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Guanxi network and business performance of Sino-Thai SMEs

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GUANXI NETWORK AND BUSINESS PERFORMANCE OF SINO-THAI SMEs

A thesis submitted in fulfillment of the

requirements for the award of the degree

DOCTOR OF PHILOSOPHY

from

UNIVERSITY OF WOLLONGONG

By

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2007

THESIS CERTIFICATION

I, Krittakorn SAHAKJIPICHARN, declare that this thesis, submitted in fulfillment of the requirements for the award of Doctor of Philosophy, in the School of Economics, Faculty of Commerce, University of Wollongong, is wholly my own work unless otherwise referenced or acknowledged. The document has not been submitted for qualifications at any other academic institution.

Krittakorn SAHAKIJPICHARN

December 2007

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ABBREVIATIONS

ABS	Australian Bureau of Statistics
AMOS	Analysis of Moment Structures
ANOVA	Analysis of Variance
APEC	Asia-Pacific Economic Cooperation
ASEAN	Association of Southeast Asian Nations
ASEP	The Asian Society for Environmental Protection
BOI	The Office of the Board of Investments
CFA	Confirmatory Factor Analysis
CFI	Comparative fit index
CIEM	Central Institute for Economic Management
CR	Cultural Revolution
EAAU	East Asia Analytical Unit
EMS	Environmental Management Systems
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
GFI	Goodness-of-fit
IDA	The Infocomm Development Authority of Singapore
IFI	Incremental fit index
ILO	International Labour Organization
IMF	International Monetary Fund
ISO	International Organizational for Standardization
IT	Information Technology
KMO	Kaiser-Meyer-Olkin test
LE	Large enterprise
ME	Medium enterprise

NFI	Norm-fit-index
NPLs	Non-Performing Loans
OECD	Organisation of Economic Co-operation and Development
PNFI	Parsimonious norm fit index
R&D	Research and Development
RMR	Root-mean-square
RMSEA	Root mean square error of approximation
SE	Small enterprise
SBA	Small Business Administration
SEM	Structural Equation Modeling
SMEs	Small and Medium Enterprises
SMI	Small and Medium Industry
SMIDEC	Small and Medium Industries Development Corporation
SPSS	Statistical Package for the Social Sciences
TCCC	Thai-Chinese Chamber of Commerce
TCE	Transaction Cost Economics
TCOD	Thai-Chinese Organization and Enterprises Directory
THB	Thai Baht
UN	United Nations
US	United States
VIF	Variance Inflation Factor
WTO	World Trade Organisation

ABSTRACT

During the last few decades overseas Chinese business networks have been important for the local economies of many countries in Southeast Asia, including Thailand. Although only 14 percent of the Thai population is Sino-Thai, they still make a significant contribution to the Thai economy. Sino-Thais are estimated to control over 80 percent of listed companies by market capitalisation (Mackie, 1994). One of the key factors behind the success of overseas Chinese in Thailand, and in other countries, is strong social relationships and strong business networks between them. A number of studies have attempted to explain how these social relationships and business networks contribute to Chinese business success. A clear picture of such a connection has, however, still not been achieved. Thus, the main object of this thesis is to examine how social relationships can be used to improve business performance, in particular for the case of Sino-Thai SMEs.

To attain this objective, this thesis first reviews the literature relating to both guanxi and organisation networks. Evidence from the literature shows the importance and benefits that both guanxi and organisational networks can provide to its members. In addition, this thesis also reviews the literature relating to strength of ties, network embeddedness, business uncertainty and business performance. By reviewing the literature a theoretical framework, that links these factors together, can be established. From the framework a number of assumptions and hypotheses relating to relationships between the guanxi network, strength of ties, network embeddedness, business uncertainty, and business performance are identified. The Kruskal-Wallis Test, a multiple regression analysis, a multiple discriminant analysis, and factor analysis are all used to test these assumptions and hypotheses. Data from 298 Bangkok based Sino-Thai SMEs provide a number of interesting results. First, strength of ties in the network for the family relationship is stronger than the friend and stranger relationship, while the strength of ties in the network for the friend relationship is stronger than the stranger relationship. Second, strength of ties in the network has a positive impact on the level of network embeddedness. Third, the level of network embeddedness for the family relationship is stronger than that for the friend and stranger relationship, while the level of network embeddedness for the friend relationship is stronger than the stranger relationship. Fourth, network embeddedness has a positive impact on Sino-Thai SMEs’

business performance. Fifth, business uncertainties have a negative effect on Sino-Thai SMEs' business performance and sixth strength of ties in the network has a negative effect on business uncertainties.

This thesis also uses structural equation modeling (SEM) as a means to analyse all variables in the framework simultaneously, and to confirm results of hypotheses testing presented earlier. The result of SEM provides strong support for the empirical findings in this thesis and, also, suggests that network embeddedness is the most important factor that helps to improve business performance as a result of an increase in the strength of ties in the network. Finally, this thesis recommends that policy-makers should encourage SMEs to consider both formal and informal networks as presenting real opportunities to increase their business performance. In particular, policy-makers can encourage and help Sino-Thais SMEs to use the common characteristics of the guanxi network to establish strong business networks with other Chinese entrepreneurs in other countries such as Singapore, Malaysia, Hong Kong, and China. Furthermore, this thesis suggests financial risk management and changes in firm strategy as two major approaches that SEMs can use to reduce some business uncertainties.

