The Growth Paths of Small Business in A Competitive Global Economy: The Network Perspective in the Context of the Clothing Manufacturing Industry in Durban

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DECLARATION

This thesis is an original work of the undersigned. It has never been submitted in any form to any institution for any degree other than the University of Kwazulu-Natal.

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Kwame Owusu-Ampomah

DEDICATED TO MY

Late father, Kwabena Ampomah
And my
Mother, Yaa Akyama

ACKNOWLEDGEMENTS

A project of this nature is not likely to happen without the help of other people, either as individuals or as a collective. It will thus be remiss on my part not to acknowledge them at the end of it all. First and foremost I want to thank, profusely, Professor Jeff McCarthy, my promoter, whose dedication, patience and love for academic excellence were critical for the successful completion of this project. It has been a privilege working with Professor McCarthy, and my indebtedness to him is not only in relation to the successful completion of this project but also, and more significantly, for his immense role in my academic and personal development over the last seven years or so. Over these years, my relationship with Prof. McCarthy, which began purely as academic relationship, has crystallized into a personal relationship, and this has been a wonderful experience, which will significantly underpin both my academic career and personal life.

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ABSTRACT

One of the most enigmatic phenomena to explain in social and business sciences is the functioning and economic growth of organisations and national economies. This is testified by the several theoretical frameworks, which, with varying degrees of success, attempt to unravel the growth puzzle. This dissertation focuses on the network theory, with particular reference to small business growth in the contemporary competitive global economy. The primary focus is the isolation thesis which maintains that although small business growth is constrained by a number of factors, isolation rather than size is the key problem and that the answer lies in *networking* and *clustering*. Hypothesising that fraternal network is the most significant type of network for small business growth, the dissertation investigates the structural properties of networks in relation to the performance of the small clothing manufacturing enterprises (SCMEs) in the Durban Metropolitan Area (DMA).

Combining qualitative and quantitative research approaches, descriptive network data and hermeneutic analyses, the dissertation argues that the growth and development of small business may be understood by the framework of relationships between the scopes of fraternal and factor networks, the medium of communication and the human factor. The dissertation empirically confirms the isolation thesis and the widely documented view that networks have positive impact on business performance although they could also be detrimental. The study finds that although clustering may be necessary it is certainly not a sufficient condition for inter-firm co-operation and joint action to a level that promotes individual firm performance and collective efficiency.

The study argues that the widely documented poor performance of the clothing industry in the Durban Metropolis is, to a large extent, due to inadequate network relationships. The observed minimal network relationships among the sampled firms is largely the result of human factor decay manifesting as mistrust, selfishness, dishonesty, greed etc. Conceding that human factor decay is largely a consequence of the process of modernisation or the transition from *Germeinschaft (Community)* to *Gesellschaft (Association)*, the dissertation maintains that human factor decay among the sampled

SCMEs is exacerbated by the apartheid system, which undermined social and economic relationships.

Of the three types of networks identified in the literature – factor, fraternal and communication networks - the study confirms the latter as the most significant to SCMEs in Durban. The study also confirms the view that the use of electronic networks or new information and communication technologies (ICTs) contributes significantly to economic performance. Although reverse causality is a possibility, the dissertation concludes that small firms are likely to be better off through increased electronic connectivity, as compared to face-to-face (FTF) interactions. By this finding and conclusion the study, on one hand, fails to confirm the hypothesis that fraternal networks are the most significant types of networks among the SCMEs in Durban. On the other hand, it confirms Castells' theory of a universal trend of social change towards a network society, a global informational economy and a culture of 'real virtuality'. The impact of ICTs use on the effectiveness and efficiency of networks, however, depends on the scope of networks but more importantly, on the *human factor* (HF) i.e., appropriate human personality traits, e.g., information management skills and knowledge, trust, honesty, reciprocity, loyalty and creativity.

In the concluding chapter, the dissertation explores the policy implications of the findings and offers recommendations that could inform trade and industrial policy for small business growth and development through the network perspective.

PART I

INTRODUCTION

CHAPTER 1

INTRODUCTION

1.1. Growth of Firms, Industrial Districts and Business Networks

The attention given to the growth and development of small firms, in recent years, is not baseless. A firm's growth does not only confer prestige, honour and pecuniary gains to individual investors or entrepreneurs but also contributes to economic growth and development. The latter may be particularly significant in times of acute and persistent unemployment which, quite often, does not only lead to economic hardships and a fall in the standard of living but also has the potential to foster social discontent, crime, moral decadence and political instability.

Notwithstanding this, small firms, particularly, small manufacturing enterprises (SMEs) are constrained by lack of access to finance, technology, raw materials and components, product markets and inadequate government support especially in South Africa, as in many developing countries. SMEs in these countries also face high input costs, a hostile business environment characterised by debilitating tax system and legal framework, a host of managerial problems, high wages and strong unions, and above all the impact of globalisation (IDS, 1997).

These are critical barriers to the growth and development of SMEs, and have been, justifiably, quintessential to the debate on small business growth and development. However, in this study attention is focused on the thesis that the isolation of SMEs rather than size is the key problem, and that the answer lies in networking and clustering (IDS, 1997). In other words, networks, inter-firm co-operation and clustering are catalytic to the growth of firms. Orthodox literature on economic organisation, organisational development and industrial sociology emphasises that the concentration of many businesses of similar character in a given geographic location – an *industrial district* - often secures significant external economies and inter-firm co-operation to the firms. This in turn enhances individual performance and the collective efficiency of firms in an industry or a cluster (Marshall, 1920, Nadvi, 1997, 1999; Nadvi and Schmitz, 1999).

The usual point of reference of successful clusters has been the Italian experience. In the 1960's and 1970s, there was a surge of growth in the Northeast and Central regions of Italy, areas not previously associated with strong industrial capacity. In these areas, clusters of small firms managed to break through export barriers to establish themselves in world markets for shoes, leather handbags, tiles, musical instruments and food processing. A cluster of leather shoes producing firms in the Sinos Valley, Brazil, and the surgical instrument firms in Sialkot, Pakistan, have seen similar achievements. Further examples can be located in India e.g. the textile and metalworking in Ludhiana, the engineering and electrical industries in Bangalore and the diamond industry in Surat. Mexico, Peru, Indonesia and Taiwan have also recorded remarkable successes (Piore and Sabel, 1984; IDS, 1997; Nadvi, 1999; Nadvi and Schmitz, 1999).

In contrast, although the clothing industry in Kwazulu-Natal exhibits the spatial attributes of the industrial district model it has not been able to achieve the successes associated with industrial districts. In the past decade or so, the clothing industry has been declining, with dire consequences on employment levels, environmental stability, and the growth and development of the economy. The industry is the hardest hit in the wave of job losses, which was severe in the period 1998 to 2001, when 33 963 jobs were lost - 22 700 in clothing, 5 700 in footwear and 3 800 in textiles. During this period KwaZulu-Natal lost 12 300 jobs, Western Cape 10 000, Gauteng 4 600, Eastern Cape 3 400 and Free State and Northern Cape 3 506 (*Indicator*, December 2001).

The decline of the clothing industry is often attributed to many factors. The factors include lack of technical and managerial skills, lack of capital and financial management skills and high input costs, largely due to high wages. Other factors usually mentioned are debilitating legal environment, low productivity and globalisation (Owusu-Ampomah, 1997:87-92).

> For many decades, the clothing industry was focused almost exclusively on the domestic market. Its biggest battle has been competition from cheaper imports, made cheaper still recently by the reduction of import tariffs in line with government's restructuring programme for the industry. With the exception of a handful of skilled entrepreneurial operators, the South African textile industry, facing similarly inwards, was almost eradicated by import substitution. Homemade products were simply swamped by cheap imports that rendered local competition, with its relatively short runs,

> uncompetitive. The clothing industry has also been forced to rationalise and modernise. Many small manufacturers have either closed down or moved to lower-wage areas. Bigger players have downsized (*Indicator*, December 2001:2).

A number of studies (e.g., Prinsloo, 1995; Harrison, 1996; Owusu-Ampomah, 1997; Kaplinsky and Morris, 1998) suggest that the downward trend of the clothing industry in South Africa is partly due to inadequate inter-firm co-operation and networking within the industry. There is little evidence of the level of co-operation and networking associated with successful industrial districts or clusters, e.g., Pakistan's Sialkot surgical instrument cluster (Nadvi, 1999) and the Italian clusters (Piore and Sabel, 1984:17). This does not enhance the opportunities for job creation in an industry, which, as a labour intensive industry, has the potential to reduce one of South Africa's major problems: unemployment.

1.1.1. Industrial Decline and Flexible Specialisation

From a broader perspective, the decline of the clothing industry has its roots in the country's industrial and trade policies, which in turn are a reflection of the interpretation of, and response to industrial decline in the west. The decline of the twentieth century British economy, for instance, is attributed to the failure of business enterprises to adapt to the new organisational principles that accompanied the emergence of mass production in America (Chandler, 1977; Elbaum and Lazonick, 1987; Best, 1990). For the American industry, the managerial gospel of big business (Hayes and Abernathy, 1983:523) and/or the rigid command and control production organisation (Best, 1990:7), which characterised mass production capitalism, were the main factors of industrial decline.

The antidote to industrial decline in the west, as Piore and Sabel (1984) suggested, was *flexible specialisation* –

> a strategy of permanent innovation: accommodation to ceaseless change, rather than an effort to control it. This strategy is based on flexible – multi-use – equipment; skilled workers; and the creation, through politics, of an industrial community that restricts the forms of competition to those favoring (sic) innovation (Piore and Sabel, 1984:17),

which soon became a dominant economic theme to influence much of the economic policies of countries world-wide, including South Africa.

In 1995, the new South African government promulgated its White Paper on Small Business (WPSB) (Republic of South Africa, 1995). Although the WPSB goes a long way to provide a vision for the growth and development of small business it has proven to provide only a mild support for the small business sector. It has failed to vigorously pursue the relevant elements that create an enabling environment for small business, especially congenial inter-firm relations and effective networks, which are invariably associated with flexible specialisation (Piore, 1992). Areas of omission such as network brokerage are yet to receive critical attention. Yet, in a previous study (Owusu-Ampomah, 1997) it was observed that the survival of the clothing manufacturing industry largely depended on the ability of the firms to transform themselves into "networks of technologically sophisticated, highly flexible manufacturing firms" (Humphrey and Schmitz, 1996:1862). It was also observed that the clothing-manufacturing firms had to prioritise style/design, improved productivity and quality, speed of innovation and speed of response rather than price.

Thus far, the perception that big business reflects the realities of the South African economy, described as a minerals-energy complex (Fine, 1995), while largely true, poses the danger of distracting attention from small business development. The tendency to hold on to the minerals-energy complex notion does not only valorise static theory; it also fails to acknowledge that since the 1970s (or even earlier), there have been sectoral changes in the economy, which have rendered the primary sector - mining and agriculture – less significant than it was 40-50 years ago. While the industrial sector rose until the 1980s, stabilised and, is now declining slightly, the services sector has been rising spectacularly. Some observers believe that these sectoral changes and increase in labour productivity arising from greater use of technology, have resulted in a decline in demand for unskilled labour, and hence, the persistence of unemployment and its attendant problems of poverty.[1] This line of argument suggests a focus on education and training, within the framework of new policies on growth (Dasnois, 2000:1). It is argued that the new growth policies will have to pay more dynamic attention to the entrepreneurial firm than the mild

support, hitherto, accorded them. This is deemed essential in an era of the New Competition (Best, 1990), which is "about seeking a competitive advantage by continuously upgrading product, process and organisation" (Best, 1990:144).

Applied to Japan, the New Competition (Best, 1990) manifests itself in three forms.

> It is Schumpeterian in that firms compete strategically by choosing the terrain of competition; firms may compete, for example, on the basis of price, product quality, technological process, or product innovation. It is Penrosian in that the firm is a learning organisation that is continuously creating new productive services by team work and experience, and it is Richardsonian in that inter-firm relations can be co-operative or market oriented" (Best, 1990:166).

From the global theoretical perspective, Castells (2000) provides a slightly different version of the New Economy (of the 1990s) in a general treatise on "network society". He describes it as "informational, global and networked". According to Castells (2000:77) "(i)t is the historical linkage between the knowledge-information base of the economy, its global reach, its network-based organisational form, and the information technology revolution that has given birth to a new, distinctive economic system". This form of the New Economy - in essence, globalisation - poses great challenges to small and medium enterprises (SMEs), particularly in Third World countries. SMEs in Third World countries have to compete, and strive for higher levels of productivity and profitability in a global market dominated by stand-alone or networked multinational co-operations (MNC).

1.1.2. SMEs and South Africa's Global Market Re-entry

For South Africa, the years of isolation - imposed by anti-apartheid sanctions – and the protective policies of the apartheid regime have made it harder for the SMEs to compete globally. Further, the small clothing manufacturing enterprises (SCMEs) in South Africa appear to be technologically deficient to participate effectively in the new global economic order and as such the local economy is less capable of responding to the new challenges and opportunities. To be productive, the new economic order also demands that firms need not be anywhere but must be somewhere, and particularly be part of larger distributed networks where place is a resource

not a burden (Gurstein, 2001). In other words, firms need to adjust themselves to the fast changing economic environment if they are to improve upon their performances. The question, however, is "What form should it take?" Although upgrading and networking are often cited in many contemporary business research reports, any answer to this question is not a *fait accompli.* Even so, many small firms, particularly in Durban's clothing-manufacturing sector do not appear to be interested in upgrading and networking. "Unless they know how good upgrading is, unless they know what the challenge is, no one would know how to upgrade them" (Owusu-Ampomah, 1997:126).

1.1.3. Trends in Growth Strategies

Against this backdrop, the Neo-classical theories of firm growth - at the heart of which is free market - do not appear to hold many prospects for the growth of small firms in the contemporary global economy. In the same breadth, there is no consensus on a single most effective approach to firm growth in this era of globalisation. What seems to be true, however, is that in the past sixty years or so attempts to explain firm or economic growth show a trend towards production imperatives focused on non-market competition. Instead of price or market regulation, these theories variously focus on innovation of products, methods and processes (Schumpeter, 1942), capital deepening and technological improvement (Solow, 1956). Internal dynamics characterised particularly by teamwork (Penrose, 1959), efficient economic organisation (North and Thomas, 1973; Simon, 1988, cited in Best, 1990) and flexible specialisation, (Piore and Sabel, 1984) have also come to the fore. From the mid-80s attention has shifted to knowledge systems and informatics, collective efficiency, business networks and/or social relations (Granovetter, 1985; Podolny, Stuart and Hannan, 1996; Nadvi, 1999; Humphrey and Schmitz, 1999; Humphrey and Nadvi, 1999; Bell and Albu, 1999; Castells, 2000; Rasiah, 2000).

In the past decade and a half, the quality of entrepreneurship and labour as embodied in the human factor paradigm (Adjibolosoo, 1995; Adu Febiri, 1997; Haucap, 1997; Adjibolosoo and Soberg, 2000), has been highlighted. Governments are also increasingly emerging as an important player in industrial growth in so far as social and economic policies promote

appropriate business environment. The legendary Asian Tiger's remarkable economic success is a case in point.

In recent times, firm growth strategies in the literature are more in the tradition of the New Economy than the old: Fordism and Taylorism, even in firms which still operate in the shadows of these forms of production. These strategies include "breaking compromises" (Stalk, Pecaut and Burnett, 1998), "diversification" (Markides, 1998), "value innovation" (Kim and Mauborgne, 1998), "acquisitions" (Anslinger and Copeland, 1998; Ashkenas, Demonaco and Francis, 1998), and "value chains" (Rayport and Sviokla, 1998; Kaplinsky and Readman, 1998; Kaplinsky, 2000). These strategies, it seems, pertain to conglomerates more than they do to small entrepreneurial firms. However, common to these and all other organisational forms e.g. the distinct (or not-so-distinct) production trajectories of mass production and flexible specialisation, and the New Competition (as interpreted by Best (1990) or Castells (2000)), inter-firm relations and networks are pertinent to performance. However, in this researcher's view, networking or no networking is not really the issue. "The *type* of networking that occurs is more important than whether or not networking of any sort occurs" (Casson, 2000:161).

> "There is 'good' networking and 'bad' networking as far as regional economic development is concerned. Good networking is typically open, transparent and entrepreneurial, and involves the provision of 'public goods' to industry. Bad networking is typically closed and opaque. It may involve politicians or anti-entrepreneurial social elites, although entrepreneurs may be implicated too. Bad networking is exemplified by 'rent-seeking lobbying' in which entrepreneurs combine with politicians to protect weak regional industries against external competition" (Casson, 2000:161).

For theoretical and practical purposes, therefore, an investigation into business network parameters and dynamics particularly network characteristics and performance is imperative.[2] This study undertakes this task in the context of the clothing-manufacturing industry, particularly in the Durban Metropolis, which is declining.

1.2. The South African Clothing Industry

The bulk of the South African clothing industry is concentrated in three provinces: Kwazulu-Natal, Gauteng and the Western Cape (Table 1.1). Within provinces, clothing manufacturing enterprises are clustered in specific areas. In Kwazulu Natal, for example, the main centres are Durban (Metro), Newcastle, Hammersdale, Isithebe, Ladysmith and Port Shepstone. In Western Cape the main centres are Cape Town (CMA), Paarl, Atlantis, Worcester and Wellington. Although official statistics are hardly reliable as a result of the state of flux of the economy and the industry in particular, Kwazulu Natal appears to have the highest number of manufacturing units (761) followed by Gauteng (670) and Western Cape (624).

Table 1.1: Main Manufacturing Centres of the South African Clothing and Textile Industries (MPCS Consulting)

Province	Main Manufacturing Centers	Number of Companies	
		Clothing / CMT*	Textiles
Western Cape	Cape Town (CMA), Paarl, Atlantis, Worcester, Wellington	624	117
Kwazulu-Natal	Durban (Metro), Newcastle, Port Shepstone, Hammarsdale, Isithebe, Ladysmith	761	194
Gauteng	Johannesburg, Pretoria, Nigel, Krugersdorp	670	117
Eastern Cape	Port Elizabeth, East London	141	53
Free State	Bloemfontein, Qua-Qua, Botshobelo	70	16
North West Province	Rustenburg, Brits, Hammanskraal, Rosslyn North	24	10
Northern Province	Pietersburg, Potgietersrus	16	9
Mpumalanga	Witbank, Standerton	24	8
Northern Cape	Kimberley, Upington	11	4
TOTAL		**2341**	**528**

* Note: Clothing / CMT category includes: Garments, Furnishings, Industrial (tents/tarpaulins etc.) and Embroidery

Source: Wesgro, 2002

The number of manufacturing units, as provided by MPCS consultants in Table 1.1, appears to present a fairly accurate distribution of clothing and textile production centres and density of the industry in South Africa as the figures represent production centres rather than separate legal entities. A vertically integrated textile and clothing company would be counted as two production units while a clothing manufacturing enterprise with two production centres (in different locations) would be counted as two production centres (WESGRO, 2002).

From the data in Table 1.2 there has been a consistent net decline in the number of clothing manufacturing firms in all the provinces from 1990 to 2001. The decline was steeper in the period 1995 to 2001, averaging almost 7% per annum as compared to the average decline of nearly 3% per annum over the period 1990 to 1995 (WESGRO, 2002).

Table 1.2: The Location Aspects of the South African Clothing Industry (Clofed)[3]

Year	Western Cape	KZN	Gauteng	OFS/Northern Cape	Total
1990	448	445	347	8	1248
1995	404	385	268	7	1064
1996	410	420	261	7	1098
1997	379	355	239	7	980
1998	361	301	226	6	894
1999	350	214	201	5	770
2000	351	186	179	6	722
2001	324	153	171	6	654
Growth of Firms					
Annual % 1990 – 1995	-1.97	-2.37	-4.98	-1.00	-3.08
Annual % 1995 – 2001	-3.55	-13.55	-7.16	-1.83	-7.64

Source: WESGRO, 2002.

The South African clothing industry, like the national economy, has been in a state of flux characterised by uncertainties, outsourcing to smaller clothing manufacturing enterprises described as cut, make and trim (CMT) operators, restructuring, informalisation, and casualisation and shedding of labour. Sales output, viewed together in nominal or constant (Rand) values, does not project an image of a growing industry. While export propensity and import penetration have increased significantly between 1995 and 2000 (Table 1.3), employment appears to be relatively constant although formal employment under the bargaining councils has significantly declined (WESGRO, 2002).

Regarding the decline in employment the hardest hit Provinces, as observed in Section 1.1., are Kwazulu Natal (over 50% loss) and Eastern Cape Province (more than 45% loss), compared to the overall employment decline of 40% for the country. As Table 1.3 shows, the official statistics indicate employment levels far exceeding those of the bargaining councils. As at January 2001,

for instance, the total official employment in the sector was over 200% of the bargaining councils' level of employment.

Table 1.3: Official and Bargaining Council Employment, 1995 - 2001 (Clofed, 2001)

	Total BARGAINING COUNCIL Employees							
Year and Month	**Western Cape**	**Kwazulu Natal**	**Gauteng**	**Eastern Province**	**OFS / Northern Cape**	**Total**	**Total Official Employment (DTI / Stats SA)**	**Official as % of Bargaining Councils**
January 1995	46,980	34,720	10,888	2,423	1,432	96,443	131,350	136%
January 1998	41,874	26,397	8,994	1,793	1,262	80,320	125,469	156%
January 1999	37,918	21,331	8,176	1,415	1,311	70,151	134,952	192%
January 2000	38,262	19,714	7,517	1,489	1,004	67,986	138,371	204%
January 2001	34,655	15,693	6,626	1,291	1,315	59,580	135,959	228%

Source: Wesgro, 2002.

Most of the difficulties of the industry stem out of the shift in economic policy of the post-apartheid regime which implied the gradual dismantling of economic barriers, e.g., tariffs, and compliance with international regulations based on various agreements such as those under the Uruguay Round, the General Agreement on Tariffs and Trade (GATT) and its successor, the World Trade Organization (WTO) which prohibit preferential treatment of the clothing industry (Owusu-Ampomah, 1997). The shift exposed many post-apartheid South African firms, including those in the clothing industry, as relatively uncompetitive on the international market. Many of the firms are still struggling to cope with the new economic realities of globalisation and trade liberalisation in the policy framework of the *Growth, Employment and Redistribution – A Macroeconomic Strategy* (GEAR). For many of the firms high labour cost in relation to output is often cited as a critical factor but for labour the high wages are being used as a smokescreen for the inefficiencies and lack of managerial and entrepreneurial vision of some of the manufacturers (Owusu-Ampomah, 1997).

The downward trend of the clothing industry has added currency to the African Growth and Opportunity Act (AGOA) as it has a potential to turn the tide in South Africa's domestic clothing

sales and exports. Indeed, since its enactment in 2001, AGOA, which provides qualifying Sub-Saharan African countries with duty-free access to the US market, is reportedly making significant impact not only in South Africa but also in Lesotho, Kenya, Madagascar and Mauritius. For the period March to October 2001, when South Africa became eligible under AGOA, the country exported almost R250 million worth of clothing to the US. The weaker Rand in 2001 stimulated export growth, but the recovery and strengthening of the currency by as much as 26%, since 2002 poses a threat to export growth of clothing products (WESGRO, 2002).

1.2.1. Durban's Economy and the Clothing Industry

1.2.1.1. Durban's Economy

Durban's economy has been shaped by its locational advantages and government policy. The principal locational factors, which have played a critical role in building Durban's economy, include a large natural harbour, abundant manpower, and a relatively large consumer market. These factors have always offered the city opportunities for the development of industry, particularly under the inward-looking import substitution industrialisation (ISI) policy and the economic isolation of the country during the apartheid era (Morris, Barnes and Dunne, 1998).

The Durban Metropolitan Area (DMA) is the hub of Kwazulu-Natal's (KZN) economy. It accounts for 45% of the Gross Geographic Product (GGP) of the province. The metropolis is also South Africa's second largest industrial hub, after Gauteng, accounting for 15% of national output. It has a large diversified economy and the largest concentration of manufacturing employment in the country. Manufacturing accounts for 26% of Durban's Gross Geographic Product (GGP) and 25% of its formal employment. Other significant sectors are finance, and tourism and commerce, which account for 21% and 18% respectively of the GGP. While chemicals account for 20% of manufacturing output, food and beverage's share is 18%. Clothing on the other hand, accounts for 20% of manufacturing employment. Having been the focus of the colonial economy in the past Agriculture, forestry, fishing and mining are less significant in Durban's economy at present. In Durban's modern economy these sectors account for only 2% of the metropolis' GGP (Durban Metro, 2003; Lanegran, 2000).

In the last decade, the prosperity of the city has declined by almost 0.5%. Output growth has been a mere 1.8%, with per capita income pegged at R19 900 as compared to Johannesburg's R33 000. Unemployment in the metropolis is estimated between 30% and 40%, and the average rate of job growth over the last decade is less than 1% per annum. About 50% of the metropolis' manufacturing jobs are in declining industries, especially labour-intensive industries such as metals, textiles and clothing. This spells a genuine concern, especially given that 7% of the population does not earn any income, and as much as 45% earn less than R1500 per month (The Monitor Company, 2000).

The inability of the formal economy to create jobs has resulted in the development of a fast growing informal sector, which is believed to account for about 16% of the labour force, mostly engaged in trading, catering and accommodation. Very few people in the informal sector appear to be involved in manufacturing while others are engaged in illegal and/or underground economic activities often not accounted for by official statistics.

1.2.1.2. The Clothing Industry in Durban

The Durban Metropolis has the largest cluster of clothing manufacturing enterprises in Kwazulu-Natal. (The other clusters in the province are found in Newcastle, Isithebe, Hammersdale, Port Shepstone and Ladysmith (see Table 1.1)). Although the firms are spread across the length and breadth of the metropolis, the areas of concentration include the southern hub of Mobeni, Jacobs, Clairwood, Chatsworth and Umkomaas. In central Durban, firm clusters can be found in and around Grey Street, and Umbilo/Rosburgh area, which includes Umbilo Road and Gale Street. Along the northern axis there are firm clusters in the Umgeni/Stamford Hill area, Phoenix, Inanda, Verulaam and Tongaat. Other clusters are located in the northwestern end of the city, i.e., in Mayville/Overport area, and to a lesser extent, along the western axis in Pinetown.

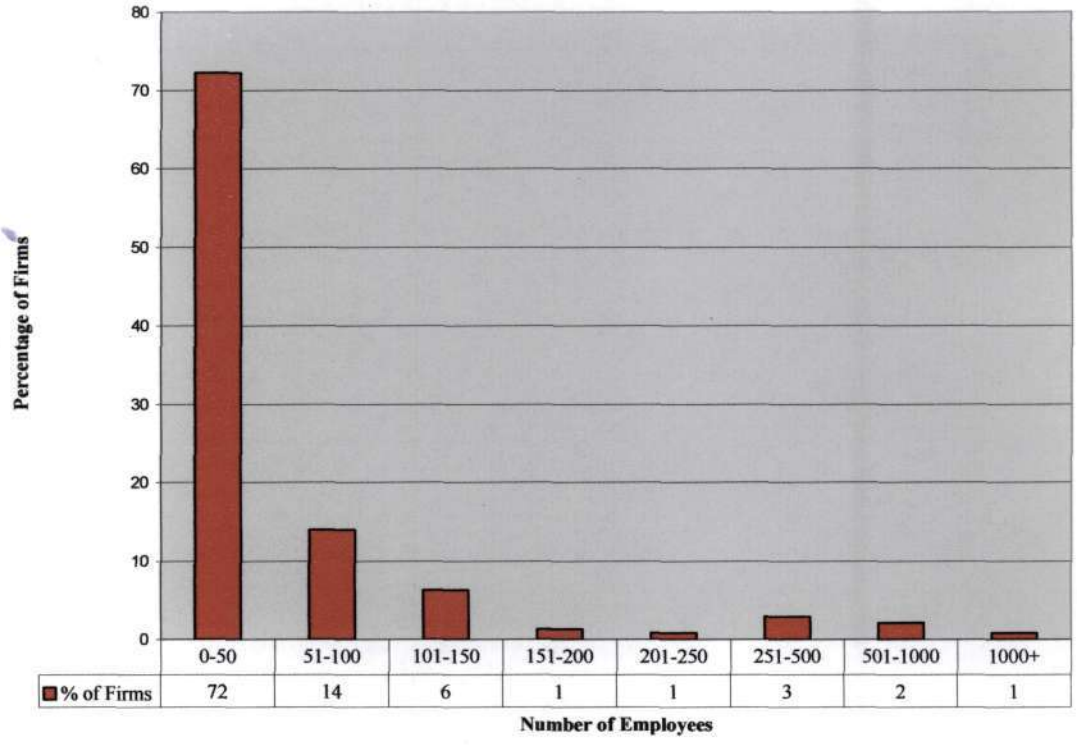
As a result of the rapid changes in the economy and the clothing industry in particular, official statistics, as indicated in the case of the country as a whole, are inconsistent. By February 2001 there were 238 registered firms with 15 876 employees in the area of jurisdiction of the Kwazulu Natal Bargaining Council of the Clothing Industry (BCCI). This is in contrast with the 402

clothing firms with 28 312 employees in 1997 (Bargaining Council of the Clothing Industry (BCCI), 1997; 2001). These figures indicate over 40% decline in the population of BCCI-registered firms in the Durban Metropolis over a four-year period.

The decline in the number of BCCI-registered clothing-manufacturing firms, however, does not reflect the true picture of the population density of clothing manufacturing firms in the metropolis. Apart from the informal and micro clothing-manufacturing firms in the metropolis, not included in the BCCI statistics, firm closures do not necessarily imply a total loss of such firms. In most cases the closures have either meant the establishment of new firms elsewhere, restructuring, and relocation or decentralisation to areas outside the designated BCCI area of jurisdiction, ostensibly to escape compliance with BCCI conditionalities, particularly pertaining to wages.

Notwithstanding the decline in the population density, small firms still dominate the clothing industry in Durban. As shown in Figure 1.1 the labour force of majority of the firms (72%) is not more than 50 while 14% of them offer jobs to 51-100 workers. On the whole over 90% of the firms employ no more than 200 workers while less than 10% of the firms employ more than 200 workers

Figure 1.1: Size of Clothing Manufacturing Enterprises - 2001



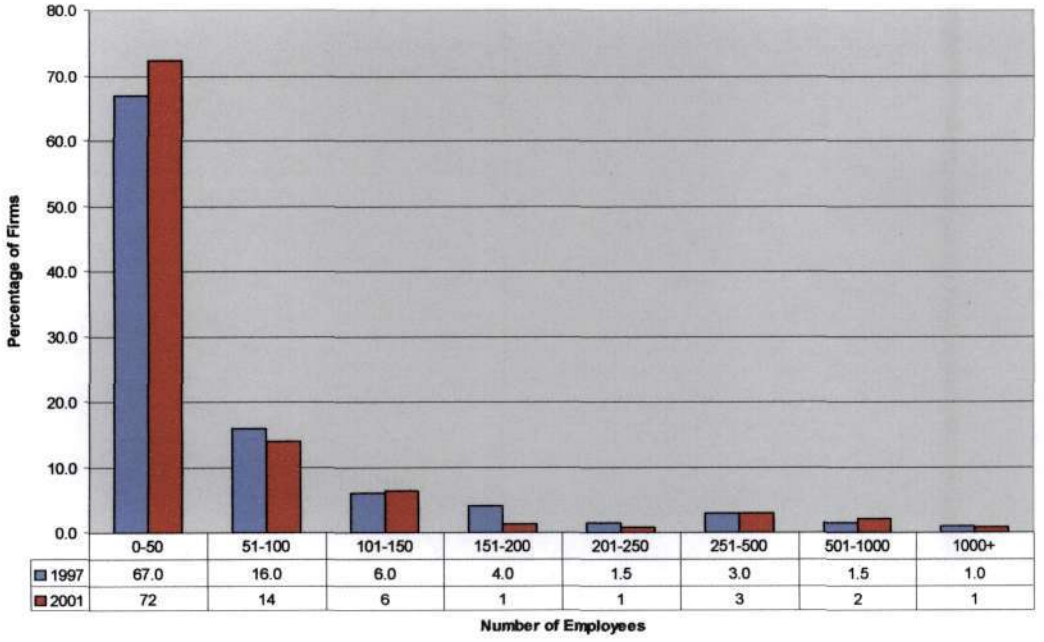
Source of data: BCCI, 2001.

Table 1.4: Size Distribution of Clothing Manufacturing Enterprises

Employees	No. of Firms		% of Firms		Cum. % of Firms	
	1997	2001	1997	2001	1997	2001
0-50	271	172	67.0	72	67.0	72
51-100	65	32	16.0	14	83.0	86
101-150	24	15	6.0	6	89.0	92
151-200	15	3	4.0	1	93.0	93
201-250	6	2	1.5	1	94.5	94
251-500	11	7	3.0	3	97.5	97
501-1000	6	5	1.5	2	99.0	99
1000+	4	2	1.0	1	**100.0**	**100**
	402	**238**				

Source of data: BCCI, 1997; 2001

Figure 1.2: Size of Clothing Manufacturing Firms - 1997 and 2001



Source of data: BCCI, 1997; 2001

Compared to 1997 figures (Table 1.4 and Figure 1.2) there does not appear to be a significant change in the general structural pattern of distribution of firm-size although there is a visible backward trend, signifying a downsizing industry.

Much of the literature on the clothing industry in the Durban Metropolis (e.g., Harrison, 1996; Owusu-Ampomah, 1997; Morris et al, 1998), attribute the small-size structural pattern of the clothing firms to:

- Easy entry into the industry, especially the lower end of the market which requires a minimum of 20% labour cost of ex-factory price and 50% fabric;

- Limited economies of scale;

- Seasonal demand for clothing;
- Relatively portable skills associated with clothing manufacturing;
- The existence of a pool of clothing skills of historical significance in Durban;
- The capability of small firms rendering quality products and service;
- The cost-effectiveness of dealing with small firms

Durban's small-scale clothing manufacturing industry consists of independent producers and contracted or sub-contracted manufacturers. The majority of the independent producers are in the lower end of the market, producing cheap women and children's dresses – usually known as cottage dresses or pinafores. Others in this category produce items such as curtains and other high value items e.g. custom-made women's garments such as wedding dresses and clothing for special occasions. The contracted or sub-contracted manufacturers produce either finished garments for sale in boutiques or flea markets or assemble components of garments (attaching pockets, completing cut-up garments etc) for the large manufacturers and wholesalers. The majority of firms in this category are described as Cut, Make and Trim (CMT) enterprises. The CMT enterprises are solely concerned with the making of garments from fabrics supplied by full manufacturing houses or large retailers and wholesalers (Owusu-Ampomah, 1997). In some cases, a production unit may provide CMT services and at the same time maintain an exclusive line of production. In recent times, however, the rollback of the industry has compelled an increase in the ranks of the CMT category and informalisation. The increase in informalisation is also the result of the inability of the industry to counter external competitive pressures, particularly the cheap imported clothing from South East Asia, following the phasing out of protective tariffs (Fakude, 2000). These trends, doubtless, have adversely affected the industry's labour absorptive capacity, and the living standards of majority of people in Durban with serious sociological consequences that deserve attention.

It is pertinent to note, however, that the dynamics of the clothing industry have not been gloomy for all firms; some firms have performed creditably. Firms that show increasing profits and turnover in recent studies (e.g., Owusu-Ampomah, 1997; Morris et al, 1998) are those that operate in the middle and upper income markets. The success of these firms is often credited to high productivity levels, as a result of a skilled workforce, updated technology and access to cheaper imported trim material and textiles, relatively high levels of technical and managerial efficiency, adaptability and creativity as well as strong leadership and export orientation. For the declining firms, high input costs, low skill levels and increased competition in the domestic market are to blame.

1.3. The Research Problem

The weakness of Durban's clothing manufacturing industry, it is often argued, largely relates to the industry's inability to develop embedded production network relationships and inter-firm co-operation. In other words the poor performance of Durban's clothing industry is attributable to limited networks and inter-firm co-operation, i.e., the isolation thesis. This, it is believed, has constrained the ability of the industry to maximise the advantages inherent in the new competition and flexible production in the face of a competitive global economy (Owusu-Ampomah, 1997; Morris et al, 1998). The situation raises several questions, but a few are posed. First, to what extent is the isolation thesis applicable to the clothing manufacturing industry in Durban? Secondly, what factors contribute to the state of networks and inter-firm co-operation in Durban's clothing manufacturing industry? Thirdly, although the industry has been performing poorly a few of the small clothing manufacturing enterprises have been performing well. In that event:

- Do networks and inter-firm co-operation, *ceteris paribus*, explain the disparities in the performances of the firms in the clothing manufacturing industry in Durban?

- If so, (or not) what type of networks most significantly contributes to firm performance?

- What is the nature and scope of networks and inter-firm co-operation of the (i) small

clothing manufacturing enterprises (SCMEs), and (ii) of high performance and low performance SCMEs in the Durban cluster?

- How can networks be promoted among the firms in the clothing sector to enhance their economic performance?

1.4. Hypotheses

- **Hypothesis #1.**

Network theory asserts that networks and inter-firm co-operation are catalytic to the growth of small firms. The generality of this theory is not in contention in this study. The study rather postulates that the scope and nature of networks have a positive effect on the individual small clothing manufacturing enterprises in Durban and consequently, on the collective performance of the firms. In that event the relationship between openness and performance is measured, using the following null and alternative hypotheses:

H_0: There is no significant difference between the openness index of high performance firms (HPFs) and the openness index of low performance firms (LPFs).

H_1: There is a significant difference between the openness index of high performance firms (HPFs) and the openness index of low performance firms (LPFs).

- **Hypothesis #2**

The economic performance of entrepreneurial firms, *ceteris paribus*, is largely dependent on a specific network-type, in this event, fraternal networks.

1.5. Aims and Objectives

Besides testing these hypotheses, the objectives of the study are to:

- Investigate the applicability of the isolation thesis to the small clothing manufacturing enterprises in Durban through the scope and nature of networks among the enterprises;

- Investigate the relationship between network characteristics of small business and economic performance, and which of the types of networks is the most significant for the growth of SCMEs in Durban;

- Generate a further theoretical and practical insights into cluster dynamics, particularly networks and inter-firm relationships and firm growth, using the small clothing manufacturing enterprises in Durban, Kwazulu Natal as a case study;

- Provide guidelines towards a policy framework that would promote effective and efficient network contacts among SCMEs, and by extension, South Africa's small business sector as a whole, for the growth of SMEs.

To achieve these broad goals, the study attempts to:

- Identify network characteristics or types of networks through empirical evidence, and show the relationship between them and economic performance;

- Identify the most significant type of networks for the growth of SCMEs and investigate the conditions under which it promotes a firm's growth and the collective efficiency of firms;

- Investigate the factors that promote and/or inhibit strategic and effective networking, and inter-firm co-operation among small businesses in the clothing industry in Kwa-Zulu Natal, using the theoretical and empirical parameters, as well as international underpinnings

already established. The key to the success of this task lies essentially in its comparative component, and hence in the utilisation of existing local and international literature.

- Explore a policy framework for the promotion of clustering and networking with a view to stimulating the growth of small firms in the clothing industry;

1.6. Significance of the Study

The relationship between network characteristics and economic performance has been an area of interest to economists and industrial sociologists. This is not only because there is the desire to understand how network characteristics influence business performance. It is also important for managers/entrepreneurial firms to know the network characteristics that facilitate high financial performance so that they would be able to formulate growth-oriented policies around them (Perrow, 1992:524-525).

In Third World countries where SMEs apparently need state support, an understanding of the types of networks and how they relate to the performance of small businesses will enable the state to raise and find answers to critical questions regarding network brokerage among small firms. In the context of the Kwazulu-Natal cluster, the study will also enable researchers to understand the underlying factors to the low level of networking among the small clothing manufacturing enterprises in the cluster so that appropriate solutions can be found to ensure effective and efficient networks in the cluster.

1.7. Structure of the Study

In the next chapter of this part of the study the theoretical and conceptual issues pertaining to networks and firm growth are discussed. In chapter three – the concluding chapter of Part I of the study - the research methods for the study are described. It includes a description of the methods used, the sampled small clothing manufacturing enterprises (SCMEs), the techniques of data collection and analysis, and the limitations of the study. Part II, consisting chapters four, five and six, presents the data analysis and research findings. Chapter six is a simplified version of the

analysis in chapters four and five; readers who find chapters four and five easy to follow may skip chapter six. In the third and final part of the study, the findings are discussed - in theoretical context - in chapter seven. The study concludes with a summary, policy implications and recommendations for future research in chapter eight.

NOTES:

1. To be sure, there have been some modest gains, as more households now have access to basic services such as electricity, water and housing. Significantly, however, income inequalities have worsened between 1995 and 2000, signaling the need for more robust strategies to create jobs. The worst part of it is that in real terms, the income of the average African household has fallen by 19% as against an increase of 15% of the average white household. Besides, the average white household earned six times as much as the average black household, up from four times as much in 1995. During the period unemployment, peaking in the 1990s, also increased from 16% in 1995 to 30% in 2000 (Makgetla, 2002), resulting in a push to swell up the numbers in the informal sector.

