

The Role, Use and Activation of Strong and Weak Network Ties: A Qualitative Analysis*

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ABSTRACT A characteristic of studies seeking to explain the structure and operation of networks is the use of Granovetter's strong and weak tie hypothesis. Whilst this hypothesis has become an established paradigm, questions and disagreements arise over its applicability at demonstrating the real use and value of each tie. This study extends the work of Granovetter. Using a qualitative ethnographic approach to explore in-depth the networking activities of fourteen respondents, it aims to enhance understanding about the role of ties, how they are used and activated for business activity. Findings demonstrate that it is strong ties that are instrumental for business activity and used extensively to provide knowledge and information but also to maintain, extend and enhance business and personal reputations. Unless activities require their reactivation and manifestation, strong ties remain latent and dormant within the network. Strong ties also provide the mechanism to invoke 'weak' ties, represented by nodes operating in a wider social context.

INTRODUCTION

The use and popularity of the network concept by social science researchers has intensified in recent years as the relevance of relations for business activity becomes increasingly recognized (Easton and Araujo, 1986; Harland, 1995; Nohria and Eccles, 1992). Although the network concept is not new, dating back to the 1930s in organizational research and at least the 1950s in anthropology and sociology (Nohria, 1992, p. 1), there have been consequences of its increasing popularity: 'the network concept "has indeed become fashionable and trendy" . . . Anyone reading through what purports to be network literature will readily perceive the analogy between it and a "terminological jungle in which any newcomer may plant a tree". This indiscriminate proliferation of the network concept threatens to regulate it to the status of an evocative metaphor, applied so loosely that it ceases to

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mean anything' (Nohria, 1992, p. 3). It has even been remarked that the term network has acquired the character of an umbrella, a catch-all term under which a variety of theoretical and methodological positions in the social sciences seek refuge (Araujo and Easton, 1996, p. 64).

Certainly a review of the organizational and management literature introduces a broad and diverse range of concepts, terminology and models (see Curran (1996) and Harland (1995) for a fuller account and explanation of some approaches). Nevertheless, whilst the extensive work carried out has been useful in expanding our knowledge, difficulties arise when applying the network concept as an analytical tool. Moreover, gaps within the literature remain, particularly in terms of our understanding of the content of network interactions (Barnir and Smith, 2002; Lechner and Dowling, 2003; O'Donnell et al., 2001; Uzzi and Lancaster, 2003). As a consequence, our knowledge about how networks operate, their nature and role in supporting business activity remains limited to fairly broad and descriptive accounts. Yet, despite these issues there is a general consensus that networks do seem to provide specific benefits, thereby enabling business outcomes to be achieved.

The aim of the present research is to enhance understanding about networks and how they are used for business activity. To achieve this a social network perspective is taken and a qualitative approach to the research used to explore in-depth the networking activities of fourteen respondents. The theoretical orientation of this study is Granovetter's (1973) strong and weak tie concept. This orientation is justified on the basis that although the ideas of Granovetter have been widely drawn on to understand and explain the structure and operation of networks, there does seem to be some disagreement concerning the real value and significance of these different ties. The theoretical contribution of this paper is, therefore, that it enriches our understanding of the strong and weak tie hypothesis and extends the work of Granovetter. To achieve this, the study addresses the questions: What is the role of ties? How are ties used and activated?

Since networks are perceived to influence the entrepreneurial process and outcomes (Hoang and Antoncic, 2003), entrepreneurship was chosen as the context in which to explore these questions. By using the entrepreneurial context this study demonstrates not only the importance of strong ties for business activity but that strong ties provide the link to the wider social context and act as a mechanism to invoke weak ties. Interestingly, it also shows that strong ties can remain latent and dormant within the network. This has important implications for the way ties are defined and measured.

NETWORKS, TIES AND OUTCOMES

In previous studies sociologists and anthropologists have used social network theory to demonstrate the nature and effect of the interaction and exchange that takes place between individuals (Harland, 1995; Maguire, 1983). Basically, a social

network can be thought of as the actual set of links of all kinds amongst a set of individuals (Mitchell, 1973). Links such as friends of friends (Boissevain, 1974), group obligations (Bourdieu, 1986) and strong and weak ties (Granovetter, 1973) can provide privileged information, access to opportunities and enable individuals to obtain resources.

Although the social network approach is generally acknowledged as the precursor of other approaches and the most prolific in terms of the development of data analysis tools and their application to a range of social science topics (Araujo and Easton, 1996, p. 68), criticisms have been made concerning the use of social network theory as an analytical framework. These criticisms are primarily based on the point that a social network perspective often takes social structures as a given (Aldrich, 1982; Granovetter, 1985; Jones et al., 1997), raising concerns about the perception and interpretation of structure and agency in terms of influencing behaviour and how the initiation, reproduction and change of structures are brought about (Araujo and Easton, 1996; Emirbayer and Goodwin, 1994; Mizruchi, 1994). Despite these criticisms, there does seem to be widespread consensus that social networks affect economic performance (Arrow, 2000). For example, Granovetter (1992, p. 25) argued that economic action is embedded in ongoing networks of personal relationships and that economic goals are typically accompanied by non-economic goals which are related to the social context. Similarly, Young (1998) made the point that economic actions are conditioned by ongoing structures of social relations. The relevance of informal social systems for co-ordination and collaboration is also emphasized within the network governance literature (Piore and Sabel, 1984; Powell, 1990; Ring and Van de Ven, 1992; Snow et al., 1992), where contracts are perceived to be socially rather than legally binding (Jones et al., 1997).

Yet, in spite of there being recognition that aspects of the social context can impact on economic activity, there is a need for our understanding to be broadened further about particular aspects, for instance the origins and persistence of structural embeddedness and social mechanisms (Jones et al., 1997). Furthermore, even though numerous studies have looked at networks, there is a tendency to focus on measuring the extent and range of contacts within a network and the actual structure of a network (for examples see Aldrich and Zimmer, 1986; Greve, 1995; Malecki and Tootle, 1996). Whilst these and similar studies have usefully demonstrated the utility of networking and some of the structural features, understanding about what really goes on within a network remains limited. Furthermore, issues related to structure, the typical unit of network analysis, offer only modest insights into how networks develop over time and their evolution (Human and Provan, 2000). Interestingly, most network studies are characterized by the use and application of Granovetter's strong and weak tie hypothesis (for examples, see Aldrich et al., 1987; Hills et al., 1997; Marsden and Campbell, 1984). Indeed, Marsden and Campbell (1984) argued that 'tie strength' has probably attracted

the most research attention and resulted in substantive contributions towards understanding the network concept.

The Strong and Weak Tie Hypothesis

According to Granovetter (1973, p. 1361) the strength of ties within a network defines the strength and quality of relations. By differentiating between two types of ties – strong and weak – Granovetter (1973) describes how the diversity, homogeneity and heterogeneity of these ties impact on the actions of individuals. He argued that compared to weak ties, strong ties consist of frequent interaction, occurring at least twice a week. Indeed, this ‘closeness’ of relationship does seem to be the most commonly used indication for measurement of tie strength (see Erickson et al., 1978; Lin and Dumin, 1982; Marsden and Campbell, 1984; Murray et al., 1981).

Granovetter (1973) and Burt (1992a, 1992b) argued that a network should consist of both strong and weak ties because the nature of these ties influences the operation and structure of networks. For example, weak ties are described as heterogeneous ties and are perceived to be a critical element of social structure, enabling information to flow into other social clusters and the broader society (Burt, 1992a). Hence, the value and strength of weak ties is not related to the weakness of the relationship, but in the possibility of connections to other social systems (Ibarra, 1993). Contrastingly, Granovetter (1985, p. 490) noted that the information and support gained through strong ties offers multiple benefits: it is cheap; it is more trustworthy because it is richer, more detailed and accurate; it is usually from a continuing relationship and so in economic terms it is more reliable. Nevertheless, strong ties are perceived as being less beneficial than weak ties because they are likely to provide redundant information since they can be anticipated to move in similar, if not the same, social circles (Burt, 1992b). Thus, the homogeneity of strong ties is thought to be less effective, breeding local cohesion but also leading to overall fragmentation (Granovetter, 1973; Ibarra, 1993; Maguire, 1983). However, cumulating evidence that emphasizes the importance of weak ties has fuelled the debate on the relative value of strong versus weak ties (Hoang and Antoncic, 2003). So, whilst the strong and weak tie hypothesis has become an established paradigm, questions arise over its applicability. This, therefore, provides the focus for this paper. It is concerned with enriching our understanding about these different ties, their use and application.