ACKNOWLEDGEMENTS

This thesis would not have been completed without the assistance and support of many individuals and organisations. First of all, I am indebted to my initial supervisor Dr. Boon-Chye Lee who, after two and half years has been away for personal reason. I wish to express my appreciation to Dr. Boon Lee, to whom no acknowledgement can give full credit for his valuable guidance and support throughout my first two and half years of the doctoral program. For subsequent overall guidance, I am grateful to my subsequent supervisor Associate Professor Charles Harvie who, with his rich knowledge on a wide spectrum of topics, perceived my endeavour to capture a rather neglected aspect of economic theory as being worthy of effort.

My special debt is also owned to Dr. Nelson Perera, my co-supervisor for his tremendous help on statistic technique, supplied relevant text book, and his sustained encouragement. I am also especially grateful to Dr. Elias Sanidas for his constructive criticism and invaluable advice on the structural equation modeling and other issues relating to this thesis. I have also appreciated Dr. Guibin Zhang's comments on issues relating to the concept of the guanxi network; Associate Professor Ed Wilson's comments of several parts of chapters contained in this study.

The extremely difficult task of data collection process, especially at the firm level, would not have been successful without Ms. Saniporn Infahseng, Mr. Thanit Chalermchutidech and his teams, who extended their most generous and benevolent support. I also express my sincerest gratitude to the Thai-Chinese Chamber of Commerce (TCCC) for allowing me to accomplish a significant part of my research using the data on Thai-Chinese organisation and enterprise directory. Thanks are also due to Ms. Sutira Prangsengmas who help translate the questionnaire in to Thai.

I also wish to extend my thankfulness to Ms. Carol Borgatti, Administrative Assistant to Deputy, Head School of Economics, University of Wollongong, for her effective administrative support. The great research facilities provided by Faculty of Commerce, University of Wollongong and desktop and IT support from Mr. Laszlo Abel.

I am grateful to my father, mother, and my brother for their devotion patience and help during the long period of my study. Special appreciation is also given to all of my friends and colleagues: Mr. Surachai Chancharat, Mr. Are Suwanmanee, Ms. Nantika Prinyapol, and Ms. Chanitapat Tanawattanakorn for their comments and support.

Any appearing errors and omissions in this thesis are my own responsibility, and any suggestions from the readers, whom I thank in advance, for the future improvement of this study are appreciated.

CHAPTER 1

INTRODUCTION

1.1 BACKGROUND

1.1.1 Background of the Research

Overseas Chinese business entrepreneurs are very important to the South-East Asian economies. Though relatively few in number, they are one of the main forces behind the dynamic growth that characterises the region as a whole. They control much of the region's non-land capital and its retail trade, and are major stakeholders in most of the region's economies. Although they comprise less than ten percent of the population of South-East Asia, overseas Chinese make up 86 percent of its billionaires (East Asia Analytical Unit, 1995 and 2000). According to the East Asia Analytical Unit (2002) social relationships (guanxi) and networks between Chinese (bamboo network), both local and international, can play a significant role in their business success.

The objective of this thesis is to examine how a guanxi network can be used to improve business performance, in particular, for Sino-Thai SMEs. To achieve this objective it is necessary to examine the background of Sino-Thais, Thai SMEs and SMEs in general. It is also necessary to establish a theoretical framework that links the relationship between the guanxi network, strength of ties, network embeddedness, business uncertainty and business performance. This will allow for analysis of the impact of social relationships within the gaunxi network on the business performance of Sino-Thai SMEs.

Over the last two decades there has been increased research into entrepreneurship studies (such as, Szarka, (1990); Greve, (1995); and Bjorkman and Kock, (1995)), and these indicate that social relationships between partners in business networks are very important to successful business performance. This seems to be so in the context of Chinese and overseas Chinese business networks, where, in order to create trust and gain information, social relationships are prerequisites for business exchanges. Chen and Hu (1997) found that the effectiveness of Chinese business networks is captured by the statistic that overseas Chinese capital accounts for more than 80 percent of foreign investment in the East Asian region. Furthermore, Yeung and

Table 1.1: Major research related to the guanxi network.