2. The study broadly focuses on the firm. This does not, however, imply that other economic agents and institutions are not important. The quest for growth in an economy characterised by widespread poverty, cultural diversity, and racial and income inequalities like South Africa's, requires a sort of corporatism in which firms, labour and government are seen as partners in development. The analysis also takes into account the role of social relations and the human factor – something that Piore and Sabel (1984) ignore in their analysis of flexible specialisation – in firm growth. It is, however, fair to acknowledge the importance they attach to technology and politics in their analysis (see Casson, 2000:164).

3. Tables 1.1 and 1.2 do not match. The 'discrepancy' is due to the fact that the two sets of data were obtained from different sources. They are presented here essentially for the purposes of showing in Table 1.1 the spatial distribution of clothing manufacturing centres in South

Africa as at 2002 and in Table 1.2 the decline in the size of the industry from 1990 to 2001. The two tables should therefore be read independently.

CHAPTER 2

NETWORK THEORY AND ORGANIZATIONAL PERFORMANCE

2.1. Introduction

The network perspective has gained currency as an analytical tool in industrial organisation and economic growth at both micro- and macro-economic levels in the last few decades. The paradigm particularly makes its mark as an explanatory model in the context of the Marshallian industrial district. Although it makes a significant contribution, it fails to explain the bonding mechanism underpinning the dynamics and nature of exchange relations between actors (Gipouloux, 2000:60).

The literature on growth advances three main theoretical frameworks to explain the functioning and economic growth of organisations and national economies:

- The market approach, associated with Chandler (1977) and Williamson (1975, 1985),
- The cultural approach, and
- The Weberian authority relations or political economy approach.

The latter integrates cultural and market forces, and makes allowance for historical evidence (Hamilton and Biggart 1988). According to Hamilton and Biggart (1988) market and cultural forces best explain organisational growth while the form or structure of enterprise is better understood by Weberian patterns of authority relations in the society. It is believed, however, that the cultural approach is excessively oversimplified (Mackie, 2000) while the Weberian economic cultural approach, used as the vehicle for studying Chinese capitalism, suffers from the danger of a permanent trap (Redding, 1990, cited in Wu Wei-ping, 2000). Holbig (2000:16) has labelled this trap the "Weber Trap"[1] as scholars do not only continue to prove that either Weber was right and China indeed lacked a true

spirit of capitalism, or that he was wrong and that China had come up with an indigenous and extremely vital version of a 'Spirit of Chinese Capitalism'. "In both cases they base their arguments not only on the same (Weberian) mode of culturalistic ascriptions but also on his specific findings – even when defying his results" (Holbig, 2000:16).

The market model, on the other hand, has been widely criticised for its presuppositions especially, the perception of the market as an atomistic exchange system in which selfish, rational, profit-seeking individuals pursue their interests in arm's-length relationships.

Understanding economic behaviour and outcomes has clearly been an intellectual dilemma. In this researcher's view, not even the later theoretical approaches, largely revisionists, e.g. the transaction cost theory, agency, neo-institutional and population ecology approaches, adequately explains the economic growth phenomenon. The growth puzzle remains unresolved, and this may be partly attributed to conflicting ideological, ontological and epistemological interests. The debate continues, and it is in this context that this study is located. But the purpose is not to bring the debate to closure; it is impossible to do so. The aim, therefore, is to throw more light on one of the many models: network theory of organisational performance, relative to market theory.

In this chapter the literature on the network theory is reviewed. The first part of the review focuses on the notions of networks, network elements and the structural dimensions of networks which are critical to the key research problem addressed in this study: the relationship between network characteristics and business performance. In the second part, the chapter focuses on how social relations affect economic behaviour and outcomes, with a view to understanding the relative differences in the performances of firms, industries and industrial districts, with particular reference to the small clothing manufacturing enterprises (SCMEs) in Durban. Competing network theories on organizational performance exist; an equally considerable amount of literature on the subject is also available. The problem posed by such realities, particularly the latter, as Williamson (1981:550) observes in his transaction cost exposé, is the risk of omitting some important theories and contributions. It is hoped that the literature at hand will save this study from this risk. The chapter

concludes with a brief discussion of the paradox of competition and co-operation that characterises much of the sociological, industrial and economic growth discourse. The same paradox largely underpins this study and its methodological approach.

2.2. Conceptual Issues

2.2.1. Notions of Networks

The term *network* is not a new phenomenon. From its early recognition in the 1930s when Roethlisberger and Dickson (1939, cited in Nohria, 1992a) highlighted its significance in organisations, it has become a buzzword across disciplines, in workplaces, and even in the spheres of governance at national, provincial/regional and local levels. This, notwithstanding, the term is used in different ways by different people, reflecting, "some confusion about quite what a network perspective entails" (Faulkner and de Rond, 2000:20). Some analysts perceive networks as a metaphor, lacking any properties and strategies to maximise the benefits of networks (Aldrich and Whetten, 1981; Ibara, 1992). Others view networks as a hybrid form of organization located on the markets-hierarchies spectrum (Thorelli, 1986; Powell, 1990). Generally, however, the concept of social networks is often defined as a structure of ties or set of nodes among actors in a social system or a set of high-trust linkages connecting a set of entities (Nohria, 1992a:288; Castilla et al., 2000; Gipouloux, 2000; Casson, 2000:170). As a theory of co-operation, it draws from and builds on earlier theories such as the social exchange theory (Blau, 1967; Ekeh, 1974; Burt, 1982; Cook, 1982, 1987), population ecology theory (Hannan and Freeman, 1977; Aldrich, 1979, 1982) and transaction cost theory (Williamson, 1975; 1987). Other sources include homophily and balance theory (Leinhardt, 1977) and the cognitive theory (Piore, 1992).

According to Faulkner and de Rond (2000:20), social networks are persistent and structured sets of autonomous players (persons or organizations who co-operate on the basis of implicit and open-ended contracts. Besides the general notion of social networks two conceptions of networks have emerged in recent times. At one level, a network refers

to a new organizational form - the network organization – described as a specific form of organization type. It is a form of organisation which is integrated across formal groups created by vertical, horizontal, and spatial differentiation for any type of relation, and distinct from Weberian bureaucracy or hierarchies and markets (Baker, 1992; Piore, 1992). The basis of relationships in this new organizational form is also different from those designed by the market or hierarchical authority (Nohria, 1992a; Nohria and Eccles, 1992:288; Piore, 1992:430; Ibara, 1992:169; Baker, 1992).

> "*All* organizations are networks – patterns of roles and relationships – whether or not they fit the network organization image. Organizational type depends on the particular pattern and characteristics of the network. For example, a network characterised by a rigid hierarchical subdivision of tasks and roles, vertical relationships and an administrative apparatus separated from production is commonly called a bureaucracy. In contrast, a network characterised by flexibility, decentralized planning and control, and lateral (as opposed to vertical) ties is closer to the network organization type" (Baker, 1992:399-400).

Baker (1992) explains further that a network organization form is characterized by integration across formal boundaries of multiple types of socially important relationships, vertical and spatial differentiation, as well as horizontal differentiation. It is not limited to professional service firms; it is common in other industries as well. Baker (1992:400) states that the chief structural characteristic of a network organization is the high degree of integration across formal boundaries.

At another level, a network connotes a new organizational form, which derives from the modern information and telecommunications technologies, e.g. facsimile, e-mail, teleconferencing, and Internet. Castells (2000:187) calls this organizational form network enterprise, which he defines as "*that specific form of enterprise whose system of means is constituted by the intersection of segments of autonomous systems of goals*". The conception of network from the information and communication technologies perspective has drawn conclusions towards a vision of Network Society (Castells, 2000) or Network Nation (Hiltz and Torhoff, 1978). Nohria and Eccles (1992:289) point out that the two

conceptions of network often converge but network organization is not the same as electronic networks although the latter can and will play a key role in shaping the former. According to Nohria and Eccles (1992) electronically mediated interactions are not always as effective as face-to-face exchanges. In support of this argument it may be added that the use of the electronic medium also does not obliterate the traditional medium of communication: printed matter. The paperless office, often talked about as a result of the breakthroughs in information and communication technologies, could be a distant dream.

An important derivative of the network phenomenon is networking, i.e., building relationships to get things done (Nohria, 1992a:1), at both individual and organizational levels, and over a range of human and organizational activity. Although networks and networking have always been part of society, their rise to prominence in recent years is often attributed to increased competition and uncertainty. The increased competition and uncertainty is generally believed to be the result of the dramatic changes in the social, economic and political environment of which improvements in production and information and communication technologies are prominent. Another key factor is the globalization of markets and inputs. According to Castells (2000:208) as globalization progresses, organizational forms evolve from multinational enterprises to international networks. The contemporary multinational then becomes an inter-organizational network or a network that is embedded within an external network. Small and medium firms are not, and cannot be peripheral to the unfolding global economic reorganization process although some analysts believe that the scale of networks among them, globally, is relatively less significant. Even so, Perrow (1992), who had argued that small is trivial in a world of giants, has changed his position, arguing that small will not be trivial if many small organizations form a network. But, this will be possible only if small organizations can eliminate circumstances that can stifle networks' drive towards change.

Another perspective on the network phenomenon, which has little to do with social networks, comes from the actor-network theorists. From this perspective, a network is defined as "a group of unspecified relationships among entities of which the nature itself

is undetermined" (Callon, 1993:263). The actor-network theory (ANT) recognizes an environment of interconnected hybrid entities, human and non-human. The pattern of interconnectedness between these hybrid entities or actors is termed as a "network" (Latour, 1993). By this definition, actor-network theorists claim inclusiveness of the social and technical in contrast with the sociological definitions of a network where according to Wasserman and Faust (1994:20, cited in Stalder, 1997:4)), "a social network consists of a finite set or sets of actors and the relation or relations defined on them ".

Proponents of ANT emphasize the heterogeneity of animate and inanimate elements constituting the actor-network phenomenon, which is irreducible to actors or networks alone but are linked to one another over a period of time (Callon, 1987:93; Stalder, 1997:5). For this stream of network analysts, actors are "entities that do things" (Latour, 1992:241). "In networks of humans, machines, animals and matter in general, humans are not the only beings with agency, not the only ones to act; matter matters" (Risan, 1997). In other words matter or *things* are also important agents in networks. A network thus ties together two systems of entities in an alliance, i.e. people, individuals who are involved in production transactions and consumption of artifacts, and things, all elements existing or assembled, including technology, to connect the people (Stalder, 1997).

The conceptual perspectives of a network discussed thus far highlight a fundamental problem: inconsistency in the use of the term network. The inconsistency is far greater between the actor-network perspective and the others, which collectively fall under a common umbrella: social networks. For the purpose of this study, a network is defined as a group of economic and/or non-economic actors that maintain a formal or informal ongoing and exclusive set of relationships or ties in which the medium of interaction is either face-to-face or electronic, or both. The relationships may be exclusively for social or business purposes. In the event of the former the linkages are described as social networks, and the latter, business networks. A social network is a web of social relationships established within the sphere of core family members, extended family members, friends, classmates, fellow townsmen etc. A business network, on the other hand, may be defined as a web of business organizations whose objective is to create or

internalize a market for the purpose of profit maximization or cost-minimization for all its members (Wu Wei-ping, 2000:39-40). Business relationships, to some degree, always involve personal relations (De Glopper, 1978:297). A relationship that begins in the corridors of business transactions may end as inter-personal relationship, and vice versa, even in an arms-length kind of transaction.

2.2.2. Network Elements

Irrespective of how a network is perceived, there is a consensus on most of its elements in the network literature (e.g. Callon and Latour, 1981; Cook, 1982; Callon, 1987; Emirbayer and Goodwin, 1994:1417; Stalder, 1997; Casson, 2000; Gipouloux, 2000). Gipouloux (2000:58), for instance, observes that by definition a network is composed of relations between actors (individuals, organizations), and that relation possesses both content (information or resource flow, social relations in general) and a form (intensity of the relationship). For networks to operate, therefore, he maintains, four elements are required:

- Actors, that is, operators; for instance: firms, friends, government agencies and groups of people.

- Activities, that is, the finality of this organizational mode in the case of firms: assembly functions, the manufacturing of components, design, research and development, etc.

- Resources, which are the core of what is exchanged in the network: technologies, know-how, information provided by the coordinating body.

- A binding mechanism, which provides coherence to the network: licence agreements, shares in equity, subcontracting agreements and values.

Acknowledging individuals, organizations and groups as actors or units of analysis, Emirbayer and Goodwin (1994:1417) also include an entire "society" in the category of

actors in a social network. According to Cook (1982:179) an actor is a point (or node in a network) where many exchange relations connect.

2.2.3. Structural Dimensions of Business Networks

Although understanding the elements of networks is useful in this study a more critical aspect is typology. There are many types of networks, and a considerable degree of overlapping exists as well. In some cases differences may not be real but a matter of semantics. This is reflected in the works of network analysts such as Castells (2000), Casson (2000), Wu Wei-ping (2000), Redding (1990), Brass and Burkhardt (1992) and Tichy, Tushman and Fombrun (1979). According to Castells (2000:207), Ernst (1994) observes that most economic activity in industries in the global economy is organized around five different types of networks. These types of networks are:

- *Supplier networks*, which include subcontracting, OEM (original equipment manufacturing) and ODM (original design manufacturing) arrangements between a client (the "focal company") and its suppliers of intermediate production inputs.

- *Producer networks* which are defined to include all co-production arrangements that enable competing producers to pool their production capacities, financial, and human resources in order to broaden their product portfolios and geographic coverage.

- *Customer networks* which are defined as the forward linkages of manufacturing companies with distributors, marketing channels, value-added resellers and end-users, either in the major export markets or domestic markets.

- *Standard coalitions, which are* initiated by potential global standard setters with the explicit purpose of locking-in as many firms as possible into their proprietary product or interface standards.

- *Technology co-operation* networks, which facilitate the acquisition of product design and production technology, enable joint production and process development, and permit generic scientific knowledge and R&D to be shared.

In the context of Chinese and overseas Chinese Communities, Wu Wei-ping (2000) identifies two main types of *guanxiwang* i.e. a network of exchanges or transactions between two parties and beyond: social networks and business networks. In the Chinese context, Redding (1990) observes that a social network consists of lineage, village or neighbourhood, clan or collection of lineage and special interest associations. Its main function is to protect and help each other and to have an ethnic and/or unique identity in a wider social context (Wu Wei-ping, 2000:40). From this perspective, Wu Wei-ping (2000) identifies four types of business networks, much of which conforms to Ernst's (1994) categorization above:

- Ownership networks – firms linked through common ownership
- Investment networks – firms linked by capital and investment
- Production networks – firms linked by joint-production arrangements
- Distribution networks – firms linked by the distribution of commodities (Wu Wei-ping, 2000:40).

In an analysis of centrality of power in organisations, Brass and Burkhardt (1992) identify three types of social networks - workflow network, communication network and friendship network. According to Brass and Burkhardt (1992) these types of networks correspond to Tichy, Tushman and Fombrun's (1979) three basic flows: (i) exchange of goods, (ii) exchange of information, and (iii) affect or liking. Casson's (2000) categorization (Table 2.1), however, provides a much more comprehensive approach to distinguishing between different types of networks but this does not necessarily imply that all the distinctions drawn are equally related to the functions that a network performs.

Table 2.1: Typology of Networks

Inter-regional	Regional
Business	Social/political/religious etc
Inter-organizational	Inter-personal
Vertical	Horizontal
Product-market co-ordination	Factor market co-ordination/government policy co-ordination
Open	Closed
Visible	Invisible
Transparent	Opaque
Impersonal Trust	Personal Trust
Morally sanctioned	Socially sanctioned
Forgiving	Unforgiving
Tough	Lenient
Intermediated	Non-intermediated
Directly intermediated	Indirectly intermediated
For-profit	Not-for-profit

Source: Casson, 2000:178

Casson (2000) draws distinctions between networks in terms of two opposing extremes, which are not necessarily incompatible in all cases. The list includes vertical, product market co-ordination, intermediated, for-profit, directly mediated and business networks on one side of the extremes. At the opposite end, the corresponding list includes horizontal, factor market co-ordination/government policy co-ordination, non-intermediated, not-for-profit, indirectly intermediated, and social/political/religious networks. Casson's (2000) categorization, partly reflecting his definition of a network in terms of trust also acknowledges regional networks, i.e. business networks whose members are located in a particular region, and inter-regional networks as equally important. Casson (2000) argues that inter-regional networking offers as much mutual advantages as networking among firms in physical proximity; firms can exploit the gains from inter-regional trade and investment, and shared occupational allegiance. A network may be forgiving or unforgiving, transparent or opaque, open or closed, tough or lenient, and visible or invisible. Networks that accept competition, and operate according to rules are more likely to be visible and transparent;

those networks in which members cannot agree to compete are more likely to be invisible and opaque. Invisible networks tend to be harmful. In opaque networks, the weak and ordinary members tend to be vulnerable, and easily fall prey to the strong and powerful members of the group (Casson, 2000)

2.3. Theoretical Issues

The underlying problem for the emergence of networks as a plausible governance structure is the failure of markets and hierarchies, caused by uncertainty, small numbers, small size, bounded rationality and opportunism. Williamson (1981:553) states, "But for bounded rationality, all economic exchange could efficiently be organized by contract". This, failing, networks assume an inter-mediating role in the exchange system under the assumption that relational network structures can reduce uncertainty, malfeasance and/or opportunistic behaviour, and thereby lower transaction costs. Saxenian (2000:142), for instance, attests to this, arguing that by remaining highly focused and relying on networks of suppliers the computer systems business in Silicon Valley have been able to contain the rising costs of product development, shorter product cycles and rapid technological change.

Central to network theory is embeddedness. According to Granovetter (1985), embeddedness means that economic behaviour does not occur in a social vacuum; it is embedded in social relations (Granovetter, 1985). In other words, as White (1981:518) states, "markets are social structures in which producers reproduce their own set of actions ..." According to Granovetter (1985:487),

> "A fruitful analysis of human action requires us to avoid the atomization in the theoretical extremes of under- and over-socialized conceptions. Actors do not behave or decide as atoms outside a social context nor do they adhere slavishly to a script for them by the particular intersection of social categories that they happen to occupy. Their attempts at purposive action are instead embedded in concrete, ongoing systems of social relations".

Granovetter (1985:490-491) rejects institutional arrangements and generalized morality as a source of trust in contrast with the human factor paradigm. According to Granovetter (1985), personal concrete relations and structures are mainly responsible for the production of trust and discouragement of malfeasance in economic life. This view contradicts the transaction economists' position that concepts such as trust and reciprocity muddy the clear waters of economic analysis (Williamson, 1994, cited in Uzzi, 1996).

Although the embeddedness argument makes an important contribution some theorists (Williamson, 1993; Uzzi, 1996; Montgomery, 1998) argue that it fails to explain adequately how network contacts affect economic outcomes. Uzzi (1996) maintains that the core argument - that economic action is embedded in social relations, which sometimes facilitate and at other times derail exchange – is conceptually vague. Rational choice theorists (e.g. Williamson, 1993) reject the notion of personal trust and reciprocity, which underlies the embeddedness argument. Calculative trust is a basis for economic action, and this notion is supported with "a well-specified theoretical methodology – game theory – that allows representation and analysis of rational choice explanations" (Montgomery, 1998). In Montgomery's (1998) view, however, role-playing appears to offer a better metatheoretical perspective on embeddedness than any other approach, largely because role theory could be viewed as a generalization of game theory, and therefore serves as a more plausible theoretical methodology. Although Montgomery (1998) concedes that a well-developed role theory would be needed for a deeper understanding of embeddedness, this author contends that relying on secondary sources would undermine the scientific rigour of such a cause.

Advancing the embeddedness argument Powell (1990, cited in Uzzi, 1996:677) and Smitka (1991, cited in Uzzi, 1996:677) explain that embeddedness shifts actors' motivations away from the narrow pursuit of immediate economic gains toward the enrichment of relationships through trust and reciprocity. Uzzi (1996) argues further that although a network creates a benign environment for performance through co-operation and coordinated adaptation, it can also derail performance by sealing off firms in the network from new information or opportunities that exist outside the network. According

to Uzzi (1996:675), an organization's network position, network structure, and distribution of embedded exchange relationships shape performance such that performance reaches a threshold as embeddedness in a network increases. After that point, the positive effect of embeddedness reverses itself.

Examining the effects of networks on performance, Perrow (1992:460) argues that the success of networks is due to three factors, listed as follows:

- Economic power of economies of scale through networks;
- Trust and co-operation existing with competition;
- Welfare effects of networks that increase the efficiency of regions and industries.

On welfare effects, the caveat is that networks could have few welfare functions for society particularly when an elite that generates trust among its members becomes powerful and exploitative (Perrow, 1992:463). Known for his pioneering work on flexible specialization in collaboration with Sabel,[2] Piore (1992) contends that networks facilitate the deepening of social division of labour, which enhances expertise and integration, in a way that markets cannot.

Much of the network literature maintains that organizational networks promote economic performance (Putnam, 1993; Uzzi, 1996; Castells, 2000; Schak, 2000; Kwok Bun and Chee Kiong, 2000; Wu Wei-ping, 2000; Theodorakopoulous and Wyer, 2000). Uzzi (1996) explains that networks enhance economic performance through inter-firm resource pooling, co-operation, and co-ordinated adaptation regarding production and information flows, business decisions and organizational learning. Putnam (1993) also suggests that the quality of networking is a common factor in both a vibrant regional economy and a vibrant regional polity.

> Networks facilitate flows of information about technological developments, about the creditworthiness of would-be entrepreneurs, about the reliability of individual workers, and so on. Innovation depends on 'continual informal interaction in cafes and bars and in the streets.' Social norms that forestall opportunism are so deeply internalised that the issue of opportunism at the expense of community obligation is said to arise less often here than in areas characterised by vertical and clientistic networks. What is crucial about these small-firm industrial districts, conclude, most observers, is mutual trust, social co-operation and a well developed sense of civic duty – in short, the hallmarks of the civic community (Putnam, 1993:161).

Networks also mediate labour and capital flows, with significant effects on industry and economic outcomes (Granovetter, 1973; Nohria, 1992b; Castilla, Hwang, Granovetter and Granovetter, 2000; Kwok Bun and Chee Kiong, 2000; Schak, 2000). Family and friendship networks are not only a source of start-up capital and recruitment but also hiring of trusted and efficient employees. Granovetter (1973) adds that recruitment occurs through the strength of weak ties where weak ties are acquaintances that form better bridges to new contacts and non-redundant information relative to strong ties, i.e., close friends who invariably know the same people and have the same information as others in the network. Burt (1992) provides a mirror image of the weak ties argument in his concept of "structural holes" which functions in the same way as weak ties: diffusion of rich information and knowledge. Although the strength of weak ties argument holds true, it does not imply that strong ties can be discounted. Under certain circumstances strong ties generate internal solidarity and trust with profound effect on collective achievements (Granovetter, 1982; Krackhardt, 1992).

Castilla et al. (2000:220) point out that high labour mobility in the Silicon Valley, particularly among engineers, reinforce the dense networks of the region. The high labour mobility also strengthens their role as channels through which technical and market information as well as other intangibles – organizational culture and trust, for example – are diffused and shared among the firms.

From the organizational ecology perspective, institutional embeddedness, i.e. relational density – which in a limited sense, increases with population density - confers high

survival rates on organizations (Baum and Oliver, 1992). Baum and Oliver (1992:541), concur that institutional relationships act as buffers that protect organizations from environmental uncertainty and competitive threats to survival. As their reward for their institutional relationships organizations in a community derive legitimacy, status and vital resources that enhance their chances of survival and growth.

2.3.1. Network Characteristics and Organisational Performance

Several network analysts, including Ibara (1992) and Castells (2000), observe that the realization of the gains from network structure and contacts is contingent upon network properties. The argument is that a well-structured network is an invaluable resource to its members, and vice versa. The key network properties include *consistency* and *connectedness*. Consistency refers to the extent to which there is a sharing of interests between the network's goals and the goals of its components (Castells, 2000:187). Connectedness, on the other hand, refers to the nature of connections and how it facilitates interactions between the members in a network. The dimensions of connectedness include density (the most important), positioning, openness, diversity, and strength of ties and medium of interactions, e.g., face-to-face (FTF) and electronic. All of these, individually and collectively, affect exchange outcomes, either positively or negatively, depending on the magnitude of their manifestations (Nan Lin, 1982; Granovetter, 1973, 1982; Villasalero, 1999; Nohria and Eccles, 1992; McKenny, Zack and Doherty, 1992; Burt, 1992, 1997). According to Villasalero (1999), quoting Glassmeier (1991) and Grabber (1993), density, defined as the size or number of contacts that a firm has in a network is not only a proxy for speed of learning diffusion, which is very valuable in the short-term. It is also for stability and compliance with standard routines, which are obstacles for long-term flexibility. Villasalero (1999:5) hypothesizes that the greater the density of relationships in an industrial district, the higher its competitive profile. Density, per se, is considered insufficient in maximizing the benefits of networks; diversity and openness are equally critical (Burt, 1992; Bell and Albu, 1999).

Several network analysts also show that apart from strengths-of-ties - associated with Granovetter (1973, 1982) - strengths-of-positions determine access to various benefits including ideas, information, power and resources (Nan Lin, 1982; Yamagishi et al., 1988; Villasalero, 1999; Brass and Burkhardt, 1992; Krackhardt, 1992). A study by Brass and Burkhardt (1992) indicate that centrality is positively and significantly related to power in an organization. On the contrary, Cook, Emerson, Gillmore and Yamagishi (1983) argue that under certain conditions centrality was not related to power. The implications are that centrality of an actor in a network may or may not enhance his or her power, and by inference, access to resources. It all depends on the nature of network connections – whether positive, negative or mixed (Yamagishi, Gillmore and Cook, 1988). Nonetheless, as Baker (1990) observes from the resource dependence perspective, with particular reference to investment banks, firms structure their market ties to reduce dependence and exploit power advantages. Thus, positioning in a network is not a sufficient condition for the maximization of power advantages. Control over resources or access to investors (in the case of banks) is necessary.

The dramatic advances in information and communication technologies (ICTs), particularly the telephone and the Internet, have revolutionized interactions, and impacted positively on industrial and economic growth in a way that traditional media of communication have not been able to do (Nohria and Eccles, 1992; Greenspan, 1999, 2000a, 2000b; Eggleston, Jensen and Zeckhauser, 2000; Castells, 2000; Brynjolfsson and Hitt, 2000:45). However, some analysts, e.g., Nohria and Eccles, (1992), Kraut, Steinfield, Chan, Butler and Hoag (1998), and McKenny et al., (1992) insist that the effectiveness of electronic networks depends on social structure. Face-to-face (FTF) interaction therefore cannot be ignored in any effort to build network organisations; FTF still has a vital role to play in information flow and production co-ordination in business organisations.

The literature on Chinese capitalism acknowledges that although *guanxi* (networks) facilitate problem solving, they could be dysfunctional in several ways or play a very small part in economic growth (Kwok Bun and Chee Kiong, 2000, and Li, 2000). Kwok Bun and Chee Kiong (2000) for instance argue that *guanxi* could be cumbersome and

costly when there are too many obligations to fulfil. According to Kwok Bun and Chee Kiong (2000:74), dependence on personalized relations tends to create problems of inheritance and wealth distribution. In some cases, a firm may dissolve or fragment into separate firms upon the death of the founder. Openness could also expose a firm's secrets, increase its vulnerability and weaken its competitiveness.

Network analysis is problematic in that it negates culture, agency, process, and the human factor, which are critical to understanding economic action and outcomes (Weber, 1968; Emirbayer and Goodwin, 1994; Brüderl, Preisendörfer and Ziegler, 1992; Adjibolosoo, 1993, 1995; Adu-Febiri, 1997). This limitation suggests that structural analysis of network relations, though useful, does not sufficiently explain economic behaviour and outcomes. This underscores the view that an integrated theoretical approach provides a much greater opportunity for insights into firm performance and the dynamics of industrial districts (Villaselero, 1999; Wei-ping, 2000; Chan Kwok Bun and Ng Beoy Kui, 2000). This approach also has limitations. For example, there is the danger of misapplication of concepts exported from one theoretical framework to explain aspects of a phenomenon in another theoretical framework (Marsh and Scot, 1995:293-294).

Thus far, the literature on network reveals that networks contribute either positively or negatively to organisational outcomes, but the bulk of the theoretical underpinning highlight the benefits of co-operation and not much of the risks or limitations (Adler and Seok-Woo Kwon, 2002:30). However, much of the assertions on the benefits of networks highlighted in the literature are not backed by empirical evidence (Casson, 2000:166). More research is warranted to substantiate the claims made in the name of networks in economic and sociological analyses, as well as in organisational theory. One area of interest, and least researched, is the relationship between network characteristics and business performance. Given the assumption that some characteristics are more likely to make a substantial contribution to business performance than other characteristics (Casson, 2000:178) it is imperative that this study focuses on network characteristics and performance. Besides, Kanter and Eccles (1992) observe that instead of debating on network as a characteristic and network as a type of organisation it would be more fruitful

to identify the characteristics of networks in both senses and relate them to performance to see if there are really differences in performance between network and non-network organisations. Although this study does not respond directly to Kanter and Eccles' (1992) proposition, it is not far from it; neither is the purpose different: both approaches remove the futility of arguing for the sake of heuristic value, and place emphasis on pragmatism.

2.4. The Paradox of Competition, Co-operation and Uneven Growth

The qualitative dimensions of networks, which, it is believed, underpin network structures and their functionality, and enable network structures to become vehicles of co-operation and success or failure in a competitive global economic environment, are also of vital interest to the study. As observed earlier, one of the pillars of the success of networks is the economic power of trust and co-operation existing with competition, although this is virtually ignored in the market theories of the Right and Left (Perrow, 1992).[3]

The rationale for co-operation has been approached from different theoretical perspectives, e.g., transaction costs theory, agency theory, game theory, real options theory, ecosystems theory and the social network theory. The root of all these theoretical perspectives lies in the complex and dynamic economic environment engineered by the rapid technological change and globalisation, widely acknowledged in the literature. However, of greatest interest in this study is the social network perspective.[4]

The review of the literature demonstrates that the rationale for co-operation from the network perspective is derived from the embeddedness argument and the possible outcomes of the strategic decisions and actions of firms. While the positive outcomes could be positive or negative, only a few theorists pay attention to the disparities in the performances of firms in industrial districts, and/or disparities in the performances of industrial districts.[5] Quite often, the mere mention of *industrial district* conjures assumptions of success, largely as a result of the success stories of the Third Italy, Silicon Valley, Sialkot, Sinos Valley, Palar Valley, Ludhiana etc., but these stories, though

authentic, cannot be construed as characteristic of *all* industrial districts. There are failure stories, and it is important - for obvious reasons - for the industrial district discourse to pay attention to these situations. The volume of scholarship in this area is now growing, and this helps to deepen analysts', managers' and policy makers' understanding of the dynamics of industrial districts.[6] This study aims to contribute to this trend. It attempts to do so by examining the underlying factors contributing to the low levels of networking and inter-firm co-operation, and hence the poor performance of the small clothing manufacturing enterprises (SCMEs) in the Durban Metropolis.[7]

2.4.1. Trust

Of particular interest is the lack of trust, which is believed to be the key factor underlying the poor performance of the Durban cluster of clothing manufacturing firms. Trust is perceived as the most important value underlying the maximisation of benefits in network relationships, co-operative behaviour and alliances (Thorelli, 1986; Fukuyama, 1995; Humphrey and Schmitz, 1998; Wu Wei-ping, 2000; Cohen and Fields, 2000; Faulkner and de Rond, 2002; Adler and Seok-Woo Kwon, 2002). According to Faulkner and de Rond (2002),

> Trust gives rise not only to lower transaction costs and higher investment returns, but also to more rapid innovation and learning according to Sabel (1994), as a consequence of a joint problem-solving attitude by the partners, free from the constraints that follow from anticipated defection (Faulkner and de Rond, 2002:31).

Fukuyama (1995:7) also observes that a nation's well being, (and if it may be added, an organisational well-being), as well as its ability to compete, is conditioned by a single pervasive cultural characteristic: the level of trust inherent in the society.

These views, and the wider notion of social capital (Coleman, 1988; Fukuyama, 1995; Cohen & Fields, 2000), of which trust is seen as a key source (Adler and Seok-Woo Kwon, 2002), are pervasive in the network literature. However, the key role assigned to trust in economic growth in the industrial networks literature runs the risk of reductionism. Trust

manifests itself alongside other human characteristics and cultural traits such as honesty, loyalty, accountability, reputation, discipline and responsibility. In tandem with human characteristics and cultural traits trust elicits appropriate behaviour that contributes to positive economic outcomes. To isolate and establish trust as a decisive factor would thus, require far more rigorous empiricist approach than thus far demonstrated in the literature; much of the claim has been largely intuitive.

Tönnies' (1955:8) argues in a sociological analysis of the development of group life from *Gemeinschaft* toward *Gesellschaft* or from *Community* towards *Association* that trust itself, or confidence, rests upon what he considered as the three great systems of social will: order, law and morality. These categories of norms and public opinion indeed, regulate behaviour, but according to Tönnies (1955), they are not mutually exclusive. This creates a problem in trying to establish trust as the main causal factor, in relation to other values, in terms of exchange outcomes. Even so, a successful empiricist approach may warrant a critical differentiation between the types of trust that ultimately contribute most to positive exchange outcomes. Applying Tönnies' (1955) concepts, it may be asked, is it trust invoked by personalised confidence or trust conditioned by impersonalised or rationalised confidence in which event personality is of little or no importance but rather wealth? Or in Luhman's (1979, cited in Holbig, 2000:19) equivalent terminology, is it personal trust or system trust?

Luhman (1979) argues (in Holbig, 2000:19) that personal trust is based on familiarity between individuals and thus is limited in scope, while system trust is based on impersonal and generalised media of communication such as power or money. In the process of social life becoming more complex, i.e., society becoming industrialised and highly monetised, the role of personal trust, will shrink gradually (Luhman 1979, cited Holbig, 2000:19). Luhman (1979:50) argues (in Holbig, 2000:19):

> Anyone who trusts in the stability of the value of money ...basically assumes that a system is functioning and places his trust in that function not in people. Such system trust is automatically built up through continual, affirmative experience in utilizing money. It ...is

> therefore incomparably easier to acquire than personal trust in new and different people all the time.

Holbig (2000:19), however, adds that the more widespread the use of money in a society, the lower will be the requirements for personal trust, limited through bonds of familiarity between members of that society. This correlation resonates with Tönnies' (1955) observation that folk life and folk culture, mores and religion that exist in the order of the Gemeinschaft manifest less in the Gesellschaft. In that context exchange outcomes are shaped much more by rational will than natural will in the Gesellschaft-like life.

The question, however, is whether rational will or system trust – in this event, trust in the use of money – ultimately evokes socially desirable consequences. To the extent that rational will or system trust is the dominant force in Gesellschaft-like life, not values, shared-feeling, folkways, mores and culture, there is always the spectre of conditional doom, although the transformation to Gesellschaft has its own appeal in improvement in the general quality of life through industrialization, trade, technology and science.

Social Darwinism, progressing from close-knit rural communities to large urban societies is characterized by specialization, role differentiation and alienation (Hughes, 2000) as people become goal-oriented, egotistical and would do anything to satisfy their self-interests, even at the expense and suffering of others without any moral compunction. In Tönnies (1955) view, there is, then, a tendency for society to move towards family life decay, misery of the common people, inequalities, class-consciousness leading to class struggle, and the destruction of society. The transformation from Gemeinschaft to Gesellschaft (thus) "means the doom of culture itself if none of its *seeds* (emphasis added) remain alive and again bring forth the idea of Gemeinschaft, thus secretly fostering a new culture amidst the decaying one" (Tönnies, 1955:270). In short, the transformation from Gemeinschaft to Gesellschaft or modernisation requires mediating mechanisms to counterbalance its excesses. Here lies the essence of culture in all its ramifications: folkways, values, norms, morality, etc., captured in what is now commonly

referred to as social capital or human factor, not just trust or "the limited scope of conventions and state power" (Tönnies, 1955).

2.4.2. Social Capital versus Human Factor

Social capital, defined variously by analysts,[8] has been described as nebulous and unwieldy, an "umbrella concept" (Hirsch and Levin, 1999) that "means many things to many people" (Lappe and Du Bois, 1997:119). As a result it fails to capture succinctly the prerequisites of economic growth.[9] It is believed that a more useful approach, which builds on these ideas more comprehensively and distinctly, is offered by the *human factor* (HF) paradigm. A key proponent of the human factor paradigm, Adjibolosoo (1995:33) defines the human factor as:

> the spectrum of personality characteristics and other dimensions of human performance that enable social, economic and political institutions to function and remain functional, over time. Such dimensions sustain the workings and application of the rule of law, political harmony, a disciplined labor force, just legal systems, respect for human dignity and the sanctity of life, social welfare, and so on. As is often the case, no social, economic or political institutions can function effectively without being upheld by a network of committed persons who stand firmly by them. Such persons must strongly believe in and continually affirm the ideals of society.

Among the personality traits that enhance human performance are responsibility, integrity, trustworthiness, commitment and discipline. The list also includes loyalty, competence, knowledge, tolerance, humility, love, wisdom, collegiality, vision, creativity, dedication, self-control, imagination, spirituality, and inventiveness, sharing and reasoning. These human characteristics have been broadly classified as spiritual capital, aesthetic capital, human capital, moral capital, human potential and human abilities, which are a sine qua non for the attainment of organizational growth and development. Extending the HF concept Owusu-Ampomah (2001) argues that HF also connotes the entire socio-cultural and political milieu in which the being finds

expression, and which defines its identity, institutions, values, needs, rights and duties. This, in effect, implies the social, moral, and political values that promote social cohesion and guarantee a civic community for progress. These dimensions are critical in this study, which primarily seeks to understand the relationship between network characteristics and performance.

2.5. Conclusion

In this chapter an attempt has been made to review the literature on network theory and economic performance. Notwithstanding the negative effects of social networks the general perception is that networks are catalytic to economic growth, both at the firm level and the national level. The literature, however, does not adequately address the relationship between network characteristics and firm performance. This is the gap that this study hopes to contribute to fill. It is the view of this author that the type of network relationship that a firm nurtures, as well as the medium of communication it employs, are critical for performance. It is also held that at the centre of all economic activities is the human being, in this event the entrepreneur. Therefore, the culture, religion, values, norms and personality traits of the entrepreneur constitute the foundation upon which productive exchange relations can be built for the success of an entrepreneurial firm. It is contended that an entrepreneur who possesses the appropriate personality traits, e.g., strategies, access to finance, firm size, an enabling environment and government policy, *ceteris paribus,* is more likely to succeed than the one who possesses negative personality traits. Similarly, an industrial district that boasts a network of men and women who are not only committed to their personal success but also to the well-being of the region as a whole, *ceteris paribus*, is more likely to prosper than an industrial district in which entrepreneurs show no commitment to the good of society. The method by which these broad suppositions and assumptions are explored is outlined in the next chapter.

NOTES:

1. An escape from this trap, it is suggested, is an integrated theoretical approach (Villasalero, 1999; Wu Wei-ping, 2000; Kwok Bun and Beoy Kui, 2002).

2. See Piore and Sabel, 1984.

3. That co-operation should exist side by side with competition in the same way as consensus and conflict do in the dialectics of social change, emphasizes the truism of dualism as a reality in human society. This, at best, is a reminder of the intellectual dilemma mentioned at the beginning of this chapter: the problem of explaining the social world and the organisational world. Indeed, it is quite appropriate that competition - as the "norm" in the modern economic sphere - is being debated. Some of the conclusions emerging indicate that competition is just a *myth*, and a powerful one, too. Co-operation is as much in evidence as competition is, even if the latter continues to be reckoned with as a major driving force in industry.

4. For detailed account of this and other theoretical perspectives of co-operation see Faulkner and de Rond, 2000.

5. For the latter see Villasallero's (1999) work on the optimal structure of an industrial district should be in order to maximize competitiveness in the short- and long-term.

6. See for example, Knorringa, 1999; Mccormick, 1999; Rabellotti, 1999; Schmitz, 1999.

7. See for example, Prinsloo, 1995; Harrison, 1996; Owusu-Ampomah, 1997; Kaplinsky and Morris, 1999.

8. See Adler and Seok-Kwon, 2002 for a sample.

9. See Fine (1999) and, Smith and Kulynych (2002) for a critique of social capital.

CHAPTER 3

THE RESEARCH METHODOLOGY AND DESIGN

3.1. Method

The key to unravelling a research problem is the research methodology, and this usually takes a form determined by the researcher on the basis of the nature of the problem being investigated. The methodological approach in this study is essentially a combination of quantitative and qualitative methods. This approach is termed as triangulation – a multiplicity of research methods, procedures and techniques in social research. The efficacy of this approach lies in the advantages in addressing a problem from different angles.

