5
Location					
New settlement	85.7	-	-	1.9	28.2
Urban centers	14.3	75.0	16.7	69.8	50.0
Rural areas	-	25.0	83.3	28.3	21.8
Labor organization					
Specific task	51.4	43.7	-	20.8	32.7
All participate	22.9	12.5	-	41.5	29.1
Both	25.7	43.8	-	37.7	32.7
Not applicable	-	-	100.0	-	5.5
Employment size					
1 - 10	11.4	93.7	100.0	88.7	65.5
11 - 25	48.6	6.3	-	9.4	20.9
26 - 50	40.0	-	-	1.9	13.6
Total	31.8	14.5	5.5	48.2	100.0
No	35	16	6	53	110

Source: Data analysis

APPENDIX 3

LOGISTIC REGRESSION ANALYSIS

Logistic Regression Analysis is a useful tool to identify the variables that are important in predicting the probability that an event occurs (Homer and Lemeshow 1989). It also serves as a basis for classifying cases into one of the two groups already predetermined from a survey. The key empirical variable that the model seeks to explain is the probability of a particular decision being chosen and what variables are probably the most influential.

In logistic regression analysis all cases with missing values should be excluded. When there is evidence that missing values are associated with some particular characteristics of the cases, one should consider the possibility of eliminating these variables from the analysis.

The objective in Logistic regression, is to estimate the probability of an event occurring on the basis of a set of independent variables. In our application, the 'event' is that an entrepreneur makes a location search.

Under the logistic regression model, this probability is:
P (event occurring (X1 X2.....X3)) = 1 / 1+ e -z or (e z / 1 + e z)
where Z is the linear discriminant model

$$Z = Bo + B1\ X1 + B2\ X2 + \ldots\ldots + Bp\ Xp$$

and X1, X2,..., Xp. are the independent variables. The value of 'e' is equal 2.718. The probability of the event not occurring is

P (event not occurring (X1, X2,.....Xp))
= 1 - P (event occurring (X1, X2,.... Xp)).
= 1 / 1 + e z

The parameters of the logistic regression model, which are the coefficients Bo, B1, ..., Bp may be estimated from the data. The probability estimate is always between 0 and 1. Parameters can be estimated using the maximum likelihood method. That is the coefficient that make our observed results most likely are selected.

The percentage of cases classified correctly is often taken as an index of the effectiveness of the model. A disadvantage is that it does not show the estimated probability for cases in the two groups. Therefore, another indicator is the visualization of the predicted probability group on a histogram; the more the two groups cluster at their respective ends, the better the model fits the data, and the more the groups are separated.

One desired objective of the analysis is the identification of good predictor variables. As in multiple regression analysis, variable selection algorithms (i.e. forward stepwise entry, backward elimination, and enter all) can be used depending on the objectives of the study. None of the algorithms result in a best model in any statistical sense, being as practical approximations for considering all combination of all independent variables. Also the model may fit well for a particular sample but not the whole population. In this study, the forward stepwise is used.

In order to arrive at a good model in a stepwise selection, a variety of potentially useful variables are included from the data set. Variables are included when they have the largest acceptable value of the selection criterion and then tested according to a removal criterion. Variable selection terminates when no more variables meet entry or removal criteria.

There are a number of selection criteria: Roa's statistic score, Wald statistics and change in the likelihood. The Roa's score statistic is often used for the selection of the variables. In the stepwise method, variables with significance of statistic score less than 0.05 enter the model and

are then tested for removal. A variable is removed when the observed significance level for the Rao's statistics score exceeds 0.1.

One major advantage of logistic regression analysis in SPSS/PC+ is its ease in dealing with categorical variables (nominal or binary). When a variable has more than two categories, the logistic regression automatically creates new binary indicator variables to represent various categories. The number of new variables required to represent a categorical variable is one less the number of categories. Nonetheless, the interpretation of the coefficients becomes more difficult with the increase in the number of categories.