Authors	Main topic related to the guanxi network	Country
Hwang (1987)	Face and favour	China
Alston (1989)	Managerial principles	Japan, China and Korea
Kao (1993)	Global Chinese business networks	Many countries
Yang (1994)	Gifts, favour, and social relationship in China	China
Bjorkman & Kock (1995)	Social relationships, Business network	China
Davies, Leung, Luk, and Wong (1995)	Benefits of Guanxi in developing markets	Hong Kong
Wank (1996)	Market clientelism	China
Yeung & Tung (1996)	Basic concept and the significance of guanxi	China
Luo &Chen (1996)	Strategic management, firm performance	China
Xin & Pearce (1996)	Informal networks as substitutes for formal support	China
Tsui & Farh (1997)	Regional demography, Interpersonal relations, work outcome	East Asian
Tsang (1998)	Competitive advantage from guanxi	China
Ewing, Caruana, and Wong (2000)	Buyer-seller interaction model	China and Singapore
Dunfee & Warren (2001)	Bribery, corruption, and normative analysis	China
Park & Luo (2001)	Organisational networking, firm performance, and transition economy	China
Wu & Choi (2004)	Transaction costs, social capital, interorganisational and synergy creation	Hong Kong
Chen & Chen (2004)	Guanxi development process	China
Hammond & Glenn (2004)	Ties, social network, and guanxi	Many countries
Ramasamy, Goh and Yeung (2006)	Knowledge transfer, Relationship building	China
Freeman and Lim (2006)	Trust, Dependency, Reciprocity, and Strategic alliance	Australia and China

Olds (2000) note that overseas Chinese firms and their network cross national boundaries, enabling them to develop a global web of economic links that can play an important economic role. A number of studies such as Yeung and Olds (2000); Yeung and Tung (1996); Redding (1996) and Tsang (1998) suggest that the establishment of the overseas Chinese business networks based on social relationships (guanxi network), is a practical means by which Chinese firms have been able to reduce risk and uncertainty. In addition, these Chinese networks are considered not only a constraint against opportunism, helping firms minimise transaction costs, but also act as an invaluable resource. Table 1.1 summarises significant studies related to the concept of the guanxi network over the last few decades.

From Table 1.1, it can be seen that a number of topics from many fields of research have been studied and linked to the guanxi network. However, results from these studies have still not shown a clear picture of how the guanxi network can be used

to increase business performance. Furthermore, most of these studies have been applied to China and other countries that have a strong Chinese background (such as, Hong Kong and Singapore), but not Thailand. To remedy this gap this thesis will establish a theoretical framework that can be used to study the impact of the guanxi network upon business performance and analyse this framework with data from Sino-Thai SMEs.

1.1.2 Background of Sino-Thais.

The Chinese are recognised as having been in Thailand since the sixteenth century (Hafner, 1983, p.36). However, significant numbers did not arrive until the early to mid nineteenth century. There were a number of Teochew origin followed by Hakka, Hokkien and Cantonese respectively (Yamaguchi, 1993). The Teochew tended to dominate the rice trade and much of the lucrative remittance business back to China in the years before WW II. They also provided the most eminent Chinese community leaders in Bangkok, in much the same way as the Hokkien have tended to dominate in Singapore and the Philippines. As in other South-East Asian countries, Sino-Thais live in the larger towns or cities, and particularly in Bangkok (Mackie, 2001).

In 2006 the population of Thailand was 64 million people, of which 14 percent claimed to be either Chinese Nationals or have Chinese ancestors (United Nation, 2007). The latter group is called Sino-Thai. The number of Sino-Thais, however, may be underestimated, because they consider themselves primarily Thai nationals, not Chinese, and it is almost impossible to distinguish between indigenous Thais and the modern Sino-Thais (East Asia Analytical Unit, 1995). Even the Thai-Chinese Chamber of Commerce (TCCC) has to accept members of any ethnicity due to the difficulty in distinguishing between ethnic Thais and Chinese in many instances (East Asia Analytical Unit, 1995, p. 78). The extent of their willingness to assimilate is the most important feature of the ethnic Chinese in Thailand, compared with the Chinese of other South-East Asian countries.

There are a number of explanations for the Sino-Thai willingness to be absorbed into society in comparison with their counterparts in other parts of South-East Asia. Over the past one hundred years Thai rulers have made a concerted effort to avert serious anti-Chinese sentiment. In 1907, King Rama V proclaimed that he regarded the overseas Chinese in Thailand not as foreigners but as part of his country, and as such were entitled to share in the fruits of the country's prosperity. King Rama VI initiated nationalist programs, focused on an assimilation policy. A law was passed in 1918

requiring all students in private schools to be taught in the Thai language and instructed in Thai history and geography. Furthermore, non-ethnic Thais born in Thailand were eligible for Thai citizenship (East Asia Analytical Unit, 1995, p.74). After World War II, under the ruler General Phibunsongkhraam, the development of a Thai national identity was taken even more seriously. Overseas Chinese in Thailand were encouraged to adopt Thai citizenship and names, and attend Thai schools and universities. This was achieved by the use of an annual Alien Registration Tax for non Thai residents. Access to the public service was restricted for those with Chinese names. Chinese language newspapers and instruction were banned. It was only in the early 1970s that Chinese retailers could once again use Chinese characters on shop hoardings (Chantavanich, 1993). The similarity between the religious philosophies of Thais and Chinese helped the Chinese immigrants to adopt Thailand's Theravada Buddhism (Skinner, 1960). Intermarriage and a high degree of social, political and cultural intermingling between the two groups (i.e. Thai and Chinese) also increased assimilation (Mackie, 2001, pp. 85-86).