There is no single method, procedure or technique that is perfect or adequate to capture all the dimensions of a phenomenon. Many researchers, including Neuman (1997) and Zakaria (1999), state that a combination of different methods, procedures and techniques in social research allows the weaknesses in one method, procedure and technique to be offset by the strengths of other methods, procedures and techniques. Further, heterogeneous observations provide stronger evidence than one or very similar observations (Neuman, 1997:150). In this study, the multiplicity of methods ensured a more objective approach to establishing the relationship between network characteristics and organisational performance. It also facilitated a more comprehensive testing of the hypothesis set out from the beginning: That, of the identified types of networks fraternal networks, *ceteris paribus*, largely determine the performance of entrepreneurial firms.

By triangulation the study aimed at increasing measurement validity and inspiring confidence in the measurement of the constructs. The qualitative approach, while complementing the quantitative method revealed the richness and diversity of social settings in the business environment. It also increased the rigour and sophistication of data collection and analysis (Neuman, 1997).

The study was conducted within the framework of a case study as well as that of a sample survey. The case study approach offers the opportunity to study a sub-sector and a few cases of the sub-sector of the small business domain of South Africa's macro-economy. Although the case study approach also provides a variety of useful data sources, including direct observation and formal and informal interviews, it's greatest value, to a large extent, lies in the fact that it facilitates a rich analysis of considerable depth, detail and texture. In contrast with the sectoral analytical approach, commonly used in much of recent studies in the manufacturing sector,[1] the case study approach enables an extra-structural analysis of sectoral intricacies. It also facilitates the analysis of strategies and the normative underpinnings of behavioural patterns of actors in the small business sector. Above all, it allows an accurate specification of the causal process within the case or cases under study (Stoeker, 1993).

The sample survey, on the other hand, often provides numerical datasets that are usually representative, and facilitate rigorous statistical analysis. Using both the quantitative and qualitative data the study demonstrates how a multiplicity of methodologies can be used to "ground theoretical knowledge in the lived cultural and historical experiences of (the owner-managers of the small clothing manufacturing enterprises in Durban)" (Nabudere, 2002).

3.2. Research subjects

The research subjects consisted:

- 61 owner-managers of small clothing manufacturing enterprises in the Durban Metropolis (including Verulam and Tongaat);

- The KwaZulu-Natal secretary of the South African Clothing and Textile Workers Union (SACTWU), Mr. Sipho Gina;

- The President, Clothing Federation of South Africa (Clofed), Mr. Hassim Randeree;

- The Executive Director, Clothing Federation of South Africa (Clofed), Dr. Paul Theron.

By virtue of their positions, the three officials apparently carried much more insightful overviews and intimate knowledge of interactions within the industry than did any other member of the respective associations.

Why was the clothing sector selected for the study? First, the sector is labour intensive. Secondly, it is the single most important sector that particularly offers job opportunities to women, often marginalised in the formal labour market. Thirdly, the industry has been declining in the last decade or so, and from the labour market perspective, the decline raises much concern. Fourthly, the backdrop of the decline is the often-cited negative impact of globalisation. Although this is partly credible, it is also a fact that some contemporary industrial districts and even some firms within the Durban cluster have achieved a relative measure of success. Thus, the decline of the industry cannot be solely explained in terms of globalisation. The only way to identify other causal factors is through research, and that is the basis of this research.

The selection of the 61 owner-managers of SCMEs for the study was based on the availability and/or willingness of the owner-managers to participate in the study. A firm's eligibility for selection depended on whether it was classified as "small" or "big" from an initial cluster-sampling frame of 237 clothing manufacturing enterprises in Durban.[2] The concept of small business has been variously defined but in this study a small business is defined in terms of a simple quantitative criterion: a firm that employed up to 200 employees.[3] By this definition the initial cluster-sampling frame of 237 was reduced to 223 at the second stage of cluster sampling. This formed the basis of the interview population from which 61 firms (approximately 26%) were randomly selected. In the end, the final sample for the study showed a fairly proportionate distribution of the elements over the study area in accordance with the spatial distribution of SCMEs in the Durban Metropolis.

Cluster sampling is a simple random sample in which the sampling frame is a collection, cluster, or elements within a given universe (Scheaffer, Mendenhall and Ott, 1990). This sampling method was used in this study because of its inherent advantages. Cluster sampling is most appropriate where a comprehensive list of the research units does not exist, as in the case of the clothing industry. Cluster sampling is also cost-effective; it does not require any financial outlay. Although cluster sampling is prone to sampling errors, restricting the study to a two-stage cluster sampling approach enabled the researcher to avoid more sampling errors, usually found in multistage cluster sampling. In addition, spreading the elements of the sample over many clusters enhanced the representativeness of the population, reliability and validity of the results.

3.3. Data Collection

Four separate structured and semi-structured questionnaires were designed and used for the collection of data from the four distinct research subjects (see section 3.2.). The questionnaire for the owner-managers included closed- and open-ended questions. The inclusion of open-ended questions allowed probing, judgmental responses and elaboration of answers by respondents. It also enabled the researcher to have access to a considerable amount of qualitative data to supplement the quantitative data.

The data from the 61 owner-managers were collected between January and June 2001. Two of the three key actors in the industry were interviewed in September 2001 for the ethnographic data. The data from the third official, the Executive Director of Clofed, was collected by e-mail; the questionnaire was sent and returned through the electronic medium. It was possible to follow up the Executive Director's responses with further queries for clarification in some instances. The electronic medium did not only save time and resources but also bridged the distance between the researcher and the Executive Director.

The initial phase of the data collection from the owner-managers of the small clothing manufacturing enterprises through mail questionnaire was less successful; the response rate was only 12%. The bulk of the data was thus collected through direct administration and self-administered questionnaires. The latter was done in the presence of the researcher or research assistants drawn from post-graduate students in the researcher's Research Methods course in Political Science and Public Administration at the University of Kwazulu-Natal (Westville). The research assistants went through comprehensive training sessions. The training focused on the essence of the research, clarification of the questions and other salient aspects of the research that were critical to the reliability and validity of the primary data to be collected. By this approach, the researcher and research assistants were able to make pertinent observations, and probe responses. Responses were recorded in a written form and electronically in some cases, e.g., the interviews with the President of Clofed and the General Secretary of the Kwazulu-Natal South African Clothing and Textile Workers Union (SACTWU). Writing down responses was an insurance against a possible malfunctioning of the Dictaphone, which, indeed, did occur at one stage. The incident validated a useful caveat, "Never substitute tape recordings completely for field notes" (Neuman, 1997:364)

In addition to the researcher's field notes, the research assistants were advised to take down notes as well. The notes enabled each of the research assistants to submit a four-page report on their personal experiences, direct observations and comments.[4] These reports and field notes were useful in authenticating the completed questionnaires, analysing the data and providing insights into the status of networks in the clothing industry in Durban.

3.4. Data Analysis

The analyses of the quantitative and ethnographic data aim at:

- Mapping the scope and nature of inter-firm networks,
- Evaluating the effects of network characteristics on performance, and
- Understanding the dynamics of the network perspective of the clothing industry in Durban.

The qualitative data are hermeneutically analysed while the quantitative analysis is essentially based on descriptive network statistics, much of which was computer-generated, using SIMSTAT FOR WINDOWS statistical software. This is in conformity with the view that a useful approach to ascertaining patterns in network data is to examine distributions and summary statistics on a variety of network variables (Gerlach and Lincoln, 1992:512).[5] The variables, discussed in detail below, include density/size of business networks, openness, and location of networks, frequency of network contacts, medium of communication, and the level of education of owner-managers of the sampled SCMEs.

A central feature of the analysis is the categorisation of the sampled firms into high performance firms (HPFs) and low performance firms (LPFs). The HPFs are SCMEs whose average net profit per employee per annum for the period 1998 - 2000 is equal to or greater than R4000. The LPFs are SCMEs whose average net profit per employee per annum for the same period is less than R4000.[6] Classifying the firms makes it possible to ascertain the network configuration of SCMEs. It also allows comparison of groups (Gerlach and Lincoln, 1992:512), particularly in relation to the levels of networking. The object is twofold: First, to attempt to establish association or causality between networks and economic performance. Secondly, it is meant to understand the disparities between the performances of SCMEs in the Durban Metropolis from the network perspective.

3.4.1. Network Regression Model

Another useful analytical approach to ascertaining the effect of networks on performance in this study is the network regression model. A statistically significant regression coefficient of determination (r^2) between the density of fraternal networks and performance, for instance, would confirm or refute the hypothesis that fraternal networks largely determined the performance of SCMEs in Durban. Computed openness indices (OIs), based on weighted coding by loading points on the independent variables, are also expected to correlate with performance and thereby lend empirical support to the widely held view that networks have positive influence

on business performance. If the openness index (OI) of a firm is high, the level of networking of the firm will also be high; if the OI is low the level of networking will be low. In the event of the former being true the firm is described as outward looking, and in the latter, it is inward looking.[7] Similarly, a composite index for the sample would enable the determination of the level of networking within the sample and in the clothing industry in Durban, as whole. In that event, the perception that a low level of networking is partly to blame for the relatively poor performance of the industry could be confirmed or refuted.

Generally, regression is a flexible tool that can be used to test a variety of theoretical assertions but its use for inference depends on assumptions that may not necessarily be plausible when applied to macrosocial indicator data, (Dietz, Frey and Kalof, 1987). Dietz et al (1987) contend that population residuals may not be normally distributed and warns researchers to pay attention to this possibility. Following this caveat, this study complements the parametric approach with nonparametric techniques, e.g. the Chi Squared (χ^2) test.

One source of problems in regression analysis is the extreme values or outliers. It is usual to delete cases that generate outliers to correct for non-normality in ordinary least squares (OLS) regression analysis. But deleting outliers does not necessarily fulfil a useful function; it does not guarantee a normal distribution of population residuals (Dietz et al., 1987:383). Among other things, the study follows the OLS analytical trajectory, as Dietz et al (1987) recommend, with a careful examination of residuals and a search for influential observations. This marked the second phase of the analysis, which was necessitated by the failure to establish strong generic trends in the initial phase. (The failure was perhaps due to a survey dataset that was not comprehensive).

Cognisant of potential measurement errors, tight levels of significance in the parametric tests (and nonparametric tests, as well) are maintained to reduce, as much as possible, the effects of errors in the estimates. This does not, however, imply that all errors are accounted for in the estimates; apparently some do remain, as it should be expected in any research. But it is the belief of this researcher that sufficient

caution has been taken to minimise the errors and thereby maintain a high level of confidence in the results. In any event, if the ethnographic data and the statistical results converge, such a convergence gives additional support to the interpretation of the findings (Jick, 1979; Uzzi, 1996).

3.5. Measures

In research there is always interest in asymmetrical relationships. By asymmetrical relationships it is postulated that one variable (the independent variable or IV) is responsible for another variable (the dependent variable or DV) (Emory, 1976). Determining IV and DV is not always easy; a variable could double as an independent variable in one instance and also a dependent variable in another instance. It is also possible that a variable can only assume one form but not the other. The basic principles for determination, however, are fixity or alterability of the variables and the time order between them. If a variable is relatively unalterable then it takes the form of an independent variable, but is designated as dependent if alterable. On the other hand the temporal order of two variables dictates that the independent variable will always precede the dependent variable. In this study, the research problem implicitly defines type of networks as the independent variable, and economic performance as the dependent variable.

3.5.1. *Dependent Variable*

Measurement of economic performance is problematic. There is no consensus on what constitutes business success; different people define it differently, and how one defines it often depends on the specific cultural context and the parameters used (Zakaria, 1999). The parameters include achieving set goals or targets, profits, growth and expansion, perpetuity, absence of debts, financial turnover, luck, supernormal intelligence and skill (Zakaria, 1999:177-181) and positive entrepreneurial traits such as trustworthiness, foresight, drive and a high sense of responsibility and discipline (Adjibolosoo, 2000).

Further, Zakaria (1999) maintains that business success is also transient and erratic. Failure today does not necessarily mean failure forever, and vice versa. Business success therefore cannot be analyzed adequately within a short-term frame. In this context, Villasalero (1999) argues that measurement of performance at the network level should be in the short- and long-term.

In this study economic performance is defined in terms of profitability although like all other parameters, it is not a sufficient measure of business success. In any event, performance, alongside growth and perpetuity, is seen as a prerequisite indicator of business success in most modern economies (Zakaria, 1999:181). In the analysis the economic performance of each of the sampled firms is computed as the average economic performance (AEP) over a three-year period (1998-2000).

3.5.2. *Independent Variable(s)*

In Chapter 2, a network was defined as a group of economic and/or non-economic actors that maintain a formal or informal ongoing and exclusive relationships or ties in which the medium of interaction is either face-to-face or electronic, or both. But what are the indicators of networks? In other words, how does one measure a network? The multiplicity of structural characteristics of networks, as shown in Chapter 2, warranted a judicious choice-decision if the relationship between network characteristics and business performance were to be captured unambiguously and convincingly. Three types of networks were in the end identified - factor, communication, and fraternal networks - and the choice synthesized much of the views on the typology of networks in the literature.

3.5.2.1. Factor Networks

The nature of business activity essentially tends to determine the relationships that a firm may contract although there is a possibility that a relationship could be a forerunner of a business undertaking. Fundamentally, business relationships may be in the spheres of marketing, production (supply of raw material), technology (techniques of production), finance, labour (internal labour relationships) etc. Relationships of this kind, hinged on inputs, are described as *factor networks*. Such relationships tend to be

functionally determined, transient or long lasting, but rarely permanent, and may vary in their relative significance though all may be basically indispensable. Alongside the *quality* of a firm's network contacts, the *density* or *size* of factor networks has a direct bearing on performance. It is contended that the failure or success of an entrepreneurial firm can be located in the number of its factor network contacts. This contention influenced the research design, particularly the design of the research instrument.

3.5.2.2. Communication Networks

Interactions between firms, ostensibly for the purpose of exchange of information or ideas, may take place either *face-to-face*, through the *electronic medium* or through the traditional print medium. Of the three mediums the first two were of considerable interest in this study. Entrepreneurial firms are not, for various reasons, keen record keepers, and therefore sparingly use the print medium in communications. Beyond this, however, what mattered most, were not just the interactions but also the outcomes in terms of financial performance. In this event, the argument from the outset was that the medium of interaction that optimized financial performance could be critical to these firms. The *frequency* of communication between firms, we supposed, might also be pertinent to the performance of a firm. From these perspectives we measure the significance of communication networks to entrepreneurial firms along these two delineated paths - the medium of communication (face-to-face and electronic media, e.g., telephone, fax, Internet, e-mail etc.) and the frequency of contacts.

It was also believed that spatial distribution of networks could also influence organizational performance. The study thus ascertained the importance of *internal* and *external* communication networks, in comparative terms, to business performance. In other words the location of network contact-persons and its impact on business performance were critical to the study. The question was whether network contacts outside the study area were more helpful than network contacts within the locality where the firms operated. *Internal* communication networks refer to communication linkages between firms and people within the study area, the Durban Metropolis.

External communication networks refer to linkages between firms and people outside the study area. The investigation into the relationship between the spatial distribution of networks and performance also served to highlight the significance of *diversity* of networks in business performance. Density, per se, does not sufficiently explain the relationship between networks and performance (Burt, 1992).

3.5.2.3. Fraternal Networks

To great extent small enterprises tend to rely on social relationships in the conduct of business, particularly for the exchange of information and ideas. Friendship may not be the direct source of economic reward to a business but rather an instrument in obtaining other relevant resources such as information or rewards (Brass and Burkhardt, 1992:198). Friendships may also be the bases for forming coalitions, although coalition formation for a specific purpose could also result in friendship. Essentially, however, the desire to succeed usually induces co-operation and sharing of information that is likely to direct friends towards their goals. Friendship and other forms of social relationships are thus vital to owner-managers of small enterprises. From this basis it is argued that the density, diversity and frequency of fraternal network contacts could also be as much critical for business performance as they are in factor network contacts.

3.6. Control Variables

From the outset the study pointed out several explanatory variables of economic growth and organisational performance. This implicitly built into the study a few control variables while focusing on network characteristics (see Chapter One). The control variables include age of firm, resources such as finance and technology, and trade and industrial policy (i.e. government). Further control variables that are known to exert influence on inter-firm relationships and performance include diffusion of ownership. Diffusion of ownership is the equivalence of share-ownership across a variety of firms. This set of controls not only allows unbiased estimates of the owner managers' network effects, but also affords a comparison of the relative predictive

power of SCMEs' network attributes on firm performance outcomes (Gerlach and Lincoln, 1992:508).

3.7. Limitations of the Study

Besides the control variables, the study has other limitations. One of the limitations is its narrow focus. The study focuses on inter-organisational networks but not intra-firm network dynamics. In other words, the study restricts its 'networking focus' to owner managers' personal contacts. As such, it fails to capture "the full text of learning activities and sub-processes which are embedded in the wider interfaces and actions of organisational members" (Theodorakopoulos and Wyer, 2000:4). This is not an oversight; it was impracticable to conduct a research of such a scope and magnitude, given the limited time for the study.

Secondly, the study relies on cross-sectional data, which generally suffer from limited internal validity. The use of longitudinal data is likely to offer a more comprehensive overview of networks in the clothing industry in Durban. Notwithstanding this limitation the relatively large sample makes the findings generalizable to the population from which it was drawn.

Another limitation of the study is its narrow focus on the manufacturing sector - and narrowing, still, to the clothing-manufacturing sector - of the Durban Metropolitan Area (DMA). The focus on manufacturing is methodologically and logistically expedient: the scope is ideal given the limited resources at the disposal of the researcher. The manufacturing sector, noted in Chapter 1, is also the economic engine of the DMA, and Kwazulu-Natal as a whole (Durban Metro, 2003). The clothing and textile sector is also one of the most significant sub-sectors in terms of net output of the DMA's manufacturing sector. However, critical for the prosperity of the DMA, the clothing sector, as widely documented, is declining. Although this is factual, a few manufacturers have managed to stay competitive through restructuring into niche markets or higher quality and value segments of the market. Others have done so through relocation to areas outside the control of the Bargaining Council of the Clothing Industry (BCCI) to take advantage of the low wages and limited regulation

in those areas. But, generally, many of the firms are still struggling to cope with the new economic environment, with serious sociological consequences, and this underlies the rationale for this study (Harrison, 1996; Owusu-Ampomah, 1997; Morris, Barnes and Dunne, 1998).

NOTES:

1. See, for example, Morris, Barnes and Dunne, 1998; Kaplinsky and Morris, 1999; Fakude, 2000 and Wesgro, 2002.

2. A list of clothing manufacturing enterprises registered with the Kwazulu-Natal Bargaining Council for Clothing Industry served as the sampling frame for the study.

3. See Owusu-Ampomah (1997) for a detailed discussion of the various definitions of small business. The definition adopted here follows one of the aspects of the quantitative criteria upon which the official definition of small business is based (see the National Small Business Enabling Act (NSBEA) of 1995).

4. This exercise formed part of the assessment of the research assistants, post-graduate students in Research Methods in Political Science and Public Administration. The involvement of the students in the research was thus mutually beneficial to both research assistants/students and the researcher.

5. See Appendices F, G, and H for the tabulated survey data, I for the descriptive statistics and J for the variable acronyms.

6. See Appendix A.

7. See Appendix B for the calculation of the OI; Appendix C for the openness index data for the sampled firms.

PART II

DATA ANALYSIS AND RESEARCH FINDINGS

In this section, comprising chapters 4, 5, and 6, the statistical and qualitative analyses of the data and the main findings of the study are presented. Chapter 6 is a simplified version of chapters 4 and 5; statistically literate readers may skip.

From the outset, the study corroborated existing orthodoxy that generally networks and inter-firm co-operation were catalytic to the growth of small manufacturing enterprises (SMEs). The concern, however, was the isolation thesis and the relative significance of the relationships between network characteristics and the growth of SMEs. It was postulated that the nature and scope of business networks were critical dimensions to the growth and development of small manufacturing enterprises (SMEs).

In the study the nature of networks is defined as types of networks, and these were identified as factor, fraternal and communications networks. The scope of networks on the other hand implied the size, diversity, openness, location and frequency of network contacts. It was contended that the collective efficiency and competitiveness of SMEs derived from specific types of networks, which tended, first, to enhance the economic performances of individual small firms, and then the industry as a whole. It was also hypothesized that the economic performance of the small clothing manufacturing enterprises in Durban, *ceteris paribus,* was largely dependent on fraternal networks.

The analysis of the survey and qualitative data, thus, seeks to:

- Establish whether the isolation thesis is applicable to the small clothing manufacturing enterprises in Durban. This is achieved through an analysis of the scope and nature of networks among the sampled firms.

- Identify the factors that contribute tot the state of networks and inter-firm co-operation in Durban's clothing manufacturing industry;

- Establish the relationship between network characteristics and economic performance of firms;

- Identify the most significant type of networks for the growth of SMEs;

- Identify the conditions that facilitate the type of networks that promote the collective efficiency of the enterprises.

CHAPTER 4

THE ISOLATION THESIS AND THE RELATIONSHIP BETWEEN NETWORKS AND BUSINESS PERFORMANCE

4.1. Introduction

This chapter presents the first phase of the data analysis and findings of the study. The analysis is focused on the scope of factor and fraternal networks in relation to the isolation thesis and business performance.

Evidence from the factor and fraternal networks data preliminarily shows that:

- The small clothing-manufacturing enterprises (SCMEs) in Durban are relatively isolated. This is confirmed by the limited scope of networks, i.e., network density, diversity, and openness, among the sampled small clothing manufacturing enterprises.

- The scope and nature of networks contributes to the performance of the small clothing manufacturing enterprises in Durban. In other words there is a positive relationship between network characteristics and business performance, though not as strong as expected.

- The hypothesis that economic performance of entrepreneurial firms, *ceteris paribus*, is largely dependent on fraternal networks is not empirically supported.

4.2. Factor Networks and Business Performance

4.2.1. Density of Factor Networks (FACNET)

Evidence from the survey indicates that the scope of factor networks among the small clothing manufacturing enterprises in Durban is limited. The data show that the minimum number of firms that an SCME in the study interacts with (hitherto designated as "factor networks") is 1 and the maximum is 75. The sample's mean number of business relationships with other firms is 13.7, with a standard deviation of 13.05. The mean factor network density of high performance firms (HPFs), however, is lower than that of the low performance firms (LPFs). The mean for the HPFs is 11.52 with a standard deviation of 8.78; the mean for the LPFs is 16.29, with a standard deviation of 16.55.[1] It can thus be inferred that the *higher the number of firms/organisations that an SCME in the sample interacts with on issues of production co-ordination, the lower is the financial performance of the firm.* In other words, the statistics suggest that the factor network density of those high performance firms in the population is more likely to be less than the network density of the low performance firms.

This finding is unusual, and runs counter to expectation. The finding is also difficult to explain, given that the dataset is cross-sectional. It can be speculated, however, that the need to look for and establish more network contacts - rich in information and resources to improve performance - would be enhanced when a firm is experiencing a downturn. As performance improves with a corresponding increase in network contacts there could be a point where network contacts would reach a threshold and cease to be critical for a firm's performance. At that point the firm's network density may begin to decline or stabilise while performance increases. In other words a firm's embeddedness reaches a threshold when the positive effect of performance on network density reverses itself. The converse of this explanation is reported in Uzzi (1996). According to Uzi (1996:675), an organisation's network exchange relationships shape performance such that performance reaches a threshold as embeddedness in a network increases. After that point, the positive

effect of embeddedness reverses itself. These conclusions indicate a symbiotic relationship between factor networks and performance.

Notwithstanding these observations the question is whether there is a significant difference between the network density of HPFs and that of LPFs or not. The study finds that the difference between the mean network density of HPFs and that of LPFs is not statistically significant. At a significance level of 0.01 $t_{calc} < t_{crit}$ on the t-table with 40 DF and above H_0 is thus accepted, implying that with a probability of 99% it can be concluded that there is no significant difference between the mean network density of HPFs and that of LPFs. *Thus, the number of firms that a firm in the sample interacts with, over input, has little influence on the performance of the firm.* This is reflected in Table 4.1, which shows that although there is a positive relationship between the number of factor networks and performance, the relationship is very weak (r^2 = 0.0109). At a confidence interval of 95% with a degree of freedom (DF) at 1 and 59, F ratio, equal to 0.647, is not statistically significant.

TABLE 4. 1: REGRESSION: FACNET with AEP

AEP Average Economic Performance (1998 – 2000)
by FACNET Number of Factor Networks
Regression
R = .1042 R Square = .0109 sig. of R = .4243

Analysis of Variance

Source	D.F.	Sum of Squares	Mean Squares	F Ratio	F Prob.
Regression	1	52754175518.522	52754175518.52	.647	.4243
Residual	59	4807631867508.0	81485285889.96		

Equation: AEP = 250217.748 + (2272.7851 * FACNET)

Variable	B	SE B	95% confidence interval	F	Sig F
Intercept	250217.748	53239.5151	143722.255 to 356713.240		
FACNET	2272.7851	2824.6819	-3377.4522 to 7923.0224	.647	.4243

Standardized residual caseplot

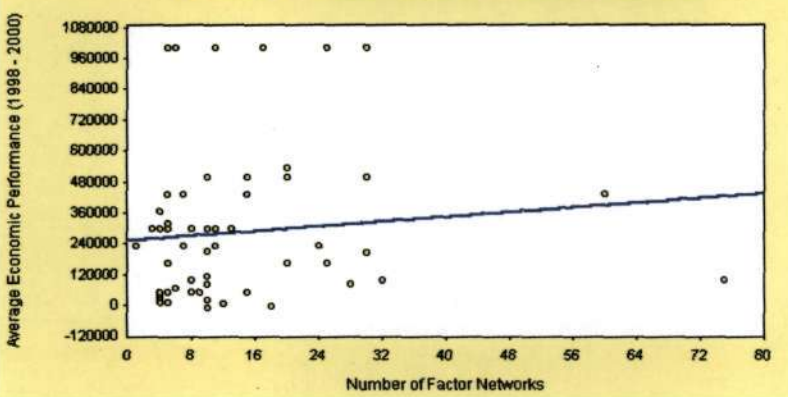
Case #	Predicted	Obtained	Residual	Standard	-3.0 0.0 3.0
1	307037.3761	1000000.000	692962.6239	2.43	. . * .
5	261581.6738	1000000.000	738418.3262	2.59	. . * .
12	263854.4589	1000000.000	736145.5411	2.58	. . * .
14	288855.0952	1000000.000	711144.9048	2.49	. . * .
51	318401.3017	1000000.000	681598.6983	2.39	. . * .
56	275218.3845	1000000.000	724781.6155	2.54	. . * .

Case #	Predicted	Obtained	Residual	Standard	-3.0 0.0 3.0

VALID CASES: 61 MISSING CASES: 0

This conclusion undermines the hypothesis that the scope of business networks is a significant factor in the financial performance of small firms, but closure is premature. The reason is twofold: First, factor networks constitute just one component of the scope of business networks, and this component is not representative of the rest. Secondly, there is the need to take the outliers into account for reasons illustrated in Figure 4.1. The factor network density of most of the firms does not exceed 30. The data also show that the average economic performance per annum of most of the firms is less than R600 000. Yet, there are a few firms whose average economic performance per annum is as high as R1 000 000 and above. These are the outliers. The question is: 'What distinguishes the outliers from the rest of the sampled firms?'

Figure 4.1: REGRESSION: FACNET with AEP

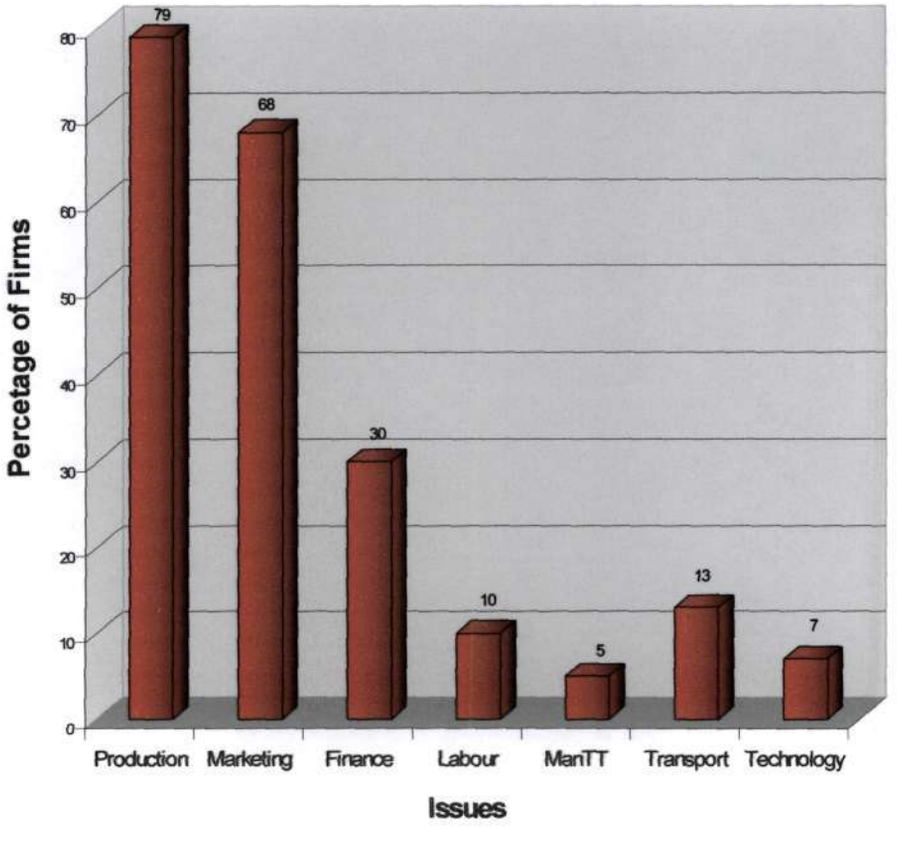


Apparently, the definitive relationship between the scope of networks and performance can only come at the end of the analysis. Until then, the analysis of, and findings from the data on some finer internal dynamics of factor networks are presented.

4.2.2. *Issues discussed during interactions*

The respondents were asked about the subject often discussed in factor network contacts. The results show that production, marketing, finance, transport, labour, managerial and technical training often feature in the discussions of the sampled firms. The majority of the firms (79%), however, often discuss production issues in their factor networks interactions (Figure 4.2). Marketing features in the interactions of 69% of the firms while finance, transport, labour and technology are central in the interactions of 30%, 13%, 10% and 7% of the firms respectively. The least often discussed issue is managerial and technical training (ManTT); only 5% of the firms often engage in discussions around this subject.

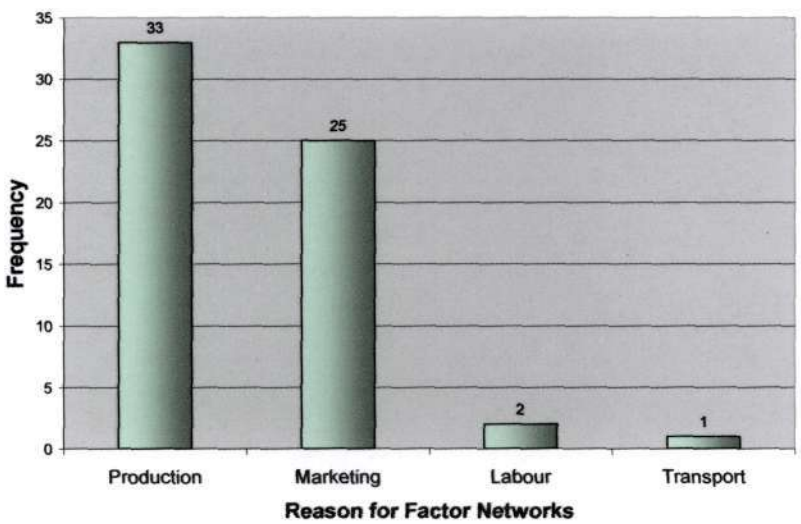
Figure 4. 2: Issues Discussed During Interactions



4.2.3. *Most Significant Issue Discussed*

For the majority (33, i.e. 54%) of the respondents in the sampled SCMEs, the most significant issue that features in their factor network interactions is production.[2] The next dominant themes are marketing (25, i.e., 41%), labour (2, i.e., 3%) and transport (1, i.e., 2%) (see Figure 4.3).

Figure 4. 3: Most Significant Reason for Factor Networks



This finding belies the orthodox view that marketing is most significant to SMEs. It is found, however, that the dominance of production issues is a reflection of the concerns of the dominant group of businesses, CMTs, in the study. CMT enterprises make up approximately 59% of the sample, and of this number 67% consider production as the most significant issue. In contrast, the majority of the firms (69%) owning lines of production (Ms = "manufacturers" in this context) view marketing as the most significant issue to their businesses. This group constitutes only 21% of the sample. There is a 50-50 split among those firms that have their own lines of production (Ms) and also do CMT work at the same time (see Table 4.2). While 42% (5) of this group view production issues as most significant, the same percentage of the group (42%) regards marketing as the key issue in their business interactions. Only two (3%) and 1 (2%) of the sampled

SCMEs respectively consider labour and transport as critical elements in their interactions.

Table 4.2. Most Significant Reason for Factor Networks (MSRFAN) and Nature of Business (NBUS)

NBUS\MSRFN	Production	Marketing	Labour	Transport	TOTAL
Ms	4 (31%)	**9 (69%)**	0 (0%)	0 (0%)	**100**
CMTs	**24 (67%)**	11 (31%)	1 (2%)	0 (0%)	**100**
CMTs\Ms	5 (42%)	5 (42%)	1 (8%)	1 (8%)	**100**

Table 4.3 presents the responses of the firms in the two performance categories (HPFs and LPFs) and the most significant reason for factor networks. Out of the firms that consider production as the most significant reason for business contacts, 31% is in the HPFs category while 23% is in the LPFs category. On the other hand, 21% of the firms that perceive marketing as the most significant reason are HPFs as compared to 20% for the LPFs. The same number of HPFs considers labour issues as the most significant reason as does the number of LPFs. The only firm that opts for transport is an LPF.

Table 4.3: Most Significant Reason for Factor Networks and Performance Category

	Production	Marketing	Labour	Transport	Total
HPFs	**19 (31.%)**	**13 (21%)**	1 (1.65%)	0 (0%)	**33**
LPFs	14 (23.0%)	12 (20%)	1 (1.65%)	1 (2%)	**28**
Total	**33 (54.0%)**	**25 (41%)**	**2 (3%)**	**1 (2%)**	**N=61**

At this juncture the question that may be asked is whether HPFs and LPFs have different reasons for engaging in factor networks. In other words is there a significant difference between the number of HPFs and that of LPFs that consider production, marketing, labour or transport as the most significant reason for factor networks? The study finds no statistically significant difference. *Thus, irrespective of the economic performance of an SCME in the Durban Metropolis, the number of owner-managers who think that production, marketing, labour or transport is the most significant reason for factor network relationships is virtually the same.* In other words the decision on whether

production, marketing, transport or labour is the most significant reason for engaging in business contacts is not influenced by performance.

4.2.4. *Reason for Most Significant Issue Discussed*

Table 4.4 provides a summary of the responses of the sampled SCMEs to the question of why production, marketing, labour or transport was most significant to the respondents. Majority of the respondents who identify production as the most significant reason for factor networks consider production as their main preoccupation, and job security as an important goal. While 12 of them say that production is their preoccupation, 11 demonstrate their concern for job security, apparently showing concern for the high rate of unemployment in the country.

The next important reason relates to the notion that without production there could be no business. This is the view of 6 of the respondents. Although this view may not be true always, as in the events of futures, pre-financing or some credit transactions, the general pattern of business transactions reflects immediacy of production. This is a key principle that guides a sizeable proportion of the sampled small businesses. The study observes that only 3 of the respondents in this category emphasize the profit motive, and only one, in each case, raises the issue of customer satisfaction and the relationship between quality and sales.

On marketing, there is no significant variation in the responses of the sampled SCMEs. Any differences are a matter of semantics, as shown in Table 4.4. The responses converge on the importance of marketing as the ultimate object of production, profitability and survival of any business. Marketing and production are inter-related such that the question of order does not arise.

Table 4.4: Reasons for Most Significant Theme of Discussions*

MSRFAN	Reason	No. of Respondents
PRODUCTION	Greater output, higher turnover/profit	3
	Quality production, more sales	1
	No production, no business	6
	We are manufacturers; our job is to produce	12
	For customer satisfaction	1
	It creates employment	11
MARKETING	No sales, no production/profit	5
	Makes business stable	3
	Makes business grow	5
	Business relies on sales	7
	Survival of business depends on marketing	5
LABOUR	Good labour relations are necessary for business to grow.	1
	No labour, no production	1
TRANSPORT	It makes business grow	1

* *Multiple responses were accommodated. The table thus reflects responses that correspond with the major themes.*

The significance of production to CMTs and marketing to Ms are logical, and this is illustrated by one of the owner-managers:

> "We (the CMT owners/managers) only need to sell our production capacity. We don't need to bother ourselves about the marketing of finished products; the marketing we do is aimed at securing production orders - contracts and subcontracts - and that is minimal" (Naidoo, 2001).

In contrast, Ms generally believe that without sales there could be no business, although they recognize that there could be no sales without production as well. Sometimes sales may come before production as it is the case with futures.

Only 3% of the respondents view good labour relations as indispensable for output optimization and profit maximization.

In short, the study finds that *ceteris paribus, marketing is a necessary and sufficient condition for the survival of small manufacturing enterprises in the clothing industry, but not necessarily so for CMTs.*

4.3. Fraternal Networks and Business Performance

4.3.1. *Density of Fraternal Networks*

The survey data show that the density of fraternal networks is low. The minimum number of persons with whom SCME owner/manager in the sample discuss business-related activities is 2 and the maximum is 35. The mean for the sample is 10.02 with a standard deviation of 7.03, indicating a not-too-great dispersion from the mean.

Table 4.5: FRANET: Descriptives for HPFs and LPFs

	N	Mean	Std. Deviation	Student t-test
HPFs	33	9.48	5.30	t_{calc}=0.615
LPFs	28	10.64	8.70	

Note: α=0.05; df=59

$t_{calc} < t_{crit}$

The study finds the mean density of FRANETs of both HPFs and LPFs categories to be 9.48 with a standard deviation of 5.30, and 10.64 with a standard deviation of 8.70 respectively (Table 4.5). The data show that LPFs tend to have more fraternal networks than HPFs. This is consistent with the finding with respect to factor networks, and in that event similar conclusions, as before, can be drawn (see section 4.2.1). A test of significance also gives similar results as in the case of factor networks. A Student t-test shows that the difference between the mean sizes of FRANETs of both HPFs and LPFs is not statistically significant. At a significance level of 0.05, with df=59, $t_{calc} < t_{crit}$ (actual value of t_{crit} is close to 1.671). This implies that the density of FRANET does not significantly explain the disparity in the economic performances of SCMEs in the Durban Metropolis.

Table 4.6: REGRESSION: AEP with FRANET

AEP Average Economic Performance (1998 - 2000)
By FRANET Number of Fraternal Networks
Regression
R = .3029 R Square = .0918 sig. Of R = .0176
Analysis of Variance

Source	D.F.	Sum of Squares	Mean Squares	F Ratio	F Prob.
Regression	1	446017852189.34	446017852189.3	5.961	.0176
Residual	59	4414368190837.2	74819799844.69		

Equation: EP = 158515.746 + (12264.9271 * FRANET)

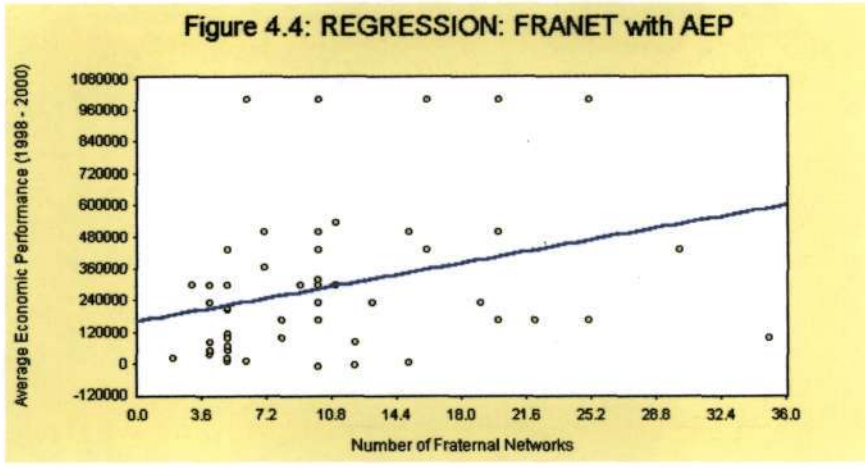
Variable	B	SE B	95% confidence interval	F	Sig F
Intercept	158515.746	61304.8270	35887.1359 to 281144.356		
PC	12264.9271	5023.3926	2216.5886 to 22313.2657	5.961	.0176

Standardized residual case plot

Case #	Predicted	Obtained	Residual	Standard	-3.0	0.0	3.0
5	281165.0176	1000000.000	718834.9824	2.63	.	.	*.
12	281165.0176	1000000.000	718834.9824	2.63	.	.	*.
14	354754.5805	1000000.000	645245.4195	2.36	.	.	*.
51	403814.2890	1000000.000	596185.7110	2.18	.	.	*.
56	232105.3090	1000000.000	767894.6910	2.81	.	.	*.
Case #	Predicted	Obtained	Residual	Standard	-3.0	0.0	3.0

VALID CASES: 61 MISSING CASES: 0

A linear regression analysis (two tails) also shows that there is a positive relationship between FRANETs and the average economic performance (AEP) of the sampled firms (Figure 4.4). The positive relationship is, however, weak. As shown in Table 4.6, the coefficient of determination (r^2=0.0918) and the F ratio (5.961) are not significant values. Thus, *although fraternal network density is a factor in the performance of SCMEs it is not a particularly strong factor for growth.*



4.3.2. *Persons with whom SCME Owner-Managers Discuss Business-related Activities.*

The sampled SCME owner-managers were asked to indicate the type of persons with whom they discussed business issues. In Table 4.7, most of the respondents discuss business issues with colleagues with whom they have co-production arrangements (Column 4) or colleagues doing the same business (Column 5). The figures are 83.6% and 62.3% respectively. Of the 61 sampled owner-managers 24.6% discuss business issues with friends; 26.2% discuss business issues with relatives.