Area for Investigation

For the following reasons entrepreneurship was chosen as the context for this study. The importance of entrepreneurship for economic development and regeneration is increasingly recognized (Hart et al., 1993; Wiklund et al., 1997). Not only is entrepreneurship perceived to bring social (Aldrich et al., 1983; Hyrsky and Ali,

1996) and economic (Storey, 1997; Wiklund et al., 1997) benefits but modern economies are increasingly made up from the ventures entrepreneurs create. Entrepreneurial outcomes can be viewed as 'the consequences of the entrepreneurial process, for instance, the founding of a new venture and its performance' (Hoang and Antoncic, 2003). Entrepreneurial processes have been said to consist of 'opportunity identification, resource mobilization and the creation of an organization' (Shane and Venkataraman, 2000). Therefore, our understanding of entrepreneurship and the tools and mechanisms used to manage these types of ventures is an important area of research, not only within the entrepreneurship literature but also the wider management arena.

Further justification for using entrepreneurship to explore the relationship between networks and business activity is that in the literature entrepreneurship has been offered as an interesting phenomenon to examine from a network perspective (Araujo and Easton, 1996, p. 97). Around fifteen years ago, research on entrepreneurial networks emerged as an important new area of inquiry as studies confirmed the important and varied role that networks play in influencing the entrepreneurial process and outcomes (Hoang and Antoncic, 2003). Studies have shown that the ability to network effectively is an important factor in facilitating entrepreneurial activity and sustaining business development (Pettitt and Thompstone, 1990). This association is demonstrated in the work of various researchers who have found that networks are important for entrepreneurship (Aldrich and Zimmer, 1986; Birley, 1985; Carsrud and Johnson, 1989; Greve and Salaff, 2003; Hansen, 1995; Johannisson and Peterson, 1984); that the entrepreneur must network to ensure the survival of the venture (Arocena, 1984; Brüderl and Preisendörfer, 1998; Huggins, 2000; Szarka, 1990); and that networks provide a resource base crucial to starting and developing a business. This perspective is particularly important as it has been demonstrated that by supplementing the entrepreneur's own business resources, the network improves the likelihood of success (Anderson and Jack, 2002; Brüderl and Preisendörfer, 1998; Foss, 1994; Hansen, 1991; Jack and Anderson, 2002; Johannisson, 1986, 1987; Johannisson and Peterson, 1984; Ostgaard and Birley, 1994). Social relations, therefore, play an important role in establishing a firm (Greve and Salaff, 2003; Hite, 2003) and its subsequent development (Hoang and Antoncic, 2003; Shane and Cable, 2002; Uzzi and Gillespie, 2003). Furthermore, through social and professional networks entrepreneurs are supplied with ideas, exchange opportunities and access to valued resources (Araujo and Easton, 1996, p. 97). Entrepreneurship, therefore, does seem to provide a relevant and interesting setting to explore the issue of networks.

Entrepreneurship and the Strong and Weak Tie Hypothesis

Within the entrepreneurship literature, Granovetter's (1973) strong and weak tie hypothesis has been widely drawn on and increasingly linked to network charac-

teristics and content. Most research illustrates that the strength of relationship determines the type of resources provided through the network (Jenssen and Koenig, 2002). For instance, weak ties provide opportunities for diverse resources and information (Aldrich et al., 1987; Bloodgood et al., 1995; Katrishen et al., 1993; Mönsted, 1995). Alternatively, Jenssen and Koenig (2002) argued that strong ties provide access to motivation. Yet, in terms of information relating to opportunities a personal network predominantly characterized by strong ties is perceived to be inefficient (Hills et al., 1997; Ibarra, 1993).

However, some accounts of ties are beginning to question the utility and function of each type of tie. For example, Aldrich et al. (1987), Hansen (1995) and Lechner and Dowling (2003) all emphasize the importance of close strong ties, perceived to support and help justify the choices made by the entrepreneur and help to solve problems (Mönsted, 1995). So, in many ways the results for strong ties are more defensible and seem to suggest that entrepreneurs benefit from ready access to resources (Hoang and Antoncic, 2003).

Nevertheless, despite empirical findings, the literature emphasizes that weak ties are more effective for entrepreneurship. For example, an entrepreneur embedded in a broad and diverse network is argued to receive more help and resources compared to an entrepreneur embedded in a confined network, or one which lacks basic resources (Brüderl and Preisendörfer, 1998). Yet, in common with Granovetter (1973) and Burt (1992a, 1992b), Johannisson (1986) argues that the ideal entrepreneurial network should contain both weak and strong ties.

So, whilst the literature supports the view that networks consist of dichotomous ties, questions arise concerning the real value and significance of each tie. Nevertheless, the effectiveness of the network seems to depend upon the presence of both strong and weak ties since different forms of ties are seen to provide distinct and different resources. By focusing on the role of ties and how they are used and activated this study seeks to deal with these issues and aims to provide a better understanding about ties.

METHODOLOGY

The Context

To address the research questions, rural areas of the Highlands of Scotland were selected as the specific research context. Whilst rural areas may be perceived as poor places to start or run businesses, the Highlands of Scotland presents a paradox. The Highlands has a population of 373,000, covers an area of 39,050 square kilometres and is one of the most sparsely populated areas of the European Union (Highlands and Islands Enterprise, 2001). Yet, this area experienced an increase of 24 per cent in self-employment between 1981 and 1991 (Anderson, 1995) and an estimated two thousand new businesses were created here

between 1997 and 1998 (Highlands and Islands Enterprise, 1998). It should be stressed at this stage that this study does not deal with rural entrepreneurship. Instead, it uses respondents within this context to interrogate the research issues. This is justified on the basis that scarcity of population and bounded space make social observations easier whilst social influence is likely to be more transparent (Jack and Anderson, 2002). Thus, it is argued that social patterns and the influence of social relationships should be easier to trace and identify, allowing contingent variables to be pinpointed and the significance of social networks to be recognized.

Methods Adopted

Although the request for more qualitative work has been made within the general management area (see, for example, Fay, 1996; Gill and Johnson, 1997; Morgan and Smircich, 1980; Papineu, 1978), and particularly entrepreneurship network research (see, for example, Curran et al., 1995; Harland, 1995; Hoang and Antoncic, 2003), there is an inclination towards positivist methodological approaches. Nevertheless, the literature argues the case for qualitative work being a mechanism to provide richer and more dynamic theories (Hoang and Antoncic, 2003). Qualitative studies have been argued to be preferable when addressing the process, content and dynamics of networks, rather than purely structural matters (Lechner and Dowling, 2003; O'Donnell et al., 2001). Thus, the researcher adopted a qualitative approach for data collection (Morgan and Smircich, 1980). This allowed a more detailed and richer analysis of ties. This approach was also used because the intention was to look for the meanings that lie behind actions (Hammersley, 1992). Furthermore, the objectives of the research were related to understanding, rather than measuring (Oinas, 1999).

During the research process it became clear that interviews alone would not generate the depth of data required to fully understand and investigate network ties. Therefore, ethnographies were used to provide a way to explore how people operated. This allowed the researcher to gain awareness and begin to understand the situations of respondents. The essence of ethnographic research is that it allows qualitative researchers to get 'inside the minds' of those being studied to understand the values, meanings, motivations and logics which govern action (Curran and Blackburn, 2001, p. 113). It allows the researcher to look for close-up detail (Fetterman, 1989; Yin, 1993) or 'thick' description (Geertz, 1973) of the real world and explore social patterns (Gummesson, 2000). It is based on what are termed as 'naturalistic modes of inquiry' such as participant observation and semi-structured interviews, within a predominantly inductive framework (Gill and Johnson, 1997, p. 96; Silverman, 2000, p. 37). And on the belief that the social world cannot be understood by studying artificial simulations in experiments or interviews (Gill and Johnson, 1997, p. 97). Thus, when using ethnographic techniques, the researcher

immerses himself/herself in a locality for a period of time to directly participate with the group being studied (Easterby-Smith et al., 1991; Gill and Johnson, 1997). This allows the researcher to understand the way people behave, how they interact and collaborate, to learn about the culture of others and to look at things from the point of view of the group being studied (Curran and Blackburn, 2001; Easterby-Smith et al., 1991; Gill and Johnson, 1997; Gummesson, 2000).

The Sample and Research Techniques

Respondents were selected using theoretical sampling (Strauss, 1987, pp. 38–9). According to Alvesson and Sköldberg (2000, p. 27) theoretical sampling has two main steps. Firstly, the differences between groups are minimized by identifying basic categories and properties. Secondly, differences are maximized to enable the researcher to investigate these category properties in their greatest possible range and begin weaving them together into a more substantial theory. For the research, a framework for data collection and analysis was developed from the literature review. This provided a theoretical understanding and background. It also allowed ties and networks to be identified as appropriate themes for analysis. Investigating these features provided a mechanism for progressive focusing of data collection. Additional new respondents were selected on the basis of emerging properties, first to examine the validity of characteristics and analytic categories and second to consider the links, associations and relationships of emerging categories. The process of data collection was therefore ‘controlled’ by the emerging theory and allowed ‘ideas’ to be refined. The selection of data is justified by the significance and relevance categories held for the respondents themselves and by the examples respondents used to illustrate their points. Respondents were identified primarily through personal and local knowledge and contacts. Before contacting potential respondents the researcher asked around the local area for views and impressions of each respondent. This ensured that all potential respondents would be eligible to participate in the research. It also ‘fitted’ each respondent into the local context and structure.