In terms of economic contribution the role and influence of the Sino-Thais has been particularly important since World War II. They are active in virtually all sectors of the economy, including agriculture (rubber, sugar, maize, vegetables, but rarely rice), manufacturing, banking and finance, construction, and real estate, and retail and wholesale trading (Mackie, 1992). Small enterprises in Bangkok, especially in the retailing sector, are dominated by Sino-Thais. The Sino-Thai community has played an important role in developing Thailand's private sector where it is estimated to control 81% of the listed companies by market capitalisation (Mackie, 1994 and 2001). Prior to the economic crisis of 1997, among the thirty or forty largest business groups in Thailand none were controlled by ethnic Thai families. Many of the Sino-Thai families in Bangkok have grown large from providing services such as banking (Vatikiotis, 1998). This kind of characteristic, that no ethnic Thai can claim to be dominant amongst big business entrepreneurs, makes the entrepreneurial structure of Thailand unique in South-East Asia (Mackie, 1992).

1.2 IDENTIFICATION OF THE RESEARCH PROBLEM

The existing literature has not addressed the issue of social relationships, guanxi network, organisation networks and the business performance of Sino-Thais. These issues will be addressed in this thesis.

1.2.1 Links between the Guanxi Network and an Organisational Network in a Western Context

In recent years there has been an impressive accumulation of studies related to the guanxi network and entrepreneurship. Only a few (for example Park and Luo, (2001); Tsui and Farh, (1997); Freeman, Matanda and Lam, (2004)), however, have linked the concept of the guanxi network to the organisational network in the Western context. It is necessary to establish a basic understanding of the relationship between the guanxi network and the organisation network, because they share some common factors (such as trust, information sharing, and repeat transactions). Understanding these similarities and differences will provide an alternative way of explaining organisational behaviour in the business network.

1.2.2 Lack of a Framework reflecting how Social Relationships can affect Business Performance

There are numerous studies on strength of ties (Krackhardt, 1992; Rowley, Behrens and Krackhardt, 2000), network embeddedness (Uzzi 1996, 1997; Mohr and Spekman, 1994, Naude and Buttle, 2000), business uncertainty (Hebert and Link, 1989; Ekelund and Hebert 1990) and business performance (Bruderl and Preisendorfer, 1998; Forsaith and Hall, 2000; Gray, 1998;), but no attempt has been made to integrate these into one study. To do this a theoretical framework is required, establishing links between the guanxi network, strength of ties, network embeddedness, business uncertainty and business performance. From the framework a number of assumptions and hypotheses relating to these factors can be identified and tested. Results from such hypotheses testing will facilitate understanding of how Sino-Thai SMEs use their ties in the business network to reduce business uncertainty and improve business performance.

1.2.3 Measurement Items for Variables Relating Social Relationships and Business Networks

It is difficult in general to establish highly reliable measurements due to the fact that the quality of the measurement items can be affected by other exogenous factors beyond the control of the researcher. Examples of these factors are: individual characteristics of respondents, general environmental impact, and the nature of research and data collection methods. An attempt, however, must be made to establish these

reliable measurement items because the quality and reliability of measurement items for each variable in the framework is necessary for statistical testing. This issue is one of the major aims of this thesis.

1.2.4 Appropriate Quantitative Methods and Techniques Linking Social Relationship with Business Performance

This problem relates to the choice of statistical techniques which will be used to estimate relationships between variables in the framework. At times multiple regression analysis, the Kruskal-Wallis test, and multiple discriminant analysis for sub-scale analysis will be necessary. In general the multiple regression will help to understand relationship between a number of independent variables and a dependent variable. The Multiple discriminant analysis is a statistical technique that helps to determine which variables in the framework discriminate between different groups of the guanxi relationships. The Kruskal-Wallis test is a non-parametric statistical method for testing equality of populations of data among different groups of guanxi relationships. In addition, structural equation modeling (SEM) can be used to estimate all variables in the framework, simultaneously. This simultaneous estimation approach will be able to show both the direct and indirect affects between variables in the framework and also help to understand the full picture of how social relationship can be used to improve business performance.

1.3 RESEARCH QUESTIONS

The research in this thesis will enable a number of questions relating to relationships between the guanxi network, strength of ties, network embeddedness, business uncertainty, and business performance to be answered. These questions are:

1.3.1 Main Research Questions

a. Is the guanxi relationship of significance in Thailand?
b. What are the major factors of a guanxi network that can help to improve Sino-Thai SMEs' business performance?
c. Which category of the guanxi relationship provides the most substantive benefit to his/her business partners?

1.3.2 Subsidiary Research Questions

a. How do guanxi relationships affect strength of ties in a business network?
b. How do guanxi relationships affect network embeddedness?
c. What are the major factors of strength of ties in the network that affect network embeddedness?
d. What are the key factors of network embeddedness that facilitate an improvement in the business performance of SMEs?
e. Does strong network embeddedness impact positively on business performance?
f. What are the major uncertainties that affect Sino-Thai SMEs' business performance?
g. Does business uncertainty negatively impact the business performance of Sino-Thai SMEs?
h. Do Sino-Thai SMEs use their partners in the network to help reduce business uncertainty?