Table 4.7: Persons with whom Owner/Managers discuss business-related issues and Subject of Discussions[3]

ISSUES\PERSONS	FRIENDS	RELATIVES	COLLEAGUES I	COLLEAGUES II	OTHER
Production	6	7	30	19	2
Marketing	8	7	19	17	0
Transport	0	1	1	0	0
Labour	1	1	1	2	0
TOTAL (n=61)	**15 (24.6%)**	**16 (26.2%)**	**51 (83.6%)**	**38 (62.3%)**	**2 (3.3%)**

The data in Table 4.7 also show that much of the interaction that occurs between colleagues is centered on production and marketing. This finding is consistent with the finding with respect to factor networks (see section 4.2.3).

4.3.3. *Partial Measurement of Openness of Sampled Firms*

In a partial openness assessment the study found that SCMEs in the sample are considerably inward looking.[4] On a 100-point partial openness scale, with 0 indicating extremely inward-looking and 100, the highest level of openness, the sampled SCMEs score (not weighted) was 40.

Table 4.8: Persons with whom Owner/Managers Discussed Business-related Issues and Category of Firms' Performance

Firms	Friends	Relatives	Colleagues I	Colleagues II	Others	Total
HPFs	6	6	26	23	1	**62**
LPFs	9	10	25	15	1	**60**
Total	**15**	**16**	**51**	**38**	**2**	**122**

The comparative partial openness indices for HPFs and LPFs were 20.3 and 19.7 respectively (see Appendix B). Showing a paltry difference of 0.6, the difference, nevertheless, indicates that HPFs are relatively more open than the LPFs. This is suggestive that *the more open an SCME in the Durban Metropolis is, the more likely it could perform better on the financial scale in relation to the levels of its previous performance*[5].

4.3.4. *Reasons for Not Discussing Business Issues with Friends and Relatives*

Why do most of the firms not want to discuss business issues with friends and relatives? A sample of responses to this question is provided in Table 4.9. Generally, the responses reflect lack of trust in friends and family members, and the fear of losing one's

competitive edge through inadvertent divulgence of trade secrets, formulae and/or technology. The responses suggest that a cautionary approach to trading is desirable. It is a fact that the World Trade Organisation's Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) provides strict conformity with rules and regulations on intellectual property rights. However, there is no guarantee that brandnamed clothing in the pipeline, for instance, may not be pirated before the original owner got it off the production line.

Table 4.9: Reasons for not discussing business with friends and relatives

Reason	No. of Responses
Business is confidential.	10
Friends don't bring any profit in business.	7
Family, pleasure and business do not mix; you may lose family over business squabbles or lose your business.	11
Business is competition.	2
Not necessary. Family and friends have nothing to do with business activities.	13
Negative ideas from friends and relatives can kill the business.	3
Not interested; do not like it.	4
Non-business minded people know very little about business problems; it's useless talking to them about business.	5
No response.	9

In contrast to the negative perceptions of the role of friends/relatives and colleagues in business, a few owner-managers have no objection to discussing business issues with outsiders. Such owner-managers believe that wide network ties foster business growth. One of the respondents explains, "The more people I interact with, the more business I get" (Rasool, 2001).

4.3.5. *Location of People with Whom Owner-Managers Discussed Business-Related Issues*

Majority (58%) of the respondents declared that persons with whom they discussed business issues were located in Durban; 42% of the respondents discuss business issues with persons in and out of Durban. The data show that the fraternal networks of majority of the sampled SCMEs (55.8%) do not extend beyond the Durban Metropolis (Table 4.10); only 41.0% of the firms engage in fraternal network interactions both within and outside Durban. There was no response from 3.2% of the respondents.

The data (Table 4.10) suggest that CMT/Ms are relatively more indifferent to the location of fraternal networks than the CMTs and Ms. Firms of the CMT/Ms category are split, almost equally, between fraternal relations in 'Durban Only' and 'In & Out of Durban'. While 8.3% (5) of the CMT/Ms have fraternal networks in Durban only, the remaining 9.8% (6) have fraternal networks 'In & Out of Durban'.

Table 4.10: Spatial Distribution of Fraternal Networks by Nature of Business

LOCATION\NBUS	CMT	M	CMT/M	TOTAL
Durban Only	44.2% (27)	3.3% (2)	8.3% (5)	**55.8% (34)**
In & Out of Durban	14.8% (9)	16.4% (10)	9.8% (6)	**41.0% (25)**
No response	0.0 (0)	1.6% (1)	1.6% (1)	**3.2% (2)**
Total (N=61)	**59.0% (36)**	**21.3% (13)**	**19.7% (12)**	**100% (61)**

In sum *fraternal networks in the clothing industry in the KZN cluster are, to a large extent, localized. The nature of business determines the spatial character of fraternal networks.* But how significant are these conclusions? A non-parametric test of significance showed that there is a significant difference between the number of firms whose fraternal networks are in Durban only and the number of the firms that have fraternal networks in and out of Durban in the various categories of businesses. Thus, the spatial character of fraternal networks of SCMEs is determined by the nature of business.

4.3.6. *Comparing the Helpfulness of Local and External Networks*

Of the 25 respondents whose fraternal relations extend beyond the Durban Metropolis, 46% believe that locally resident friends/relatives/colleagues with whom they discuss business issues are more helpful than those residing outside the Metropolis. In contrast 42% do not think so; 12% did not answer. Given that the 12% are all CMT firms whose interests are more local than external, it is contended that the firms would find local social relationships more beneficial than external social relationships. In that event the percentage of the firms that believe that local fraternal networks are more helpful could rise to 58%.

Table 4.11: Spatial Distribution of Fraternal Networks by Economic Performance

	HPFs	LPFs	TOTAL
In & Out of Durban	21.31% (13)	21.31% (13)	42.62% (26)
Durban Only	**31.15% (19)**	24.59% (15)	55.74% (34)
Missing Data	1.64% (1)	0.0% (0)	1.64%(1)
Total	**52.46 (32)**	**45.9%(28)**	**100% (61)**

The financial implications of a firm's proximity to its trusted friends, colleagues and family members on business matters warranted examination. The analysis shows that 55.74% of the sampled firms have fraternal networks in Durban only while 42.62% have fraternal networks in and out of Durban (see Table 4.11). Of the 55.74% that have fraternal networks in Durban only, 31.15% of them are HPFs while 24.59% are LPFs. There is an equal number of firms (i.e. 13 or 21.31%) in both categories of firms whose fraternal networks extend beyond the study area. The data thus suggest that *the closer the SCME owner-managers are to friends and colleagues with whom they could discuss business-related issues the greater the chances of improving their economic performances.*

This observation reinforces an earlier finding that firms whose fraternal relations extended beyond Durban usually found friends and colleagues within the locality more helpful than friends and colleagues outside Durban. A chi-square test, however, shows that there is no significant difference between the number of HPFs and that of LPFs that have fraternal networks in Durban only, and 'In & Out of Durban'. This implies that the economic performance of firms in the HPFs category could not be significantly attributed to having fraternal networks in Durban only.

Table 4.12 presents the data on the opinions of HPFs and LPFs on the helpfulness of fraternal networks. The data show that 37.5% of LPFs believe that local fraternal networks are more helpful than external fraternal networks; 12.5% disagrees with the proposition. In contrast, only 16.67% believe that local FRANETs are more helpful than external FRANETs; a third of HPFs do not believe in the proposition. This should not be surprising. The performance of a business is determined by a number of factors with varying degrees of impact. Fraternal networks, although helpful, are not a key factor as seen in this study; much depends on other factors such as the qualities of the entrepreneur.

Table 4.12: Helpfulness of Fraternal Networks by Economic Performance Category

	Local FN More Helpful	**Local FN Not More Helpful**	**Total**
HPFs	16.7% (4)	**33.3% (8)**	50% (12)
LPFs	**37.5% (9)**	12.5% (3)	50% (12)
	54.2% (13)	45.8% (11)	**100% (24)**

To some HPFs "it is not friends that bring jobs; it is service, satisfaction, reliability, quality and adherence to principles" (Moonsamy, 2001). The notion that local FRANETS are more helpful and reliable allies in business is yet to be empirically proven.

Table 4.13: Spatial Distribution of Fraternal Networks by Economic Performance Category and Nature of Business

	LOCATION\ NBUS	CMT	M	CMT/M	TOTAL
LPFs	In and Outside Durban	7% (4)	10% (6)	5% (3)	**21% (13)**
	Durban Only	**20% (12)**	0% (0)	5% (3)	**25% (15)**
HPFs	In and Outside Durban	8% (5)	8% (5)	5% (3)	**21% (13)**
	Durban Only	**25% (15)**	2% (1)	5% (3)	**31% (19)**
	Missing	0% (0)	0% (0)	2% (1)	**2% (1)**
	TOTAL	**59% (36)**	**20% (12)**	**21% (13)**	**100% (61)**

In Table 4.13 all the Ms (6) in the LPFs category, and all but one in the HPFs category (5) have fraternal relations in and outside Durban. The number of CMT/M firms who have all their fraternal networks within the Durban Metropolis and those CMT/Ms whose fraternal networks extend beyond Durban is the same i.e., 3, for both categories of firm-performance (HPFs and LPFs). There is a 3:1 ratio of the number of CMT firms whose fraternal networks are solely within Durban and the number of CMTs whose fraternal networks extend beyond Durban in both performance categories. However, the number of CMTs in the HPFs category whose fraternal networks are solely locally based is greater than their counterparts in the LPFs category. *In the main Ms are more likely to nurture fraternal networks in and out of Durban irrespective of their performances as compared to CMTs.*

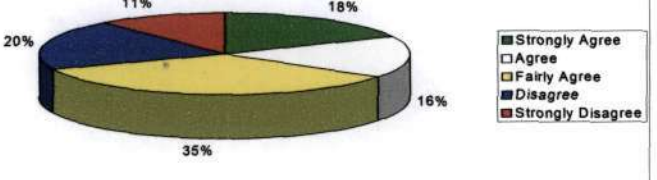
Although the tendency for Ms to have fraternal networks in and outside the locality is greater than CMTs, the relationship between the location of fraternal networks of Ms and performance is inconclusive. There are almost as many Ms whose fraternal networks are solely in Durban in the HPF category as the Ms in the LPF category whose fraternal relations extend beyond Durban. It is postulated that a much larger sample and a longitudinal data design would perhaps give different results. However, it may seem fair to argue that *unlike the Ms in the study, CMTs are more likely to perform better if they concentrate on nurturing fraternal relations solely in Durban than in and outside Durban.*

4.3.7. *Source of Orders and Inputs*

The data in Figure 4.5 show that majority of the sampled firms agree to the proposition that most small clothing manufacturing enterprises obtain their orders and inputs from friends/relatives/colleagues. A further analysis of the results (Figure 4.6) shows that 18% of the respondents strongly agree to the proposition, 16% agree and 35% fairly agree. In contrast 11% strongly disagree while 20% disagree.

Figure 4.5: Opinion on Source of Orders/Inputs

Figure 4.6: A Breakdown of Opinions on Source of Orders/Inputs



Were these responses influenced by the financial disposition of the firms? Table 4.14 shows the responses of the 61 firms to the proposition as per economic performance categories. Evidence from the data show majority of the respondents who agree to the proposition is in the HPFs category.

Table 4.14: Source of Orders/Inputs by Performance Category

PERFORMANCE CATEGORY	AGREE	DISAGREE	TOTAL
HPFs	**36% (22)**	18% (11)	**54% (33)**
LPFs	33% (20)	13% (8)	**46% (28)**
TOTAL	**69% (42)**	**31% (19)**	**100% (61)**

This suggests that friends/relatives/colleagues constitute an important factor in the economic performance of small business.

A Chi square test however shows that with α=0.01 and df=1, $\chi^2_{calc} < \chi^2_{crit}$ (even when the Yates' Correction formula is applied), hence, H_0 is accepted. This implies that the difference between the number of firms that agree to the proposition within the two performance categories and the number of those firms that disagree is not significant hence friends/relatives/colleagues do not constitute an important source of orders/inputs for small business.

In any event obtaining orders or inputs through friends/relatives/colleagues do not necessarily translate into profitability – orders, if any, could be small or big, regular or irregular. The decision to agree or disagree with the proposition may, therefore, not necessarily be influenced by the financial disposition of the firm. Respondents may not want to show ingratitude for help they might have received from a friend or colleague, no matter how paltry it was. It may thus be conjectured that conscience and real life experience could be the deciding factor in responding to the proposition.

Table 4.15: Opinion on Source of Orders/Inputs by Nature of Business

	AGREE	DISAGREE	Total
CMT	**43% (26)**	16% (10)	**59% (36)**
M	13% (8)	8% (5)	**21% (13)**
CMT/M	13% (8)	7% (4)	**20% (12)**
Total	**69% (42)**	**31% (19)**	**100% (61)**

Notwithstanding the reasoning above, what part could the nature of business have played in the decisions of the owner-managers to agree or disagree with the proposition? Table 4.15 shows that out of the 69% that agree to the proposition more than one half, i.e., 43% of the true sample consists of CMTs. The remaining 26% is equally split among Ms and CMT/Ms. The distribution of the remaining 31% of the true sample that disagree follows a similar pattern as the firms that agree. More than one half (i.e.16% of the true sample) consists of CMTs while the rest is almost equally split among Ms (8%) and CMT/Ms (7%).

In the main, given that the greatest percentage of CMTs (43%) agree to the proposition than the percentage of Ms and CMT/Ms that agree, it can be concluded that CMT owner-managers are more likely to rely on friends/relatives/colleagues for orders/inputs (or sub-contracts) than the owners/managers of the other categories of businesses. The converse would be true. This conclusion is captured by one of the respondents in the CMT/Ms category who explains that as a CMT he would strongly agree to the proposition but not as a manufacturer.[6] The backdrop of this respondent's comment is the operational interest of CMTs and Ms discussed earlier in this chapter.

In spite of these conclusions, a Chi Square test of significance of the differences between the number of firms in the various categories that agree and disagree with the proposition shows that at a significance level of 0.01 and df=2, $\chi^2_{calc} < \chi^2_{crit}$. It can thus be concluded that *the nature of business of SCMEs in the Durban metropolis do not have any significant influence on the decision to agree or disagree with the proposition that most small businesses obtain their orders and inputs through friends/relatives/colleagues.*

Further statistical analysis also shows that at all levels of significance with df =1 there are no significant differences in the opinions of the male and female owner-managers towards the source of orders/inputs although a greater percentage of females (79%), as against 66% males, agree with the proposition. Similarly, the study could not establish the level of education as a significant factor that determines the owner-managers opinion towards the source of orders/inputs. What then influences the SCME owner/manager's opinion on on friends/relatives/colleagues as SCMEs' source of orders/input?

It is speculated that no single factor appears to be critical in explaining the opinion of the owners/managers on the source of orders/inputs. Rather, there is interplay of an array of factors ranging from non-quantifiable variables such as personal conscience to statistically verifiable variables as economic performance. Ultimately, the social factor in the performance of a small business is as much important as capital, even if statistically insignificant. Thus, the dichotomy between particularism and universalism in organizational life appears to be false.[7]

4.4.0 Summary

The analysis and findings in this chapter show that the sampled firms are relatively isolated; the scope of networks is limited and the firms are also significantly inward looking. The data also suggest that there is a positive relationship between factor and fraternal networks and economic performance respectively although the relationships are statistically not significant. The analysis shows that firms that are open are more likely to perform better although the measure of openness at this stage is a partial one.

The issues often discussed in factor network relationships include production, marketing, finance, labour, managerial and technical training, transport and technology. Of these the dominant issues are production and marketing but the significance of each of them depends on the nature of business activity, not the level of economic performance. For CMT's production is the main concern; for firms, which have their own lines of production, i.e. "manufacturers" (Ms), it is marketing.

The majority of the sampled firms prefer discussing business issues with colleagues in the industry or those with whom they have co-production arrangements. The fraternal networks of the sampled firms are mainly localized; only a few of the firms have fraternal network relationships within and outside the study area. The spatial location of fraternal networks is determined largely by the nature of business activity: CMTs tend to have fraternal networks mainly within the study area while Ms, tend to have fraternal networks within and outside the locality. Local fraternal networks appear to be financially rewarding, particularly for CMTs. However, for Ms who have both internal and external fraternal networks it is hard to tell from the data the type of fraternal networks that is more financially rewarding. Although the majority of the owner-managers believe that friends, relatives, and colleagues are important in small business performance, the belief could prove to be teleological or an illusion in this era of globalisation.

Thus far, much of the findings are not statistically significant, and therefore it cannot be claimed that any substantive findings have been made. In the next chapter the rest of the data is analyzed.

NOTES:

1. High Performance Firms (HPFs), as earlier explained, are firms whose average economic performance per employee per annum for the years 1998-2000 is equal to or greater than R4000.00 while low performance firms (LPFs) are those firms whose average economic performance per employee per annum for the same period is less than R4000.

2. By production it is meant the elements of the production process, and the activities and arrangements towards the transformation of raw materials into finished products.

3. The respondents were asked to make multiple indications, where applicable, and therefore the horizontal totals of the data presented in Table 4.7 need not

correspond with the sample size. It should be noted, however, that each column could not exceed the number of respondents in the study (61). At best, a column could total up to 61, indicating that all the respondents favoured discussing business issues with that particular variable.

4. The set of data in Table 4.8 was used to calculate the partial openness indices of the individual firms, the sample as a whole, and the performance categories. The calculation was based on each firm's total score on the type of persons with whom the owner-managers discussed business-related issues. The response categories were friends, relatives, colleagues who gave orders, jobs etc, and colleagues doing the same business. The scores were expressed as a standardized measure - openness index (OI). Each response category carried 10 points, and the maximum that could be achieved by any firm was 50, on the assumption that the firm ticked all the five attributes of the partial openness variable. See Appendix B.

5. The calculation of the openness index of the sampled SCMEs at this juncture did not take into account all relevant variables. A comprehensive computation is provided in Chapter 5. It takes into account other variables such as the size of business networks (SNB), whether or not most small firms obtain their orders/subcontracts from friends/relatives/colleagues, and whether or not local relationships are more important than external relationships.

6. Faizal Omar, Poodle Clothing. Interview, April 25 2001.

7. M. P. O'Shea, Interview May 4 2001.

8. Missing data: 2.

9. Idris, Interview April 17, 2001.

10. Maharaj, Proprietor, Bronjo Clothing, Interview 18/01/01.

11. See Heimer, C. A. 1992. "Doing Your Job *and* Helping Your Friends: Universalistic Norms about Obligations to Particular Others in Networks," in N. Nohria and R. G. Eccles eds. Networks and Organizations: Structure, Form and Action, Boston: Harvard Business School Press.

CHAPTER 5

COMMUNICATION NETWORKS AND THE CRITICAL PHASE OF THE DATA ANALYSIS AND FINDINGS

5.1. Introduction

This chapter presents the second part of the analysis and findings of the study. The chapter focuses on:

- Communication networks and the composite network density (size of business networks (SBN)) in relation to business performance;
- The question of the most significant type of networks among the sampled SCMEs;
- The outliers;
- The analysis of, and findings with respect to the ethnographic data;

The chapter does not only confirm the key findings in Chapter 4 but also establishes that:

- A communication network, to be precise, electronic medium of communication, is the most significant type of networks, in terms of economic performance, among the sampled SCMEs in Durban;
- There is a positive relationship between communication networks and economic performance of the sampled firms;
- The relative isolation of the sampled SCMEs in Durban is explained by cultural, socio-economic and political factors, as well as human factor decay;

- There is a positive relationship between the level of education of owner managers of the sampled SCMEs and the business network density of the firms.

5.2. Communication Networks

5.2.1. Most Often Used Medium of Communication

The data show that the most often used medium of communication among the sampled SCMEs in Durban is the electronic medium. This applies to fraternal networks (87%) (Figure5.1), as well as factor networks (92%) (Figure 5.2).

Figure 5.1: Most Often Used Medium of Communication for FRANET

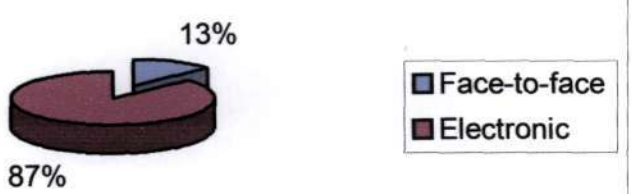
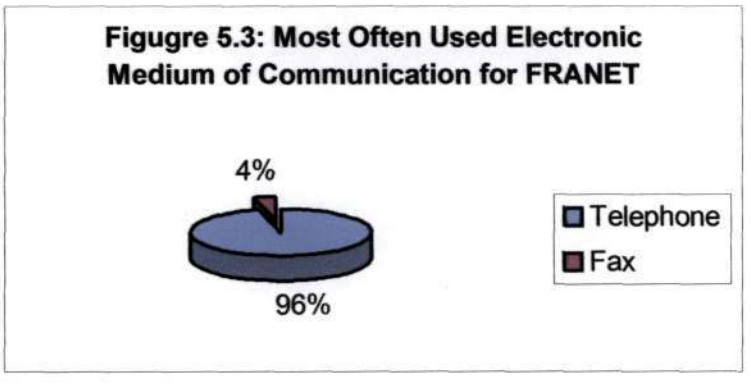
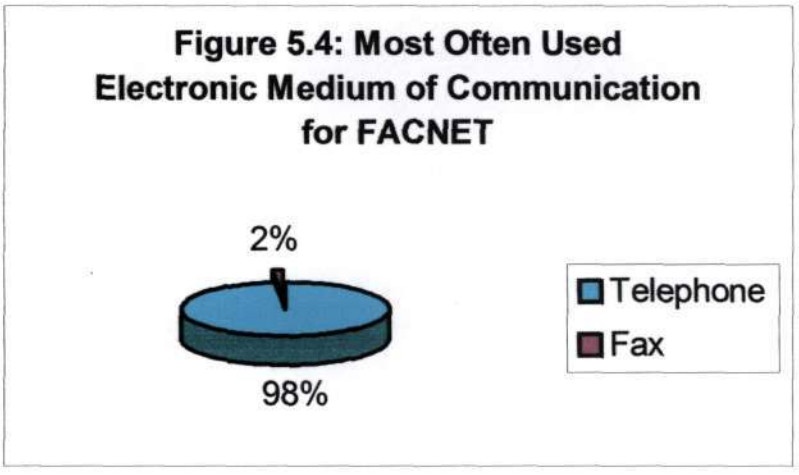


Figure 5.2: Most Often Used Medium of Communication for FACNET

In both fraternal and factor networks, the telephone is the most popular electronic medium among the respondents. Of the 87% respondents that use the electronic medium for fraternal networks most often, almost all of them (96%) use the telephone; only 4% use facsimile most often (Figure 5.3).



For factor networks, the finding is similar. With the exception of a firm that uses fax most often the rest (98%) use the telephone most often (Figure 5.3). Notably cellular phone, Internet and e-mail are seldom used; only 39% of the sampled firms have access to Internet and e-mail. Of this percentage, less than 5% employ other forms of advanced telecommunication technologies such as voice mail, teleconferencing and electronic bulletin boards. Notwithstanding this, it was observed that while 55% of HPFs have access to Internet and e-mail only 21% of LPFs have access to these modern forms of communication technology. *Thus, empirically there are reasonable grounds to conclude that there is a positive relationship between modern forms of communication and economic performance of the sampled SCMEs.*



However, the extent of electronically mediated network relationships within the industry is gravely limited. It is apparent that generally the clothing industry has not taken advantage of the vast technological advances in telecommunications to promote inter-firm co-operation, and thus, enhance their economic performance. This cultural lag has far-reaching implications for the SCMEs in the current global competitive economy in which networks have become phenomenal for business performance and economic growth.

Table 5.1: Most Often Used Medium of Communication for FRANET and FACNET by Economic Performance

		MEDIUM OF COMMUNICATION		
	Category	Face-to-Face	Electronic	Total
FRANET	**HPFs**	3 (5%)	**30 (49%)**	**33 (54%)**
	LPFs	**5 (8%)**	23 (38%)	**28 (46%)**
	TOTAL	**8 (13%)**	**53 (87%)**	**61 (100%)**
FACNET	**HPFs**	2 (3%)	**31 (51%)**	33 (54%)
	LPFs	**3 (5%)**	25 (41%)	28 (46%)
	TOTAL	**5 (8%)**	**56 (92%)**	**61 (100%)**

In Table 5.1 more than a half of the firms that most often engage in face-to-face contacts in fraternal networks (8% of the true sample) belong to the LPFs category. On the other hand 57% of those that most often use electronic medium (EM) (49% of the true sample) are in the HPFs category. Similarly, for factor networks, more than one half of the firms (5% of the true sample) that most often engage in face-to-face (FTF) interactions are in the LPFs category while the majority of the firms that prefer electronically mediated interactions are high performance firms.

The data presented in Table 5.1 suggest that in both fraternal and factor networks the economic performances of firms that engage in electronically mediated interaction most often are more likely to be higher than firms that engage in face-to-face interaction most often. A test of significance of the data, however, showed that the difference between the number of firms in both performance categories that engage in face-to-face and electronically mediated networks is not statistically significant. At all levels of significance on the table of critical values of Chi Square with df =1 (applying Yate's Correction formula) $\chi^2_{calc} < \chi^2_{crit}$ It can, thus, be concluded at a 99.9% confidence level that the difference between the number of firms that engage in face-to-face interaction and that of firms that prefer electronically mediated communications in both HPFs and LPFs categories occurred by chance. *In other words, the medium of communication in business network relationships has little or no influence on the economic performance of SCMEs in the Durban Metropolis.*

This finding casts a shadow, even if minimal, on the possibility of supporting Nohria and Eccles' (1992: 288-308) hypothesis on the balance between face-to-face interaction and electronically mediated communication in building a network organisation with "hard data". According to Nohria and Eccles (1992:303) using electronically mediated exchange to help create a network organisation would require more face-to-face interactions. Although Nohria and Eccles (1992) present a plausible argument in defence of their hypothesis they admit that their argument would have to be supported by hard data. The hard data in this study suggests, to a minimal degree, though, that the more a firm often engage in electronically mediated interactions in business network

relationships the better would be its financial performance. Thus, a network organisation may not necessarily require more face-to-face interactions to perform better.

This study, however, concur Nohria and Eccles' (1992) observations that effective network organisations require the kind of rich, multidimensional, robust relationships that could be developed only through face-to-face interaction. Nohria and Eccles (1992:290) are also correct in arguing that there might well be a minimum ratio of face-to-face to electronically mediated exchange that is vital to maintain in order for network organisations to work effectively. However, it is unlikely, as these authors correctly argue, that face-to-face communication in network organisations would be replaced by electronically mediated interaction. Their reasons are corroborated in this study.

5.2.2. *Reasons for Face-to-Face (FTF) or Electronic Medium of Communication*

Respondents were asked why they preferred face-to-face (FTF) to electronic medium or electronic medium to FTF communication. Table 5.2 shows their responses. The majority of the respondents believe that for both factor and fraternal networks, the electronic medium is cheaper and more convenient; it is also faster and more reliable.

All the respondents that use FTF interaction most often agree on one thing: FTF affords a direct interaction in which, among other things, emotional expressions are visible. FTF interactions also enable actors to form opinions about each other, and determine whether the other actor, for instance, should be trusted or not. In that event transaction outcomes could, to a large extent, be determined by perception. It is also believed that FTF interaction nurtures the social context of business relationships, which in turn, could become the cornerstone of business relationships.

Table 5.2: Reasons for Preferring a Particular Medium of Communication

	Face-to-Face	No. Of Firms	Electronic Medium	No. Of Firms
FRANET	No other means of communication	1	Possible to record official issues	1
	Allows long discussions and emotional expressions to be seen	4	Convenient and cheaper	28
	Capture others' attention	1	Most common and cheaper	2
	Personal issues can be discussed	1	Saves time and cheaper	11
			Fast and reliable	15
FACNET	No other means of communication	1	Easier and Cheaper	5
	Capture others' attention	1	Convenient and cheaper	28
	Good for business issues	3	Most common and cheaper	1
			Saves time and cheaper	17
			Fast and reliable	1

In this respect, face-to-face interactions are more effective than interactions based on electronic media in network relationships. While the electronic medium, as most of the respondents testify, is fast, easy, convenient and time-saving, it is conspicuously notorious in aggravating the negativity of impersonal relationship and in addressing "issues of uncertainty, ambiguity, and risk - the daily fare of network organizations" (Nohria and Eccles, 1992:289).

It is contended that although network organisations certainly require a minimum ratio of face-to-face to electronically mediated interactions, the minimum amount of face-to-face interaction need not be the same for all network organisations. It might also be contingent upon operational expediencies of the firm, on account of the nature of its business. For instance, as shown in Table 5.3, the majority of the firms that most often engage in face-to-face interactions in both FACNET and FRANET are CMTs, 75% in the case of FACNET and 63% in the case of FRANET. Although CMTs still constitute the majority of the firms that use electronic medium for both factor and fraternal networks, almost all the Ms and CMT/Ms conduct their factor and fraternal networks through the electronic medium.

A breakdown shows that all the CMT/Ms and 92% of the Ms in the sample (i.e. 21.5% of the true sample) use the electronic medium for FACNET while 83% of CMT/Ms and 92% of Ms use the same medium of communication for FRANET. It can be concluded that while CMTs are more likely to use face-to-face interaction more often than CMT/Ms and M's for business networks, CMT/Ms and Ms are more likely to use electronic medium more often. Recalling that CMTs are service providers, it might be inferred with a reasonable degree of certainty that *firms providing services are more likely to require a relatively greater amount of face-to-face interactions than manufacturing firms in the clothing industry.* Notwithstanding these conclusions, the study finds that there is no statistically significant difference between the number of firms that most often use face-to-face interactions and the number of firms that engage in electronically mediated interactions in the various categories of businesses.

TABLE 5.3: Medium of Communication by Nature of Business

	FACNET				FRANET			
NBUS	**Face-To-Face**		**Electronic**		**Face-To-Face**		**Electronic**	
CMT	**75%**	**(4)**	57%	(32)	**63%**	**(5)**	58%	(31)
M	25%	(1)	**21.5%**	**(12)**	12.5%	(1)	**23%**	**(12)**
CMT&M	0%	(0)	**21.5%**	**(12)**	25.0%	(2)	**19%**	**(10)**
TOTAL	**100%**	**(5)**	**100%**	**(56)**	**100%**	**(8)**	**100%**	**(53)**

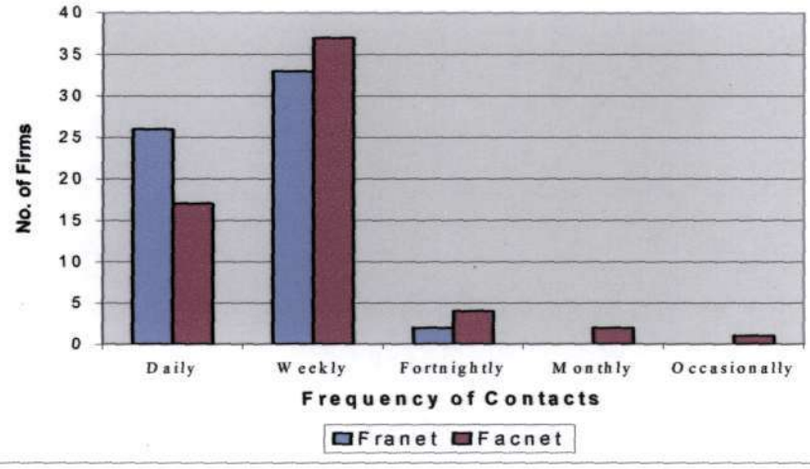
In any event, determining the required balance between face-to-face and electronically mediated interactions in order to build network organisations might not be an obvious issue. The influence of the medium of communication on the economic performance of a firm could prove to be virtually insignificant as, thus far, shown in this study.

5.2.3. Frequency of Communication

Figure 5.5 presents the frequency distribution of contacts between firms in fraternal and factor networks. In both FRANET and FACNET contacts are mostly on daily and weekly basis with a few firms preferring contacts fortnightly, monthly and/or occasionally.

Comparatively, there are more firms engaging in daily contacts in fraternal networks (26) than firms engaging in daily contacts in factor networks (17). In contrast a greater number of firms engage in weekly contacts in factor networks than in fraternal networks.

Figure 5.5: Frequency of Communication in FRANET and FACNET



The longest period that an actor does not keep in contact with other actors in fraternal networks is two weeks whereas in factor networks it is months although only a few firms keep contacts on hold for that long. From the data in Figure 5.5 it can be concluded that *the frequency of contacts is higher in fraternal networks than in factor networks among the small clothing manufacturing enterprises in the Durban Metropolis.*

Figure 5.6: Frequency of Communication and Nature of Business

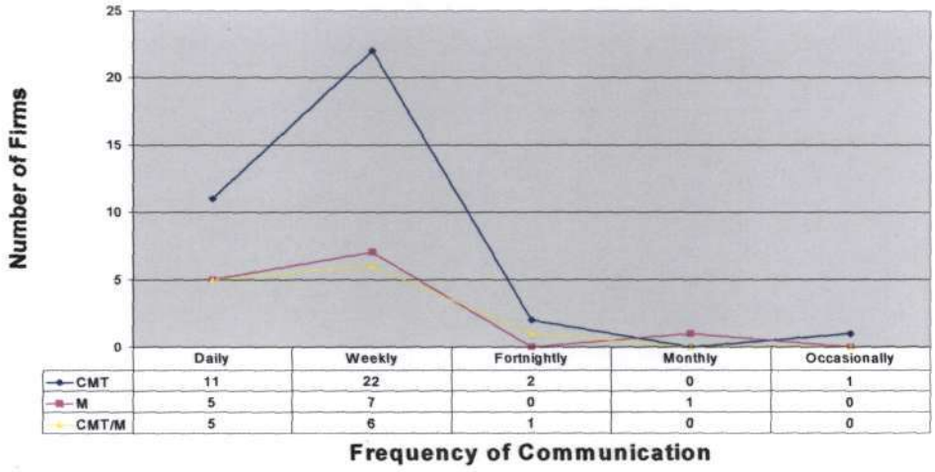


Figure 5.6 shows the frequency of communication according to the nature of business. There are twice as many CMT firms that interact with their network units once a week as the number that does so each day of the week. The number of "manufacturers" (Ms) that interact daily with their counterparts in the network relationships is almost the same as those that do so at least once a week. The CMT/Ms also follow the same pattern as the "manufacturers". While 6 of the firms engage in daily business contacts with their counterparts, friends or relatives 7 of them do so once a week. Notably, 92% of the firms in each of the business categories engage in business interactions at least once a week. However, most of the firms that interact more frequently - at least once a week - with their counterparts, friends and relatives (37% of the true sample) are CMTs.

Table 5.4: Frequency of Communication by Economic Performance I

		FREQUENCY OF COMMUNICATION					
Type of Network	**Category**	**Daily**	**Weekly**	**Fortnightly**	**Monthly**	**Occasionally**	**Total (N=61)**
FRANET	**HPFs**	20% (12)	**33% (20)**	2% (1)	0%	0%	55% (33)
	LPFs	**23% (14)**	21% (13)	2% (1)	0%	0%	46% (28)
	Total	**43% (26)**	**54% (33)**	**4% (2)**	**0%**	**0%**	**101% (61)**
FACNET	**HPFs**	13% (8)	**36% (22)**	3% (2)	2% (1)	0	54% (33)
	LPFs	**15% (9)**	25% (15)	3% (2)	2% (1)	2% (1)	47% (28)
	Total	**28% (17)**	**61% (37)**	**6% (4)**	**4% (2)**	**2% (1)**	**101% (61)**

**Data may not add up to 100% due to rounding; absolute figures are in parenthesis.*

In Table 5.4, 14 of the firms that engage in fraternal networks on daily basis (i.e.54% or 23% of the true sample) belong to the LPFs category. In contrast, 20 (i.e. 61% or 33% of the true sample) of those that engage in fraternal networks on weekly basis are HPFs. A similar pattern is observed in the case of factor networks. Out of the 17 firms that are in contact with other firms daily, more than one half (15% of the true sample) are LPFs; in contrast, more than one half of those in weekly contacts with other firms (36% of the true sample) are HPFs. Thus, HPFs are more inclined towards weekly contacts than LPFs; conversely LPFs are more associated with daily contacts in business networks (either fraternal or factor networks) than HPFs. Although the difference in the number of firms in both categories is not statistically significant, the data suggest that daily contacts do not necessarily enhance the chances of an SCME to improve its financial performance. It does suggest, however, that firms that do so may be going through a period of adjustment as a result of changes in economic fortunes in which event such firms intensify their economic activities, e.g., chasing subcontracts, sources of raw materials, markets etc., which also implies intensive networking. The data in Table 5.4 show that regular (weekly or less than weekly) interactions between SCMEs and between SCME owners/managers and their friends/relatives/colleagues are a necessary condition in the performance of an SCME in the Durban Metropolis.

Table 5.5: Frequency of Communication by Economic Performance II

		FREQUENCY OF COMMUNICATION		
Type of Network	**EP Category**	**Weekly Or Less**	**Fortnightly Or More**	**Total**
FRANET	**HPFs**	52% (32)	2% (1)	54% (33)
	LPFs	44% (27)	2% (1)	46% (28)
	Total	**96% (59)**	**4% (2)**	**100% (61)**
FACNET	**HPFs**	49% (30)	5% (3)	54% (33)
	LPFs	39% (24)	7% (4)	46% (28)
	Total	**86% (54)**	**12% (7)**	**100% (61)**

As shown in Table 5.5, in both FRANET and FACNET the majority of the firms that engage in weekly or less than weekly interactions are in the HPFs category. Conversely,

the majority of the firms that interact less often (i.e. fortnightly or more than fortnightly) with other firms, and with their friends/relatives/colleagues is in the LPFs category. Notwithstanding these conclusions, *the effect of the frequency of communication in business networks on the economic performance of an SCME appears to be negligible given that the difference in the number of firms in the various performance categories and the frequency of communication is not statistically significant.* In other words *frequency is not a significant motivating factor for firm performance*. This conclusion is in line with Granovetter's (1973:1371) finding, which suggests the primacy of structure over motivation.

5.2.4. Comparing Local and External Communication Links

A question that the study raised was whether communication links with friends/relatives/colleagues and firms in the Durban Metropolis were more important to SCMEs in the locality than communication links with friends/relatives/colleagues and firms outside the Durban Metropolis.

In Table 5.6 almost three-quarters (74%) of the sampled SCMEs agree to the proposition that communication links with actors in both types of business networks within the Durban Metropolis are more important than communication links with those outside the Metropolis. A little over a quarter of the firms (26%) disagree. Although the majority of the firms in each of the business categories agree with the proposition, the category that registers the highest percentage is CMT. Out of the 74% that agree to the proposition, 64% (29 out of 45) is made up of CMTs. This number constitutes 81% of all the CMTs or 48% of the true sample. Incidentally, the same category records the highest percentage of firms that disagree, i.e. 11% of the true sample or 44% of the firms that disagree.

Table 5.6: Opinion on Communication Links by NBUS I

		OPINION					
		Agree		Disagree		Total	
NBUS	CMT	48%	(29)	11%	(7)	59%	(36)
	M	15%	(9)	7%	(4)	22%	(13)
	CMT/M	11%	(7)	8%	(5)	19%	(12)
	Total	74%	(45)	26%	(16)	100%	(61)

Of the number of firms that support the proposition, 38% (17) strongly agree (SA), 31% (14) simply agree (A) and the remaining 31% (14) fairly agree (FA). On the other hand, three times as much as the number that "strongly disagree" (SD) with the proposition simply "disagree" (D) (see Table 5.7).

The analysis of the data in Tables 5.6 and 5.7, of course, resonates with an earlier observation that fraternal and factor linkages within the locality are more important to SCMEs in the Durban Metropolis than those outside it.