Initially a total of forty respondents were interviewed. These were used as preliminary interviews to recognize and test emerging themes. From these respondents fourteen entrepreneurs were identified (see Table I for background details) and used to fully explore the issues under investigation. The literature provided a platform to generate pre-understanding of the issues under investigation. A deeper and more thorough understanding was then gained using ethnography and returning to the roots of entrepreneurial activity. Ethnography allowed a rich body of contextual information to be collected from a wide range of primary sources and it provided a guiding framework for the research. The researcher immersed herself in the local area and culture of the community. Rich information about the history and background of each respondent and the firm was also sought from non-entre-

Table I. Respondents

<i>Entrepreneur</i>	<i>Activity</i>	<i>Year established</i>	<i>Background and experience</i>
Anne	Clothes retail outlets	1987	No prior knowledge of industry, has marketing qualification Partner involved in other successful businesses within the area
Arthur	Welding equipment services	1980	Welding apprenticeship, gained managerial and sales experience
Fiona	Fruit business	1993	Qualifications and experience in fashion and making clothes
Gary	Technical engineering	1998	Technical apprenticeship, managerial and sales experience in oil industry
George	Farming	1959 and 1998	Farming background, took over family farm
Ian	Professional service	1981	Established rural branch office for employers which he then purchased
Jackie and Paul	Manufacturer	1972	Jackie – WRAF Paul – electrical apprenticeship then ran his own business selling and repairing electrical goods
James	Manufacturer	1993	Trained as a chemist prior to joining industry
Jane	Glass blowing studio	1994	Formal qualifications. Experience of craft industry
John	Electrical contracting and retailing	1993	Employed by an electrical contractor
Mike	Leisure services	1994	Medical qualifications then joined the forces
Peter	Construction company	1977	Employed by the original company on the administration side
Sandy	Welding business	1972	Welding apprenticeship and joined family business
Steven	Service business	1991	Joinery apprenticeship then became self-employed joiner

preneurial sources (Denzin, 1979). This material represented a resource for comparison with, and triangulation of, the emerging research themes and addressed the broader theoretical issues. Data collection took place over a four year period. This involved repeat visits to the areas in which the respondents and their firms were located.

Interviewing has been described as one of the most common and most powerful ways to understand people (Fontana and Frey, 1994). For this study formal and informal interviews were used. Formal interviews were based on a semi-structured schedule which contained specific areas on which respondents were questioned at length. This schedule was concerned with implementing the research questions. It

was organized around the research questions and themes of the study: networks, ties and how these were used and activated for entrepreneurship. Respondents were questioned extensively and in-depth. These interviews were taped and transcribed. Interviews with respondents varied in duration from a couple of hours to over six hours. The form of the emerging data determined the direction and length of the semi-structured interviews. Questions were not asked in any specific order but were governed instead by the actual situation (Gummesson, 2000). Informal interviews generated additional material and provided a more complete understanding. These took place wherever and whenever possible: chatting over a cup of coffee, lunch or a drink at the local pub, chance meetings on the street or in a local shop, community events and get-togethers. This allowed a richer and deeper appreciation of how respondents acted and operated. These 'discussions' were also extremely relevant because they helped to triangulate the data by clarifying meaning and identifying different ways in which the phenomena could be seen (Stake, 1994).

Throughout the process of data collection, interview probes were used (see East-erby-Smith et al., 1991, p. 80). This helped to ensure that the interviewee was not being led in anyway and confirm that the information received from respondents reflected the actual situation.

Data Analysis

Wolcott (1990) argued that in qualitative work the objective is not to accumulate all the data you can, but to identify the essences and then reveal those essences with sufficient context. The analysis of the data explored themes in the responses of entrepreneurs using the constant comparative method (Alvesson and Sköldb-erg, 2000; Silverman, 2000) and analytic induction (Glaser and Strauss, 1967). The research process generated large amounts of data. Once the data was collected, it had to be sorted before it could be analysed. Interviews were taped and transcribed, field notes were collated and observations were written up. The 'raw' data was then written as 'cases'. These were informed by the case study approach (see Chetty, 1996; Eisenhardt, 1991; Gummesson, 2000). This provided a way to sort the rich data that had been gathered through documents, interviews, observations and discus-sions. These 'cases' were then analysed and compared to determine categories and general patterns of activities; each incident was continually compared with others within the emergent categories to refine both description and explanation. To achieve data analysis themes were identified from the literature; ties and networks. The data was examined and explored for detail relating to these themes.

Methodological Issues

Whilst the respondents are not representative of the entrepreneurial universe, they do provide useful data on the nature of network ties. The methodological tech-

niques provided sufficient depth of data to allow a meaningful analysis of the process in context. Quotes from the data are used to provide valuable supplements, to add voice to the text and help categorize the data (Wolcott, 1990). An attempt is also made to link the practices with the background of the respondents, inductively, and demonstrate veracity by telling a convincing story (Steyaert and Bouwen, 1997).

The approach used is justifiable on a number of counts; the concern for validity and reliability aided the development of analytic insights (Wiseman, 1979). This reflects Chandler and Hanks' (1994) suggestion that longitudinal and qualitative studies are useful methods to explore the way resource capabilities are developed and environmental opportunities are identified. In qualitative work the researcher aims to make sense of the social world of the people studied by attempting to reconstruct their view of their world (Wiseman, 1979). The inherent limitations of these research techniques are recognized. The study area was restricted, the small number of entrepreneurs used and the methodology employed inhibit generalizability (Chandler and Hanks, 1994; Larson, 1992). However, the value of the research design lies in its capacity to provide insights, rich detail and thick description (Geertz, 1973) to produce a grounded model which can generate hypotheses for further testing (Larson, 1992). Furthermore, the approach used to select respondents provided useful and rigorous data about ties and what happens within and between these ties.

FINDINGS

This section of the paper presents a discussion of data and findings from the study. It begins by looking at if and how entrepreneurs used ties to other individuals, the types of ties used and how effective there were in terms of entrepreneurship. Thereafter, the discussion considers how ties were developed and formed by the entrepreneurs studied.

Entrepreneurship and Ties

What was particularly interesting with this sample of respondents was that they seemed to draw extensively on strong ties and people with whom they were familiar. The actual activity of networking involved identifying entrepreneurial requirements and locating an individual within the network who could help with the actual need. Indeed, what happened when activating networks was that respondents initially approached contacts with whom they were more knowledgeable about and acquainted with – family or close, personal ties. If these contacts could not supply the necessary requirements then respondents identified others within the network who could.

Family links. For some respondents (George, Anne, Steven, Peter and Sandy) family members and their links to others played a powerful role. As strong ties, family was instrumental in providing respondents with the ability to recognize the potential for entrepreneurial opportunities, business development and continuity of the activity. For example: 'It's my family that I tend to speak to about the business. I only really approach a couple of friends. You never really know who you can trust' (Anne); 'My family helped out where they could. My brother did the plumbing, my nephew was starting a joinery apprenticeship so was keen to help out and other family members came and gave me a hand, where and when they could' (Steven); 'My children all grew up in the area so I can find things out about another age group . . . they tell me about the local labour market, whose working with who, whose looking to move from their current employer and how good they are' (Sandy); 'The family helps to inform me about what's happening in the area. They tend to hear through their friends what's going on' (Peter); 'Having my sons run some of my farms is useful and they keep me up to speed with movements in markets and competitors. My sons are loyal to me and are reliable in what they tell me . . . one of my sons is married to a major player in cattle farming and lets me know what's happening within that market' (George).

Family represented a strong tie, developed on the basis of trust, expectation and the family bond. The family bond was formed on kinship and family values which led to trust in the information and resources supplied through this network. Trust in the relationship was evident but in different ways: trust that family would support and help activities, trust in the information supplied by family members and trust in the local knowledge of the family. There was little evidence to support 'exchange relationships'. However, this may simply be a reflection of the extent and depth of family ties.

Although other personal contacts were drawn on by these respondents they seemed only to be used where required information, resources or skills could not be located within the family network. Those personal ties which were used by these respondents consisted of individuals with whom the entrepreneur was familiar. Familiarity was generated through knowledge and experience which led to trust in the individuals over time. For instance: 'One friend has got a similar business and she's a reliable source of information for what other retailers are doing and the industry in general. I know whatever I say won't go any further. Another friend has been important because she knows all the right people. It's not all take. We share information' (Anne); 'There were certain things my family couldn't help with and friends stepped in. The electrical work was done by Bob, Dylan gave me a good deal on the windows and doors and Dennis managed all the printing and stationery' (Steven).