1.4 RESEARCH OBJECTIVES

As mentioned in the first section of this chapter, the main objective of this thesis is to study the impact of the guanxi Chinese network upon the performance of Sino-Thai SMEs. With this objective in mind, the thesis aims to achieve the following:

a. Present an overview of the importance of SMEs to social and economic development, and then specifically that of Thai SMEs during the period 1994-2005.
b. Establish a sound understanding of the guanxi network and organisation networks in a Western Context.
c. Establish the links between the guanxi network and the organisation network in a Western context.
d. Establish the theoretical framework that links the guanxi network, strength of ties, network embeddedness, business uncertainty, and business performance together.
e. Establish measurement items that can adequately represent all variables in the framework.
f. Establish assumptions and hypotheses relating to relationships between factors in the framework.

g. To test hypotheses relating to the framework by means of the Kruskal-Wallis Test, a multiple regression analysis, a multiple discriminant analysis, a factor analysis, and structural equation modeling.
h. Finally, to provide policy implications relating to the issue of social networks and business performance.

1.5 METHODOLOGY

To achieve the objectives of this thesis, a review of previous studies dealing with the contribution of social relationships and business networks to business performance is conducted. An appropriate approach is selected to examine the relationship between the guanxi network, network embeddedness, strength of ties, business uncertainty and business performance. A theoretical framework, methodology, and data collection method are presented, and statistical analysis techniques are used to test the relationships in the framework based on available cross-sectional data from a survey instrument.

The first step is to (1) overview the significant contribution of SMEs to social and economic development, (2) overview the role and contribution of Thai-SMEs during the period 1994-2005. In addition, this thesis describes the basic concept of the guanxi network and organisational network in the Western context, and compares and contrasts similarities and differences between these two networks.

The second step is to review different approaches relating to strength of ties, network embeddedness, business uncertainty and business performance. By reviewing these approaches the thesis covers a range of important issues relating to social relationship and business performance. Results and evidence from the literature can be used to establish the theoretical framework that links the guanxi relationship, strength of ties, network embeddedness, business uncertainty and business performance. Furthermore, a number of assumptions and hypotheses relating to the variables in the framework can also be identified. In addition, some measurement items for variables in the framework can also be identified from the literature.

The third step is to use a number of statistical techniques to test assumptions and hypotheses from the framework. In this thesis two major types of statistical technique are employed (1) exploration and (2) confirmation. The former is done by means of the Kruskal-Wallis Test, a multiple regression analysis, a multiple discriminant analysis, a factor analysis, while the latter is conducted by means of structural equation modelling.

Finally, the policy implications regarding the use of social networks to improve business performance and factors that affect business uncertainty of Sino-Thai SMEs are also discussed.

Similar to all research, this thesis also involves data analysis. Quantitative and qualitative analyses are two major types of data analysis techniques which can be used. According to Dewalt and Dewalt (2002) quantitative research is the systematic scientific investigation of properties and phenomena and their relationships. The process of measurement is central to the method because it provides the fundamental connection between empirical observation and mathematical expression of quantitative relationships. The research is often an interactive process whereby evidence is evaluated, theories and hypotheses are refined, technical advances are made. The objective of quantitative research is to develop and employ mathematical models, theories and/or hypotheses pertaining to natural phenomena. According to www.wikipedia quantitative research is generally approached using scientific methods, which include:

- Collection of empirical data,
- Experimental control and manipulation of variables,
- The generation of a model,
- The development of instruments and methods for measurement,
- Modelling and analysis, and
- Evaluation of results.

Qualitative analysis normally involves an in-depth understanding of human behaviour. The method relies on reasons behind various aspects of behaviour (Denzin and Lincoln, 2000) and aims to achieve complete detailed description of an issue of the study. The picture of the data which emerges from a qualitative analysis is richer than that obtained from a quantitative analysis. The main disadvantage of a qualitative approach is that findings cannot be extended to the wider population with the same degree of certainty as with a quantitative approach. This is because the findings of the research are not tested to discover whether they are statistically significant or simply ue to chance (Patton, 2002). According to Fischer (2005) there are four methods that generally can be used to gather information: (1) direct observation, (2) participation in the setting, (3) analysis of documents and materials, and (4) in depth interviews.

In addition, Yin (2003) suggests criteria in choosing a research design, whether qualitative or quantitative, depends on three factors:

- The type of research questions being asked,
- The control of the investigator of the behavioural events; and
- The focus on contemporary as opposed to historical events.

According to Yin (2003, p.7) the first and most important condition for differentiating among the various research strategies is to identify the type of research question being asked. If the research questions focus mainly on “what” questions, either of two possibilities arises. First, some types of “what” questions are exploratory. This type of question is a justifiable rationale for conducting an exploratory study, the goal being to develop pertinent hypotheses and propositions for future research. The second type of “what” question is actually a form of a “how many”, “how much”, “who”, and “where”, which is more likely to favour survey and, hence, quantitative analysis. In contrast, “how”, and “why” questions are more explanatory and likely to lead to the use of qualitative analysis, such as case studies, histories, and experiments (Yin, 2003, pp.6-7).