Table 5.7: Extent of Opinion on Communication Links by NBUS

		OPINION					
		Extent of Agreement			Extent of Disagreement		Total
		SA	A	FA	D	SD	(N=61)
NBUS	CMT	15.0%	13%	20%	6.5%	4.9%	59.4%
	M	6.5%	5%	3%	6.5%	0.0%	21.0%
	CMT/M	6.5%	5%	0%	6.5%	1.6%	19.6%
	Total	28%	23%	23%	19.5%	6.5%	100%

But is the difference between the number of firms in the various business categories that agree and/or disagree with the proposition significant? A Chi Square test shows that at a significance level of 0.05 and df=2, $\chi^2_{calc} < \chi^2_{crit}$. This means that there is no significant difference between the number of firms in the business categories that agree or disagree with the proposition. In other words the owners/managers of the various types of businesses virtually share common views on communication links with friends/relatives/colleagues and firms within and outside Durban. The nature of business

does not influence their opinions on communication links in business networks; neither does the level of economic performance, as shown in Table 5.8. The differences in the number of HPFs and the number of LPFs that agree or disagree with the proposition are not statistically significant.

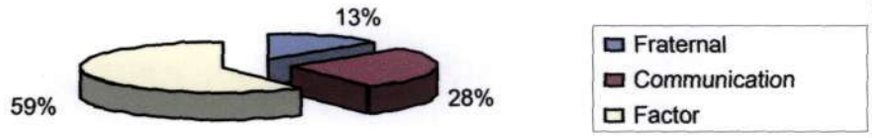
Table 5.8: Opinion on Communication Links and Economic Performance Category

		OPINION		
		Agree	**Disagree**	**Total**
EP Category	**HPFs**	**38%**	**16%**	**54%**
	LPFs	36%	10%	**46%**
	Total (N=61)	**74%**	**(26%)**	**100%**

5.3. The Most Significant Type of Networks (MSTN) and The Least Significant Type of Networks (LSTN)

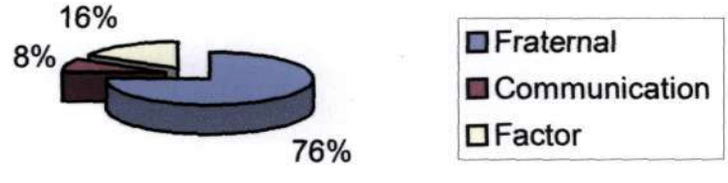
A critical aspect of the study was to establish the most significant type of networks among the sampled SCMEs in Durban. The data shows that the majority of the respondents (59%) favour factor networks as the most significant type of business networks to their businesses, followed by communication networks (28%) and fraternal networks (13%) respectively (Figure 5.7).

Figure 5.7: Most Significant Type of Networks



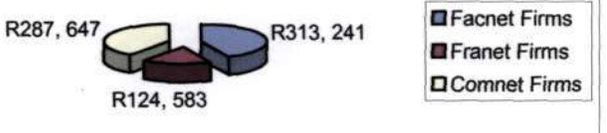
Conversely 76% of the respondents, in a verification question, confirm fraternal networks as the least significant type of network (Figure 5.8). Contrary to expectation, 16% of the respondents rate factor networks as the second least significant type of networks while 8% of them rate communication networks as the third least significant type of networks. By these ratings, *the hypothesis that a fraternal network is the most significant type of networks to SCMEs in Durban is not empirically confirmed.* This also shows that perception may not be a good indicator of performance, especially where performance is measured quantitatively.

Figure 5.8: Least Significant Type of Networks



Further, an earlier observation that the majority of SCMEs obtain their orders and inputs through fraternal networks i.e., friends, relatives, and colleagues, does not necessarily impugn any undeserved relative significance to fraternal networks. The dissenters (31%) argue, "friends do not bring jobs; service satisfaction, quality products, reliability, timely delivery, and trust, do." In other words, although fraternal networks are necessary in the economic performance of the sampled SCMEs factor and communication networks are more critical types of networks for the growth of these firms. This conclusion is further confirmed by the observation that the mean economic performance of all the firms that rate FACNET and COMNET above FRANET is higher than the mean economic performance of all the firms that rate FRANET highest. The mean economic performance of the FACNET firms is R313, 241, FRANET firms, R124, 583 and COMNET firms, R287 647 (Figure 5.9).

Figure 5.9: Type of Networks and Economic Performance (Rand)

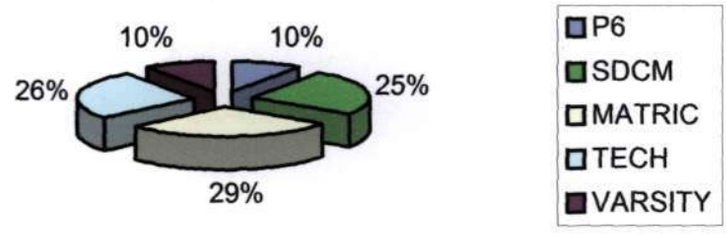


A Student t test shows a significant difference between the mean economic performance of the FACNET firms and the mean economic performance of the FRANET firms. Thus, *firms that recognize the relative significance of factor and communication networks, compared to fraternal networks, are more likely to perform better than those that lay emphasis on fraternal networks.*

Nevertheless, it seems likely that the significance of a particular type of network ties depends on the goals of the actor and the role such ties play in achieving the actor's perceived goals, most often profitability - the ultimate objective of any firm. For instance,

although familial ties are given, these ties seem to assume specific and significant role, outside the usual terrain, where members of a family are connected by direct or indirect business-interests, and have a common goal of keeping the business going. In the absence of such common business interests family ties may remotely influence owner-managers in the conduct of business. The assumption, then, that family ties contribute to profitability could prove to be teleological. Logically, too, an actor is likely to place a premium on particular types of network ties if such ties are potentially rich in resources.

Figure 5.10: Level of Education of Owner/Manager

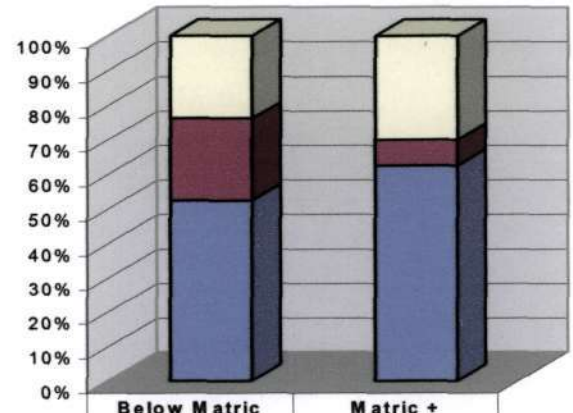


5.4. Level of Education of Owner Managers (LEDOM)

The study examined the effect of education on networks. Figure 5.10 shows the percentage of the owner managers of the sampled SCMEs in each of the five levels of education categories, which range from Primary 6 (P6) to the university (VARSITY). There are as many owners/managers with primary education as those with university education, i.e. 10% of the true sample in each case. A quarter of the respondents has secondary education but did not complete the matriculation level (SDCM). A further 26% are Technikon (TECH) graduates. On the whole the level of education of slightly more than a third of the respondents (35%) is below matriculation while the rest (65%) have matriculation certificates and/or above.

In Figure 5.11 it is observed that the level of education of more than one half of the owners/managers of the firms that identify factor networks and communication networks as the most significant type of networks to their businesses, in each case, is up to matriculation and above. In the case of factor networks 69% (i.e. 25 or 41% of the true sample) have matriculation or a higher level of education as against 31% (i.e., 11 or 18% of the true sample) whose education is below matriculation. For firms that consider communication networks as the most significant, the pattern is similar: 71% (i.e., 12 or 20% of the true sample) have matriculation or a higher level of education as against 29% (i.e., 5 or 8% of the true sample) whose level of education is below matriculation level.

Figure 5.11: Level of Education of Owner/Manager and Most Significant Type of Network



	Below Matric	Matric +
COMNET	5	12
FRANET	5	3
FACNET	11	25

In contrast to the two groups of firms, the level of education of 63% (i.e. 5 or 8% of the true sample) of the owners/managers of the firms that view fraternal networks as the most significant is below matriculation level. Only 37% (i.e. 3 or 5% of the true sample) have matriculated or gone beyond matriculation level. It can be concluded, therefore, that less educated *owner-managers of SCMEs in the Durban Metropolis are more likely to hold the opinion that a fraternal network is the most significant type of networks.*

A test of significance also shows that the difference in opinions of the owners/managers of SCMEs in Durban on the most significant type of networks did not occur by chance. *The level of education has a significant influence on the opinions of the owners/managers on the importance of the different types of networks. Thus, the higher the level of education the greater the chances of an SCME owner/manger perceiving factor network as the most significant type of network.*

5.5. Size of Business Networks (SBN) and Economic Performance

Thus far, the study shows that a positive relationship exists between economic performance and factor networks, as well as fraternal networks, although the relationship, in either case, is not strong (See Chapter 4). Taking the analysis a step further, the relationship between business performance and the size of business networks (SBN) was examined. (SBN is the aggregate of the number of factor, and fraternal network relationships).

In Table 5.9 the minimum size of business networks (SBN) of the sample is 6; the maximum is 110. The mean SBN of the sample is calculated as 23.56 with a standard deviation of 18.76, indicating that the dispersion from the mean is not too great. The data shows that network relationships are a common feature among the sampled SCMEs. This finding is consistent with the theory that markets are social structures (White's, 1981), or characterised by embedded networks of organisations (Uzzi, 1996; Granovetter, 1985), not loose dispersions of unitary firms, as argued in the classical and neo-classical market theory, and their modifications (Williamson, 1981).

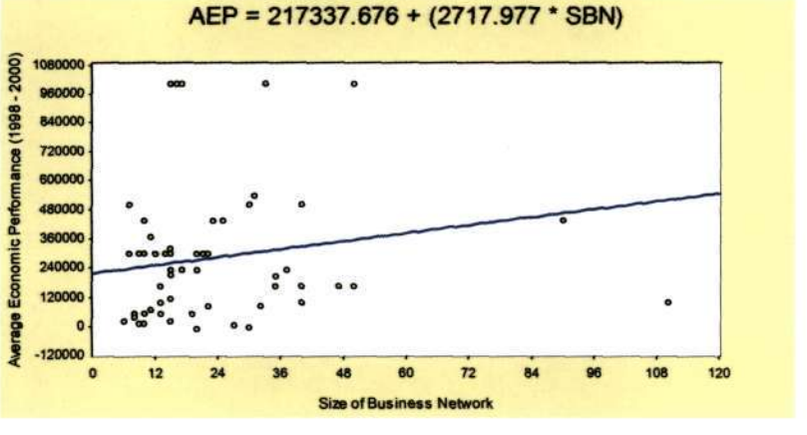
Table 5.9: Size of Business Networks - Descriptive Statistics

	ALL SAMPLED FIRMS				HPFs				LPFs			
	Mini	Maxi	Mean	SD	Mini	Maxi	Mean	SD	Mini	Max	Mean	SD
FACNET	1	75	13.7	13.05	1	30	11.52	8.78	4	75	16.29	16.55
FRANET	2	35	10.0	7.03	2	25	9.48	5.30	4	35	10.64	8.70
SBN	**6**	**110**	**23.56**	**18.76**	**6**	**50**	**20.7**	**12.18**	**8**	**110**	**26.93**	**24.17**

A test of significance shows that the difference between the mean SBN of HPFs and the mean SBN of LPFs is not statistically siginificant. *This suggests that the economic performance of the firms cannot be significantly explained in terms of the size of business networks.* This conclusion does not provide much support for the observation in much of the networks literature (e.g. Nohria and Eccles, 1992:6 and Burt, 1992:64), that the larger the size of business networks the greater the chances of access to resources, and high performance.

A linear regression analysis (Figure 5.12) indicates a positive correlation between the size of business networks and the economic performance of the firms although the coefficient of determination (r^2) is very low (0.0321). However, the coefficient of determination for the LPFs is higher than that of HPFs: r^2 for LPFs is 0.1944 with F ratio at 6.272, and that for HPFs is 0.1795 with F Ratio at 6.780. The difference does not reflect a strong positive correlation between the density of business networks and performance.

Figure 5.12: Regression: Average Economic Performance (AEP) With Size of Business Networks (SBN)



The study, however, finds a significant difference between the mean size of business networks (SBN) of firms whose owner-managers have high levels of education (Matric and above) and that of firms whose owner-managers have low levels of education (below matric). As shown in Table 5.10, the mean SBN of firms whose owner-managers' levels of education are high is 26.6 (above the mean of the sample, 23.56), with a standard deviation of 21.18. The mean SBN of firms in which the owner-managers' levels of education are below Matriculation, on the other hand, is 17.76, with a standard deviation of 11.28. Given the difference of 8.84 between the means a directional Student t-test was carried out. The test shows that *the level of education has a positive influence on the size of business networks of the sampled SCMEs in Durban.*

Table 5.10: Level of Education of Owner-Mangers, Size of Business Networks And Economic Performance

MATRIC AND ABOVE					
	Mean	SD	Min	Max	N
SBN	26.60	21.18	9	110	40
AEP (Rand)	317916.65	321448.55	-10000	1000000	40
BELOW MATRIC					
SBN	17.76	11.28	6	40	21
AEP (Rand)	211745.95	183755.88	3333	533333	21

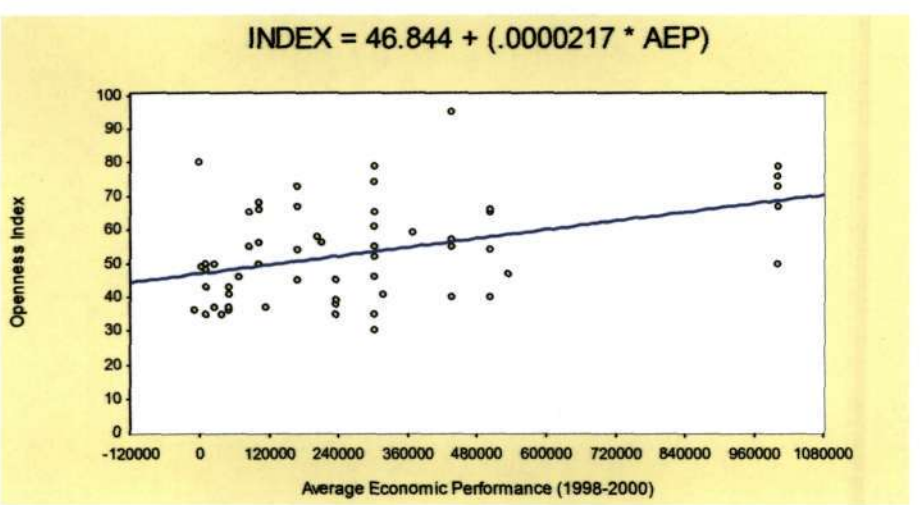
The data also show a significant difference between the mean economic performance of owner-managers whose levels of education are high and the mean economic performance of owner-managers whose levels of education are low. The mean economic performance of firms owned by entrepreneurs who have high levels of education is R317 916.65 as compared to the R211 745.95 of the firms whose owner-managers' levels of education are low (see Table 5.10). This finding corroborates an earlier finding in a study on the

export potential of small clothing manufacturing enterprises in the Durban Metropolis (Owusu-Ampomah, 1997).

5.6. Openness of SCMEs in Durban

A partial openness index (OI) of 40 for the sampled SCMEs in the Durban Metropolis was observed in the previous chapter (4.3.3). This indicated that the firms were substantially inward looking. It was postulated that the greater the degree of openness of SCMEs in Durban the more likely they would perform better. In this section the idea of openness is examined more comprehensively, taking into account multiple variables. The calculation of openness on multiple variables yields an OI of 52.64 (Table 5.11) on an openness scale with a minimum of 0 and a maximum of 100. This suggests that the firms are open but the degree of openness is fairly low. In other words, there is a fairly high degree of inward looking among the SCMEs in the Durban Metropolis although the index is an improvement upon the partial openness index observed in section 4.3.3. It is also observed that there is a positive relationship between the degree of openness of a firm and economic performance (see Figure 5.12). However, the relationship is not strong. With df at 59 and α=0.05, r^2 is calculated as 0.1542, and F ratio given as 10.759. The regression equation is stated as Index = 46.844 + (0.0000217) * AEP.

Figure 5.13. Regression: Openness Index and Economic Performance



Comparative indices for the two performance categories of firms, HPFs and LPFs, do not reveal any significant difference between the two categories. The mean OI for the HPFs is 53.58 with a standard deviation of 14.73 and that for the LPFs is 51.54 with a standard deviation of 15.35. The indices do not warrant a review of earlier conclusions based on the partial openness index of the sample. Empirically, the degree of inward looking of SCMEs in Durban is found to be fairly high.

Table 5.11: Openness of SCMEs: Comparative Analysis

	All Sampled Firms	**HPFs**	**LPFs**
Mean	52.64	53.58	51.54
Std Dev	14.93	14.73	15.35
Minimum	30	30	30
Maximum	95	79	95

In light of this the relatively poor performance of the KZN cluster of clothing manufacturing enterprises in recent years – majority of which are SMEs – could be partly explained in terms of the isolation thesis. The study thus advances compelling evidence to support the need for dynamic policies to promote networking and inter-firm co-operation among SCMEs. This observation is advanced further by analysing the outliers (see Figure 5.12) in the regression analysis with a view to unearthing the factors that differentiate those outlying firms from the rest.

5.7. The Outliers: Very High Performance Firms (VHPFs) and Very Low Performance Firms (VLPFs)

The network regression analyses, up to this point, have failed to establish convincingly the causal relationships between network characteristics and performance. The problem could be attributed to two or more reasons (a) the sample size might not be adequate to

establish a clear linkage between networks and profitability, and (b) the use of cross-sectional data under the circumstance of a suspected small sample size could also be problematic in establishing causality. In this event, attention is turned to the outliers (see Figure. 5.12): the very high performance firms (VHPFs) and the very low performance firms (VLPFs), with a view to identifying the factors that differentiated the two categories of SCMEs from each other. The VHPFs and VLPFs are listed in Table 5.12 with their average economic performances, and the residual standard errors (in parentheses).

The average economic performance of the VHPFs during the period under study (i.e., 1998-2000) is R1 000 000. In contrast the VLPFs show differences in their economic performance. Topping the list of VLPFs are Namarda, Melway and Silhoute, with an average economic performance of R10 000. At the bottom of the small pack of firms is Alperta, which recorded an average loss of R10 000 while Lucy and Faras L. show a net loss of R3 333 and a net profit of R3 333 respectively during the period.

Table 5.12: Average Economic Performance (AEP) with Residual Standard Errors (*In parentheses*)

VHPFs	True Value	Dan	Ashwood	Eva Dress	Solar Sport	Aero
	1 000 000 (2.86)	1 000 000 (2.51)	1 000 000 (2.49)	1 000 000 (2.29)	1 000 000 (2.25)	1 000 000 (1.83)
VLPFs	Alperta	Lucy	Faras L.	Namarda	Melway	Silhoute
	-10 000 (-1.00)	-3 333 (-1.07)	3 333 (-1.02)	10 000 (-0.83)	10 000 (-0.83)	10 000 (-0.83)

In Table 5.12 the performances of the firms are also rated in terms of residuals, expressed as standard errors, with or without taking the size of business networks and other variables into account. A comparable measure for the size of business networks may be calculated by calculating the difference between the population mean and the firms' sizes

of business networks, expressed in standard deviations. The standardized differences may be combined to produce a composite index but that is not relevant at the moment; the focus is on the comparative analysis of the highest ranking firms and the lowest ranking firms.

Table 5.13 shows the descriptive statistics of four of the variables – average number of employees (1998-2000), i.e., EMPLOY,[1] the number of factor network relationships (FACNET), the number of fraternal network relationships (FRANET) and the size of business networks (SBN).

Table 5.13: Descriptive Statistics of Selected Variables with Performance Categories

VARIABLE	VHPFs				VLPFs			
	Mean	Std. Dev.	Min	Max	Mean	Std. Dev.	Min	Max
EMPLOY	144.50	1.03	72	198	42.00	41.95	5	120
FACNET	15.67	10.23	5	30	9.00	5.40	4	18
FRANET	14.50	7.15	6	25	8.83	4.17	5	15
SBN	30.17	16.73	15	50	17.83	9.17	109	30

The mean density of business networks of VHPFs and VLPFs are 30.17 with a standard deviation of 16.72, and 17.83 with a standard deviation of 9.17 respectively. The difference in the means suggest that the greater the number of business network relationships, the better the chances of the SCMEs in the sample performing better. However, a test of significance of the difference between the means shows that at a significance level of 0.05 at df = 10, there is no significant difference between them. Thus although the size of business network relationships is helpful it does not adequately explain the disparity in the economic performances of the VHPFs and VLPFs as observed earlier.

5.8. True Value versus Gem

This conclusion is borne out by the peculiarities of two of the outliers, True Value in Table 5.12, and Gem.[2] Comparing the two firms and taking the size of business networks (SBN) into account it was observed that although Gem's network density is the highest (110) its performance rating is very low (AEP is R100 000), with a residual standard error (-1.47) well below the best fit line. On the other hand, the density of business networks of True Value is just 17 while its AEP is R1 000 000. This demonstrates once again in this study that although network density may contribute to performance, it is not sufficient in enhancing the financial performance of the sampled SCMEs in Durban. It may also be noted that the network density of the top performing firms and almost the rest of the very low performing firms tend to range between 12 and 50 (see Figure 5.12).

5.9. Openness and Economic Performance

Table 5.14 presents the differences between VHPFs and VLPFs. Although differences exist in all the variables the differences in the openness indices, and the medium and frequency of communication are of particular interest. The mean openness index (OI) of the VHPFs is 69, with a standard deviation of 10.30; the OI of the VLPFs is 51 and the standard deviation is 15.13. With an OI of 69, the VHPFs are quite clearly more open than VLPFs. It can then be concluded that *openness has a positive effect on the performance of the sampled firms*. In other words, *the more open the sampled SCMEs are in the management of their businesses the greater the chances of higher economic performance*. This conclusion concurs much of the literature (e.g., Bell and Albu, 1999; Casson, 2000; Theodorakopoulos and Wyer, 2000) that openness and/or networking enhances business performance.

Table 5.14: Very High Performance Firms and Very Low Performance Firms

Characteristics	VHPFs	VLPFs
Openness Index	69	51
FACNET (Mean)	15.67	9
FRANET (Mean)	14.5	8.83
Diversity of Network Contacts (Mean points scored)	25	20
Size of Business Networks (SBN) (Mean)	30.17	17.83
Location of Network Contacts		
(c) Local contacts only	33%	83%
(b) Local & external contacts	67%	17%
Medium of Communication		
Electronic (Telephone, Fax)	100%	83%
Face-to-face (FTF)	0%	17%
Frequency of Communication		
(c) Daily	33%	67%
Weekly	67%	33%
(b) Friends and Relatives	8.3	8.3
Colleagues	16.67	11.5
Nature of Business (NBUS)		
Cut Make and Trim (CMT)	33.3%	50%
Manufacturer (M)	33.3%	0%
CMT/M	33.3%	50%
Most Significant Type of Network		
FACNET	67%	50%
FRANET	0%	17%
COMNET	33%	33%
Level of Education of Owner-Managers		
Matric and Above	100%	67%
Below Matric	0%	33%

5.10. Medium of Communication and Economic Performance

The medium of communication most often used by the VHPFs in FACNET and FRANET interactions is electronic. In other words, none of the VHPFs prioritizes face-to-face (FTF) interactions; all of them prefer electronically mediated (EM) interactions to FTF. In contrast 83% of the VLPFs, on one hand, use EM communication most often in FACNET interactions while 17% prefer FTF. On the other hand, in FRANET interactions, 67% of the VLPFs use electronic medium while 33% prefer FTF. While the

majority of the VLPFs (like all the VHPFs) prioritize EM interactions, the firms that prefer FTF are all in the VLPFs category. It can be inferred from the data that *highly successful firms are more likely to be those that have shifted emphasis away from the traditional mode of interactions – face-to-face – to modern electronically-mediated interactions. Conversely, the poorest performing firms are more likely to be those that cling to old-fashioned means of interaction: FTF.*

The data on the types of electronic media employed by the sub-sampled firms (Table 5.15) show that there are significant differences between the VHPFs and the VLPFs that help to explain the disparity in the performances of the sampled SCMEs in Durban. The most often used medium of communication is the telephone. However, while all the VHPFs in the study are linked by telephone only 67% of the VLPFs have access to it. Quite significantly, too, the number of VHPFs that have access to the computer is three times as much as the number of VLPFs that have access to it.

Table 5.15: Category of Firms and Electronic-Mediated Interactions

Electronic Medium	VHPFs	VLPFs
Telephone	100%	67%
Access to Computer	100%	33%
Use of Computer		
Word Processor	100%	33%
Computing Accounts	83%	33%
Designing	83%	0%
Internet	100%	33%
e-mail	83%	17%
Voice Mail	50%	17%
Teleconferencing	50%	17%

The various ways in which the computer is used also differ between the two sub-samples. While 83% of the firms in the VHPFs category use the computer for designing, none of the VLPFs uses the computer for that purpose. Further, all the firms that have access to the computer (100% and 33% of the true sample in the cases of VHPFs and VLPFs

respectively) are on the Internet. Regarding e-mail, 83% and 17% of VHPFs and VLPFs respectively have access to it. The least employed electronic media are voice mail and teleconferencing. Only 50% and 17% of VHPFs and VLPFs respectively use the computer for voice mail and teleconferencing. In sum, these findings reinforce an earlier discovery that modern forms of communication, particularly the computer, enhance the economic performance of SCMEs.

5.11. Frequency of Communication

From Table 5.14 it can be gathered that very high performance firms interact less often than very low performance firms do. While two-thirds of the VHPFs interact at least once per week, the same percentage of the VLPFs does so daily. This indicates that high frequency of network contacts does not necessarily imply high performance. This confirms an earlier finding (see Section 4.4.3).

Although contacts with colleagues are preferred to contacts with friends and relatives, the VHPFs show a greater degree of preference for contacts with colleagues. This conclusion is based on the analysis of the responses of the VHPFs and VLPFs to the question on the type of persons with whom the firms prefer discussing business related activities (see Appendix B). While twice as much of the VHPFs prefer discussing business issues with colleagues to friends and relatives, there is little difference between the mean scores of VLPFs on the variables, i.e., friends and relatives, and colleagues. This shows that network contacts with colleagues are more rewarding, and yet these contacts are relatively more infrequent than network contacts with friends and relatives. Thus, it would pay a firm in the sample to develop network contacts outside the family and intimate friends more than within fraternal circles.

5.12. Views on Business Networks in Durban's Clothing Industry

The limited scope of networks among the sampled SCMEs is confirmed in in-depth interviews with the three key personalities in the industry. The three personalities are the

chairperson and general secretary of the Clothing Federation of South Africa (Clofed), Mr. Hassim Randeree and Dr. Paul Theron, respectively, and the KwaZulu-Natal regional secretary of the South African Clothing and Textile Workers Union (SACTWU), Mr. Christopher Sipho Gina. There is a consensus among these key figures in the clothing industry that although networks are significant for the growth of the industry the level of network relationships among SCME owners in the Durban Metropolis is very low. Dr. Paul Theron, for instance, intimates that inter-firm co-operation within the industry is, at one level, primarily pipeline driven. At another level, it is needs driven, and often occurs at the level of policy intervention, particularly where the government's trade and industrial policy seems to have a negative impact on the industry, and success has not been always guaranteed. A case in point is the negotiated phase-down of trade barriers with the World Trade Organisation (WTO) and member-countries of the Southern African Development Community (SADC). The tariff phase-down was intended to compel South African industries to become internationally competitive. The effects, however, have proven to be a mixed blessing. While it has enabled some manufacturers to import product inputs cheaply, it has also encouraged illegal re-export and tariff-free importation of large volumes of clothes, particularly from Malawi, Zimbabwe and Mozambique – in accordance with the bilateral agreements with these countries – with disastrous consequences on employment in the industry. The latter, particularly, arises from the disparities in SADC member-countries' tariffs on imported clothing from countries outside the SADC region.

The mixed bag of outcomes of the phase-down has prevented the formal network structures from securing "a mandate for calling on government to support a freeze in the tariff phase-down" (*Indicator*, Dec. 4 2001). Consequently, some South African manufacturers have relocated their production plants in the neighbouring countries. In situations of this nature, cross-border business or policy intervention networks could be instrumental in harmonising trade and industrial policies and arresting opportunistic behaviour that invariably arise from disparities in trade and industrial policies of the countries in the region. Such networks could also create appropriate business climate for the mutual benefit of all actors. In light of this, the emergence of the Southern African

Enterprise Network (SAEN) in September 1998 seemed opportune for the Southern African region. The effectiveness of SAEN, however, is predicated on the strength and effectiveness of national business networks. In the South African context, at least in the clothing industry, this is hardly the case.

According to Mr. Gina, the KwaZulu-Natal regional secretary of SACTWU, inter-firm relations in the clothing industry, especially between small businesses and the big companies, have been anything but cordial. In Gina's words:

> "The small companies are being squeezed by the big companies. If you are small you'll be small until you die or don't survive; if you are big you'll be big in order to squeeze those that are small. That's the fact of the game in South Africa. Small companies are not enjoying any good co-operation from the bigger companies. In the clothing sector it is a really disaster area, except that if a big company wants to outsource some job because they have a huge customer that they cannot satisfy then they begin to look for companies that they can outsource to do the work, i.e. CMTs. But they dictate the price. If you (CMTs) don't take their price you (they) are out. They will look for other smaller companies that will take their price" (Gina, 2001).

This scenario provides a basis for the fierce competition among CMTs in the Durban clothing-manufacturing sector (Prinsloo, 1995: 3; Owusu-Ampomah, 1997: 85), and this is largely because the CMTs are not adequately networked. This is not peculiar to the sector or region. Benton (1986, 1989; cited in Perrow, 1992: 463) records that the small firms clustered about one or two mass marketers in the shoe industry in Alicante, not networked, compete fiercely and savagely for the few crumbs that the big corporations hand out. "There is so little wealth generated among them that its distribution is insignificant; secrecy and distrust reign as does the exploitation of workers and family members" (Perrow, 1992: 463).

Asked about the effect of the low level of co-operation in the industry, the three interviewees agreed that the inadequacy of network relationships partially accounted for the poor performance of the industry in the last decade or so. According to Mr. Randeree,

> When you look at the Far East the SMMEs are *very supportive of each other* hence they are

> very successful in the export market. What they do is they try and help each other to overcome problems.....all their problems are dealt with *by groups of people that have got the interests of the country at heart*. In SA we work as individuals because we haven't been exposed to the culture. To a large extent, that explains the failure of the SMME sector to grow as it should.

Reiterating the views of Mr. Randeree, Mr. Gina observes that the Chinese have mastered the 'cluster approach' to great effect, even here in South Africa. Mr. Gina explains:

> "When we talk about exports it is huge and the only employers that are able to achieve that goal are Chinese. I had a discussion with two Chinese guys two weeks ago. They said to me that they were in firm control of 100% of the export orders they receive but the only way they were using was that they were *sharing the export orders among themselves*, between Isithebe, Newcastle, Tembisa, Lesotho, Qwaqwa etc. Look at Isithebe. They started with one company but in one year they have opened two other companies and they employ over one thousand people... They produce for an American company. *These approaches are the approaches by which South African companies can succeed.* One striking thing is that those companies are not big companies, they are small Chinese companies *but they relate to one another, and they've got a strong association too*" (Gina, 2001).

In contrast Indian owner-managers of South African small clothing manufacturing enterprises have little faith in both formal and informal network structures. The evidence in this study suggests limited informal networking among the sampled SCMEs owner-managers; interest in formal network structures is also waning as shown, according to Mr Randeree, by the dwindling of the membership of the Clothing Federation. According to Mr. Randeree (2001), "the members do not see any benefit in being part of a formal structure. The perception is that the formal structures are too close to the labour movement and as such the Labour Act, for example, does not give them any benefit".

A striking observation is that in spite of the negative attitude towards formal network structures, the executive of Clofed is not keen in encouraging its members to network effectively. By and large, according to Dr. Theron, manufacturers are left to network among themselves through their monthly and quarterly meetings of the regional associations and

Clofed respectively. Besides the meetings, which facilitate face-to-face interactions, Dr. Theron confirms an earlier finding that the telephone is the most predominantly used medium of communication in the network relationships of the firms.

According to Theron (2001), "Great use is also made of e-mail." The survey data, however, show that only 39% of the sampled SCMEs use the e-mail. The major constraint in the acquisition of computers for communication and/or administrative purposes, according to Mr. Randeree, is finance. "They can't afford it; only a few have computers in their offices, and it all comes down to costs. When you are selling time and labour those are very important costs, and so, in the short-term Internet technology is not a priority" (Randeree, 2001).

The study reveals a few reasons for the low level of network relationships in the clothing industry. The reasons include mistrust, reputation effects, individualism, the apartheid system, conservatism of an ageing crop of entrepreneurs, time and financial constraints, cultural differences and religion. Others are lack of government policy to promote business networks, lack of exposure to the culture of business networks, lack of interest in formal network structures, rivalry or destructive competitive spirit, and indifference on the part of the leading members of Clofed.

The problem of mistrust, individualism and reputation (Raub and Weesie, 1990) underlines the human capital theory or the much preferred human factor paradigm which argues that human factor decay i.e., negative personality traits such as dishonesty, selfishness and lack of trust, accountability and responsibility, is the primary cause of poor economic performance, particularly in less developed countries (Adjibolosoo, 1995). This is consistent with Tönnies' (1955) observations on the evolution of society from *Gemeinschaft* (Community) to *Gesellschaft* (Association). The former is characterised by the consciousness of belonging together, the latter, characterised by the objective fact of a unity based on common traits and activities and other external phenomena.

5.13. Summary

The key findings in this chapter are as follows:

- There is a positive relationship between the use of modern forms of communication and economic performance. This finding is consistent with international trend.

- The most often used medium of communication among the sampled firms is the electronic medium, and the reason often cited is that it is faster and more reliable. In spite of this, face-to-face (FTF) interaction, though old fashioned and less favoured, still serves a useful purpose and cannot be dispensed with entirely, even in this era of rapid modernization.

- Face-to-face (FTF) interaction is relatively an ideal form of interaction in the service industry than in manufacturing.

- Of the electronic medium of communication the telephone is the most often used.
- High performance firms tend to interact relatively less frequently than low performance firms.

- For the majority of the sampled firms, communication links within the locality is relatively more important than communication links outside the locality.

- In the opinion of majority of the sampled firms the most significant type of network is factor network. However, further analysis of the data in relation to economic performance reveals that communication networks are the most significant types of networks among the sampled firms.

- The scope of networks among the sampled SCMEs is limited. This is largely explained by symbols of societal decay observed in the study. This finding is

consistent with much of the conclusions of scholars such as Tönnïes' (1955) in their analysis of social evolution.

- There is a positive relationship between the level of education and the network density of the sampled firms.

- Openness has a positive effect on the economic performance of the firms in the study. However, the degree of openness among the firms is relatively low. In other words, the sampled firms are relatively inward looking.

NOTES:

1. The study confirms an earlier study, which established a strong positive relationship between performance and number of employees (see Owusu-Ampomah, 1997). In Table 4.28 the mean number of employees of VHPFs is given as 144.5 with a standard deviation of 1.03, and that of VLPFs is 42 with a standard deviation of 41.95. A significance test showed that with df=10 at all significance levels $t_{calc} > t_{crit}$ and therefore it can be concluded that the difference between the mean number of employees of both categories was not by chance and that there is a positive relationship between the number of employees and performance.

2. Gem is not included in Table 5.12. It is selected for comparison because its network density is highest yet its AEP is low.

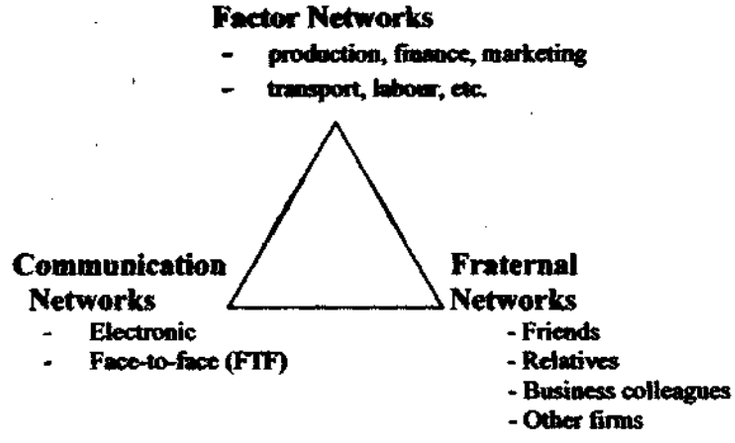
CHAPTER 6

INTERPRETIVE ANALYSIS OF DATA AND RESEARCH FINDINGS

6.1. Introduction

This chapter provides a simplified interpretative analysis of the data, focusing on the key findings of the study. The reader is reminded of the types of networks discussed in the study: factor, fraternal and communication networks (Figure 6.1).

Figure 6.1: Typology of Business Networks



The analysis was in two phases. The first phase (Chapter 4) revealed little concrete results, which in statistical terms were described as not significant. This warranted the second phase in which the outliers, lowest and the highest performing firms, in the regression analysis were pulled out and analysed.

6.2. Scope of Networks and Inter-firm Co-operation: Factor Networks and Fraternal Networks

The data provide evidence that all the firms in the study have network contacts. This finding contradicts the neo-classical market theory that efficient market is characterised by atomised independent firms in arms-length relationships. The finding is consistent with White (1981), Uzzi (1996) and other network theorists' argument that markets are

characterised by networks of organisations. Following much of the literature, the observed network contacts could be classified as factor, fraternal and communications networks.

The data also show a positive relationship between openness and economic performance of the sampled firms. The greater a firm measures on the openness scale (which also measures the level of networking) the higher the level of its economic performance. The results suggest that firms are likely to improve their financial performance if they open up their businesses, interact more and engage in joint action with other firms and actors in the economic environment. This finding empirically confirms the widely documented perception that a positive relationship exists between openness and/or networking and business performance (see, for example, Bell and Albu, 1999; Casson, 2000; Theodorakopoulos and Wyer, 2000).

Although the study establishes a positive relationship between networks and performance, the density of business networks (factor and fraternal) and the extent of inter-firm co-operation are very low. At one level the fact that all the firms have network contacts and, to some extent, are involved in some form of collaboration with other firms renders the isolation thesis problematic.[4] Besides the limited informal network relationships, the sampled SCMEs in the study belong to formal network structures such as the Natal Clothing Manufacturers Association and the Clothing Federation of South Africa (Clofed). In this event, the firms in the clothing industry in Durban need not be, and indeed, are not, in absolute terms, isolated. It may be argued that no business operates in *absolute* isolation or "in a social vacuum" (Granovetter, 1985; Murphy, 2001), therefore, explaining economic performance in terms of absolute isolation may beg the question.

At another level, the isolation thesis cannot be dismissed outright. In relative terms - a more plausible way of looking at it – the thesis holds a great deal of water. This comes out clearly, first, by contrasting the density of networks in Durban's clothing manufacturing sector with the Chinese experience. In China where networks are believed

to have contributed significantly to the country's phenomenal economic growth, a firm may belong to several dozens of business networks at the same time (Wei-ping, 2000:46). Secondly, the small clothing manufacturing enterprises in Durban (and South Africa, as a whole) receive very little or no patronage from the big firms in the industry. Attempts to foster meaningful vertical linkages with the big companies have not been significantly successful. Rather, the big companies have been offering the small firms cut-throat competition, which in turn has compounded the traditional problems of these business units - for being small - and threatened their survival. This scenario provides a basis for the fierce competition among CMTs in the Durban clothing-manufacturing sector earlier reported by Prinsloo (1995:3) and Owusu-Ampomah (1997:85). The rationale is not farfetched: the CMTs are not adequately networked. This resonates with experiences elsewhere. Benton (1986, 1989; cited in Perrow, 1992:463) records that the small firms clustered about one or two mass marketers in the shoe industry in Alicante, not networked, compete fiercely and savagely for the few crumbs that the big corporations hand out. "There is so little wealth generated among them that its distribution is insignificant; secrecy and distrust reign as does the exploitation of workers and family members" (Perrow, 1992:463).

From the survey and qualitative data this study confirms the isolation thesis. The poor performance of the clothing industry in Durban in the last two decades or so can also be partially explained in terms of the isolation thesis. This conclusion is consistent with Barton (1997) and Duncombe and Heeks' (1999) observation that performance can be constrained and inconsistent if an entrepreneur's social network is small, closed and knowledge-poor.