George's case is indicative of the extent to which friends can support entrepreneurship. Financial pressures led to him closing his business but George's friends provided the incentive and continuing support, in terms of customers and markets,

to start again. In addition, these friends provided George with a short-term loan to assist him in the re-establishment of the business, although this was considered secondary to the personal support received. The example provided by George demonstrates when strong ties are particularly important: 'It was the traders who gave me the assistance to buy the Company after it went into liquidation; four put up the cash for me to buy it back. I've known these traders all my life. They're my friends but also my customers . . . during the start-up, everybody was working together, the farmers, researchers and institutions. I was part of this. It provided me with a range of people who became friends and who were helpful to the business'.

Personal links. For other respondents (Arthur, Fiona, Gary, Ian, James, Jane, John, Mike, Jackie and Paul) the family bond was less relevant. Family members were not directly involved in the operation and management of the business and these respondents made limited use of family ties. Instead other personal links were used more extensively and seemed to replace the role played by family in the previous category. These respondents either had previous experience, in some shape or form, of the actual industry in which they had started their business or knew of others who could provide the detail required. These links represented a strong tie where relationships were transferred to the entrepreneurial situation to become networks of business friends: 'I knew a lot of the people I speak to about the business before we started it. Some I knew from living here, others I met when I was at Uni. And others when I was in the forces' (Mike); 'My customers tend to be former colleagues and other people I knew when I was working in industry' (Gary); 'I knew many of the people who buy my product before I did business with them. My first customer was Linda who lives next door. She owns the local shop. We also supply a number of hotels in the town. I'd worked in some of them so knew the owners which made it easier to approach them' (Fiona); 'For the first four years I didn't have to sell hard because I had contacts in the trade that I knew would guarantee the business . . . these were mainly contacts I'd had for many years' (James); 'I was known in the circles . . . when I first opened the shop suppliers provided me with stock and allowed me to return what I didn't want. They knew me and knew I wasn't going to run off with their stuff' (John). Thus, 'knowledge about' the individual was an important factor for these respondents.

This even applied to professionals where respondents had knowledge about the individual or experience of them prior to using that individual for entrepreneurship. Alternatively, respondents looked to develop a personal as well as a professional relationship with the individual, building a stronger relationship: 'Even though it's a while back since we needed the use of the Trust, if we're in a panic we phone the guy from the Trust. He's become a good friend. He's never fazed by anything and understands our situation' (Jane); 'Like all my customers, my solicitor and accountant are all personal friends now. I don't look to make them that.

It happens because of the way I treat them . . . a year ago I had to start my business again. I had practically nothing. Most of my customers knew what I'd been through and they rallied round me' (Arthur). Johannisson et al. (1994) referred to a tie with a business and friendship content as a multiplex tie. The data here demonstrates that the impact of these ties were that respondents felt that these individuals 'understood' their situation and what they were trying to achieve. This led to respect, trust through understanding and trust in the knowledge and ability of the professional.

When compared to the family relationship, personal links relied more extensively on a two way process of give and take between those involved in the network. The relationship with friends involved a degree of exchange where information and resources were 'traded'. This was not always in monetary terms but was more a trade of favours between those who were party to the network. Nevertheless, this trade and exchange only occurred once trust in the individual had been established through knowledge and experience. Trust was not just related to information being supplied. It also related to trust in the individual. A point which helps to clarify this situation further is provided by Jane, who demonstrates the extent to which friends support each other even when in competition: 'It's the support we get from our friends which is important. Although most of us work in the same industry and compete against each other, we still support each other . . . The support we get from our friends has saved us money, time and trouble so it's really important for us'.

Employee links. An important similarity between all the respondents was the utilization of employee links. Primarily these links were used to gain staff and obtain local information. However, in some instances employees were used once they had left the business and in other situations employees were used to maintain local market positions: 'My employees keep me informed of what's happening in the local area. I've always had a good team of people round me and strived to build that. I often employ people I know and most of them are from the local area' (George); 'We build relationships with our employees. Our employees are the core of our business. They are very rapid at informing me of what's going on' (Peter); 'I've got a good relationship with my employees. They've got friends who work with my competitors and they always know what's going on' (Sandy); 'I sold the contracting business to Gavin (an employee). If somebody came into the shop to buy a shower I would get the people to let Gavin fit it. If he was on a job and somebody said "we need a shower" Gavin would send people here to buy it . . . he speaks up for me and I speak up for him' (John); 'Through my children I have links to teenagers in the local area. This makes it easier to access a seasonal workforce' (Fiona); 'My sisters work in the business. They know what's happening like who's opening and how they're doing or who's closing and why, what other places are charging . . . they find out through their friends and customers' (Steven). An

interesting feature is the extent to which respondents seemed to generate employee loyalty to the benefit of the business. Loyalty led to trust in the information being supplied by employees. Furthermore, respondents trusted the judgement of their employees, particularly when recruiting new employees. Networks of employees were, therefore, important at two levels. Firstly, through employees, respondents were helped to identify new employees or to find out about potential employees, for example, who would fit into the business and do the job well. Secondly, respondents also used employees to monitor the external environment and to inform them of situations within the local area. By capitalizing on the employee/employer relationship, respondents were linked into the wider networks of employees. This allowed respondents to make effective use of the employee tie for entrepreneurship and also draw into the business from the wider social context.

Strong ties. Thus, it is evident that strong ties were important to respondents. They acted as business generators and reputation enhancers. Strong ties allowed entrepreneurs to link into other social circles which provided certain benefits, for instance, information about local markets, local social information and employees. Strong ties were also important when starting the business, especially in developing a customer base. Strong ties provided support, knowledge and information to establish the business. These ties which formed the networks helped to fill the gaps in the entrepreneurs' own knowledge about business, industry and/or the local area. Nevertheless, the networks in which respondents were located were tight networks and operated primarily at a local level.

Constraints of Ties

In general the literature provides evidence that social ties, often drawn from an immediate circle of family and friends, may be essential to launch a business but possibly act as a brake on future development by restricting diversity (Donckels and Lambrecht, 1997; Johannisson and Mönsted, 1997; Pages and Garmise, 2003). This reflects a point made by Bloodgood et al. (1995) that opportunities and issues can arise with strong ties. Furthermore, Johannisson (1987) makes the point that relationships can be damaging or creative. Failing to conform to expectations or implicit rules may sour relationships so that they can become a constraint to business operations. For example, firing family members may lead to tensions within the network. The data here provides evidence to demonstrate that strong ties can work to constrain entrepreneurship in various ways. While this is apparent with both family and other personal ties it is more clearly demonstrated in the family bond. Strong family bonds were used effectively but they can limit the ability of the entrepreneur to expand the business. Sandy made the point that whilst his immediate family have been very supportive, his extended family have not always been as supportive. He finds this difficult to understand and accept.

His parents owned the land that he used to develop the business. This has led to family conflict. Sandy felt his brother and sister did not appreciate what he was doing. Yet, in spite of family objections, Sandy eventually built his offices and workshops on family land: 'I don't know. I suppose every family has their feuds. I give them money. I help them out whenever they need it but I just don't know. Sometimes you feel as though they don't understand, even though it's for the good of the local community'. In the case of Steven expansion beyond the family competence may be hard; family plays a critical role in his business that has been built round the skills of family members. Thus, the business is physically limited to the available range of family skills and competencies.

Furthermore, strong ties can also work to constrain the entrepreneurs ability to realize business opportunities away from the familiar business and social context, limiting the extent to which ideas are turned into opportunities: 'The downturn in farming has meant that farmers need to look for other ways to make money but while we have the ideas we don't have the financial resources to support them. Many of my friends are in a similar situation but we can't access the finance to do these things. We could go along to a big accounting firm and get them to do a business plan to raise the finance but that would cost thousands and you're still not guaranteed the money. Farmers have always had money or been able to raise finance around their traditional activities, so it's difficult for them to go and ask others outwith the farming community. They don't really know where to start' (George). Birley's (1985) study of formal and informal networks found that although more popular, informal sources resulted in poor and limited advice. Whilst there was little evidence with this sample of entrepreneurs that this is the case, what is clear is that entrepreneurs preferred to deal with individuals whom they either already knew and had experience of, or about whom they could generate knowledge. This led to trust in the type of support and information provided. This suggests that trust in the individual with the network is greater than trust in the professional sources of information. However, the case of George demonstrates that strong ties were not robust enough to deal with the impact of market forces on his business activities and that they can even constrain the entrepreneurs ability to realize entrepreneurial opportunities. Thus, for George strong ties have limited entrepreneurial activity outwith the social and business context with which he is familiar.

The data presented does demonstrate a further constraint about the use of strong ties for entrepreneurship. It seems that by activating family, personal and employee links entrepreneurs may be limited to the resources and information provided by these networks. Nevertheless, these networks may not match business needs in the most suitable way. More appropriate information and resources may lie outwith these networks. Therefore, if trying to change the direction of the business or looking for expansion the entrepreneur can be constrained, even limited,

by the range of these networks, the information and resources held within the network and the links of these ties to the wider social context.