Based on the nature of the research questions asked in this thesis and the information presented above the survey method and quantitative analysis are the most appropriate methods which will be used in this thesis, since one of the main objectives of this thesis is to develop a theoretical model and test hypotheses that relate to a number of observations.

1.6 ORGANISATION OF THE THESIS

The structure of this thesis is as follows. Chapter 2 presents both an overview of SMEs in broad terms and then specifically for Thailand. The chapter begins with general issues relating to SMEs, such as their definition, social and economic roles, including (a) the significant contribution of SMEs to individual economies in terms of numbers and output. (b) foundation of industrialisation, (c) job creation, (d) export promotion. (e) sales, output, and value added, (f) contribution of SMEs to growth and (g) poverty alleviation. The chapter also reviews important issues relating to Thai SMEs, including their major weaknesses and Government’s policies to promote them.

Chapter 3 reviews the literature relating to the guanxi network and organisational networks. The purpose of this chapter is to establish a basic understanding of the guanxi network and relate this to organisational networks in a

Western context. The chapter begin with definitions and background concepts relating to the guanxi network, including its concept of guanxi bases and interpersonal relationships, norms of guanxi, factors that help to establish and maintain a strong network and the benefits of the guanxi network to its members. After that, it reviews key concepts and theories of organisational networks. Finally, this chapter compares and contrasts the guanxi and Western networks.

In chapter 4, a theoretical framework that establishes links between guanxi, strength of ties in a network, network embeddedness, business performance and business uncertainty is developed. Furthermore, a number of assumptions relating to these factors are also identified. The first part of this chapter reviews the literature relating to strength of ties and entrepreneur's performance, and also develops questions to measure strength of ties. Second, relationships between the guanxi relationship, strength of ties and network embeddedness are focused upon. Finally, this chapter reviews the literature relating to business uncertainty and develops measurement items for such uncertainty.

Chapter 5 applies statistical techniques to test a number of hypotheses and assumptions relating to the theoretical framework in chapter 4. The chapter outlines the data collection process, characteristics of the sample and measurement items used in the questionnaire[1] procedure. After that the Kruskal-Wallis Test, multiple regression analysis and multiple discriminant analysis are used to test hypotheses relating to the relationships between the guanxi relationship, strength of ties, business performance and network embeddedness. In addition, an explanatory factor analysis is also conducted for the uncertainty variables. The results from the factor analysis are used to develop and test hypotheses relating to the relationships between business uncertainty, business performance, and strength of ties.

In chapter 6, the focus is on structural equation modeling (SEM) in relation to the theoretical framework in this thesis. The SEM is a specific statistical method that allows the researcher to test relationships between variables in the framework, simultaneously. The chapter begins with a basic concept and model fit criteria of SEM. After that it is concerned with model development and specification followed by assumptions and hypotheses which are then analysed. Finally, SEM is employed to test for an invariance between three groups of the guanxi relationship.

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[1] see appendix 1 for the English questionnaire and appendix 2 for the Thai questionnaire.

Chapter 7 summarises the major conclusions derived from the thesis. The chapter also discusses the policy implications from the major results. Finally, limitations of the study are outlined as well as future research possibilities are provided at the end of the chapter.

CHAPTER 2

BACKGROUND OF SMEs AND OVERVIEW OF SMEs IN THAILAND

2.1 INTRODUCTION

The role played by SMEs in any society is undoubtedly important. In almost every country in South-East Asia, SMEs constitute at least 98 percent of all enterprises (Hayashi, 2005). These firms are important not only in economic terms but also in terms of their broader contribution to society. Hence the purpose of this chapter is to review in broad terms, but then specifically for Thailand, the important aspects of SMEs. The remainder of this chapter proceeds as follows.

In section 2.2 there are two major parts that relate to the overview of SMEs. The first is concerned with the definitional issue relating to SMEs while the second part is concerned with the economic role and importance of SMEs. In particular, the second part of section 2.2 emphasises (a) the significant contribution of SMEs to individual economies in terms of numbers and output. (b) foundation of industrialisation, (c) job creation, (d) export promotion. (e) sales, output, and value added, (f) contribution of SMEs to growth, and (g) poverty alleviation. In section 2.3, there are six major parts that relate to the overview of Thai SMEs. Part 1 presents the definition of Thai SMEs. Part 2 emphasises the number and proportion of SMEs from 1994 to 2005, covering size, industry and region. Part 3 presents numbers and proportion of employment by SMEs. Part 4 emphasises the contribution of SMEs to Thailand's GDP during 1999-2005. Part 5 presents the major weaknesses of Thailand's SMEs. Finally, part 6 reviews some of the Government's major policies to promote SMEs after the economic crisis in 1997.

2.2 OVERVIEW OF SMALL AND MEDIUM ENTERPRISES

Small and Medium Enterprises (SMEs) have been shown to contribute significantly to country and regional economic growth, increased employment levels and locally relevant product and service innovation (Park 1995, Hall 2002b, Harvie and Lee 2004, and Hayashi 2005). Although the definition of what constitutes an SME varies from country-to-country the benefits of growth in the SME sector are

significant[2]. This section contains 2 major parts that relate to the overview of SMEs. The first is concerned with the varying definitions of what constitutes an SME while the second part is concerned with the roles and importance of SMEs to the economy of various countries. In particular, the second part emphasises the: (1) significant contribution to individual economies in term of numbers and output, (2) foundation of industrialisation, (3) job creation, (4) export promotion (5) sales, output, and value added, (6) contribution of SMEs to growth, and (7) poverty alleviation.