Evidence from the interviews show that the low density of networks and inter-firm collaboration in Durban's clothing manufacturing sector is largely due to lack of government policy to promote networks and inter-firm co-operation, indifference, conservatism and human factor decay such as lack of trust, dishonesty, religious intolerance and hatred. The absence of personal trust, for instance, does not imply that other forms of trust e.g. system trust, is non-existent, although the study did not

investigate owner-managers' reflections on this type of trust. Referring to Holbig's (2000) critique of Weber's insights on Chinese business community, the study does not also mean to essentialize personal trust by arguing that business relationships in Durban's clothing manufacturing sector are solely based on specific trust bonds, limited according to personal bonds of obligation, reputation and face. The study concurs Holbig's suggestion that society is dynamic and therefore economic behaviour such as personal trust may be best understood by taking time and change into account (Holbig 2000:17). Moreover, from the human factor perspective, several human personality traits, e.g., honesty, loyalty, respect, responsibility and reciprocity, influence human behaviour and outcomes, not only trust (this will be further discussed in chapter seven).

The observed human factor decay is, to a large extent, rooted in the process of transition from Gemeinschaft to Gesellschaft (Tönnies, 1955). However, in the case of South Africa, it is complicated by apartheid. Both issues are addressed below, beginning with modernisation and human factor decay. In the process of modernisation, rational will, convention, laws, individualism, self-interest, impersonal relationship and science associated with Gesellschaft-like group life gradually replace natural will, folkways, mores, morality, religion and personal relationships, characteristic of Gemeinschaften (Tönnies, 1955). Lacking the element of shared feeling, though not in its entirety, Gesellschaft reproduces men and women in the metropolis who are

> "...curious and hungry for money and pleasure.....The more and longer their influence prevails the more the residuals of family life acquire a purely accidental character. For there are only few who will confine their energies within such a narrow circle; all are attracted outside by business, interests, and pleasures, and thus separated from one another.....The mechanism of money, under usual conditions and if working under high pressure, is means to overcome all resistance, to obtain everything wanted and desired, to eliminate all dangers and to cure all evil" (Tönnies, 1955:268).

Although this does not hold always, as Tönnies acknowledges, the freedom and independence of individuals to pursue their personal interests is such that they would do anything to achieve their ends unless restrained by conscience, law or state power.

In apartheid South Africa the situation was more complex than Tönnies or earlier social evolutionists could have imagined. It was not just a struggle of individuals in pursuit of economic resources in the process of capitalist development but also a struggle of cultures or races in the framework of a state-sanctioned policy of separate development. In this frame, not only was there a tendency for individual malfeasance and class conflict. There was also the nurturing of the fragmentation and alienation of the diverse cultures in South Africa. All this gave birth to multi-pronged conflicts, and deepened racial and social divisions, religious differences, hatred, and suspicion, resulting in the breakdown of social and economic relationships (Maasdorp and Humphreys, 1975) – a condition not favourable for an inclusive business network formation.

In recent times, the role of government in the promotion of network relationships and inter-firm co-operation has increasingly become recognized, especially following the success of some national network brokerage programmes, e.g. the Danish network programme, a *government initiative* which ran during 1988-1993 (Humphrey and Schmitz, 1996) (Emphasis added). It is in this event that the seriousness of the lack of national policy or initiative on network brokerage should be viewed.

6.3. Size of Networks and Performance

The study finds a positive relationship between the size of business networks and performance, although the relationship is weak, and therefore does not adequately explain the disparities in the performances of the firms. Nevertheless, since the performance of a firm depends on many factors, each of which counts, irrespective of the size of its contribution, it is argued that the size of network contacts is a relevant factor in the performance of a firm. This argument is consistent with much of the networks literature (e.g. Nohria and Eccles, 1992:6; Burt, 1992:64), which maintains that the greater the network density of an actor, the better the actor's chances of accessing social resources.

Although the positive relationship between the size of business networks and performance is weak, it is stronger between the size of fraternal networks and performance than between the size of factor networks and performance. This finding suggests that fraternal networks are, to these firms, more important than factor networks. Yet, in the opinion of most of the firms, factor networks are more important. This places the study in a dilemma. There appears to be no downright solution to the question of the most significant type of networks to the SCMEs in Durban but this is not the case as is shown in section 6.7 below.

6.4. Diversity, Location and Frequency of Network Contacts

While the size of network contacts could enhance a firm's opportunities for financial gains, it was found that a positive relationship between size and other characteristics such as diversity, an actor's location in the network, and the spatial distribution of network exists. Besides the large number of network contacts, the very high performance firms (VHPFs) have greater diversity of network contacts which are also widespread, with some of the network contacts outside the Durban Metropolis and even internationally. On the contrary the very low performance firms have limited network contacts, and less diversified and localized networks. The network contacts of the successful firms are, however, less frequent, compared to the very low performance firms. While the former, on average, interact at most once a week the latter group have daily contacts on business issues. It can be speculated that SCMEs that are experiencing some kind of desperation, insecurity or difficulty, and hence low returns, are likely to interact more frequently, hoping to find solutions to their problems. The finding on the relationship between frequency of contacts and performance is in line with Granovetter's assertion of the primacy of structure over motivation (Granovetter, 1973:1371) although it can be argued, as this study does that the human factor is critical for business performance.

There is also evidence that an actor's location or position in a network is critical to its investment rewards. This is particularly the case in one firm, which describes itself as "a

vertical retail-manufacturer" (VRM), "governing" quasi-hierarchical network relationships of 40-60 CMTs. As the owner–manager explains,

> We are coordinators, in that we do not manufacture in-house. We source design from the international market, say from Asia, Europe.... We buy the fabrics from the Far East. We bring the fabric to South Africa. We request the styles. While the styles are being manufactured our design department creates the patterns. When the fabrics arrive, we make samples....get approval from our buyers, and thereafter manufacture via CMTs. We have the design facility, a warehousing facility and a cutting facility (Randeree, 2001).

The VRM provides a fully cut garment with all the trimmings, and all that the CMTs in its network merely do is to assemble the garment.

6.5. Type of Network Contact-Persons

The data on the type of persons the owner-managers interact with reveal that most of the firms prefer interactions with colleagues in the clothing industry or those with whom they have co-production arrangements. Interaction with friends, relatives and colleagues is common among the VHPFs and VLPFs. However, interactions with colleagues in the clothing industry are more common among the VHPFs than among the VLPFs. It thus seems that for a small business to be successful it is important to forge strategic linkages, which in this event should be with business associates. Most of the interactions, particularly, with regard to factor networks, are dominated by production, marketing, transport, and labour issues.

A few of the respondents also indicate union leaders and customers as relevant types of people with whom they discuss business-related issues. This group of respondents underscores the significance of good labour relations and customer satisfaction in the success of a firm although the majority of the respondents do not perceive them as critical. *It may thus seem appropriate to argue that network ties tend to develop along the faults of a business environment. Where faults do not exist (as may be presumed, in the case of the majority of the sample, with respect to labour and customer relations) network ties might be less relevant.* Such a conclusion reiterates contemporary classical

economists' perception of network ties, underlying the remarkable economic successes of Asian economies, as an aberration of the capitalist system. These economists consider Asian business groups as a derivative of the failure of the capitalist system, and describe "their patterns of economic development and international practices as being 'unfair' in bilateral trading relations, and suffering 'imperfections' that 'distort' their domestic economies" (Biggart and Hamilton, 1992:471-472). It may be argued, however, that while this may be true in the context of the Western model of capitalism, it may not be necessarily so in an economy in which social relationships have been institutionalized, and indeed, form the foundation for economic activity, as shown by Biggart and Hamilton (1992) in the case of the East Asian economies.

Consistent with the conclusion that network ties tend to develop along the faults of a business environment (in this event western capitalist model environment) it is observed that there is a negative relationship between the average economic performance per employee and the size of fraternal networks although the relationship is weak. This appears to be inconsistent with an earlier observation that a positive relationship exists between the size of fraternal networks and economic performance (net profit) but it need not be. It is contended that a certain minimum size of fraternal networks may be required for the growth of a firm. However, as the firm's performance improves (i.e. as the firm achieves higher levels of economic performance per employee due to efficiency in its operations), it tends to rely less on fraternal networks but not up to the point of doing away with it outright. This argument corresponds with Wei-ping's (2000:43) third stage of business networking in China in which "networking no longer depended solely on personal connections but more on reputations and potentials for future business development". The size of fraternal networks thus, has a nonmonotonical effect on firm performance. In other words, there is an inverse U-shaped relationship between the size of fraternal networks and performance, similar to the nonmonotonical effect of organizational population density on organizational founding rates reported in Hannan and Freeman (1989a, 1989b), Singh and Lumsden (1990), Hannan and Carroll (1992), and Baum and Oliver (1992). The argument also seems to be the converse of Uzzi's (1996) observation that although networks impact on organisational performance, the

positive effect of embeddedness tends to reverse itself at a certain point as embeddedness in organizational networks increases. It is postulated, therefore, that a symbiotic relationship exists between networks and economic performance, but more in the short- to medium-term than in the long-term.

As pointed out earlier, a certain minimum size of fraternal networks may have to be necessarily maintained but the size may vary from firm to firm. However, the optimum density of networks necessary to maximize the gains from business networks is open to conjecture. There is also no empirical evidence to suggest that too much of it is detrimental. Rather the thesis (i.e., as the analysis has shown) is that the wider the scope of a firm's networks the better the chances of improving upon its economic performance – *ceteris paribus*. The caveat, however, is that unguarded openness could be counter-productive.

Dense networks may create an environment in which firms increase their capacities to reduce transaction costs through joint action. Areas of collaboration may include bulk purchasing of inputs/raw materials, accessing investment incentives, sharing of overhead costs of, or being catalysts for the provision of infrastructure, sharing large export orders that one firm alone cannot honour, and developing a pool of skilled labour through collective training efforts. Such firms – especially in a cluster - have an added advantage of securing external economies such as the diffusion of new technologies, access to subcontracts, finance and information, and attracting attention for public assistance.

6.6. Medium of Communication

Evidence from the data shows that majority of the sampled firms most often use the telephone for communication. A few of the firms among the low performance firms (LPFs) and very low performance firms (VLPFs), however, prefer face-to-face (FTF) interactions. Although the telephone is most commonly used across the firms, all the very high performance firms have modernised their information gathering and processing technologies. The better-off firms have also introduced more sophisticated technologies

and innovations in pattern and style designing, ostensibly through the use of the computer. All the very high performing firms (VHPFs) are users of advanced ICTs. Access to the computer (in addition to the telephone, fax and other traditional information handling technologies) and a variety of software enable the most successful firms, in varying degrees, to engage various applications including word processing, Internet, e-mail, voice mail, teleconferencing, designing, accounting and record-keeping.

In contrast, although almost all of the very low performance firms (VLPFs) have the telephone only a few of them have access to the computer, and the extent of application is extremely limited. The firms that recorded the highest average economic performance per employee (AEPPEM) within the VLPFs category - half of the number – are ICT users. Although the observed figure is less than half of the least recorded AEPPEM of the VHPFs category, it still confirms the positive impact of ICTs use on the performance of the sampled SCMEs in Durban.

The few firms that most often rely on FTF interactions are in the poor performance category. However, the reasons for FTF interactions confirm much of the literature (e.g., Granovetter, 1985; Krackhardt, 1992; Kraut, Steinfield, Chan, Butler and Hoag, 1998). The argument is that personal and social relationships are indispensable and even more effective in many economic transactions than market forces or arms-length mechanisms.

6.7. Most Significant Type of Networks

The question of the most significant type of networks was not easily resolved, as mentioned earlier; the data showed conflicting results, which initially seemed to pose a dilemma. The analysis of the outliers was helpful in resolving the issue. From the analysis of the outliers, communication networks (COMNET), to be precise, electronic networks emerged conspicuously as the most significant type of networks in terms of performance. From the data the claim that factor networks (FACNET) are the most significant type of network was not supported in terms of performance. The economic performance of the firms associated with fraternal networks (FRANET), is also less than

the economic performance of firms associated with electronic communication networks. The conclusion is that electronic networks are the most significant type of networks among the sampled SCMEs in Durban. This finding confirms the widely held view that the use of the new information and communication technologies (ICTs) is significantly associated with economic performance. In this event, for SCMEs in Durban to become competitive and improve upon their performance through effective and efficient networks in this era of globalisation, they will need to modernise their information and communication technologies.

6.8. Summary of Key Findings

The key findings of the study are as follows:

- The scope of business networks, in terms of size, diversity, and spatial distribution, among the sampled SCMEs in Durban is very limited. In other words the SCMEs in Durban are inward looking. This finding confirms the isolation thesis (IDS, 1997);

- The reasons for the low level of networks include mistrust, apartheid's negative impact on social, economic and political relationships, indifference, lack of government policy to promote inter-firm co-operation, weak formal network structures and unhealthy rivalry. In short, this finding resonates with what the proponents of human factor development paradigm (HFP) (e.g., Adjibolosoo, 1993; 1995) describe as human factor decay, i.e., negative human characteristics such as mistrust, dishonesty, selfishness and lack of patriotism, loyalty and accountability, whose roots primarily lie in the process of change from *Gemeinschaft* to *Gesellschaft* (Tönnies, 1955) but exacerbated by apartheid.

- Communication networks, to be precise electronic communication networks, are the most significant type of networks among the sampled firms. Thus, the

hypothesis that fraternal network is the most significant type of network to SCMEs in Durban is not empirically confirmed;

- Although the results of the study establish a positive relationship between the size of business networks and economic performance the relationship is not statistically significant. In other words the positive relationship between the size of business networks and financial performance of a firm in the study is weak.

- Positive relationships exist between the size of fraternal networks and economic performance on one hand and the size of factor networks and economic performance on the other. However, the former is relatively stronger than the latter;

- The most important issue to the majority of the sampled firms is production. This features prominently in discussions between the owner-managers and their friends, relatives and colleagues in and out of the clothing industry. Nevertheless, the study discovers that the most significant issue to the sampled SCMEs in Durban is significantly determined by the nature of business. While CMTs acknowledge that production matters are most significant, firms that have their own lines of manufacturing consider marketing as the most significant;

- Generally, the owner-managers of the sampled SCMEs prefer discussing business issues with colleagues with whom they have co-production arrangements and/or colleagues who are in the clothing industry;

- Fraternal networks of the sampled SCMEs are significantly localized (i.e. social relationships are spatially circumscribed). However, the local network relationships are not necessarily more beneficial than external fraternal networks;

- Majority of the sampled SCMEs believe that friends, relatives and colleagues are an important source of subcontracts and other forms of assistance;

- The most dominant medium of communication is the electronic medium; an overwhelming majority use the telephone most often;

- Firms that have switched from old-fashioned means of communication such as face-to-face (FTF) to electronic-mediated network relationships or modern forms of communication e.g. the computer, Internet, e-mail, voice mail, and teleconferencing are more likely to perform better on the financial scale. This finding is consistent with a universal trend towards the emergence of a network society (Castells, 1997, 1998, 2000);

- In spite of the huge advantages offered by the technological breakthroughs in modern communication systems, face-to-face interactions – however minimal – still continue, and will continue to be a feature of the clothing industrial landscape in Durban, especially among the firms that provide services (e.g. CMTs);

- The more open the SCMEs in the sample are in the management of their businesses, the greater the chances of improving upon their economic performances. Conversely, the more inward looking the firms are the greater the chances of a poor economic performance.

NOTE:

1. The isolation thesis maintains that small businesses operate alone in a competitive environment, and this constitutes the greatest barrier to their growth and development (IDS Policy Briefing, Issue 10: April 1997).

PART III

DISCUSSION AND CONCLUSION

Chapter 7

Network Characteristics and Economic Performance Of Small Manufacturing Enterprises

7.1. Introduction

The focus of this dissertation is networks and small business growth. It is primarily concerned with the isolation thesis. Investigating this thesis, the study sought to identify the types of networks and the relationships between them and performance. It also investigated which among them is the most critical to the small clothing manufacturing enterprises (SCMEs) in the Durban Metropolis and the conditions that foster its viability for growth. It was also hypothesised that fraternal networks were the most significant types of networks.

Much of the literature identifies types of networks, which may be broadly classified as factor, fraternal and communication networks. The literature also maintains that:

- Although size or density of network contacts is important, diversity, openness (implying networking or receptivity to change), frequency of, and widespread contacts are more critical for the effectiveness and efficiency of networks;

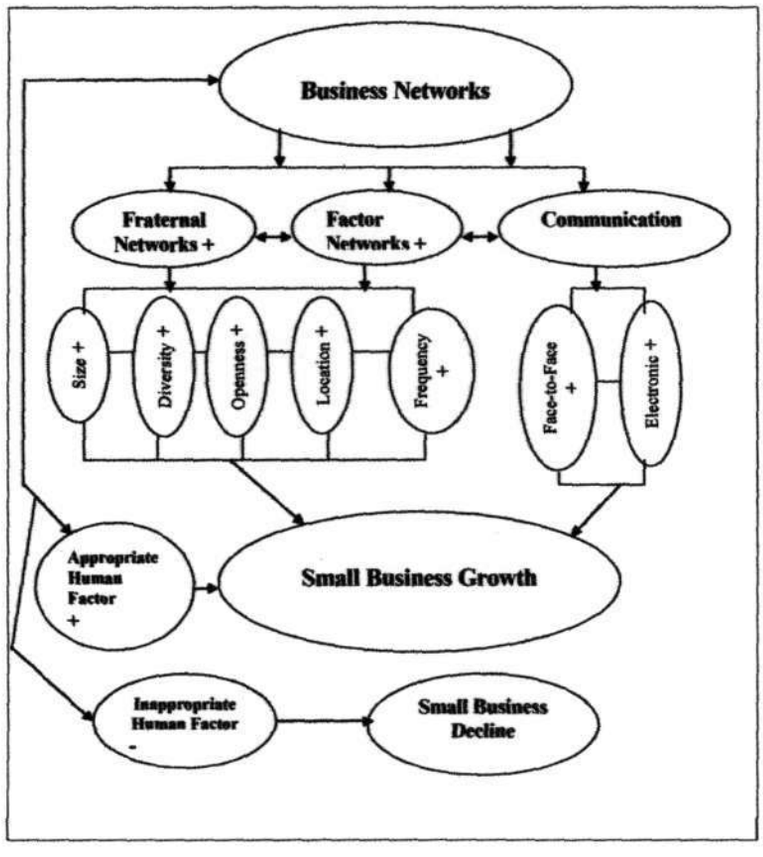
- Modern communication networks are the most critical to firms in the current competitive global economy. In other words: information and communication technologies (ICTs) have the potential to foster the growth of small firms;

- Social and interpersonal relationships are relevant in understanding the impact of networks on small business growth;

- The poor performance of the clothing industry in Durban is significantly due to inadequate networking and inter-firm co-operation or the isolation of the firms in the clothing industry in Durban.

The results of the study, summarised in Figure 7.1, confirm all the four assumptions but fail to support the hypothesis that fraternal network is the most significant type of networks to SCMEs in the Durban Metropolis.

Figure 7.1: Network Contacts and Business Growth



7.2. Electronic Networks and Business Performance

The data provide evidence that the electronic mode of communication or an electronic network is the most critical network-type for the growth of SCMEs in the Durban Metropolis. The study found a much stronger association between the use of modern information and communication technologies (ICTs) and economic performance. This finding confirms much of the literature on economic growth at national and firm levels that ICTs are not only a potential source of accelerated growth[4], but also *do* really have positive effects on the growth of firms and, by implication, the growth of national economies[5] (Greenspan, 1999, 2000a, 2000b; Eggleston, Jensen and Zeckhauser, 2000; Castells, 2000; Brynjolfsson and Hitt, 2000:45; Jorgenson and Stiroh, 2000; Sharpe, 2001; Baily and Lawrence, 2001; CEA, 2001; Baldwin and Sabourin, 2001; Kikuchi, 2003; Rauch and Trindade, 2003). Alan Greenspan, for instance, maintains that:

> It is the observation that there has been a perceptible quickening in the pace at which technological innovations were applied that argues for the hypothesis that the recent acceleration in labor (sic) productivity was not just a cyclical phenomenon or a statistical aberration, but reflects -- at least in part -- a more deep-seated, still developing, shift in US economic landscape (Greenspan, 1999:4).

A number of studies in the US have, to some extent, vindicated the chairman of the Federal Reserve Board. Oliner and Sichel (2000), for example, found that ICTs contributed 0.71 percentage point of the 1 percentage point acceleration in labour productivity growth between 1991-95 and 1996-99. They estimated ICTs contribution to GDP growth at 0.57 of a percentage point and 1.10 percentage point for the two periods respectively. Jorgenson and Stiroh (2000) also made a similar finding, 0.40 of a percentage point and 0.76 of a percentage point contribution to GDP growth for the periods 1991-95 and 1995-98 respectively.

Using firm-level data, Brynjolfsson and Hitt (2000:45) observe that rather than being paradoxically unproductive, computers have had an impact on economic growth that is disproportionately large compared to their share of capital stock or investment.

In separate studies conducted in Australia, Parham, Roberts and Sun (2001) and Houghton (2002) observe that the use of ICTs contributed significantly to the country's productivity growth in the 1990s although non-ICT factors such as policy reforms could not be discounted. Houghton (2002) maintains that ICT industries are important to the Australian economy, both as major growth industries *and* as the providers of products and services, which will enable all other sectors to operate in the knowledge economy.

Reports on France and other OECD countries follow a similar trend. Using the classical growth accounting methodology, Mairesse, Cetter and Kocoglu (2002) estimate that the total contribution of ICT to GDP growth in France averaged 0.2 per cent per year for the 1970 to 2000 period. According to Mairesse et al (2000), the ICTs' contribution increased gradually from 1995 to 2000, reaching 0.3 per cent on average, and even became more important than that of other types of equipment (whose growth and contribution had decreased). Mairesse et al (2000) observe that ICT contribution to output growth in Germany, Italy, Japan and France was virtually the same, but compared to the USA it was much lower. Canada and the United Kingdom, on the other hand, fell between these four countries and the USA. In the case of Canada, Baldwin and Sobourin (2001) found that between 1988 and 1997 Canadian firms that adopted ICTs experienced greater labour productivity growth and market shares. This finding confirmed an earlier study by Baldwin, Diverty and Sabourin (1995) on the relationship between plant performance in the 1980's and advanced technology use.

7.2.1 The Sceptics

In spite of the favourable reports on ICTs use and economic performance at firm- and national-levels, a few researchers are sceptical about the contribution of the use of ICTs to the performance of firms and national economies. Robert Solow (1987), one of the

sceptics, is noted to have said, "We can see the computer age everywhere but not in the statistics". Although Robert Solow is reported to have since declared this statement obsolete (Gordon, 2000; Uchitelle, 2000), other studies (e.g., Attewell, 1995; Landauer, 1996; Kraut, Steinfield, Chan, Butler and Hoag, 1998; Gordon, 2000a) still maintain sceptical views on the contributions of ICTs to growth. Gordon (2000a), for instance, argues that the recent productivity growth of the American economy is not only cyclical in nature but also occurred primarily in the sectors producing ICT hardware, peripherals and telecommunication equipment with a substantial spillover to only 12 percent of the economy involved in manufacturing durable goods. Gordon (2000a) found no visible effects of the New Economy in the rest (88%) of the US economy, and considered capital deepening unproductive (see Table 7.1).

Table 7.1: Estimates of contributions to the US MFP acceleration in the 1990s

	Gordon (2000)	Oliner and Sichel		CEA 2001
		(2000)	(2001)	
MFP acceleration	0.29	0.67	0.91	1.19
ICT Production	0.29	0.26	0.26	0.18
Other Industries	0.00	0.41	0.64	1.00

Source: Parham et al 2001: xx.

However, as Parham, Roberts and Sun (2001) point out, citing Jorgenson and Stiroh, (2000:183), even zero multifactor productivity (MFP) growth for 'other industries' aggregate does not necessarily rule out MFP gains in individual ICT-intensive user industries that are offset by trends in other industries.

At the firm level, Kraut et al (1998) report no association between electronic networks and business productivity. In a study on production co-ordination in virtual organisations, Kraut et al (1998) observe that the use of networks is associated with poor outcomes, errors and inefficiencies in ordering. Kraut et al (1998) argue that studies which showed

strong positive effects of using electronic data interchange (EDI), (e.g., Davidow and Malone, 1992; Malone and Rockart, 1993) and other inter-organisational computer networks (Kekre and Mudhopadhyay, 1992), might have overstated the positive impact of networks, focusing on large firms dealing with high volumes of very routinized transactions. This is problematic if one considers the fact that the firms in this study are *not* large firms yet it arrives at similar conclusions as those stated by researchers such as Kekre and Mudhopadhyay (1992).

Kraut et al (1998) argue further that the poor outcomes associated with the use of electronic networks, on one hand, and errors and inefficiencies on the other hand, in ordering were perhaps transient. The reason is that many firms were inexperienced in using electronic networks with suppliers and were relying on proprietary and ad hoc applications to share data. It is presumed that no causality is implied between electronic networks and poor outcomes, on one hand, and errors and inefficiencies on the other hand. If any, at all, the causal factor may be human limitations which could as well be evident in the use of "literate" and "organic" technologies, i.e. written information and information held in human memory and in sound waves, respectively (Duncombe and Heeks, 1999).

These sceptical studies suggest that the days of the greatest benefits of computers are over, particularly in the US (Gordon, 2000a) and Australia (Australian Industry Group (AIGP), 2000). This study and other optimistic studies, particularly, on US and Australian economies (e.g., Brynjolfson and Hitt, 2000; Gruen, 2001 and Parham et al, 2001) challenge this view. Brynjolfson and Hitt (2000), for instance, maintain that the impact of computers on US economic growth is likely to grow in coming years. In the case of Australia some observes suggest that Australia is far advanced in accessing productivity gains through ICT use (Gruen, 2001). Others believe that Australia has already caught an ICT-related productivity wave through rapid uptake of ICTs (Parham et al, 2001) or is awaiting a second ICT-based productivity wave (Wilson, 2001). In this study, SCMEs in the Durban Metropolis, and by extension, South Africa as a whole, is

yet to see the productivity wave associated with ICTs use, and one way through which this may come is a rapid uptake of ICTs.

7.2.2. Methodology and Differential Outcomes

Outcome differentials in studies on the contribution of ICTs use to business growth raise doubts on the potential of ICTs to business and economic growth. The disparities are the result of differences in the scope and productivity growth accounting frameworks adopted by various researchers (Mairesse et al 2002; Perham et al, 2001). On one hand, Mairesse et al (2002:3) suggest that sectoral allocation of productivity gains brought about by ICT depends greatly on the conventional methods of breaking down goods and services into volumes and prices. It is argued that a "cost of factors" approach to productivity gains is more likely to be allocated to users and, a "producer services" approach, to producers.

Perham et al (2001), on the other hand, explain that it is virtually impracticable to make fine distinctions between different types of gains from ICTs and quantify 'special properties of ICTs through the growth accounting framework. According to these authors, this is largely because the measurement of multifactor productivity (MFP) gains in ICT production depends crucially on the accuracy of the measurement of ICT prices. The usual hedonic price approach used to deflate nominal output of, and expenditure on ICTs could be erratic, and this could engender a distortion of the size of MFP gains. Further, the growth accounting framework does not decipher any 'new qualities' spillovers from IT investment; if it did, it could increase output growth and MFP gains.

Given the differences in methodology, Oliner and Sichel (2000) argue that although Gordon's (2000a) approach provides for a cyclical adjustment, his numbers' embed their basic finding: that the *production* and *use* of information technology have contributed importantly to the actual pickup in productivity growth in the US since 1995. In effect, Gordon (2000a) does not appear to rule out completely trend multifactor productivity (MFP) growth outside the production of computers. In Perham et al (2001), Gordon

(2000a) accepts that ICT use contribute to labour productivity growth through capital deepening.

This study's accounting framework circumvents the methodological problems of decomposing growth. The study, however, does not rule out other factors contributing to the high levels of profitability and employment growth among the VHPFs, besides ICT use. The study's position is congruent with Brynjolfson and Hitt's (2000:24) observation that information technology investment generates complementary organisational investments, which in turn lead to substantial economic benefits. Besides, as will be seen shortly, ICT use does not take place in a social vacuum. Issues of interpersonal relationships and the human factor are as pertinent to business and economic growth, via networks, as the use of ICTs. The point to stress, at this juncture, is that the factor that distinguishes the very high performance firms from the low performance firms, *ceteris paribus*, is the intensity and diversity in the use of new ICTs. The study thus strongly concludes that the use of ICT contributes to profitability and employment growth of SCMEs in the Durban Metropolis. By this conclusion, the study's approach takes account of reverse causality, which to some extent, clouds the relationship between the use of ICTs and economic performance.

Two critical points should make this clear. First, none of the sampled firms is an ICT producer; at best they can only be users, and that is the case with many of the firms, though in various ways. Secondly, although almost all of the firms use the telephone for their factor and fraternal networks, all of the most highly successful firms employ new ICTs as compared to only a third of the very low performance firms. As the study found, the sampled SCMEs that continue to cling to old-fashioned organisational and/or information practices, are at least, more than twice as much likely to perform poorly.

7.3. Contribution of ICTs Use to Business and Economic Growth

The contribution of information and communication technologies to the profitability and employment gains in this study may be explained in terms of the generally acknowledged

expansion of knowledge and the reduction in uncertainty that ICT fundamentally brings to firms (Bell and Albu, 1999; Greenspan, 2000b; Barr, 2000; Castells, 2000;). Greenspan (2000b) explains that the availability of information in real time enables firms to increase productivity by reducing costs, increasing output quality, and ensuring co-operation and effective co-ordination of production and marketing transactions between organisations. The firms are also able to set up strategic partnerships and extensive networks (beyond their immediate locations), which enable them to obtain subcontracts and orders, create a potential for the consolidation of their competitiveness, and enlarge their market shares (Porter, 1985; Poon and Swatman, 1996; Connor and Woodburn, 1999; Brynjolfson and Hitt, 2000). Market shares are particularly enhanced by access to price information. This enables users of ICTs, especially, CMT firms that depend on subcontracts, to compare prices offered by various principals (wholesalers and large manufacturers and retailers), prevent exploitation and maximise profitability growth.* In a rather general sense, the users of ICTs are able to overcome the inherent weaknesses of failing to "hear" markets, taking into account segmentation and the importance of non-price competitive factors (Kaplinsky and Morris, 1999:731). These factors include quality, delivery reliability, and efficiency in production planning; others are cost- and time-saving designing of patterns and styles, and flexibility.

Consistent with this study's finding, Brynjolfson and Hitt (2000) observe that information technology - described by Bresnahan and Trajtenberg's (1995) as not a traditional capital investment, but a "general purpose technology" - is economically beneficial mostly because they facilitate complementary innovations. The economic impact of such innovations or restructuring of the production process, as Brynjolfson and Hitt (2000) correctly argue, are substantially larger than would be predicted by simply multiplying the quantity of capital investment devoted to them by a normal rate of return. For example, without the development of computer networks, the complex web of strategic alliances, subcontracting agreements, and decentralised decision-making for both large firm and small firms would have been simply impossible to manage (Castells, 2000).

This was particularly evident in one firm, the "vertical retail-manufacturer" (VRM), in this study. Electronic networks had dramatically transformed the nature of this firm's operation, leverage and profitability, though largely as a result of its central location in the network. To some extent, the VRM's operations epitomise the Cisco System or "the global networked business model", based on three core assumptions. That:

- The relationships a company maintains with its key constituencies

  services;
- The manner in which a company shares information and systems is a critical element in the strength of its relationships;
- Being connected is no longer adequate: business relationships and communications that support them must exist in a "networked" fabric. The global networked business model opens the corporate information infrastructure to all key constituencies, leveraging the network for competitive advantage (Cisco Sytems, 1999:1-2).

However, there is little evidence that the VRM's information infrastructure is fully available to its constituencies and as such it has a competitive edge over the rest of the actors in the network. There are three reasons for this: First, not all the CMTs in the network relationship have been able to make the requisite capital investment in new ICTs and other manufacturing equipment to enhance information flow and efficiency. For these firms the investment cost in terms of equipment is still prohibitive although the prices of ICT equipment have phenomenally spiralled downwards as a result of technological advances. Similarly, the firms find the opportunity cost of acquiring information skills, e.g., accessing, selecting, assessing, using and processing information too high to contemplate. Others, still, are not particularly interested, finding an excuse in old age.' To a large extent, face-to-face interactions and the use of the telephone rather than the computer continue to characterize information flow in the network. This comes with harrowing frustrations at times, due, in part, to failure to move abreast with the shifting technological frontiers.

Secondly, many of the firms seem to be satisfied with their profit margins under the self-placating belief that they do not incur any heavy capital outlays, such as one on ICTs. As CMTs the firms only sell labour and time. As such, they do not see any compelling grounds for technological innovations or restructuring to enhance their efficiency, competitiveness and productivity. However cogent this argument may be it is also suggestive that the nature of business determines information needs.[o] Thus, adapting Granovetter's (1985) thesis on networks of social relations, ICT use penetrate irregularly and in differing degrees in differing sectors of economic life. Nevertheless, given the enormity of opportunities in the clothing sector in South Africa today (Randeree, 2001), the problem seems to emanate from a combination of factors other than differential information needs. The factors include conservatism and complacency, lack of enthusiasm to upgrade, lack of vision, unwillingness to learn new skills and a low McClelland measure of need for achievement (McClelland, 1961; Burt, 1992:79, 82). Thus, the study argues that information needs may be enterprise specific (Duncombe and Heeks, 1999), but in the same industry information needs for networking is virtually the same across firms. It is the belief of this dissertation that CMTs require ICTs use for efficient networks and performance no less than manufacturing firms that have their own lines of production. It is even more critical if CMTs have any desire to meet international product and process standards, as a component of upgrading which has increasingly become a precondition for international subcontracts or participation in global product markets and global value chains (Kaplinsky and Readman, 2001:29).

But as the VRM's owner-manager explains,

> "When you visit these companies what strikes you is the poor planning of production. The layout of the production floor is such that should an expert walk in and make them aware of how production should be planned, I'm of the opinion that there would be great benefit without any financial commitment – I would estimate 25% to 35% increase in productivity.....A common sight at these factories is a lot of human

> movement, which if limited by fifty percent would increase productivity, significantly. All that is required is designing the production floor to the specificity of the job at hand" (Randeree, 2001).

An additional requirement is, of course, the adoption of ICTs to enhance intra-firm information flow.

Thirdly, the VRM is reluctant to commit resources to helping its satellite CMTs overcome their problems. A possible explanation is that this could undermine the VRM's efficiency gains, and centrality in the network.' Consequently the VRM only provides quality control service, which is obviously in its interest if it is to maintain its competitive edge. Yet, industry-wide performance is dependent on widespread uptake of ICTs, efficient production planning, financial and human resource management and good labour relations.

The problems of the firms in the VRM's network are generic to the low-performance firms in the sample as a whole. In both cases, the up-take of ICTs and the concomitant complementary innovations are fundamental to leveraging the network for competitive advantage. In this event all corporate and less formal business units in the network are obliged to open their information infrastructure to all economic constituencies.

These observations, to a large extent, are also applicable to South African firms as a whole, given their widely documented low competitiveness rating. The low competitiveness of South African firms is attributed to a number of factors including their inability to "hear" the market, the legacy of import substitution industrialization, archaic Fordist production methods and lack of specialization. Others are the predominantly arms-length relationships between manufacturers and their suppliers and customers, the inability of manufacturers to escape from the cocoon of protection under the erstwhile apartheid regime and face the demands of the New Neo-liberal Economic Order (NNEO), and a post-apartheid trade and industrial policy that is biased against the latter (Kaplinsky and Morris, 1999).

In this study, the crux of the matter is not only the lack of better market/demand information (Duncombe and Heeks, 1999; Eggleston, Jensen and Zeckhauser, 2002.) but also production technology information. The use of ICTs improves the provision of market/demand and production technology information, which in turn, impact positively on productivity, profitability and employment. In contrast, the lack of ICTs, coupled with a poor state of, and/or limited access to other forms of information technology* account for low performance.

As is now known, performance has become a characteristic of the informational economy. The successful organizations are those able to:

- generate knowledge and process information efficiently;
- adapt to the variable geometry of the global economy;
- be flexible enough to change their means as rapidly as goals change, under the impact of fast cultural, technological and institutional change; and
- Innovate, as innovation becomes a key competitive weapon.

Thus, the *network enterprise makes material the culture of the informational, global economy: it transforms signals into commodities by processing knowledge* (Tuomi, 1999; Castells, 2000:188). Not surprisingly, the most highly successful firms in the study epitomize this category of enterprises. SCMEs in the Durban metropolis, seeking to make dramatic breakthroughs in the face of globalization, will need to hasten the pace of their transition from old-fashioned mode of network interactions to modern forms of electronic networks, sooner. The premise is not farfetched: Given that effective networking is vital for small business growth the use of ICTs offers a relatively low cost solution (Poon et al., 1996; Connor and Woodburn, 1999). ICTs also have the ability to support integrated development with long-term social and economic benefits.

Inasmuch as ICTs and structural innovations contribute to the effectiveness and efficiency of networks, it must be acknowledged, however, that these are not sufficient conditions for growth. The mere presence of ICTs does not guarantee information flow and distribution of resources. Self-seeking individuals, especially if centrally placed in

communication activity and have control over such activity in a network, may block the flow of information, and considerably impact on the distribution of resources (Marsden, 1982:205). Similarly, negative connections do not also facilitate information flow and distribution of resources (Yamagishi, Gillmore and Cook, 1988).

7.4. Factor and Fraternal Networks and Business Performance

The results of the study show that business performance is positively linked to the scope of factor and fraternal networks defined in terms of size, diversity, openness, frequency and location of network contacts. Of these, size of networks is the most familiar. The usual perception is that big is better (Burt, 1992:64). The most successful firms in this study have, on average, larger network contacts than the least successful firms. This finding corroborates other studies (e.g. Berkman and Syme, 1979, cited in Burt, 1992; Boxman, De Graaf, and Flap, 1991, cited in Burt, 1992), though not as strongly as expected. According to Burt (1992), Boxman, De Graaf, and Flap (1991), for instance, show that people with larger network contacts obtain higher paying positions as compared to people with fewer networks. A study by Berkman and Syme (1979) on social support also shows that persons who have larger networks tend to live longer.

Large network contacts can mean access to more valuable information, more likely early exposure, and more referrals, and hence substantial rewards. Nonetheless, a firm that has large network contacts may be crippled in the absence of diversity (Burt, 1992:63-64) although diversity itself is not a sufficient condition either. The gains from networks are greatly enhanced if contacts are not geo-spatially constrained. In this study the very high performance firms (VHPFs) are not only prepared to nurture all sorts of relationships (with people and other firms). The VHPFs also have more network contacts beyond their immediate locale. The majority of the firms have links both within the locality and internationally. For example, in addition to contacts within South Africa the vertical retail-manufacturer (VRM) has network contacts in other African countries, e.g., Botswana, Zimbabwe and Mozambique, and in Europe and the Far East. In contrast the

network contacts of the very low performance firms (VLPFs) are mostly within the locality where they operate.

Large and diverse network contacts provide actors such as the owner-managers of the very high performance firms in this study, with networks rich in information benefits. Contacts tend to be established in places where useful bits of information are likely to air (Burt, 1992). Widespread network contacts, particularly if external, also provide access to technological and non-technological knowledge systems, which can be instrumental in turning around even non-competitive firms. According to Barr (2000:543) "the accumulation of knowledge is the driving force behind sustained economic growth, but it is the network that determines the extent to which that knowledge flows around the economy and hence how fast the economy grows."[39] Successes can, thus, be partly explained in terms of external network contacts and the benefits arising from such contacts, e.g., up-market fashion styles and patterns. Albeit, openness to internalizing new knowledge, not access per se, is the key factor.[40]

Decomposing the size of business networks, defined as the summation of the number of factor and fraternal network contacts, the study found, as expected, positive relationships between these elements and performance. The correlation between the fraternal network contacts and performance was slightly stronger than the correlation between factor networks and performance.[41] Moreover, the study found that fraternal networks were an important source of resources. The importance of fraternal networks, i.e., strong ties, to the sampled firms, it is suggested, is the result of insecurity and uncertainty, which in turn are rooted in factors such as the process of modernisation, apartheid policies and legislation, and South Africa's sudden re-entry into the global economy.

Maasdorp and Humphreys (1975: iv) correctly observe that Apartheid unleashed important economic, social and political events or forces, which resulted in significant and perhaps permanent changes in economic, political and *social relationships* (emphasis mine) in South Africa. Apartheid policies and legislation such as the Group Areas laws excluded black owned businesses from the central business district and limited blacks'

access to trading licenses. Blacks were also denied entry to the proclaimed white urban areas and important sectors of the economy, such as the small-scale manufacturing sector. The hostile economic modalities of the apartheid regime, needless to say, killed black business. The few that had any semblance of survival were largely non-competitive - a characteristic that has lived with them through the new South Africa.