Formation of Ties

Strong ties were developed and formed on the basis of knowledge, experience and trust and were developed over time. Respondents seemed to depend and rely on these extensively in both growth and start-up situations to operate the business. There are a number of patterns in the data which help to show how strong ties operated. The cases of Arthur and George demonstrate the strength of strong ties. In George's case, strong ties provided the support and finance to restart the business. In Arthur's case, strong ties provided him with a customer base which understood his circumstances and allowed him to restart the business.

Granovetter's (1973) strong ties argument is based on frequency of contact. Yet, this sample had contacts within the network which were latent but made manifest where necessary. Each of the entrepreneurs had a wide range of contacts which had the potential to be realized, if and when needed. Mike and Anne had an extensive latent network, parts of which were activated at certain times for specific requirements. Steven drew on certain people because of their specific skills as and when these skills were required for the business. Sandy re-activated and developed his relationship with former friends when expanding into a new industry, whilst Gary realized that for entrepreneurial activity he not only had to re-activate contact with former colleagues but also look to build a stronger relationship with these individuals: 'People I know have helped in times of crisis. Growing up here really helps because I know who I can call on to help me out. One of the local plumbers is an old school mate and although I hadn't seen him much since we left school, I knew (when there was a problem) he would come and sort it out' (Steven); 'I know who to get in touch with for information and advice. It was through a friend that I got to find out about the business. They told me who to get in touch with. Once I got into the network I found out how things operated and who to speak to. I hadn't spoken to this friend for ages but I knew he would help me' (Mike); 'I had contacts from my job so knew who was going to do our printing and stationery. I drew on other contacts I'd made when I worked as and when I needed them' (Anne).

In this study there was little evidence of the use of weak ties. Rather than ties being representative of weak (in Granovetter's (1973) terms), respondents referred to the importance of friends of friends as their links to others: 'We were trying to exhibit at a major exhibition but because the exhibition is so important for our type of business it's really difficult to get into. We tried for some time but could never get into it and then a friend of a friend of Bob's contacted us. He had heard that we had tried to get a stand at this exhibition. He was looking for someone to

share his stand with him. That got us into the exhibition and he introduced us to people who became customers' (Jane); 'I really enjoyed setting up the business – rooting around for information and getting it going. I got in touch with a number of my friends who I knew could help me out. They put me onto people that they knew. This really helped because through their contacts I was able to source all kinds of things for the business as well as learn about the industry . . . It was a friend of one of my friends who told me about the place in Germany where I could get the quality of fittings I was after at a good price' (Mike).

For these respondents weak ties, as described in the literature, were not important. In the few cases where weak ties were involved these were 'friends of friends' and hence established as secondary links from existing strong ties. Respondents rarely knew the weak ties but reached and activated them through strong ties.

INTERPRETATION AND ANALYSIS

In this study there was little evidence of the use of weak ties in the manner described by Granovetter (1973). Instead, all the ties used were strong ties. Furthermore, the emphasis of the strength of these ties was not based on the frequency of interaction. Rather, the strength of the tie was reflected in: (1) the type of information provided, (2) the usefulness and applicability of the relationship to the entrepreneurial situation at a particular point in time, and (3) the extent to which respondents were prepared to trust the information provided by family, personal and employee ties for economic purposes. Table II demonstrates the key themes and outcomes identified from this study.

Thus, the data supports the benefits of strong ties but demonstrates that it is how that tie can 'function' for entrepreneurship which is important when building, forming and utilizing ties rather than frequency of interaction. Referring back to Granovetter's (1973) work this suggests a weakness in the frequency approach to defining ties.

The examples provided also demonstrate that strong ties were not only capitalized on to inform the business but also to link into the wider social structure and draw benefits into the business. From this study it seems that weak ties represent nodes which operate in the wider social context. The respondents did not have a personal, direct relationship with these nodes but they still provided resources for the business while expanding knowledge and details about the respondent into the wider context. These ties supported business activity by becoming resource suppliers, business generators, market expanders and reputation enhancers.

Thus, the argument developed here is that the entrepreneur uses his/her strong tie networks as a link into other structures. Links of the strong tie contact then operate on behalf of the entrepreneur in the wider structure and through their contacts in turn link into other structures. So, weak ties (i.e. those not directly known by the entrepreneur) become the mechanism through which structures are

Table II. Key outcomes from study

Networks

Usefulness of a network is	dependent on those strong ties on which it is formed. When building and forming a relationship it is the function of a tie and how it can be utilized that is important rather than frequency of contact. Links are re-activated for business activity. When made manifest mutuality and commonality occurs. Ties can remain latent and dormant until re-activated but inactive ties remain within network as latent knowledge and resources.
Activity of networking is a	process, taking place over time, a dynamic relationship that involves shifting latent contacts to manifest ties, transferring relationships to the entrepreneurial situation, identifying entrepreneurial requirements and locating an individual within the network who can help with the actual need. It also involves a two way process of give and take, a degree of exchange, the trading of information and resources but only when trust is established through knowledge and experience.

Network ties*Strong ties*

- Characteristics strong enough to deal with infrequent contact, provide ability to recognize potential for entrepreneurial opportunities, business development and continuity of activity, developed on basis of trust, expectation and bond leading to trust in information and resources. Important characteristics are (1) respect, (2) knowledge about an individual, (3) familiarity, generated through knowledge and experience, (4) trust over time, through understanding and trust in knowledge and ability.
- Formation initially those contacts are approached with whom entrepreneur is more knowledgeable about and acquainted with – family or close personal ties. If these contacts cannot supply necessary requirements then others within network identified. Based on (1) type of information provided, (2) usefulness and applicability of relationship to entrepreneurial situation at particular point in time, (3) extent to which entrepreneur trusts information provided by social contacts for economic purposes.
- Outcomes become business generators and reputation enhancers; links to other social circles; development of customer base; support, knowledge and information to establish and develop the business.
- Constraints limit ability to extend business; reduce efficiency of business; changing its direction or expansion; relationship tensions through social and moral obligations; limited to resources and information strong ties can supply.

Weak ties

represent nodes operating in wider social context that can be used to provide resources, generate business and enhance reputations. They are represented by friends of friends and established as secondary links from existing strong ties. Reached and activated through strong ties.

bridged but they also feed back to the strong ties of the entrepreneur. Thus, in effect, strong ties become resource ‘feeders and seekers’ for the business – drawing in and looking out for the entrepreneur. This is represented in Figure 1 and the discussion is developed further thereafter.

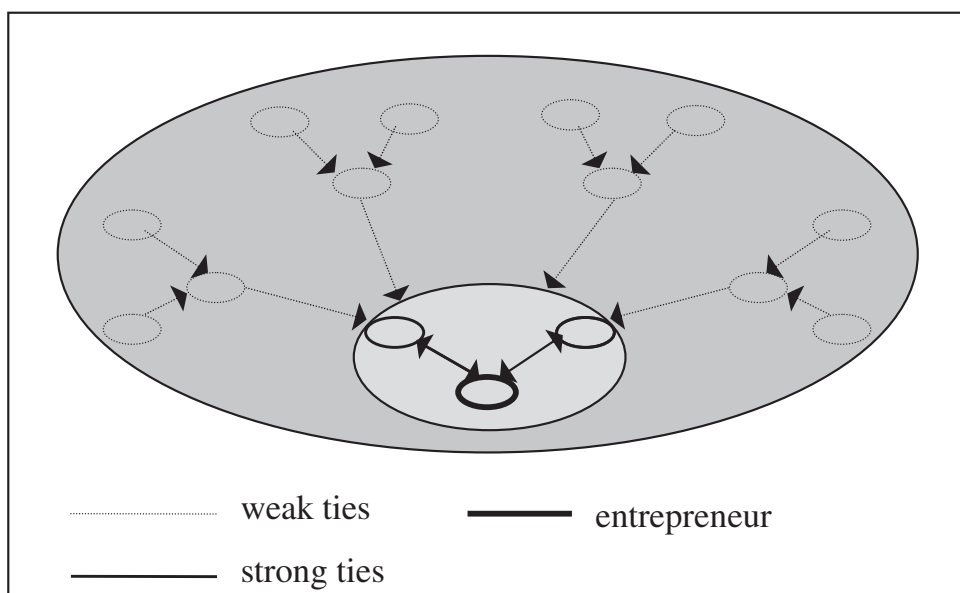


Figure 1. The entrepreneur and network ties

The findings of this study propose that it is strong ties that are activated by the entrepreneur to draw information and resources into the business. Through activating his/her links to strong ties the structure in effect is activated. This occurs because these strong ties then activate their links to others in the wider social context. Thus, strong ties draw benefits from the wider context into the business. These benefits are then built into the business. Strong ties, therefore, act as nodes supplying support and sustaining the business. At the same time these strong ties are also working at extending networks and knowledge about the business into the wider social context. The knowledge and information gathered and provided through strong ties was used to inform business activities and influenced the decisions made.