LOGISTIC REGRESSION RESULTS

Number of selected cases: 116
Number rejected because of missing data: 11
Number of cases included in the analysis: 105

Dependent Variable Encoding:

Original Value	Internal Value
1	0
2	1

	Value	Freq	Parameter Coding (1)
SGENPUB1			
NO	1	31	1.000
YES	2	74	.000
KEEPREC			
NO	1	71	1.000
YES	2	34	.000
SPRIVIN1			
NO	1	75	1.000
YES	2	30	.000
SPRIVMOR			
NO	1	74	1.000
YES	2	31	.000
EDUCLEV			
NO QUALIFIC OR ILLITERATE	1	44	1.000
SCH LEAVER	2	61	.000

Dependent Variable.. SEARALTE SEARCH FOR ALTERNATIVE LOCATION

Variable(s) Entered on Step Number
1.. EDUCLEV EDUCATION LEVEL

	Chi-Square	df	Significance
-2 Log Likelihood	119.467	103	.1277
Model Chi-Square	17.979	1	.0000
Improvement	17.979	1	.0000
Goodness of Fit	104.976	103	.4273

Classification Table for SEARALTE

		Predicted NO N	YES Y	Percent Correct
Observed				
NO	N	38	29	56.72%
YES	Y	6	32	84.21%
		Overall		66.67%

---------- Variables in the Equation ----------

Variable	B	S.E.	Wald	df	Sig	R
EDUCLEV(1)	-1.9435	.5085	14.6059	1	.0001	-.3028
Constant	.0984	.2564	.1474	1	.7010	

Table A. 5: Characteristics of firms predicted differently by the model than observed or predicted correctly

Variables	Group 1 N=6	Group 2 N=32	Group 3 N=29
-LOCATION OF THE FIRM			-
New settlement	46.9	27.6	
Urban	43.8	44.8	100.0
Rural	9.4	27.6	-
-TOTAL NUMBER OF EMPLOYEES			
less than 10	53.1	55.2	100.0
10- 25	31.3	31.0	-
26 and more	15.6	13.8	-
-EDUCATION LEVEL			
No qualification	-	-	33.3
School drop-outs	-	-	66.7
Essential education	18.8	24.1	-
Secondary school	12.5	6.9	-
Technical diploma	28.1	31.0	-
Vocational school	3.1	6.9	-
University degree	37.5	31.0	-
-CLUSTER OF ENTREPRENEURS			
Manager	50.0	42.9	-
Technician	25.0	25.0	-
Foreman	3.1	10.7	-
Artisan	21.9	21.4	100.0
-SELL TO PRIV SECT IN ONE REGION*			
Yes	37.5	34.5	16.7
-SELL TO PRIVATE SECTOR IN MORE THAN ONE*			
Yes	50.0	41.4	-
-SELL TO PUBLIC OR GOV SECT IN ONE REGION*			
Yes	18.8	20.7	16.7
-SELL TO PUBLIC OR GOV SECT IN MORE THAN*			
Yes	15.6	27.6	-
-SELL TO GENERAL PUBLIC IN ONE REGION*			
Yes	53.1	72.4	83.3
-SELL TO GENERAL PUBLIC IN MORE THAN ONE*			
Yes	31.3	34.5	16.7
-EXPORT*			
Yes	0	10.3	-
-KEEP RECORD*			
Yes	50.0	44.8	-
-TYPE OF LABOR ORGANIZATION			
Specific tasks	40.6	42.9	20.0
All participate	34.4	10.7	40.0
Both	21.9	35.7	40.0
Not applicable	3.1	10.7	-

Group 1 consists of those entrepreneurs that searched and predicted correctly.
Group 2 consists of those entrepreneurs that did not search and predicted as searchers.
Group 3 consists of those firms that searched and predicted as non-searchers.
* Percentage of entrepreneurs of the total within each group.

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