The Group Areas Act of 1950, for instance, was used to drive Indian traders out of the cities, to be replaced in many cases with emerging-Afrikaner business class (ANC, 1997; COSATU, 1997). The forced removals arguably led to the evolution of unconventional business management practices characterized by inwardness, face-to-face interactions and strong network ties. While this had detrimental effect on the performance of black business, to a large extent, survival was largely determined by the ability to adapt to the hostile social, economic and political environment, and in this, networks of strong ties were instrumental.[42] The role of strong ties, in this respect, comes alive in the context of the larger picture of the collective resistance to apartheid, and the resultant political change, as a whole. The political outcome could be described as "...the product of strong, affective, and time-honored (sic) relationships" (Krackhardt, 1992).

While strong ties may have worked under apartheid's socio-economic and political environment, the advent of the new democratic dispensation required a reconfiguration of business practices, including network contacts, but the process of transition has been very slow. Not only do strong ties, defined as those who interact daily, continue to characterize network contacts among the sampled firms but are also generally less dense and highly localized.

In contrast, this study found from the qualitative data that the Chinese in the clothing industry in South Africa relatively relate to each other more easily than the Indians who dominate the clothing industry in Durban. While this finding corroborates the widely documented association between the Chinese in the Diaspora (and in Mainland China, too) and networks the critical question is how the disparity can be explained?

Much of the literature on Chinese capitalism views the Confucian precepts of familism and the Chinese sense of obligation, frugality, diligence, pragmatism and reciprocity as the central values with which the Chinese are able to construct and use *guanxi* (networks) for economic gains (King 1991; Redding 1990; Hamilton 1996; Wong, 1988; Tanzer 1994). But are these values unique to the Chinese? Indians in Durban's clothing manufacturing industry are noted for their close relationships with, and devotion to their families. However, while the Chinese lend themselves more easily to inter-family business partnerships the Indians, like the Japanese, are less inclined to opening up their businesses to outsiders. Among the Chinese, inter-family partnerships tend to encourage a single firm investing in several different firms and becoming partners of many different families. A firm links different families, while a family ties different firms (Numazaki, 2000). In contrast the Indian-owned small clothing manufacturing enterprises in Durban are largely family businesses. A key characteristic of such business is exclusiveness; the business being closed to outsiders, and therefore nurturing limited ties.

Inter-family partnership derives from the fear of putting all of one's eggs in one basket. The risk of losing one's wealth is high. On the other hand the driving force behind family business is the fear of the outsider taking control of the business – the family's wealth.

The emphasis placed on solidarity and co-operation among the Chinese in the literature is suggestive of a homogeneous society free from conflict and tension. This offers a fertile ground to contrast the Chinese with Indians for the latter's widely known heterogeneity defined by the caste system, and considered as a barrier to building extensive social and business networks. The sociological fact, however, is that plurality of religions and cultural beliefs are found in Chinese communities as well.

> Conflict and tension such as family feuds, cut-throat competition, conflict between family and non-family members, forcing out minority partners, intra-family competition for authority, retention of key positions for family members, succession problems, fragmentation of business, hostile

> take-over, and so on, are well known but ironically not well researched (Kwok Bun and Beoy Kui 2000:297).

Moreover these seldom come into the open due to the secrecy of typical Chinese families.

The disparity in the levels of inter-firm co-operation and network density among the Chinese and Indians may also be explained in terms of the peculiarity of the social, economic and political dynamics in both societies. Some critics suggest that *guanxi* may not necessarily arise from a cultural propensity universal to Chinese in the Diaspora. Rather, it may be premised upon specific social conditions in which weaknesses in the legal system, bureaucracy, absence of resources or the size of family firms necessitate individuals to use particularistic connections to overcome structural or individual deficiency to influence desired outcomes (Li, 2000:272; Kwok Bun and Beoy Kui, 2000:291-292).

> Besides the economic forces of accumulation and the political forces of China's market reform, it would appear that many structural factors, such as society's reliance on the rule of law, the degree of political stability, the minority status of overseas Chinese and the scale of Chinese firms, play important roles in defining the social context within which networks of personalised relations may be more or less functional in the so-called transnational Chinese economy (Li, 2000:282).

Redding (1990:95) explains that overseas Chinese network originally arose as a strategy to counter insecurity from officialdom in the Chinese agrarian society, and its persistence into the modern age is to ensure the preservation of social relations in the form of "trust" and "dependability". This was much evident when the formal legal institutions, contract and bureaucracy and other channels of redress failed or were not available at the time. In other words, the rise of networks is basically associated with,

and is a response to overcoming the problem of asymmetric information, which tends to increase transaction costs (Kwok Bun and Beoy Bun 2000:290).

In the case of the Indians in the clothing manufacturing industry in Durban, the social, economic and political experiences for much of the past five decades or so are tied up with apartheid. The effect of apartheid on networks, as explained above, was the development of strong ties to transform the system as a whole rather than focusing on parts of it.

There is a strong case for "the variety thesis" (Kwok Bun and Beoy Kui 2000) to explain the prevalence of Chinese business networks, as well as the limited networks of the Indians in the clothing sector in Durban. A fundamental factor, however, is an incipient cultural trait, which promotes networks to be socially institutionalised. The propensity to build networks, intensity and direction of network synergy and strategy are then shaped by the social, economic and political conditions.

For many of SCMEs and other small and medium enterprises (SMEs) in South Africa, as a whole, globalisation has become a new source of insecurity and uncertainty; it is a bolt in the face that is a far cry from the sanctuary provided by protectionism under the apartheid regime. Globalisation is thus a major challenge to transformation from what may be termed as a medieval network system to a modern network system. The medieval system is characterised by face-to-face interactions and strong ties. The modern system is one in which weak ties - defined as those who interact at least once a week[13] - provide the incentive to maximize competitive advantage and investment rewards.

The impact of globalisation on the clothing manufacturing sector has thrown many of the firms into survival mode, aided by strong network ties to emphasize the important role of such ties in situations of severe change, insecurity and uncertainty (Krackhardt, 1992; Granovetter, 1982: 113-117; Krackhardt and Stern, 1988). There are others, nonetheless, that are performing well. The firms that are performing well are largely those that have taken advantage of the great information, communication and technological advances.

These firms also tend to adopt pragmatic approaches, including networking, to business management.

On frequency of contacts and performance, the study found that the very high performance firms (VHPFs) interacted less often, once per week, as compared with the very low performance firms (VLPFs) which interacted daily. Furthermore, much of the interactions involved colleagues and firms doing the same business as the actors or those with whom they had co-production arrangements. The frequency of network contacts of the VHPFs and VLPFs respectively corresponds with Granovetter's weak and strong ties (Granovetter, 1973), although the cut-off point of the definition of frequency of contacts is slightly different from Granovetter's.[14] However, the study confirms the Strength of Weak Ties (SWT) theory that weak ties, often ignored in sociological theory, are more rewarding than strong ties in certain situations.[13] The theory[10] rests on the premise that weak ties (acquaintances; in this case, colleagues) often constitute local bridges that link disparate parts of network segments. Weak ties are, thus, better channels for the diffusion of information, new ideas, influences and opportunities for innovations than strong ties. Thus, firms with more weak ties have greater access to resources and opportunities to increase the rate of profitability as they are linked to different network segments or cliques from which they would have otherwise been isolated. Strong ties (friends and relatives), on the other hand, tend to bring individuals of similar characteristics, interests etc., together in a mutually connected network. Such a network is insulated from outside influences and ideas. The information and ideas that filter through it are mostly generated from within, known to each other, and more often than not, are not sufficiently novel to support innovations.

Granovetter's SWT theory has been variously critiqued - from conceptual, methodological and theoretical-logical perspectives (Krackhardt, 1992; Burt, 1992; Borgatti, 1995). From the premise that large and diverse network contacts have positive effects it is argued, for example, argues that high return on investment may rather be explained in terms of what he calls structural holes, i.e., "a relationship of nonredundancy between two contacts" (Burt, 1992:65). According to Burt (1992:83) players with

networks optimised for structural holes – that is to say, players with networks providing high structural autonomy – enjoy higher rates of return on their investment because they know about, have a hand in, and exercise control over, more rewarding opportunities.

Although weak ties and structural holes seem to describe the same phenomenon Burt (1992:73) insists that the structural-hole argument deviates from the weak ties theory in terms of the causal agent and control benefits. According to Burt (1992:73) the causal agent of the phenomenon is not the weakness of a tie but the structural hole it spans while the weak ties argument obscures the control benefits of the structural hole. It is also argued that although the SWT theory is testable and empirically supported, some of the interpretations of the theory are incorrect. There is a possibility of error in logic, which in this event requires some of the mathematical reasoning to be qualified (Bogartti, 1995).

The criticisms against the SWT theory serve to underscore the difficult task of explaining empirical observations. This difficulty has seen economic sociologists through different types of structural analysis, notably, the Marxist approach, Parson's structural-functionalism and Levi-Strauss's "deep structure". Much of the structural analysis, paying little or no attention to the primary factors underlying social processes and exchange outcomes, tends to focus on objective positions and social relations in exchange networks. Yet the observed patterns of objective positions and social relations that purportedly explain empirical observations, in Lévi-Strauss's tradition, may be an epiphenomenon (Blau, 1982:274).

Through the qualitative data in this study cultural and religious differences, to a large extent, account for the low level of networking and inter-firm co-operation. The low level of networking, in turn, partly explains the disparities in the performances of the sampled firms, and the poor performance of the industry in Durban, as a whole, in the last few years. This finding revisits Weber's (1968) claim that cultural differences seemed to have significant effects on economic performance[11] although not much attention was paid to it. In the past few decades the issue of culture in the development debate has been taken up by the social capital advocates (e.g. Coleman, 1988, 1990; Putnam, 1993 and Fukuyama,

1995a; 1995b). With more clarity, the protagonists of the human factor paradigm (HFP), including Adjibolosoo (1993; 1995), Adu-Febiri (1995), Haucap (1997) and Owusu-Ampomah (2001; 2002) have taken the debate to new frontiers.

Sipho Gina, the secretary of the Southern African Clothing Workers Union (SACTWU) in KwaZulu Natal highlights the importance of cultural and religious differences in the performance of the SCMEs in Durban as follows:

> "There are two sections of the Indian community: Muslim and Hindu, who traditionally do not want any form of association with one another. They don't *co-operate*. They even *undermine* each other, which badly affects workers and the industry. Even the nature of the relationship they have with their workforce is different. I don't want to be unfair to any of the religions but to hear a worker say, 'I don't know what it means for my employer to go to the Mosque (or Temple, if you like) and pray while he's doing this to us' is bad for business. I am thirteen years old in the clothing industry so I know that culture and religion play a role in business" (Emphases added) (Gina, 2001).

A critical element underlying the lack of co-operation between the Muslim and Hindu owner-managers and the tendency to undermine one another is a high level of mistrust. According to the President of Clofed, "When a party approaches you, and tells you here is an opportunity for, say, export, you ask yourself, 'Where is the catch?' That is something of a mindset among the actors in the industry," (Randeree, 2001). The roots of this mindset are not only in religious differences but also in the apartheid system, which sowed seeds of fragmentation, and disrupted social relations.

Nevertheless, mistrust is ubiquitous, especially in a competitive environment. Co-operation is not enhanced where firms produce the same product and compete in the same market for financial rewards. In this event diversity in specialisation e.g., by garment components, gender etc., may enhance trust and joint action, say, in export orders. But this is a far cry in Durban's clothing manufacturing sector. Most of the firms compete for subcontracts from the big manufacturers and wholesalers. Specialisation is limited to

occupational, age and gender categories (see Owusu-Ampomah, 1997). Specialisation by garment components, which holds much promise for inter-firm co-operation, is yet to develop on a large scale.

The advocates of the New Institutional Economics (NIE) e.g. North (1981) and Bardhan (1996) insist that formal institutions play a more significant role in economic performance. However, the SCMEs in this study do not have faith in their formal network structures - the Clothing Federation of Southern Africa and the Natal Clothing Manufacturers' Association (Randeree, 2001). While this impacts negatively on networking, inter-firm co-operation and performance, it also suggests that economic actors shape network structures inasmuch as network structures also shape actors' behaviours and the performance of firms. In this context, informal institutions such as culture, norms, ideology, religious beliefs, values, morals and ethics, often neglected by classical and neo-classical economics, and the NIE, are critical elements in the growth of firms. Granovetter (1985), particularly, stresses the embeddedness of economic behaviour in social relations. According to Granovetter (1985:495) economic behaviour does not take place in a social vacuum, and that transactions of all kinds are rife with ...social connections. Economic behaviour, thus, cannot be explained by either the undersocialised or oversocialised conception of humans, as argued by classical and neo-classical economists, as well as the NIE, and modern sociology.

From the human factor perspective, norms, ethics, values and social relations are not only instrumental in business performance, but also are "environmentally determined" (Adjibolosoo, 1993:146). For effective and efficient networks, entrepreneurs need to acquire appropriate skills e.g. information skills, and personality traits such as integrity, loyalty, drive, positive attitude, vision, negotiation skills, trustworthiness, reliability, reciprocity, willingness to share, credibility, love, responsibility and accountability. These skills are acutely relevant for fruitful strategic alliances or relationships.

Ineffective networks may be the result of negative personality traits of entrepreneurs such as lack of information skills, cynicism, suspicion, mistrust, disloyalty, acrimony, deceit,

selfishness, fecklessness, dishonesty, penchant for free ride, fraudulence, haughtiness and greed, to mention a few. Such qualities are antithetical to building sound business relations rich in information and potentially productive.

Although impersonal social exchange and agency relationships persist, principals still willingly trust strangers (Shapiro, 1987). For most people, however, it is worth protecting one's reputation. "You sleep with dogs, you catch fleas" (Govender, 2001). In light of this it is argued that the disparities in the performances of the sampled firms and the low level of networks and inter-firm co-operation are primarily a human factor problem which, for the latter, amounts to what the human factor paradigm (HFP) advocates describe as human factor decay. Manifesting itself in the larger South African society as racism, deprivation, corruption, discrimination, and hatred has historical roots in the ideological values of the apartheid system. Human factor decay has created a condition for entrepreneurial malfeasance and non-co-operation, resulting in the collective poor performance of the SCMEs in Durban in the last few years, contrary to the collective efficiency theory of clusters (Marshall, 1920; Nadvi, 1997). Thus, in the same way as colonialism killed the entrepreneurial spirit of Africans (Adjibolosoo, 1999), apartheid, as explained earlier, denied blacks in South Africa the opportunity to acquire the appropriate qualities of entrepreneurship and/or build upon whatever entrepreneurial skills they were endowed with.[48] Instead it opened the floodgates for horizontal, negative and/or underground networks that are inconsistent with production coordination, competitiveness and firm/industry performance in the current international capitalist economy.

In any event, with the advent of the new South Africa, some observers believe that cultural and religious differences among the SCMEs owner-managers are becoming less serious a factor than it was about twenty years ago.

> "Culture is certainly an issue but mostly among the older generation, who are more conservative and traditionalist. The majority in the clothing industry today regards themselves first as Indian, and Muslim or Hindu, second. As the young become educated, cultural distinctions tend to blur. The level of education of today's CMT

> operators is higher than that of their counterparts of the past, and what we have today is 'Westernised-Indian' who is more open" (Randeree, 2001).

In spite of this, the level of openness in general is yet to be optimized, although, as mentioned in Chapter 5, the optimum level of openness necessary to maximize the gains from business networks is open to conjecture. Perhaps, it is too early to expect too much but if higher levels of networking and inter-firm co-operation, are a necessary condition for performance enhancement of SCMEs, rapid transformation of the black entrepreneur is the ultimate route for this to occur.

7.5. Conclusion

The growth of firms is the cumulative effect of many forces of varying magnitude. One of them is a network of contacts. Such contacts may be external or internal. This study has been concerned with external networks. From this perspective the network characteristics of successful firms (Table 7.2) include large size of network contacts, relatively less frequent contacts, weak ties, intensive use of new ICTs and greater diversity of network contacts. Others are a greater degree of openness and more widespread (local and external) network contacts.

Apparently, less successful firms tend to have limited number of network contacts, very high frequency of network contacts, strong ties, and inappropriate human factor. They also tend to be more inward looking, have less diverse network contacts which are largely localized, and limited use of new ICTs.

Table 7.2: Network Characteristics of VHPFs and VLPFs

VHPFs	VLPFs
1. Large number of Network Contacts	1. Limited number of network contacts
2. Diverse network contacts	2. Less diverse network contacts
3. Widespread (local and external) network contacts	3. Localized Network Contacts
4. Intensive use of new ICTs	4. Limited use of new ICTs
5. High degree of openness	5. Inward Looking
6. Weak Ties	6. Strong Ties
7. Less frequent network contacts	7. Frequent Network Contacts
8. Appropriate Human Factor	8. Inappropriate Human Factor

Of the network characteristics identified and discussed in this study, electronic communication networks is the most critical that positively impacts on the performance of SCMEs in Durban. The causal relationship between ICTs use and profitability and employment growth has often been a subject of controversy. While most studies have established a link between ICTs use and economic performance the results of a few others have failed to establish any such link. This makes the relationship appear inconclusive. In this study there is no evidence suggesting inconclusiveness in the relationship. ICTs use is positively linked to the economic performance of the small clothing manufacturing enterprises in the Durban Metropolis. Given this conclusion and the peculiar problems of small firms in the current competitive global economy, it is the belief of this dissertation that the small clothing manufacturing enterprises in Durban can enhance their growth potential and competitiveness through strategically extensive networks and inter-firm co-operation. One of the keys to this, however, is the use of new information and communication technologies (ICTs).

ICTs use impacts on the effectiveness and efficiency of networks in two ways. First, it enhances the size, diversity, and spatial distribution of network contacts, and the openness of a firm. Secondly, and resulting from this, it provides a firm with the opportunity to access new information and knowledge that could facilitate technological innovation, productivity, and higher profit margins. The critical factor for growth may,

thus, not be the ability to "hear" the market as Kaplinsky and Morris (1999) have argued but rather to communicate with actors in the economic environment, using effective medium (ICTs) to craft a "strategic learning process" (Theodorakopoulos and Wyer, 2000). This proposition underscores the notion that economic activity does not take place in a social vacuum. The extent to which a firm may benefit from ICTs use in the context of networks primarily depends on the human factor (Adjibosoo, 1993, 1995), which in turn underlies the use of ICTs, social relations (Grannoveter, 1985) and performance as a whole. Without the appropriate entrepreneurial personality traits and skills, and an enabling socio-cultural, ideological and political milieu in which economic activities take place, ICTs use in the network context may not improve investment outcomes. Thus, although ICTs use and its concomitant organisational restructuring and innovations are necessary for effective and efficient business networks, the underlying critical factor is the *human factor* without which ICTs are virtually useless. The decision to engage in effective and efficient networks and employ ICTs in business is an economic decision largely influenced by entrepreneurial perceptions of the benefits of these growth-tools (Zakaria 1999:104). This, in effect, is also a human factor issue, which makes human factor development a *sine qua non* for the enhancement of growth opportunities of through networks.

NOTES:

1. See for example Theodorakopoulos, N. and. Wyer, P. 2000. "Small Business Growth and the Use of Networks." Centre for Small Business Development and Research, De Montford University, Bedford Campus. Paper presented at the 23rd ISBA National Small Firms Policy and Research Conference, 'Small Firms: Adding the Spark', 15th –17th November 2000; Republic of South Africa 1996. White Paper on Telecommunications Policy.

http://www.polity.org.za/govdocs/white_papers/telewp.html (Accessed 17/9/02); Baraga et al, 2000. "The Networking Revolution: Opportunities and Challenges for Developing Countries, *info*Dev Working Paper, Global Information and Communication Technologies Department, World Bank Group, http:/www.infodev.org/library/working.htm; Casson, M. 2000. Enterprise and Leadership: Studies on Firms, Markets and Networks, Chaltenham: Edward Elgar, pp. 51-53; Castells, M. 2000. The Information Age: Economy, Society and Culture Vol. 1, The Rise of the Network Society, Oxford: Blackwell; Burt, R. S. 1992. "The Social Structure of Competition". In Nohria, N. and R. G. Eccles 1992. Networks and Organisations, Boston: Harvard Business School Press, pp. 57-91; Kaplinsky, R. and Readman, J. 2001. "How Can SME Producers Serve Global Markets and Sustain Income Growth?" http:/www.ids.ac.uk (Accessed 25/08/02).

2. In this context, the finding suggests that a rapid uptake of ICTs use has implications for South Africa's economy, and for that reason the discussion perceives firm- and national-level studies on ICTs as inseparable and relevant for this dissertation.

3. Gordon's (2000a) statistics were derived from calculations based on trend productivity growth, compared to Oliner and Sichel's (2000) which were based on actual productivity growth.

4. See also Eggleston et al, 2000 who discuss price information flows in the context of markets and economic efficiency and the role of ICTs.

5. The mean age of the owner-managers of SCMEs in Durban is about 51 (Owusu-Ampomah, 1997).

6. See Heeks, R. B. 1999. "Information and Technologies, Poverty and Development". Development Informatics Paper No. 5. IDPM, University of

Manchester, Manchester. http://www.man.ac.uk/idpm/idpm_dp.htm; Duncombe, R. and R. Heeks 1999. "Information, ICTs and Small Enterprise: Findings from Botswana. Development Informatics Paper No. 7. IDPM, University of Manchester. http:/idpm.man.ac.uk/idpm/diwpf7.htm

7. The centrality of this actor derives from the nature of his business relative to the rest in the network. As a manufacturer he is a source of subcontracts to the others in the network, mainly CMTs. He is thus highly placed in the network, and from this position he wields enormous power, only limited by the others' access to more favourable subcontracts from other sources. Without any options, the CMTs in the network are tied to or dependent on this central actor. The high-power position of this actor, corresponding with his relatively high profitability, confirms the power-dependence theory although Cook et al (1983) have shown that centrality in exchange networks does not always confer power on the actor. For detailed discussion of exchange networks and power, see Emerson, R. M. 1962. "Power-Dependence Relationships." American Sociological Review Vol. 27, No. 3, 31-41; Markovsky B., David Willer and Travis Patton 1988. "Power Relations in Exchange Networks." American Sociological Review, Vol. 53, pp. 220-236; Yamagishi, T. and Cook, K. S. and Gillmore, M. 1988. "Network Connections and the Distribution of Power in Exchange Networks." American Journal of Sociology, Vol. 93, pp. 833-851; Yamagishi, T. and Karen S. Cook 1990. "Comment on Markovsky, B. and Patton: 'Power Relations in Exchange Networks: A Comment on 'Network Exchange Theory'." American Sociological Review, Vol. 55, No. 2, pp. 297-300; Markovsky, B., D. Willer and T. Patton 1990. "Reply to Yamagishi and Cook: Theory, Evidence, and Intuition." American Sociological Review, Vol. 55, No. 2, pp. 300-305.

8. The main sources of information for the members of Clofed are the newsletter and monthly meetings, (Randeree, Interview/ 10/10/01).

9. See also Bell, M and Albu, M. 1999; Smith, K. 2002; Rasiah, R. 2002.

10. See, for example, Bell and Albu, 1999.

11. That is not to say that the relationships between these elements and performance will always be positive. There is a possibility that the relationship between any one of them and performance could be negative. However, any observed negative relationship in one of the elements and performance will be offset by a positive relationship between the other and performance. This must always occur to maintain a positive relationship between size of networks and performance. A different scenario will obtain if a contrary observation is made between size of networks and performance.

12. Black is used here to connote Coloureds, Africans and Indians.

13. Granovetter (1973:1371) defines weak ties as those who interact more than once per year but less than twice per week, and strong ties as those who interact at least twice per week.

14. The strength of weak ties theory is confirmed by Granovetter's (1982) later study, Blau (1980) and Karweit et al., 1979, cited in Granovetter (1982),

15. Granovetter (1985:1371) defines weak ties as those who interact more than once per year but less than twice per week, and strong ties as those who interact, at least, twice per week.

16. Although this study lends a degree of support to the theory, a systematic test of it was not a primary task. Reference to it may thus be seen in the same way as others which found the theory handy to explain the empirical findings that otherwise would have been anomalous (Granovetter, 1982:129)

17. See also DiMaggio, 1992.

18. It is not implied here that all categories of blacks as defined in this study were equally deprived of the platform for entrepreneurial development. Indians enjoyed far more industrial exposure than Africans, and it is not accidental that, today, they do not only control the Durban economy but also own a sizeable proportion of the country's wealth. Considering the fact that the units of analysis of this study are SCMEs which are owned by Indians, this viewpoint is arguable, and ought to be qualified.

CHAPTER 8

CONCLUSIONS, POLICY IMPLICATIONS AND RECOMMENDATIONS

8.1. Introduction

The growing corpus of literature on business and economic growth reveals a multiplicity of approaches to, or factors accounting for the growth phenomenon. This observation comes out clearly in the literature review in Chapter 2. In the same chapter and the preceding chapter, it was stated clearly that this study was all about the network perspective. Examining the network paradigm, this study focused on the isolation thesis advanced by a group of researchers at the Institute of Development Studies, University of Sussex in the context of small business.

The isolation thesis maintains that the isolation of small business, not size, is the main problem of small business growth, and that the answer lies in *networking* and *clustering.* Addressing this critical issue, the study analysed the scope and nature of networks in relation to the performance of the small clothing manufacturing enterprises (SCMEs) in the Durban Metropolis. For the nature of networks, the analysis centred on factor, fraternal and communications networks, and for the scope, the focus was on network density, diversity and openness. Other characteristics of networks examined in relation to business performance were frequency of contacts and spatial distribution of networks. Conceptually, business performance was defined in terms of profitability and employment growth, although the study laid emphasis on profitability.

Pertinent to the study was the widely documented assumption that the poor performance of the Durban cluster of clothing manufacturing enterprises was partly due to inadequate networks and inter-firm co-operation. Other issues of interest were the most significant type of networks to the SCMEs in Durban, and the network characteristics of successful firms and less successful firms. At the practical level, the question of how networks could be promoted also came to the fore.

In this concluding chapter, the critical findings and conclusions to the study are drawn; policy implications and recommendations are outlined. The chapter concludes by mapping out areas of possible future research and commenting briefly on the methodological approach to the study.

8.2. Critical Findings and Conclusions

The study empirically confirms the isolation thesis, and concludes that *ceteris paribus* the poor performance of the Durban cluster of SCMEs is partly due to inadequate networking and inter-firm co-operation among the enterprises. In other words, the disparities in the performances of the sampled firms in the clothing manufacturing enterprises can be explained in terms of the nature and scope of networks among the firms. From this conclusion it is argued that the existence of a cluster does not necessarily guarantee networking, inter-firm co-operation and/or joint action to a level that assures individual performance and collective efficiency. Clustering may be necessary, but is not a sufficient condition for inter-firm co-operation and joint action. Of clustering and networking, the more critical for business growth is networking. By this conclusion this study concurs with the contention of the IDS group of researchers on networking but not necessarily to the same degree as on their view on clustering. The position of this paper on clustering derives from the view that clustering may be a seedbed function for industrial growth but factors such as social capital (Weijland, 1999), co-operation and favourable market environment (Rabellotti, 1999) are more critical for firms' performance.

The results of the investigation show that the most significant of the three types of networks identified in the literature – factor, fraternal and communication networks – as far as the sampled firms are concerned, is communication network, not fraternal networks as hypothesized. The specificity of this finding is that the use of new ICTs, e.g., the computer, Internet and e-mail, not face-to-face (FTF) interaction, is the prime mover in the profitability and competitiveness of SCMEs in the contemporary global economic

system. This finding is not only consistent with Karl Marx's view that technical conditions and progress constitute the prime mover in social change[1] (Loomis, 1955:xii) but also with Castells' (2000) theory of a universal trend towards a network society, a global informational economy and a culture of 'real virtuality'. In this trend, Castells explains:

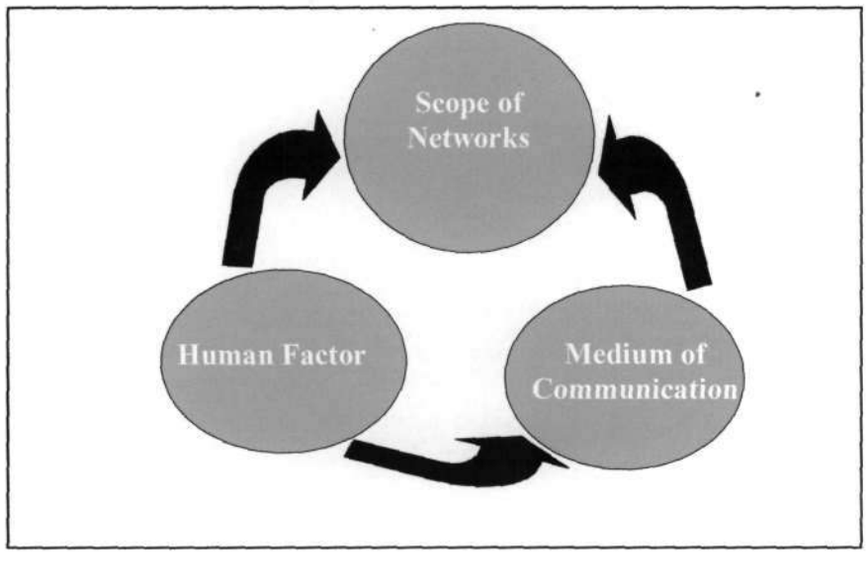
> "...dominant functions and processes in the information age are increasingly organised around networks. Networks constitute the new social morphology of our societies and the diffusion of networking logic substantially modifies the operation and outcomes in the processes of production, experience, power and culture. While the networking form of social organisation has existed in other times and spaces, the new information technology paradigm provides the basis for its pervasive expansion throughout the entire social structure" (Castells, 2000:500).

Communities in which social contacts are electronically mediated are replacing communities in which social relationships are mediated by FTF interactions. Social, economic and political progress is, thus, more likely to be determined by the extent to which communities embrace the new information age, and ensure the pervasive use of ICTs. Firms that inadvertently, or otherwise, fail to innovate in response to the information technology revolution are likely to pay a dear price for their survival.

The scope of factor and fraternal networks defined in terms of density, diversity, openness, frequency, centrality, and location of network contacts have positive effect on business performance.[2] Large network contacts facilitate access to more valuable information, more likely exposure to sources of resources, and more referrals, and hence substantial exchange outcomes (Burt, 1992). However, the gains from size of networks, which is often taken to be decisive, can only be maximized through diversity of networks, a greater degree of openness, relatively frequent contacts and extensive networks that are not spatially constrained. These mark out the successful firms in the study from the less successful firms. The successful firms demonstrate that a strategic mix of strong ties (local networks) and weak ties (external networks) are ideal for the effectiveness and efficiency of business networks.

For a network to be effective and efficient, however, there must be men and women who possess appropriate cultural and/or human factor traits. These men and women must be willing to nurture a voice for collective action, not silence, isolation or exit,[3] and an effective communication system, i.e., modern information and communication technologies (ICTs). Thus, from the network perspective, the growth and development of small business may be understood by the framework of relationships between the scope of fraternal and factor networks, the medium of communication and the human factor (Figure 8.1).

Figure 8.1: The Framework of Growth Relationships from the Network Perspective



8.3. Policy Implications

These findings do not only advance the understanding of the relationship between network characteristics and organisational performance. They also provide invaluable insights that could inform trade and industrial policy, particularly pertaining to the growth and development of SCMEs in Durban and small business in general, and the socio-economic and political transformation of the country as a whole.

In this study, it is clear that the more successful firms "do not belong to an entirely different universe" (Altenburg and Myer-Stamer, 1999:1708), from the non-performance firms. It is therefore possible for the latter to achieve high levels of performance through effective and efficient networks promoted by the use of ICTs and human factor development.

From these findings a few issues appear imperative, in terms of policy, if SCMEs in Durban are to maximise profitability and competitiveness through networks:

- *Ceteris paribus*, greater attention needs to be focused on networking rather than clustering. Modern ICTs have bridged the gap between firms; distance is no longer a constraint to interactions between firms;

- Widening the scope of networks or connectivity and increasing the intensity of networking and inter-firm co-operation within and beyond the borders of the locale of firms;

- A rapid uptake of new ICTs to enhance the effectiveness and efficiency of network contacts. This will require programmes to create awareness and educate entrepreneurs about the positive effects of networking and inter-firm co-operation.

- Acquisition of information skills and relevant knowledge to ensure the effective and efficient use of the computer for learning and incremental upgrading, administration and management, accessing and exchanging information in the cyberspace and facilitating production co-ordination. Internship and outreach programmes in the small business sector, involving students in Graduate Schools of Business, constitute a possible route of skills transfer.

- Building capacity for productive social relations through human factor development, i.e., the development of appropriate entrepreneurial traits e.g.,

trustworthiness, honesty, loyalty, responsibility, reliability, drive, vision, innovation, creativity, reciprocity, co-operative spirit, patriotism, etc.

These are as much a responsibility of the SCMEs themselves as they are of the government in its overall role of directing and managing the socio-economic development of the country. Besides, the finding that less than half of the sampled firms use new ICTs confirms Hodge and Miller's (1997) observation that apart from big business, financial services and retailing, *manufacturing is behind in IT use* (Emphasis added). International trends thus demand a concerted effort to exploit the new information technologies in this sector (Hodge and Miller, 1997). For the SCMEs, lack of capital, information management skills, and technological know-how is a damper on their ability to acquire and use ICTs. This, in essence, means that public assistance is imperative in bridging the digital divide.

That ICTs use can make significant contributions to business and economic growth is recognised by the government. This recognition is reflected in the utterances of the leading politicians in government, the blueprint for the New Partnership for Africa's Development (NEPAD) (South Africa, 2001) and the many policy initiatives to harness ICTs potential. Some of the ICT initiatives include the National Research and Technology Foresight Project, Information Technology Policy for Government Process, the South African Information Technology Industrial Strategy Process, the State Information Technology Agency and the National Electronic Commerce Policy Process. However, the fragmented policy arena is not ideal for the evolution of a knowledge-based competitive economy, and there is an urgent need to move "towards a central policy on the information society from which sectoral policies could derive" (Audenhove, 2003).

Although much has been done in providing the regulatory framework for the emerging information society, and the legislative processes are still going on,[4] more pragmatic programmes are required, in accordance with international trend, to:

- Encourage SCMEs to become part of the digital revolution,

- Access the country's information infrastructure and services to enhance information flow and production co-ordination;

- Create awareness of ICTs use to strengthen SCMEs competitiveness and profitability,

- Motivate SCMEs to devote resources to acquire ICTs and equip themselves with information management skills (e-Business Policy Group, 2002).

In line with the conclusions, an effective central policy on ICTs for SCMEs must concurrently be accompanied by human resource development approaches which do not only focus on human capital development but also on nurturing appropriate human factor characteristics for the mutual benefit of SCMEs and the country as a whole. This is possible through education because first, from the human factor perspective, norms, ethics, values and social relations are environmentally determined (Adjibolosoo, 1993:146). Secondly, as this study has shown, education has a positive effect on the density of networks and hence on economic performance.

8.4. Future Research and Recommendations

The findings of this study may not be categorically conclusive due to unavoidable limitations. First, the study is confined to external network dynamics of SCMEs, as a result of lack of resources. A more holistic approach that takes the internal and external network dynamics into account is therefore recommended in future research in an attempt to fully understand the network dynamics of entrepreneurial firms.

Secondly, the study's reliance on cross-sectional data only allowed the researcher to reflect partial, short-term or static effects of social relations on organisational performance. A long-term measure of the relationship, using longitudinal data, may be ideal to confirm or refute the findings, particularly relating to the speculated inverse U-shaped relationship between performance and scope of networks. A longitudinal approach may also settle any ambiguities in the analysis of the effect of network relationships on organisational performance in this study.

The cross-sectional data design was a major source of the inability to establish unassailable causality in the initial phase of the quantitative analysis, although the sample size also seemed to play a role. In the immediate possibility the dilemma seemed to warrant a return to the field ostensibly to increase the sample size to see if statistically significant relationships could be established between network characteristics and business performance. Instead, the extremes values, i.e., the outliers, often considered abnormal, and by custom ought to have been deleted from the sample, were pulled out for analysis. This did not only prove invaluable. It also drew home an important observation that researchers ought to take note of. Normality, as regards data distributions in ordinary least squares regression (OLS), could also be the exception rather than the rule in the social sciences just as much as in the natural sciences (Hampel et al, 1986, in Dietz et al 1987).

A detailed examination of residuals from the cross-sectional data, prompted by the inconclusive OLS analysis, proved to be a useful approach. This experience suggests that deleting cases that produce outliers is not the only, and always the best approach.

NOTES:

1. In contrast Tönnies ascribed this role to a large-scale trade involving the desire for the profitable use of money, which led to the development of capitalism (Loomis, 1955).

2. This is contrary to the orthodox market theory, which maintains that the market is an atomised exchange system in which individuals pursue their interests in arm's length relationships. This finding, however, does not necessarily nullify the notion of arm's length relationships. Thus, it may be argued that if the orthodox market

theory is not entirely wrong, then the likely scenario is that the market is a blend of arm's length relationships and more enduring networked relationships. The latter, however, appear to be the norm rather than the exception and are of relative significance in terms of exchange outcomes and social cohesion as a whole.

3. See Mitchell, 2000 for a discussion of the positive and negative externalities of IT and Internet.

4. In contrast Tönnies ascribed this role to a large-scale trade involving the desire for the profitable use of money, which led to the development of capitalism (Loomis, 1955).

5. See Dei Ottati, 2003 and Hirschman, 1970 for a discussion of the exit-voice theory.

6. See South Africa (Undated). "The White Paper on Telecommunications Policy", The World Bank Group, 2000.

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APPENDIX A

CLASSIFICATION OF FIRMS

In classifying the firms into HPFs and LPFs the cut-off point, R4000, was determined by the formula **P = R x S/E** where **P** = the average net profit per employee; **R** = the average rate of net profit of manufacturing firms in South Africa; **S** = the average of the actual value of sales of the clothing manufacturing industry; **E** = the average total employment of the clothing manufacturing industry, all for the period 1998 – 2000.

Sources of Data: Bulletin of Statistics March & June, 1999, Vol. 33, No. 1, p. 6.27; Vol. 33, No. 2, p. 6.27; March, 2000, Vol. 34 No. 1 p. 6.27; September, 2000, Vol. 34 No. 3 p. 6.27; December 2000, Vol. 34 No. 4 p.6.27; June 2001 Vol. 35 No. 2 p.6.28.

Calculation

Average Net Profit of Manufacturing Firms (%)

1998 - -2.8
1999 - 10
2000 - 10.2

Ave. Net profit for 1998-2000 - 6% (Approx)

Total Employment of Clothing Manufacturing Firms

1998 - 129,360
1999 - 138,320
2000 - 136,625

Ave. - 134768

Actual Value of Sales (Clothing)

1998 - R8,822,089,000
1999 - R9,135,948,000
2000 - R8,838,970,000

Ave. - R8,932,336,000

Sales per Employee - $\frac{\text{R8932336000}}{134,768}$

= R66,279.35

Average net profit per employee = 6% x R66279.35
= R3,976.76

Cut-off Point = R4,000 (Rounded)

APPENDIX B

COMPUTATION OF OPENNESS INDEX

The openness index is a standardised measure of the degree of outward looking (or conversely, inward looking) of the sampled firms in the study. In calculating the index:

- Specific questions on the questionnaire judged to measure openness or inwardness were selected;

- Responses were weighted and loaded with numerical values: responses which reflected openness were weighted upwards with a maximum value of 10; responses reflecting inwardness were weighted downwards with the minimum being 0;

- Each firm's scores on responses were summed up;

- Total score of each firm was divided by the maximum possible score, and standardised over base 100.

Openness Index Equation

Mathematical representation of the calculation of the openness index may be derived for a firm and a sample/population.

(c) Firm

$$\Psi_p = \frac{\sum a}{\sum b} \times 100 \quad \text{..... Equation b.1}$$

where

Ψp = Openness Index of Firm p
a = The score of a firm on each variable/question
b = Maximum score for each variable/question
$\sum$ = Sum of scores on the variables/questions

(b) Sample/Population

$$\Psi n = \frac{\sum \Psi_{p1...n}}{N} \quad \text{..... Equation b.2}$$

where

Ψn = Openness Index of sample/population
$\Psi p_{1...n}$ = Openness Index of each firm in the sample/population
N = The number of firms in the sample/population

The selected questions, reformulated for the purpose of this exercise without altering the substance of each of them, are shown below (the loaded values are in parenthesis). The scale reflects the degree of openness – high scores (up to a maximum of 10) indicate a high degree of openness; a low score (up to a minimum of 0) indicates a low degree of openness.

1. What is the size of the firm's business networks?

   ☐ Above sample mean (10) ☐ Below sample mean (5)

2. Does the owner-manager discuss business-related activities with friends?

   ☐ Yes (10) ☐ No (0)

3. Does the owner-manager discuss business-related activities with relatives?

   ☐ Yes (10) ☐ No (0)

4. Does the owner-manager discuss business-related activities with colleagues who give him/her orders/inputs/subcontracts?

☐ Yes (10) ☐ No (0)

5. Does the owner-manager discuss business-related activities with colleagues doing the same business as himself/herself?

☐ Yes (10) ☐ No (0)

6. Does the owner-manager discuss business-related activities with any other type of person?

☐ Yes (10) ☐ No (0)

7. To what extent does the owner-manager agree that small business obtain much of their orders/inputs through friends/ relatives/colleagues?