2.2.1 What are SMEs

Small and Medium Enterprises (SMEs) consist of a heterogeneous group of businesses. They include a broad variety of firms such as small machine shops, restaurants, grocery shops etc. SMEs also include enterprises with a wide range of technological capabilities and skill levels, and operate in very different markets and environments. Some of them are dynamic and innovative but others are traditional enterprises that are satisfied to remain small (Hallberg, 2000, p.1)**.** There are several methods used to define an SME such as the number of employees (most commonly used), amount of invested capital, production capacity, level of ownership/management, sales volume, or value of assets. The definition of SMEs varies by country, but is usually based on the number of employees or the value of assets. In general, the lower limit for small-scale enterprises is usually set at 5 to 10 workers and the upper limit at 50 to 100 workers. The upper limit for medium scale enterprises is usually set between 100 and 250 employees (Hallberg, 2000). In Table 2.1, a summary of definitions of SMEs in selected APEC economies is presented.

From Table 2.1 it can be observed that although the definitions of SMEs vary greatly, they still have something in common. The vast majority are relatively small and almost all of them employ less than 100 people (Hall, 2002a). In addition, they also share the following characteristics:

- Independently owned and operated,
- Closely controlled by owners/managers,
- Decision-making is primarily done by the owners/managers,

[2] The benefits of SMEs to growth of countries remain contentious for some economists – for example Chandler and Hikino (1997) and Fan, Criscuolo, and Ilieva-Hamel (2005)

- Most of the operating capital is contributed by the owners/managers (ABS, 2001, Catalogue No. 1321.0).

Table 2.1: Summary of main definitions of SMEs in selected APEC economies*

Please see print copy for table 2.1

From these characteristics, owners or managers of SMEs play an important role in business activities. If business performance is affected by interpersonal relationships, as stated in chapter 3 of this thesis, it can be expected that good personal relationships between owners of SMEs will help to encourage their business performance. Since the major focus of this study is the effect of personal relationships in a network to business performance, SMEs are appropriate to be the centre of this study.

2.2.2 Role and Importance of SMEs

Several studies have demonstrated that SMEs have played many important roles in the successful development of numerous developing economies (Abdullah 2000, Berry and Mazumdar 1991, Park 1995, and Stanley and Morse 1965). From the

literature SMEs contribute (1) to individual economies in term of numbers and output, (2) foundation of industrialisation, (3) job creation, (4) export promotion (5) sales, output, and value added, (6) contribution of SMEs to growth, and (7) poverty alleviation.

2.2.2.1 Significant Contribution to Individual Economies-by Number and Output.

Table 2.2 shows the number of non agricultural SMEs and their share of manufacturing output in several South-East Asian countries. There are about 20 to 30 million SMEs in East Asia. In almost every country, with the exception of Malaysia due to definitional issues, SMEs constitute at least 98 percent of all enterprises. 73 percent of all private enterprises are Micro-enterprises, which employ less than 5 employees. Most SMEs are in China (30 million), Japan (5 million) and Korea (2.6 million) which together have 70 percent of the SMEs in East Asia (Harvie, 2007; and Suzhou Industrial Park, 2006). SMEs contribute somewhere between 25 to 34 percent of total manufacturing product (Table 2.3). The relative importance of SMEs varies significantly according to the type of economy, stage of economic development and industry sector (Berry and Mazumdar, 1991).

Table 2.2: Number of non agricultural SMEs in Southeast Asian countries

Country	Non agricultural SMEs 1990	Non agricultural SMEs 2000	SMEs as % of all firms 2000
Indonesia	12,045,600	16,000,000	98%
Malaysia	Not available	19,000	84%
Philippines	77,807	817,976	99%
Singapore	31,468	1,050,000	98%
Thailand	63,230	350,000	98%
Vietnam	1,000	200,000	96%

Sources: APEC (2003) Table 2.2.1

Table 2.3: Share of SMEs in manufacturing output in Southeast Asian countries

Country	Output %
Indonesia	27.3
Malaysia	26.4
Philippines	26.7
Singapore	33.8
Thailand	Not available
Vietnam	Not available