However, it also had an impact on the local community. The following examples illustrate how this operates: 'The local pubs changed in response to us. If you just look at the number in the town which have been re-decorated and done up, many are now offering meals and encouraging families to come in. We had an impact on the trade' (Mike); 'You tend to know who you're up against. You know their skills. Although we could be seen to compete against each other, we really tend to complement each other and have all carved out our own wee niche' (Ian); 'We are surrounded by people we compete against but we all work together to help each other out. Sally and Dave have been really supportive. They've been based here for years and have been really quite successful and tend to help the rest of us, giving us advice and keeping an eye on us . . . We all get together every so often for a coffee and a chat. It's good because we sound each other out and share our

problems' (Jane); 'The enterprise agency keep moving the goal posts. So I'm trying to get hold of Andy Black, our MSP, to fight the battle with me. I don't know Andy but I know of him. I go shooting with his brother. Do you know his brother? He's got a business. But this will be the real test for Andy' (Sandy); 'I didn't know Simon but I knew of him. A friend knew someone who knew him. When I got in touch with Simon I found him to be really helpful. He told me about the industry, the shows to go to and how to go about buying stock for the shop. He really accelerated starting the business because he made it easier to get started' (Anne).

The data also highlights the complex nature of networking. It seems that the nature of networks is about the links and bonds that form the foundations of the network and shape its actual structure. These give the network meaning but also influence how the individual utilizes the network in which they are located. These links are bonded by trust and reciprocity which lead to exchange. How these relationships are formed is representative of the ties between individuals. Whilst the patterns in the data illustrate that a network is a latent condition, which can shift and be made manifest, it is the way respondents re-activated links within the network for business activity which is important. This appears to be a practical and acceptable part of the process of networking. When the interest between the entrepreneur and the contact was matched the relationship not only became manifest but mutuality and commonality also occurred. Thus, business benefits transpired through a mutual interest and/or a liking of each other. Therefore, maintaining and keeping up contacts is not a necessary condition for networking. Bonds can be strong enough to deal with infrequent contact. This may create an issue when determining the strength (and weakness) of a tie if using Granovetter's (1973) definition.

CONCLUSION

Harvey et al. (2002, p. 749) make the point that throughout the organizational and management literature entrepreneurship is increasingly seen as a significant factor in organizational effectiveness. The very nature of entrepreneurial firms might mean that we could expect the role of ties to differ when compared to larger organizations. Entrepreneurial firms do tend to be smaller in size, differ in terms of structure, encounter difficulties when attempting to raise external finance and resource constrained, meaning that the entrepreneur often has to find ways to supplement his/her resource base when looking to establish and develop a firm. Nevertheless, using the entrepreneurial context to explore the research questions highlights a number of interesting areas that can be applied to the wider management and organizational context. For instance, it demonstrates the importance of actually using networks for business activity and that the ties that form the structure of a network can have a significant impact on the type and extent of resources acquired. These ties can also influence and affect the growth and development of

an organization and how it is actually managed. This research, therefore, presents important insights that can be used for future research efforts and discussions.

The argument presented in the literature is that the effectiveness of a network depends on both strong and weak ties since different forms of ties provide distinct and different resources. This study has demonstrated that the entrepreneurs relied extensively on strong ties and that it was these ties that were instrumental for business activity. Granovetter's (1973) strong ties thesis is about the frequency of contact and the quality and intensity of a relationship. However, Marsden and Campbell (1984) argued that the problem with tie strength is that it has never been given a precise conceptual definition. The findings, therefore, extend Granovetter's (1973, 1985) work in the following ways. This study shows that when building and forming a relationship it is the function of a tie and how that tie can be utilized that is important rather than frequency of contact. This may represent a more applicable framework for analytical purposes. It also brings into question the way ties are defined and indicates deficiencies with Granovetter's approach. For instance, differentiating ties in terms of interaction, looking to weak ties for diversity and opportunities in resources and information and perceiving networks built predominantly on strong ties to be inefficient. Instead, future research should look to consider the actual function and utility of network ties.

The findings also show the value of links to others. Entrepreneurs are perceived to be intimately tied through their social relationships to a broader network of actors (Hoang and Antoncic, 2003). This study demonstrates that within the entrepreneurial context, strong ties act as a mechanism for generating knowledge and resources but are also used to link into the wider social context and provide a mechanism to invoke apparently weak ties (which in many cases represent 'friends of friends' (Boissevain, 1974)). This presents an interesting extension of Granovetter's work. Through strong ties personal and business reputations are maintained, extended and enforced. Nevertheless, as a consequence of social and moral obligations strong ties can hinder, even constrain, the extent of business activity and can lead to tensions within the network. Therefore, whilst networks ease the entrepreneurial process they can also be problematic. Although this may be a feature of the rural context, work with entrepreneurs in an urban context has produced similar findings (see Jack et al., 2004).

This research has implications for the definition and measurement of strong ties. In reality, it would seem that the usefulness of a network is dependent upon the strong ties that form the network. Strong ties can remain latent and dormant until re-activated. Nevertheless, even inactive ties remain within the network as latent knowledge and resources. The activity of networking is a process that takes place over time. It is a dynamic relationship and as a process involves shifting latent contacts to manifest ties. It may be that the respondents used in this study have a circle of strong ties that stay manifest. For example, strong family ties are unlikely

to change and will remain as strong ties. Longitudinal research would allow this to be verified.

The methodological approach used to address the research questions was appropriate and supports the use of qualitative methods for exploring networks. Unlike a quantitative piece of work the qualitative study derives an in-depth understanding of how people behave and act. It could even be argued that the very nature of quantitative techniques mean that a snapshot is provided which describes a static situation at a particular point in time. To understand the mechanisms and processes which influence the operation and function of networks it is vital to look beyond the shape and form of the network. This can only really be achieved through qualitative work. The techniques employed allowed an in-depth understanding about network ties and how they are used and activated for business activity. The use of theoretical sampling and the methods and techniques adopted provide some confidence that the patterns identified are likely to reflect those of other entrepreneurs. Although it is recognized that the methods restrict the generalizability of the findings, looking at only one case or a very small number of cases would have limited this further. It would be interesting if further research was carried out using quantitative measures and a much larger sample to test the patterns and relationships identified from this study in other contexts.

For policymakers, this research demonstrates the necessity for support bodies to increase their awareness and understanding of the real value and implications of networking. Huggins (2000, p. 113) made the point that Governments have used a variety of methods to encourage networking, the common thread being a concern for an institutional infrastructure that facilitates information and knowledge exchange and limits opportunistic behaviour. For example, Chell and Baines (2000, p. 195) remarked that enterprise agencies (a decentralized network of 'Government agents' providing counselling, advice, information and business training primarily to Small and Medium sized enterprises) in the UK are increasingly looking to encourage networking by owner-managers of small businesses. However, this study shows that networking involves a social process which takes place over time. It is a process of identifying common interests, gaining knowledge and experience of other individuals and building trust. The study's findings suggest the need for a longer term perspective and that this may pose issues for policymakers looking for quick solutions.

This research also has implications for practitioners. It demonstrates that the productive information and resources gathered through social networks can compensate for constraints and that the use of social networks can counteract many difficulties. In some instances the robustness, accuracy and relevance of appropriate local information is crucial for business survival and development. Through social networks entrepreneurial action can convert 'limited' resources into a 'rich environment'. Therefore, nascent, embryonic and potential entrepreneurs should

be aware of the advantages of using and developing appropriate networks. Nevertheless, this can involve taking both economic and social risks.

NOTE

*The author would like to thank the editor and anonymous reviewers for their helpful comments and discussion of this paper.