☐ Strongly Agree ☐ Agree ☐ Fairly Agree ☐ Disagree ☐ Strongly Disagree

(10) (8) **(6)** (4) **(2)**

8. Is the firm on the Internet?

☐ Yes (10) ☐ No (0)

9. Does the firm use e-mail?

☐ Yes (10) ☐ No (0)

10. How often does the owner-manager communicate with friends/relatives/colleagues?

☐ Daily ☐ Weekly ☐ Fortnightly ☐ Monthly ☐ Occasionally

(10) **(8)** (6) **(4)** (2)

11. How often does the owner-manager communicate with other firms?

☐ Daily ☐ Weekly ☐ Fortnightly ☐ Monthly ☐ Occasionally

(10) (8) **(6)** (4) **(2)**

Example

Openness Index of Firm P

Assuming Firm P's responses to the questions above were as follows (shaded boxes):

Variable	Response
1. Friends (FR)	■ Yes (10) ☐ No
2. Relatives (REL)	☐ Yes ☐ No
3. Colleagues 1 (COL1)	■ Yes (10) ☐ No
4. Colleagues 2 (COL2)	☐ Yes ☐ No
5. Other (OTH)	☐ Yes ☐ No
6. Size of Business Networks (SBN)	☐ Equal to or more than Sample Mean ■ Less than sample mean (5)
7. Friends/Relatives/Colleagues as important source of orders/inputs (FRCS)	☐ Strongly Agree ■ Agree (8) ☐ Fairly Agree ☐ Disagree ☐ Strongly Disagree
8. Use of e-mail (E-M)	■ Yes (10) ☐ No
9. On Internet (INT)	■ Yes (10) ☐ No

10. Frequency of Communication with friends/relatives/colleagues (FCFRC)

■Daily (10) ☐Weekly ☐ Fortnightly ☐ Monthly ☐ Occasionally

11. Frequency of Communication with firms (FCF)

■Daily (10) ☐Weekly ☐ Fortnightly ☐ Monthly ☐ Occasionally

Calculation

Firm P's scores are as follows:

	FR	REL	COL1	COL2	OTH	SBN	FRCS	E-M	INT	FCFRC	FCF	Total
Score (a)	10	0	0	10	0	5	8	10	10	10	10	73
Max (b)	10	10	10	10	10	10	10	10	10	10	10	110

Using Equation 5b.1, the openness formula for a firm, i.e. $\Psi p = \frac{\sum a_{1\ldots n}}{\sum b_{1\ldots n}} \times 100$

where

$\Sigma a_{1\ldots n} = 10+0+10+10+5+8+10+10+10+10 = \mathbf{73}$

$\Sigma b_{1\ldots n} = 10+10+10+10+10+10+10+10+10+10+10 = \mathbf{110}$

$\Psi p = \frac{73}{110} \times 100$

$= \underline{\mathbf{66}}$

(b) Sample/Population Openness Index

To calculate the sample/population openness index the mean index of the sample was first calculated, using Equation b.2. The mean of the indices of all the sampled firms or units of the population would constitute the openness index (Ψ) of that sample or population of firms.

(c) The Partial Openness Index

The partial openness index employed limited variables/questions, in this event, 5 questions/variables centred on the type of people with whom owner-managers discussed business-related issues.

APPENDIX C
OPENNESS INDEX

No.	FIRM	FR	REL	COLL1	COLL2	OTHER	SBN	FRCSS	INT	EMAIL	FCFRC	FCF	TOTAL	INDEX	AEP	AEPPEM
1	Aero	10	10	10	0	0	10	8	10	10	8	8	84	76	1000000	5650
2	Alley Cat	0	0	10	10	0	5	8	10	10	6	6	65	59	366667	13580
3	Alperta	0	0	10	0	0	5	4	0	0	10	10	39	36	-10000	222
4	Angies	0	0	10	10	0	10	4	0	0	10	8	52	47	533333	8889
5	Ashwood	0	0	10	10	0	5	10	10	10	10	10	75	68	100000	6536
6	Beach	0	0	10	0	0	10	10	0	0	10	10	50	45	166667	2083
7	Bell Mode	0	0	10	0	0	5	6	10	10	10	10	61	56	210000	1135
8	Brite R.	0	0	0	10	0	5	8	0	0	8	8	39	35	300000	9091
9	Bronjo	10	10	10	10	0	5	10	0	0	8	8	71	65	83333	600
10	Crocodile	0	10	10	10	0	10	2	0	0	10	10	62	56	100000	1099
11	Daisy's	0	0	0	10	0	5	6	0	0	10	10	41	37	50000	12500
12	Dan	0	0	0	0	10	5	2	10	10	10	8	55	50	1000000	13889
13	David Owen	10	0	10	0	0	10	10	0	0	10	10	60	55	83333	3333
14	Eva Dress	10	0	10	10	0	10	4	10	10	8	8	80	73	1000000	7874
15	Falcon	0	0	10	10	0	5	6	10	10	8	8	67	61	300000	4615
16	Faras L.	0	0	10	10	0	10	6	0	0	10	8	54	49	3333	133
17	Fashion Dee	0	0	10	0	0	5	2	0	0	8	8	33	30	300000	8571
18	Gem	10	10	10	10	0	10	4	0	0	10	8	72	66	100000	2000
19	Hari Fashions	0	0	10	0	0	5	6	10	10	10	8	59	54	500000	4673
20	I. M. Lockhat	0	0	10	0	0	10	6	0	0	10	8	44	40	433333	12381
21	Impact	10	10	10	10	10	10	6	10	10	8	8	104	95	433333	2166
22	Ismed	0	0	10	0	0	10	6	0	0	8	8	42	38	233333	8046
23	J&J Fashions	0	0	0	10	0	5	8	0	0	8	9	40	36	50000	8333
24	Jasper's	0	0	10	10	0	5	6	10	10	8	1	60	55	433333	11404
25	K. C. Fashions	0	0	10	10	0	5	6	0	0	8	8	47	43	50000	1429
26	Kams	0	0	10	10	0	5	8	0	0	10	8	51	46	300000	13043
27	L. Jasmine	0	0	10	0	0	5	6	0	0	10	10	41	37	50000	1613
28	Leo	10	10	10	10	0	5	6	10	10	8	8	87	79	300000	4615
29	Lucy	10	10	10	10	0	10	2	10	10	8	8	88	80	-3333	-28
30	Luiguitex	0	0	10	10	0	5	2	10	10	8	8	63	57	433333	4050
31	Lynn	0	0	0	10	0	5	6	10	10	10	10	61	55	300000	6250
32	Mayville	0	0	10	0	0	5	6	0	0	8	4	33	30	300000	3158
33	Melway	0	0	10	0	0	5	2	10	10	8	2	47	43	10000	2000
34	Merrivale	0	0	0	10	0	5	10	0	0	8	8	41	37	23333	5833
35	Midgear	0	0	0	10	0	10	10	10	10	8	6	64	58	203333	7262
36	Moondrops	10	10	0	10	0	5	4	0	0	8	8	55	50	100000	1000
37	Namada	0	10	10	0	0	5	8	0	0	10	10	53	48	10000	213
38	Nerina	10	10	10	10	0	5	2	10	10	8	6	81	74	300000	6977
39	New Fashions	0	0	10	10	0	5	6	0	0	10	8	49	45	233333	7778
40	Ninian & Lester	0	0	10	10	0	5	4	0	0	8	8	45	41	316667	6090
41	Novix	0	0	0	10	0	5	10	0	0	10	6	41	37	23333	583
42	Online	0	0	10	10	0	10	10	10	10	10	10	80	73	166667	1916
43	Pall Mall	10	10	0	10	0	10	4	10	10	8	8	80	73	166667	4388
44	Pilco	0	10	10	10	0	5	4	0	0	8	8	55	50	23333	467
45	Poodle	0	0	10	10	0	5	8	0	0	10	8	51	46	66667	1587
46	Pulse	0	0	10	10	0	10	4	10	10	8	10	72	65	500000	5435
47	R.G.K	0	0	10	0	0	5	8	0	0	10	10	43	39	233333	5833
48	R.J. Creations	0	0	10	0	0	5	8	0	0	8	8	39	35	10000	3333
49	Rasool	10	10	10	10	0	5	10	0	0	8	8	71	65	300000	10000
50	Reena	0	0	10	0	0	5	6	0	0	10	8	39	35	36667	1666
51	Solar Sport	0	0	10	10	0	10	4	10	10	10	10	74	67	1000000	5050
52	S.E.V.	10	10	10	0	0	5	10	0	0	8	6	59	54	166667	3333
53	Shernez	0	0	0	10	0	10	4	0	0	10	10	44	40	500000	4583
54	Silhoutte	10	10	0	0	0	5	10	0	0	10	10	55	50	10000	1000
55	Simon	0	10	0	0	0	5	10	0	0	8	8	41	37	113333	5666
56	True Value	10	10	10	10	0	5	6	10	10	8	8	87	79	1000000	7143
57	Unique	0	0	10	10	0	5	4	0	0	8	8	45	41	50000	1250
58	V&J	0	0	10	0	0	5	6	0	0	8	10	39	35	233333	2667
59	Virmal	0	0	10	10	0	10	6	10	10	8	10	74	67	166667	1278
60	Vision B.	0	0	10	0	0	5	6	10	10	8	8	57	52	300000	5455
61	Zenzeleni	10	10	10	10	0	10	6	0	0	8	8	72	66	500000	3937

APPENDIX D

COVERING LETTER

21st January, 2001

To Whom It May Concern

Dear Sir/Madam,

RESEARCH ON BUSINESS NETWORKS

The importance of networks to the growth and development of small businesses has been widely recognised. However, the kind of network that contributes most significantly to the performance of a business appears to be unclear. This study, therefore, aims at investigating the relationship between the nature of networks and small business performance with a view to identifying the most significant type of network to small business.

While the study is part of the researcher's Ph.D programme, it is strongly believed that the findings would go a long way to assist small business owners/managers to operate their businesses successfully by pointing out a possible growth path. We are therefore requesting you to spare us a few minutes of your time to complete the attached questionnaire.

For the purpose of this research three types of networks have been identified: **Factor Networks, Fraternal Networks** and **Communication Networks**.

Factor networks ***refer to relationships with other firms built around inputs and other business issues in the spheres of production, marketing, finance, technology, transport, management and technical training, and labour.***

Fraternal networks are social and friendly relationships that facilitate inter-firm co-operation and the sharing of information.

Communication networks refer to established media through which firms exchange information and ideas on business matters, e.g. face-to-face, electronic media such as telephone, cellular phone, fax, Internet and e-mail.

Thank you for your co-operation.

.....	.....
Mr. Kwame Owusu-Ampomah	Prof. J. J. McCarthy
(Researcher)	(Promoter)

APPENDIX E

QUESTIONNAIRE I: OWNER-MANAGERS

A. Factor Networks

1. How many firms/organisations do you have contacts with in your everyday business activities?
(i) Nil (ii) 1 – 5 (ii) 6 – 10(iii) 11 – 15 (iv) 16 – 20 (v) 21 – 25 (vi) Over 25

(Record the respondent's answer and indicate the category as well)

2. Which of the following do you often contact them about?
   1= Production (jobs, supplies and production techniques).
   2= Marketing (orders and sales)
   3= Finance (credit, debt, tax)
   4= Labour issues
   5= Managerial and technical training
   6=Transport
   7=Technology

   Tick if applicable

3. Which one of those mentioned is the most significant to your business?

   .....
   (Let respondent choose only one as answer e.g. Production*)*

4. Why is it the most significant to your business?

   .....

   .....

B. Fraternal Networks

5. With whom do you discuss business-related activities?
   (i) Friends
   (ii) Relatives
   (iii) Colleagues who give you orders, jobs etc.
   (iv) Colleagues doing the same business as yourself
   (v) Others (specify) .....
   (Tick all those applicable)

6. How many people, altogether, do you discuss business-related activities with?

(i) 1 – 5 (ii) 6 – 10 (iii) 11 – 15 (iv) 16 – 20 (vi 21 –25 (vi) Over 25

(Record the respondent's answer and indicate the category as well)

7. Why do you not like to discuss business-related activities with those you did not tick in Question 6?

   .....
   .....

8. Are all the people you discuss business-related activities with resident in Durban?

   1=No 2= Yes

9. If "no", do you find those who are resident in Durban more helpful to your business than those outside Durban?

   1= No, I don't. 2= Yes, I do.

10. To what extent would you agree or disagree that most small clothing businesses (like yours) get much of their orders and inputs through friends/colleagues/relatives?

    1= I strongly agree 2= I agree 3= I fairly agree 4= I disagree
    5= I strongly disagree

C. Communication Networks

11. How often do you communicate with the people with whom you discuss business-related activities?

    1= Weekly 2= fortnightly 3= monthly 4= quarterly 5= occasionally

12. What medium of communication do you often use?

    1= face-to-face
    2= electronic medium i.e. telephone, cellphone, fax, Internet, e-mail

13. If "2" in Q.12, which of the electronic media do you often use? .....

14. Why do you prefer this medium of communication?

    .....
    .....

15. How often do you communicate with other firms/organisations on business-related issues?

    1= Weekly 2= fortnightly 3= monthly 4= quarterly 5= occasionally

16. What medium of communication do you often use? .....
    1= face-to-face contact

2= electronic medium i.e. telephone, cellphone, fax, Internet, e-mail

17. If "2" in Q. 16, which of the electronic media do you use most often? .....

18. Why do you prefer this medium of communication?

.....

.....

19. It has been suggested that communication links with friends/colleagues/relatives and firms/organisations within Durban are more important to small clothing businesses (like yours) than communication links with friends/colleagues and firms outside Durban. Do you agree?

1= I strongly agree 2= I agree 3= I somewhat agree 4=I disagree 5= I strongly disagree.

20. Which of the three types of networks – *factor, communication* and *fraternal* – is

1= most significant to your business? .....
2= least significant to your business? .....

D. Business Profile

21. Owner/Manager: ☐ Male ☐ Female

22. Highest Level of Education:

☐ No formal education
☐ Primary, up to Grade 6
☐ Secondary (Did not complete Matric)
☐ High School (Completed Matric)
☐ Technikon (Cert., Diploma, Degree)
☐ University Degree
☐ Other .....(Specify)

23. Employment

No. Of Employees		
1998	**1999**	**2000**

24. **Economic Performance**

Tick the appropriate net profit/loss category for each year.

NET PROFIT				NET LOSS		
1998	**1999**	**2000**		**1998**	**1999**	**2000**
			Less than R10 000			
			R10 001 – R50 000			
			R50 001 – R100 000			
			R100 001 – R300 000			
			R300 001 – R500 000			
			More than R500 000			
			Can't tell you			

25.

Name of Business						
Owner/Manager						
Nature of Business	**CMT**		**M**		**CMT & M**	
Product (e.g. Ladies Outerwear)						

NOTE:

CMT - Cut, Make and Trim: Depends on sub-contracts; does not produce its own line of clothing.

M - Manufacturer: Buys fabric and produces its own line of clothing.

QUESTIONNAIRE II

MR. HASSIM RANDEREE, PRESIDENT, CLOFED.

1. What do you produce? .....

2. What is the nature of your business? ☐ CMT ☐ M ☐ CMT/M

3. Are linkages and inter-firm co-operation vital to

   (a) your business

   ☐Yes ☐ No

   (b) the clothing industry?

   ☐Yes ☐ No

4. What is the extent of linkages and inter-firm co-operation within the industry?
   ▯ Excellent ▯ Very Good ▯ Good ▯ Poor ▯ Very Poor ▯ Extremely Poor

5. What factors have contributed to this state of linkages and inter-firm co-operation?
   (a) ..... (b) ..... (c) .....
   (d) ..... (e) ..... (f) .....

6. How many firms do you co-operate with in the industry?
   .....

7. What are the areas of co-operation?
   (a) ..... (b) ..... (c) .....
   (d) ..... (e) ..... (f) .....

8. What problems do you encounter as a member of the network?
   (a) ..... (b) ..... (c) .....
   (d) ..... (e) ..... (f) .....

9. Do you and the owners/managers in the network belong to the same culture or ethnic group? ☐ Yes ☐ No

10. How does belonging /not belonging to the same culture affect the performance of your business?.....
    .....

11. How has your business been performing in the last three years?

☐Extremely well ☐Very well ☐Well ☐Break even ☐Poorly

12. Does networking have anything to do with your business performance?

☐Yes ☐ No

13. In what way does networking affect the performance of your business?

.....
.....
.....

14. Are you on Internet?

☐Yes ☐ No

15. If "No", why?

.....

16. How many of the members of the association are on the Internet? (*In percentages*)

(i) 0 – 25 (ii) 26-50 (iii) 51-75 (iv) 76-100

17. If less than half, what factors account for it?

.....

18. Does the Federation have any plan to encourage networking and inter-firm co-operation in the industry?

☐Yes ☐ No

19. If "Yes", what is the nature of the plan?

.....
.....
.....
.....

QUESTIONNAIRE III

MR. CHRIS SIPHO GINA, SECRETARY, SACTWU, KZN

1. What is your position in SACTWU?
.....

2. In your view, are linkages and inter-firm co-operation vital to the clothing industry?

☐Yes ☐ No

3. Why do you say so?
.....
.....
.....

4.

5. What is the extent of linkages and inter-firm co-operation in the industry?

☐Excellent ☐Very Good ☐ Good ☐Poor ☐Very Poor ☐Extremely Poor

6. What factors have contributed to this state of linkages and inter-firm co-operation?
(i) ..... (ii) ..... **(iii)** .....
(iv) ..... (v) ..... (vi) .....

7. What areas, in your view, should the firms co-operate?
(i) ..... (ii) ..... **(iii)** .....
(iv) ..... (v) ..... (vi) .....

8. How has the industry been performing in the last five years?

9. Does networking have anything to do with the industry's performance?
▯ Yes ▯ No

10. In what way(s) does networking affect the performance of the industry?
.....
.....
.....
.....

QUESTIONNAIRE IV

DR. PAUL THERON, EXECUTIVE DIRECTOR, CLOFED

1. What was the total net profit of the clothing sector in

   (i) 1998 - .....
   (ii)1999 - .....
   (iii)2000 - .....

2. What was the total number of employees of the clothing sector in

   (i) 1998 - .....
   (ii)1999 - .....
   (iii)2000 - .....

3. Are linkages and inter-firm co-operation vital to the clothing industry?
   (i) Yes (ii) No

   (Please briefly give reasons for your answer)
   .....
   .....
   .....

4. How would you describe the extent of linkages and inter-firm co-operation in the clothing industry?

   ☐Very Encouraging ☐Fairly Encouraging ☐Not Encouraging

5. What factors, in your view, have contributed to the state of linkages and inter-firm co-operation in the clothing industry?

   (i)..... (ii)..... (iii).....
   (iv)..... (v).....

6. If "Not Encouraging" in Question 4 what is the Federation doing to encourage networking among firms in the industry?
   .....
   .....
   .....

APPENDIX F
LIST OF ALL CASES

No.	NFIRM	SOM	EMPLOY	AEP	PRODUCT	FACNET	RFAN	MSRFAN	FRANET	MSTN	LSTN	FCFAC	FCFRA	MOUMCFAC	MOUMCFRA	LEDOM	NBUS	SBN	AEPPEM
1	Aero	M	177	1000000	MW	25	12	2	25	3	2	1	1	2	2	5	0	50	5650
2	Alley Cat	M	27	366667	LKW	4	1	1	7	3	2	2	2	2	2	4	2	11	13580
3	Alperta	M	45	-10000	LO	10	1	1	10	1	2	0	0	2	2	5	2	20	222
4	Angies	F	60	533333	LO	20	12	1	11	1	2	1	0	2	2	3	1	31	8889
5	Ashwood	M	153	1000000	MBT	5	24	2	10	1	2	0	0	2	2	4	2	15	6536
6	Beach	M	80	166667	LGO	20	12	1	20	1	2	0	0	2	2	3	2	40	2083
7	Bella mode	M	185	210000	MT	10	1	1	5	1	3	0	0	2	2	4	0	15	1135
8	Brite R.	M	33	300000	LKB	4	1	1	5	1	2	1	1	2	2	5	2	9	9091
9	Bronjo	M	139	83333	MBT	10	13	1	12	3	2	1	1	2	1	4	1	22	600
10	Crocodile	M	91	100000	MLBGO	32	12	2	8	1	2	0	0	2	2	6	0	40	1099
11	Daisy's	M	4	50000	LU	8	12	2	5	1	2	0	0	2	2	4	1	13	12500
12	Dan	M	72	1000000	MWGT	6	13	1	10	1	2	0	1	2	2	5	1	16	13889
13	David Owen	M	25	83333	T	28	12	2	4	1	2	0	0	1	1	6	0	32	3333
14	Eva Dress	M	127	1000000	LGO	17	12	2	16	1	3	1	1	2	2	5	2	33	7874
15	Falcon	F	25	3333	MO	12	12	2	15	1	2	1	0	2	2	3	1	27	133
16	Faras L	M	35	300000	LO	10	1	1	5	1	2	1	1	2	2	4	1	15	8571
17	Fashion Dee	M	65	300000	MO	11	2	2	10	1	2	1	1	2	2	4	1	21	4615
18	Gem	M	50	100000	LCO	75	12	1	35	1	2	1	0	2	2	5	0	110	2000
19	Hari Fashions	M	107	500000	MBO	10	12	1	7	1	2	1	0	2	2	3	1	7	4673
20	I.M. Lockhat	M	35	433333	SLU	15	12	2	10	1	2	1	0	2	2	3	1	25	12381
21	Impact	M	200	433333	MT	60	12	1	30	3	2	1	1	2	2	6	1	90	2166
22	Ismed	M	29	233333	LMO	24	12	1	13	2	1	1	1	2	2	3	1	37	8046
23	J&J Fashion	M	6	50000	LO	4	12	2	4	2	1	1	1	2	2	2	0	8	8333
24	Jasper's	F	38	433333	LGO	5	13	1	5	3	1	1	1	2	2	2	1	10	11404
25	K.C. Fashions	M	35	50000	LO	15	12	1	4	1	2	1	1	2	2	5	1	19	1429
26	Kams	M	23	300000	MSB	5	12	1	5	1	2	1	0	2	2	3	0	10	13043
27	L. Jasmine	F	31	50000	LO	9	1	1	4	1	3	1	2	2	2	3	1	13	1613
28	Leo	M	65	300000	GCR	13	12	1	9	1	2	1	1	2	2	4	2	22	4615
29	Lucy	M	120	-3333	LMCO	18	12	2	12	3	2	1	1	2	2	6	2	30	-28
30	Luiguitex	M	107	433333	MBS	7	2	2	16	1	2	1	1	2	2	6	0	23	4050
31	Lynn	M	48	300000	LKW	4	12	1	10	1	2	0	0	2	2	4	1	14	6250
32	Mayville	M	95	300000	MBT	10	12	2	10	3	2	3	1	2	2	3	0	20	3158
33	Melway	F	5	10000	SJ	5	1	1	5	1	2	5	1	2	2	2	1	10	2000
35	Midgear	F	28	203333	LW	30	12	2	5	1	2	3	1	2	2	5	0	35	7262
34	Mmerivale	F	4	23333	LKW	4	4	2	2	2	1	1	1	1	1	2	1	6	5833
36	Moondrops	M	100	100000	LO	8	12	1	5	2	1	1	1	2	2	4	1	13	1000
37	Namada	M	47	10000	LO	5	1	6	5	3	3	0	0	2	1	4	2	10	213
38	Nerina	M	30	233333	MBO	7	12	1	10	1	2	1	0	2	2	4	1	17	7778
39	New Fashions	M	43	300000	MBO	3	1	1	11	3	2	2	1	2	2	4	1	14	6977
40	Ninian&Lester	M	52	316667	LU	5	12	1	10	1	2	1	1	2	2	4	0	15	6090
41	Novix	M	40	23333	MBS	10	2	4	5	3	2	2	0	2	2	4	1	15	583
42	Online	F	87	166667	MLW	25	12	2	25	3	2	0	0	2	2	5	2	50	1916
43	Pall Mall	F	38	166667	TBCS	25	12	2	10	3	2	1	1	2	2	3	1	35	4386
44	Pilco	M	50	23333	LO	10	12	1	5	3	2	1	1	2	2	5	1	15	467
45	Poodle	M	42	66667	LMJ	6	12	2	5	1	2	1	0	2	2	4	1	11	1587
46	Pulse	M	92	500000	LO	30	12	2	10	1	2	0	1	2	2	6	2	40	5435
47	R.G.K.	F	40	233333	KO	1	16	1	19	1	2	0	0	1	1	5	1	20	5833
48	R.J. Creations	M	3	10000	LMJ	4	1	1	5	1	2	1	1	1	1	2	1	9	3333
49	Rasool	F	30	300000	LKW	4	24	4	3	2	1	1	1	2	2	3	1	7	10000
50	Reena	M	22	36667	LGW	4	1	1	4	3	2	1	0	2	2	3	1	8	1667
51	S. Sport	M	198	1000000	LMCU	30	12	2	20	3	1	1	0	2	2	5	0	50	5051
52	S.E.V	M	50	166667	LCO	5	12	2	8	2	3	2	1	2	2	4	1	13	3333
53	Shemez	M	109	500000	LO	15	13	1	15	1	2	0	0	2	2	3	1	30	4587
54	Silhoutte	F	10	10000	EG	4	2	2	6	2	1	0	0	2	2	5	1	10	1000
55	Simon	M	20	113333	LKG	10	12	1	5	2	1	1	1	1	1	3	1	15	5667
56	True Value	M	140	1000000	LO	11	1	1	6	1	2	1	1	2	2	7	1	17	7143
57	Unique	F	40	50000	KW	5	13	1	5	3	2	1	1	2	2	2	1	10	1250
58	V&J	M	88	233333	LMO	11	12	2	4	1	2	0	1	2	2	3	1	15	2652
59	Vimal	M	131	166667	KW	25	12	2	22	1	2	1	0	2	2	4	0	47	1272
60	Vision B	F	55	300000	ML	8	2	1	4	1	2	0	0	2	2	5	1	12	5455
61	Zenzeleni	M	127	500000	TSWW	20	12	2	20	3	1	1	1	2	1	7	2	40	3937

APPENDIX G

HIGH PERFORMANCE FIRMS (HPFs)

(Average Economic Performance per Employee (AEPPEM) p. a. >= R4000)

No.	NFIRM	SOM	EMPLOY	AEP	PROD	FACNET	RFAN	MSRFAN	FRANET	MSTN	LSTN	FCFAC	FCFRA	MOUMCFAC	MOUMCFRA	LEDOM	NBUS	SBN	AEPPEM
1	Aero	M	177	1000000	MW	25	12	2	25	3	2	1	1	2	2	5	0	50	5650
2	Alley Cat	M	27	366667	LKW	4	1	1	7	3	2	2	2	2	2	4	2	11	13580
3	Angies	F	60	533333	LO	20	12	1	11	1	2	1	0	2	2	3	1	31	8889
4	Ashwood	M	153	1000000	MBT	5	24	2	10	1	2	0	0	2	2	4	2	15	6536
5	Brite R.	M	33	300000	LKB	4	1	1	5	1	2	1	1	2	2	5	2	9	9091
6	Daisy's	M	4	50000	LU	8	12	2	5	1	2	0	0	2	2	4	1	13	12500
7	Dan	M	72	1000000	MWGT	6	13	1	10	1	2	0	1	2	2	5	1	16	13889
8	Eva Dress	M	127	1000000	LGO	17	12	2	16	1	3	1	1	2	2	5	2	33	7874
9	Faras L	M	35	300000	LO	10	1	1	5	1	2	1	1	2	2	4	1	15	8571
10	Fashion Dee	M	65	300000	MO	11	2	2	10	1	2	1	1	2	2	4	1	21	4615
11	Hari Fashions	M	107	500000	MBO	10	12	1	7	1	2	1	0	2	2	3	1	7	4673
12	I.M. Lockhat	M	35	433333	SLU	15	12	2	10	1	2	1	0	2	2	3	1	25	12381
13	Ismed	M	29	233333	LMO	24	12	1	13	2	1	1	1	2	2	3	1	37	8046
14	J&J Fashion	M	6	50000	LO	4	12	2	4	2	1	1	1	2	2	2	0	8	8333
15	Jasper's	F	38	433333	LGO	5	13	1	5	3	1	1	1	2	2	2	1	10	11404
16	Kams	M	23	300000	MSB	5	12	1	5	1	2	1	0	2	2	3	0	10	13043
17	Leo	M	65	300000	GCR	13	12	1	9	1	2	1	1	2	2	4	2	22	4615
18	Luiguitex	M	107	433333	MBS	7	2	2	16	1	2	1	1	2	2	6	0	23	4050
19	Lynn	M	48	300000	LKW	4	12	1	10	1	2	0	0	2	2	4	1	14	6250
20	Midgear	F	28	203333	LW	30	12	2	5	1	2	3	1	2	2	5	0	35	7262
21	Mmerivale	F	4	23333	LKW	4	4	2	2	2	1	1	1	1	1	2	1	6	5833
22	Nerina	M	30	233333	MBO	7	12	1	10	1	2	1	0	2	2	4	1	17	7778
23	New Fashions	M	43	300000	MBO	3	1	1	11	3	2	2	1	2	2	4	1	14	6977
24	Ninian&Lester	M	52	316667	LU	5	12	1	10	1	2	1	1	2	2	4	0	15	6090
25	Pall Mall	F	38	166667	TBCS	25	12	2	10	3	2	1	1	2	2	3	1	35	4386
26	Pulse	M	92	500000	LO	30	12	2	10	1	2	0	1	2	2	6	2	40	5435
27	R.G.K.	F	40	233333	KO	1	16	1	19	1	2	0	0	1	1	5	1	20	5833
28	Rasool	F	30	300000	LKW	4	24	4	3	2	1	1	1	2	2	3	1	7	10000
29	S. Sport	M	198	1000000	LMCU	30	12	2	20	3	1	1	0	2	2	5	0	50	5051
30	Shemez	M	109	500000	LO	15	13	1	15	1	2	0	0	2	2	3	1	30	4587
31	Simon	M	20	113333	LKG	10	12	1	5	2	1	1	1	1	1	3	1	15	5667
32	True Value	M	140	1000000	LO	11	1	1	6	1	2	1	1	2	2	7	1	17	7143
33	Vision B	F	55	300000	ML	8	2	1	4	1	2	0	0	2	2	5	1	12	5455

APPENDIX H

LOW PERFORMANCE FIRMS (LPFs)

(Average Economic Performance Per Employee (AEPPEM) p. a. < R4000)

No.	NFIRM	SOM	EMPLOY	AEP	PRODUCT	FACNET	RFAN	MSRFAN	FRANET	MSTN	LSTN	FCFAC	FCFRA	MOUMCFAC	MOUMCFRA	LEDOM	NBUS	SBN	AEPPEM
1	Alperta	M	45	-10000	LO	10	1	1	10	1	2	0	0	2	2	5	2	20	222
2	Beach	M	80	166667	LGO	20	12	1	20	1	2	0	0	2	2	3	2	40	2083
3	Bella mode	M	185	210000	MT	10	1	1	5	1	3	0	0	2	2	4	0	15	1135
4	Bronjo	M	139	83333	MBT	10	13	1	12	3	2	1	1	2	1	4	1	22	600
5	Croccodile	M	91	100000	MLBGO	32	12	2	8	1	2	0	0	2	2	6	0	40	1099
6	David Owe	M	25	83333	T	28	12	2	4	1	2	0	0	1	1	6	0	32	3333
7	Falcon	F	25	3333	MO	12	12	2	15	1	2	1	0	2	2	3	1	27	133
8	Gem	M	50	100000	LOO	75	12	1	35	1	2	1	0	2	2	5	0	110	2000
9	Impact	M	200	433333	MT	60	12	1	30	3	2	1	1	2	2	6	1	90	2166
10	K.C. Fashi	M	35	50000	LO	15	12	1	4	1	2	1	1	2	2	5	1	19	1429
11	L. Jasmine	F	31	50000	LO	9	1	1	4	1	3	1	2	2	2	3	1	13	1613
12	Lucy	M	120	-3333	LMOO	18	12	2	12	3	2	1	1	2	2	6	2	30	-28
13	Mayville	M	95	300000	MBT	10	12	2	10	3	2	3	1	2	2	3	0	20	3158
14	Melway	F	5	10000	SJ	5	1	1	5	1	2	5	1	2	2	2	1	10	2000
15	Moondrops	M	100	100000	LO	8	12	1	5	2	1	1	1	2	2	4	1	13	1000
16	Narmada	M	47	10000	LO	5	1	6	5	3	3	0	0	2	1	4	2	10	213
17	Novix	M	40	23333	MBS	10	2	4	5	3	2	2	0	2	2	4	1	15	583
18	Online	F	87	166667	MLW	25	12	2	25	3	2	0	0	2	2	5	2	50	1916
19	Pilco	M	50	23333	LO	10	12	1	5	3	2	1	1	2	2	5	1	15	467
20	Poodle	M	42	66667	LMJ	6	12	2	5	1	2	1	0	2	2	4	1	11	1587
21	R.J. Creati	M	3	10000	LMJ	4	1	1	5	1	2	1	1	1	1	2	1	9	3333
22	Reena	M	22	36667	LGW	4	1	1	4	3	2	1	0	2	2	3	1	8	1667
23	S.E.V	M	50	166667	LOO	5	12	2	8	2	3	2	1	2	2	4	1	13	3333
24	Silhoutte	F	10	10000	EG	4	2	2	6	2	1	0	0	2	2	5	1	10	1000
25	Unique	F	40	50000	KW	5	13	1	5	3	2	1	1	2	2	2	1	10	1250
26	V&J	M	88	233333	LMO	11	12	2	4	1	2	0	1	2	2	3	1	15	2652
27	Vimal	M	131	166667	KW	25	12	2	22	1	2	1	0	2	2	4	0	47	1272
28	Zenzeleni	M	127	500000	TSWW	20	12	2	20	3	1	1	1	2	1	7	2	40	3937

APPENDIX I
DESCRPTIVE STATISTICS

DESCRIPTIVES: ALL CASES

Variable	Mean	Std Dev	Minimum	Maximum	N	Label
EMPLOY	66.44	50.81	3.00	200.00	61	Average Number of Employees (1998 - 2000)
FACNET	13.70	13.05	1.00	75.00	61	Number of Factor Networks
MSRFAN	1.59	.88	1.00	6.00	61	Most Significant Reason for Factor Networks
FRANET	10.02	7.03	2.00	35.00	61	Number of Fraternal Networks
MSTN	1.69	.89	1.00	3.00	61	Most Significant Type of Network
LSTN	1.92	.49	1.00	3.00	61	Least Significant Type of Network
FCFAC	.92	.86	.00	5.00	61	Frequency of Communication in FACNET
FCFRA	.61	.56	.00	2.00	61	Frequency of Communication in FRANET
MOUMCFAC	1.92	.28	1.00	2.00	61	Most Often Used Medium of Communicatlon III FACNET
MOUMCFRA	1.87	.34	1.00	2.00	61	Most Often Used Medium of Communication in FRANET
LEDOM	4.08	1.26	2.00	7.00	61	Level of Education of Owner/Manager
NBUS	.98	.65	.00	2.00	61	Nature of Business
SBN	23.56	18.76	6.00	110.00	61	Size of Business Network
AEPPEM	4862.95	3765.59	-28.00	13889.00	61	Average Economic Performance Per Employee
AEP	281366.08	284616.29	-10000.00	1000000.0	61	Average Economic Performance (1998 - 2000)

DESCRIPTIVES: HIGH PERFORMANCE FIRMS

FIL TER: AEPPEM >=4000

Variable	Mean	Std Dev	Minimum	Maximum	N Label
EMPLOY	63.33	50.26	4.00	198.00	33 Average Number of Employees (1998 - 2000)
FACNET	11.52	8.78	1.00	30.00	33 Number of Factor Networks
MSRFAN	1.48	.67	1.00	4.00	33 Most Significant Reason for Factor Networks
FRANET	9.48	5.30	2.00	25.00	33 Number ofFratemal Networks
MSTN	1.52	.80	1.00	3.00	33 Most Significant Type of Network
LSTN	1.82	.46	1.00	3.00	33 Least Significant Type of Network
FCFAC	.88	.65	.00	3.00	33 Frequency of CommunicatIon in F ACNET
FCFRA	.67	.54	.00	2.00	33 Frequency of Communication in FRANET
MOUMCFAC	1.91	.29	1.00	2.00	33 Most Often Used Medium of Communication in FACNET
MOUMCFRA	1.91	.29	1.00	2.00	33 Most Often Used Medium of Communication in FRANET
LEDOM	4.00	1.20	2.00	7.00	33 Level of Education of Owner /Manager
NBUS	.97	.64	.00	2.00	33 Nature of Business
SBN	20.70	12.18	6.00	50.00	33 Size of Business Network
AEPPEM	7620.82	2913.36	4050.00	13889.00	33 Average Economic Performance Per Employee
AEP	424949.42	302806.49	23333.00	1000000.0	33 Average Economic Performance (1998 - 2000)

DESCRIPTIVES: LOW PERFORMANCE FIRMS

FIL TER: AEPPEM < 4000

Variable	Mean	Std Dev	Minimum	Maximum	N Label
EMPLOY	70.11	52.13	3.00	200.00	28 Average Number of Employees (1998 - 2000)
FACNET	16.29	16.55	4.00	75.00	28 Number of Factor Networks
MSRF AN	1.71	1.08	1.00	6.00	28 Most Significant Reason for Factor Networks
FRANET	10.64	8.70	4.00	35.00	28 Number ofFratemal Networks
MSTN	1.89	.96	1.00	3.00	28 Most Significant Type of Network
LSTN	2.04	.51	1.00	3.00	28 Least Significant Type of Network
FCFAC	.96	1.07	.00	5.00	28 Frequency of Communication in F ACNET
FCFRA	.54	.58	.00	2.00	28 Frequency of Communication in FRANET
MOUMCFAC	1.93	.26	1.00	2.00	28 Most Often Used Medium of Communication in FACNET
MOUMCFRA	1.82	.39	1.00	2.00	28 Most Often Used Medium of Communication in FRANET
LEDOM	4.18	1.33	2.00	7.00	28 Level of Education of Owner/Manager
NBUS	1.00	.67	.00	2.00	28 Nature of Business
SBN	26.93	24.17	8.00	11 0 . 00	28 Size of Business Network
AEPPEM	1612.61	1094.92	-28.00	3937.00	28 Average Economic Performance Per Employee
AEP	112142.86	128249.41	-10000.00	500000.00	28 Average Economic Performance (1998 - 2000)

APPENDIX J
VARIABLE ACRONYMS

SOM	Sex of Owner-Manager
EMPLOY	Number of Employees
AEP	Average Economic Performance
PROD	Product
FACNET	Factor Networks
RFAN	Reasons for Factor Networks
MSRFAN	Most Significant Reason for Factor Networks
FRANET	Fraternal Networks
MSTN	Most Significant Type of Network
LSTN	Least Significant Type of Network
FCFAC	Frequency of Communication in Factor Networks
FCFRA	Frequency of Communication in Fraternal Networks
MOUMCFRA	Most Often used Medium of Communication for Factor Networks
MOUMCFRA	Most Often used Medium of Communication for Fraternal Networks
LEDOM	Level of Education of Owner-Managers
NBUS	Nature of Business
SBN	Size of Business Networks
AEPPEM	Average Economic Performance per Employee

APPENDIX K
PRODUCT (PROD) ACRONYMS

EG	Embroidered Garments
GCR	General Clothing, Rainwear
JLO	Jean and Ladies' Outerwear
KW	Kiddies' Wear
LCO	Ladies' and Children's Outerwear
LGO	Ladies' and Girls Outerwear
LGW	Ladies and Girls Wear
KO	Kiddies Outerwear
LKB	Ladies' and Kiddies' Bikinis
LMJ	Ladies' and Men's Jean
LKG	Ladies' and Kiddies' Garments
LKW	Ladies' and Kiddies Wear
LMO	Ladies' and Men's Outerwear
LMCO	Ladies', Men's and Children's Outerwear
LMOU	Ladies' and Men's Outerwear and Underwear
LO	Ladies' Outerwear
LU	Ladies' Underwear
LW	Ladies' Wear
MBO	Men's and Boys' Outerwear
MBS	Men's and Boys' Shirts
MBT	Men's and Boys' Trousers
MIW	Men's & Infant's Wear
MLBGO	Men's, Ladies', Boys' and Girls' Outerwear
MLJ	Men's and Ladies' Jean
MLT	Men's and Ladies' Trousers
MLW	Men's and Ladies' Wear
MO	Men's Outerwear

MWGT	Men's Workwear Garments and Trousers Shirts and Ladies' Underwear
SLU	Shirts and Ladies Underwear
SJ	Shirts and Jackets
T	Trimmings
TBCS	Ties, Bowties, Cravats and Scarves
TSWW	T-Shirts & Workwear