REFERENCES

- Aldrich, H. E. (1982). 'The origins and persistence of networks: a comment'. In Marsden, P. and Lin, N. (Eds), *Social Structure and Network Analysis*. Beverly Hills, CA: Sage.
- Aldrich, H. E. and Zimmer, C. (1986). 'Entrepreneurship through social networks'. In Sexton, D. and Smilor, R. (Eds), *The Art and Science of Entrepreneurship*. New York: Ballinger Publishing Company.
- Aldrich, H. E., Jones, T. P. and McEvoy, D. (1983). 'Ethnic advantage and minority business development'. In Ward, R. and Jenkins, R. (Eds), *Ethnic Business*. Cambridge: Cambridge University Press.
- Aldrich, H. E., Rosen, B. and Woodward, W. (1987). 'The impact of social networks on business foundings and profit: a longitudinal study'. In Churchill, N. C. et al. (Eds), *Frontiers of Entrepreneurship Research*. Wellesley, MA: Babson College.
- Alvesson, M. and Skoldberg, K. (2000). *Reflexive Methodology: New Vistas for Qualitative Research*. London: Sage Publications.
- Anderson, A. R. (1995). 'The Arcadian Enterprise: An Enquiry into the Nature and Conditions of Rural Small Business'. Unpublished PhD Thesis, University of Stirling.
- Anderson, A. R. and Jack, S. L. (2002). 'The articulation of social capital: a glue or a lubricant'. *Entrepreneurship and Regional Development*, **14**, 3, 193–210.
- Araujo, L. and Easton, G. (1996). 'Networks in socio-economic systems: a critical review'. In Iacobucci, D. (Ed.), *Networks in Marketing*. Thousand Oaks, CA: Sage Publications.
- Arocena, J. (1984). 'Le genie et le carnet d'adresses'. *Autrement*, **59**, 182–7.
- Arrow, K. J. (2000). 'Observations in social capital'. In Dasgupta, P. and Stiglitz, J. (Eds), *Social Capital: A Multifaceted Perspective*. Washington, DC: International Bank for Reconstruction and Development/The World Bank.
- Barnir, A. and Smith, K. (2002). 'Interfirm alliances in the small business: the role of social networks'. *Journal of Small Business Management*, **40**, 3, 219–32.
- Birley, S. (1985). 'The role of networks in the entrepreneurial process'. *Journal of Business Venturing*, **1**, 1, 107–17.
- Bloodgood, J. M., Sapienza, J. and Carsrud, A. L. (1995). 'The dynamics of new business start-ups: person, context and process'. In Katz, J. A. and Brockhaus, S. (Eds), *Advances in Entrepreneurship, Firm Emergence and Growth*, Vol. 2. Greenwich, CT: JAI Press.
- Boissevain, J. (1974). *Friends of Friends, Networks, Manipulators and Coalitions*. Oxford: Basil Blackwell.
- Bourdieu, P. (1986). 'The forms of capital'. In Richardson, J. G. (Ed.), *Handbook of Theory and Research for the Sociology of Education*. New York: Greenwood.
- Brüderl, J. and Preisendörfer, P. (1998). 'Network support and the success of newly founded businesses'. *Small Business Economics*, **10**, 213–25.
- Burt, R. S. (1992a). *Structural Holes*. Cambridge, MA: Harvard University Press.
- Burt, R. S. (1992b). 'The social structure of competition'. In Nohria, N. and Eccles, R. G. (Eds), *Networks and Organizations: Structure, Form and Action*. Boston, MA: Harvard Business School Press.
- Carsrud, A. L. and Johnson, R. W. (1989). 'Entrepreneurship: a social psychological perspective'. *Entrepreneurship and Regional Development*, **1**, 21–31.
- Chandler, G. N. and Hanks, S. H. (1994). 'Market attractiveness, resource-based capabilities, venture strategies and venture performance'. *Journal of Business Venturing*, **9**, 4, 331–47.
- Chell, E. and Baines, S. (2000). 'Networking, entrepreneurship and microbusiness behaviour'. *Entrepreneurship and Regional Development*, **12**, 2, 195–215.

- Chetty, S. (1996). 'The case study method for research in small- and medium-sized firms'. *International Small Business Journal*, **15**, 1, 73–85.
- Curran, J. (1996). 'Myths of the Small Business Sector: Implications for Theories and Research on Small Business Networks and Networking'. Paper presented at the ESRC Network of Industrial Economists: Entrepreneurship and Small Business, Durham, December.
- Curran, J. and Blackburn, R. A. (2001). *Researching the Small Enterprise*. London: Sage Publications.
- Curran, J., Jarvis, R., Blackburn, R. A. and Black, S. (1995). 'Networks and small firms: constructs, methodological strategies and some findings'. *International Small Business Journal*, **11**, 2, 13–25.
- Denzin, N. K. (1979). 'The logic of naturalistic inquiry'. In Bynner, J. and Stribley, K. M. (Eds), *Social Research: Principles and Procedures*. New York: Longman Inc.
- Donckels, R. and Lambrecht, J. (1997). 'The network position of small businesses: an explanatory model'. *Journal of Small Business Management*, April, 65–97.
- Easterby-Smith, M., Thorpe, R. and Lowe, A. (1991). *Management Research: An Introduction*. London: Sage Publications.
- Easton, G. and Araujo, L. (1986). 'Networks, bonding and relationships in industrial markets'. *Industrial Marketing and Purchasing*, **1**, 1, 8–25.
- Eisenhardt, K. M. (1991). 'Better stories and better constructs: the case for rigour and comparative logic'. *Academy of Management Review*, **16**, 3, 620–7.
- Emirbayer, M. and Goodwin, J. (1994). 'Network analysis, culture and the problem of agency'. *American Journal of Sociology*, **99**, 6, 1411–54.
- Erickson, B. H., Nosanchuk, T. A., Mostacci, L. and Ford, C. (1978). 'The flow of crisis information as a probe of work relations'. *Canadian Journal of Sociology*, **3**, 71–87.
- Fay, B. (1996). *Contemporary Philosophy of Social Science*. Oxford: Blackwell.
- Fetterman, D. (1989). *Ethnography: Step by Step*. Newbury Park, CA: Sage.
- Fontana, A. and Frey, J. H. (1994). 'Interviewing – the art of science'. In Denzin, N. K. and Lincoln, Y. S. (Eds), *Handbook of Qualitative Research*. Thousand Oaks, CA: Sage.
- Foss, L. (1994). 'Entrepreneurship: The Impact of Human Capital, a Social Network and Business Resources on Start-up'. Unpublished PhD Thesis, Norwegian School of Economics and Business Administration, Bergen.
- Geertz, C. A. (1973). *The Interpretation of Culture*. New York: Basic Books.
- Gill, J. and Johnson, P. (1997). *Research Methods for Managers*, 2nd edition. London: Paul Chapman Publishing Limited.
- Glaser, B. G. and Strauss, A. L. (1967). *The Discovery of Grounded Theory: Strategies for Qualitative Research*. New York: Aldine.
- Granovetter, M. (1973). 'The strength of weak ties'. *American Journal of Sociology*, **78**, 6, 1360–80.
- Granovetter, M. (1985). 'Economic action and social structure: the problem of embeddedness'. *American Journal of Sociology*, **91**, 3, 481–510.
- Granovetter, M. (1992). 'Problems of explanation in economic sociology'. In Nohria, N. and Eccles, R. (Eds), *Networks and Organizations: Structure, Form and Action*. Harvard, MA: Harvard Business School Press.
- Greve, A. (1995). 'Networks and entrepreneurship – an analysis of social relations, occupational background and use of contacts during the establishment process'. *Scandinavian Journal of Management*, **11**, 1, 1–24.
- Greve, A. and Salaff, J. W. (2003). 'Social networks and entrepreneurship'. *Entrepreneurship Theory and Practice*, Fall, 1–22.
- Gummesson, E. (2000). *Qualitative Methods in Management Research*. Thousand Oaks, CA: Sage.
- Hammersley, M. (1992). *What's Wrong With Ethnography? Methodological Explorations*. London: Longmans.
- Hansen, E. (1991). 'Structure and process in entrepreneurial networks as partial determinants of initial new venture growth'. In Churchill, N. C. et al. (Eds), *Frontiers of Entrepreneurship Research*. Wellesley, MA: Babson College.
- Hansen, E. (1995). 'Entrepreneurial networks and new organization growth'. *Entrepreneurship Theory and Practice*, **19**, 4, 7–21.
- Harland, C. M. (1995). 'Networks and globalisation – a review of research'. EPSRC Final Report. Grant No. GRK53178.
- Hart, M., Harrison, R. T. and Gallagher, C. (1993). 'Enterprise creation, job generation and regional policy in the UK'. In Harrison, R. T. and Hart, M. (Eds), *Spatial Policy in a Divided Nation*. London: Jessica Kingsley Publishers Ltd.

- Harvey, J., Pettigrew, A. and Ferlie, E. (2002). 'The determinants of research group performance towards mode 2?'. *Journal of Management Studies*, **39**, 6, 747–73.
- Highlands and Islands Enterprise (1998). 'Growing businesses, developing people, strengthening communities'. *Seventh Annual Report*.
- Highlands and Islands Enterprise (2001). 'Highlands and Islands – economic information and statistics'. Available at www.hie.co.uk.
- Hills, G. E., Lumpkin, G. T. and Singh, R. P. (1997). 'Opportunity recognition: perceptions and behaviours of entrepreneurs'. In Reynolds, P. D. et al. (Eds), *Frontiers of Entrepreneurship Research*. Wellesley, MA: Babson College.
- Hite, J. (2003). 'Patterns of multidimensionality among embedded network ties: a typology of relational embeddedness in emerging entrepreneurial firms'. *Strategic Organization*, **1**, 1, 9–49.
- Hoang, H. and Antoncic, B. (2003). 'Network-based research in entrepreneurship: a critical review'. *Journal of Business Venturing*, **18**, 2, 495–527.
- Huggins, R. (2000). 'The success and failure of policy-planted inter-firm network initiatives: motivations, processes and structure'. *Entrepreneurship and Regional Development*, **12**, 11–135.
- Human, S. E. and Provan, K. G. (2000). 'Legitimacy building in the evolution of small-firm multi-lateral networks: a comparative study of success and demise'. *Administrative Science Quarterly*, **45**, 2, 327–65.
- Hyrsky, K. and Ali, A. A. (1996). 'The Rocky Road of Immigrant and Ethnic Business in Finland'. Paper presented at the 2nd Irish Entrepreneurship Conference, Belfast, November.
- Ibarra, H. (1993). 'Personal networks of women and minorities in management: a conceptual framework'. *Academy of Management Review*, **18**, 1, 56–88.
- Jack, S. L. and Anderson, A. R. (2002). 'The effects of embeddedness on the entrepreneurial process'. *Journal of Business Venturing*, **17**, 5, 467–87.
- Jack, S. L., Drakopoulou Dodds, S. and Anderson, A. R. (2004). 'The strength of strong ties and the entrepreneurial process'. *International Journal of Entrepreneurship and Innovation*, **5**, 2, 107–20.
- Jenssen, J. I. and Koenig, H. F. (2002). 'The effect of social networks on resource access and business start-ups'. *European Planning Studies*, **10**, 8, 1039–46.
- Johannisson, B. (1986). 'Network strategies: management technology for entrepreneurship and change'. *International Small Business Journal*, **5**, 1, 19–30.
- Johannisson, B. (1987). 'Beyond process and structure: social exchange networks'. *International Studies of Management and Organization*, **XVII**, 1, 3–23.
- Johannisson, B. and Mönsted, M. (1997). 'Contextualizing entrepreneurial networking'. *International Journal of Management and Organization*, **27**, 3.
- Johannisson, B. and Peterson, R. (1984). 'The personal networks of entrepreneurs'. In *Conference Proceedings, ICSB*. Toronto: Ryerson Polytechnical Institute.
- Johannisson, B., Alexanderson, O., Nowicki, K. and Senneseth, K. (1994). 'Beyond anarchy and organization: entrepreneurs in contextual networks'. *Entrepreneurship and Regional Development*, **6**, 3, 329–56.
- Jones, C., Hesterly, W. S. and Borgatti, S. P. (1997). 'A general theory of network governance: exchange conditions and social mechanisms'. *Academy of Management Review*, **22**, 4, 911–46.
- Katrishen, F. A., Sandberg, W. R. and Logan, J. E. (1993). 'Social networks and entrepreneurial performance'. In Schnake, M. (Ed.), *Proceedings of the annual meeting of the Southern Management Association*, Atlanta, GA, November.
- Larson, A. (1992). 'Network dyads in entrepreneurial settings: a study of the governance of exchange relationships'. *Administrative Science Quarterly*, **37**, 1, 76–105.
- Lechner, C. and Dowling, M. (2003). 'Firm networks: external relationships as sources for the growth and competitiveness of entrepreneurial firms'. *Entrepreneurship and Regional Development*, **15**, 1–26.
- Lin, N. and Dumin, M. (1982). 'Access to Occupational Resources Through Social Ties'. Paper presented at the Annual Meetings of the American Sociological Association, session on social networks.
- Maguire, L. (1983). *Understanding Social Networks*. London: Sage.
- Malecki, E. and Tootle, D. (1996). 'The role of networks in small firm competitiveness'. *International Journal of Technology Management*, **11**, 1/2, 43–57.
- Marsden, P. V. and Campbell, K. E. (1984). 'Measuring tie strength'. *Social Forces*, **63**, 2, 482–501.
- Mitchell, J. C. (1973). 'Networks, norms and institutions'. In Boissevain, J. and Mitchell, J. C. (Eds), *Network Analysis. Studies in Human Interaction*. The Hague: Mouton.
- Mizruchi, M. (1994). 'Social network analysis: recent achievements and current controversies'. *Acta Sociologica*, **37**, 329–43.

- Mönsted, M. (1995). 'Process and structures of networks: reflections on methodology'. *Entrepreneurship and Regional Development*, **7**, 193–213.
- Morgan, G. and Smircich, L. (1980). 'The case for qualitative research'. *Academy of Management Review*, **5**, 4, 491–500.
- Murray, S. O., Rankin, J. H. and Magill, D. W. (1981). 'Strong ties and job information'. *Sociology of Work and Occupations*, **8**, 119–36.
- Nohria, N. (1992). 'Is a network perspective a useful way of studying organisations?'. In Nohria, N. and Eccles, R. G. (Eds), *Networks and Organisations: Structure, Form and Action*. Harvard, MA: Harvard Business School Press.
- Nohria, N. and Eccles, R. G. (1992). *Networks and Organisations: Structure, Form and Action*. Harvard, MA: Harvard Business School Press.
- O'Donnell, A., Gilmore, A., Cummins, D. and Carson, D. (2001). 'The network construct in entrepreneurship research: a review and critique'. *Management Decision*, **39**, 9, 749–60.
- Oinas, P. (1999). 'Voices and silences: the problem of access to embeddedness'. *Geoforum*, **30**, 351–61.
- Ostgaard, T. A. and Birley, S. (1994). 'Personal networks and firm competitive strategy: a strategic or coincidental match?'. *Journal of Business Venturing*, **9**, 281–305.
- Pages, E. and Garmise, S. (2003). 'The power of entrepreneurial networking: creating and nurturing networks'. *Economic Development Journal*, Summer, 20–30.
- Papineu, D. (1978). *For Science in the Social Sciences*. London: Macmillan.
- Pettitt, S. and Thompstone, K. (1990). 'Entrepreneurial networking within rural communities – some cases from Ireland's Shannon region'. In Vyakarnam, S. (Ed.), *When the Harvest Is In: Developing Rural Entrepreneurship*. London: Intermediate Technology Publications.
- Piore, M. J. and Sabel, C. F. (1984). *The Second Industrial Divide*. New York: Basic Books.
- Powell, W. W. (1990). 'Neither market nor hierarchy: network forms of organization'. In Straw, B. and Cummings, L. L. (Eds), *Research in Organizational Behavior*. Greenwich, CT: JAI Press.
- Ring, P. S. and Van de Ven, A. H. (1992). 'Structuring cooperative relationships between organizations'. *Strategic Management Journal*, **13**, 483–98.
- Shane, S. and Cable, D. (2002). 'Network ties, reputation and the financing of new ventures'. *Management Science*, **48**, 3, 364–81.
- Shane, S. and Venkataraman, S. (2000). 'The promise of entrepreneurship as a field of research'. *Academy of Management Review*, **25**, 1, 217–26.
- Silverman, D. (2000). *Doing Qualitative Research*. London: Sage.
- Snow, C. C., Miles, R. E. and Coleman, H. J. (1992). 'Managing 21st century network organizations'. *Organizational Dynamics*, **20**, 3, 5–20.
- Stake, R. E. (1994). 'Case studies'. In Denzin, N. K. and Lincoln, Y. S. (Eds), *Handbook of Qualitative Research*. Thousand Oaks, CA: Sage.
- Steyaert, C. and Bouwen, R. (1997). 'Telling stories of entrepreneurship: towards a contextual epistemology for entrepreneurial studies'. In Donckels, R. and Mieten, A. (Eds), *Entrepreneurship and SME Research: On its Way to the Next Millennium*. Aldershot: Ashgate.
- Storey, D. (1997). *Understanding the Small Business Sector*. London: International Thomson Business Press.
- Strauss, A. L. (1987). *Qualitative Analysis for Social Scientists*. Cambridge: Cambridge University Press.
- Szarka, J. (1990). 'Networking and small firms'. *International Small Business Journal*, **8**, 10–22.
- Uzzi, B. and Gillespie, J. (2003). 'Knowledge spillover in corporate financing networks: embeddedness and the firm's debt performance'. *Strategic Management Journal*, **23**, 595–618.
- Uzzi, B. and Lancaster, R. (2003). 'Relational embeddedness and learning: the case of bank loan managers and their clients'. *Management Science*, **49**, 4, 383–99.
- Wiklund, J., Davidsson, P., Delmar, F. and Aronsson, M. (1997). 'Expected consequences of growth and their effect on growth willingness in different samples of small firms'. In Reynolds, P. D. (Eds), *Frontiers of Entrepreneurship Research*. Wellesley, MA: Babson College.
- Wiseman, J. P. (1979). 'The research web'. In Bynner, J. and Stribley, K. M. (Eds), *Social Research: Principles and Procedures*. New York: Longman.
- Wolcott, H. F. (1990). *Writing Up Qualitative Research, Qualitative Research Methods*, Series 20. Thousand Oaks, CA: Sage.
- Yin, R. K. (1993). *Applications of Case Study Research*. Thousand Oaks, CA: Sage.
- Young, N. (1998). 'The structure and substance of African American entrepreneurial networks: some preliminary findings'. In Reynolds, P. D. et al. (Eds), *Frontiers of Entrepreneurship Research*. Wellesley, MA: Babson College.