Source: Adapted from Hayashi (2005) Table 2.1

As Hallberg (2000) notes, in low-income countries there are a large number of micro- or small-scale firms, existing alongside a few large-scale enterprises. This kind of situation results in the so called “missing middle” which is a problem for many developing countries. Medium sized enterprises in developing and emerging countries are weak because of undeveloped regional integration and difficult business conditions, which include poor infrastructure, poor regulatory and bureaucratic practices, inadequate financial systems and unattractive tax regimes (Kauffmann, 2005). Many enterprises stay small and informal and use simple technology that does not require much infrastructure. In addition, small size also protects them from legal proceedings, and facilitates greater flexibility in uncertain business conditions. Large enterprises in the form of FDI in developing and emerging countries have the means to overcome legal and financial obstacles, since they have more negotiating power and often good contacts to assist them in obtaining preferential treatment. They can access foreign finance, technology and markets and can also more easily make up for inadequate public services (Kauffmann, 2005). In middle-income countries, medium-scale enterprises begin to account for a relatively larger share of production and employment. In most countries the trend toward larger firm size continues as per-capita income increases. This happens because in the early stages of economic development the agriculture sector dominates – hence a large number of small enterprises. With industrialisation and the movement toward greater volumes of manufactured goods production, the importance of the manufacturing sector to the economy increases and average firm size increases[3]. However, exceptions to this rule are found in Asia. In Japan, Taiwan and China for example, the size distribution of firms has remained relatively constant over the past thirty years, even as the structure of production changed from labour-intensive manufacturing to high-tech computer industries (Hallberg, 2000, p.2).

In this thesis a developing country is one which has a relatively low standard of living, an undeveloped industrial base, and a moderate to low Human Development Index score and per capita income, but is in a phase of economic development. An emerging market is classified as a developing economy which has maintained sustained economic growth over a number of years and exhibits good economic potential (Mauro,

[3] In many developed economies post industrialisation is becoming more prevalent, in which high value adding services become more important. Therefore, many small businesses have an advantage. Consequently, the trend towards larger enterprises may be reversed.

2003). A transition economy is an economy which is changing from a centrally planned economy to a free market economy. The latter process includes economic liberalisation, macroeconomic stabilisation, and restructuring and privatisation in order to create a financial sector and move from public to private ownership of resources. These changes normally lead to increased inequality of incomes and wealth, and increased inflation (www.wilipedia.org).

Hallberg's argument raises the question of what really determines the size of an enterprise and why SMEs account for a large share of firms in many countries. A review of You (1995), shows that there are four major factors (1) economies of scale, (2) transaction costs, (3) market structure, and (4) stage of development.

1. Economies of Scale

According to the technological approach economies of scale is one of the principle determinants of firm size. According to You (1995, p.442) actual firm size will be the efficient size in the sense that long-run average cost is minimised at that point. However, the efficient size can be determined uniquely only if the long-run average cost curve is U-shaped. If it is flat over some range the efficient firm size is indeterminate between the minimum efficient scale and maximum efficient scale. Production technologies in manufacturing exhibit increasing returns to scale to a much greater extent than in agriculture or services. This is because of the large indivisibilities associated with special-purpose machines and other special inputs. As the number and the size of the indivisibilities increase the minimum efficient scale will decrease rapidly (You, 1995). Thus technology-based economies of scale can determine the minimum efficient scale of production (Hallberg, 2000).

In addition to economies of scale and minimum efficient scale, firm size is also determined by the effectiveness of the organisation in decision making, and implementation. For example, the ability or propensity of the entrepreneur for risk-taking (Kihlstrom and Laffont, 1979), and loss of control from expansion of firm size, may affect the entrepreneur's willingness to expand firm size (Williamson, 1967). In addition, firm size can also be determined by technological change. As Blair (1972) and Piore and Sable (1984) argue the nature of technological change from the Industrial Revolution up until the early twentieth century was to increase the minimum efficient scale of most manufacturing plants. However, in the latter part of the twentieth century

innovations, such as the introduction of new materials like plastics and the increasing use of computers, and general purpose machines, have the opposite implication. Nevertheless, changes in information and communications technology may improve organisational efficiency and thus increase the efficient organisation size[4]. Additionally, the size distribution of firms is determined by a combination of efficient firm size, market size, and the product composition of production in the economy (Hallberg, 2000).

2. Transaction Costs

Transactions cost theory suggests that the optimal size of the firm is correlated with the extent of a measurement problem and a fear of opportunistic behaviour. Transaction costs are the costs of measuring what is being exchanged and enforcing agreements (Coase, 1937). One source of market transaction cost is the difficulty of measuring and specifying all aspects of the good exchanged. The measurement problem in any transaction can be improved by internalising the transaction in which internal monitoring can be used to limit transaction costs such as cheating (Alchian and Demsetz, 1972; Bowles and Gintis, 1990).

The fear of opportunistic behaviour is another factor that determines the optimal size of the firm. The opportunistic behaviour may cause insufficient investment between companies (Williamson, 1985 and Tirole, 1986) or invite wasteful contests of power such as investment in bargaining position (Milgrom and Roberts, 1990). For example, when assets become more specialised (eg. secret formula of the product) or from technological imperatives (eg. new pattern of special machines) the fear of opportunistic behaviour of companies will increase. Under this situation market transactions between companies may be superseded by intrafirm governance which provides various safeguards against opportunism. For these two reasons transaction costs encourage integration and the enlargement of firm size (Hallberg, 2000).

3. Market Structure

The size of firms can be determined by market structure, such as imperfect competition. In an industry with heterogeneous products, product differentiation is a key element of market share competition (You, 1995). The size of firms serving different

[4] In some certain situation, for example E-Commerce, a change in communication technology could result in contracting out of certain firm activities.

segments of the market may differ for at least two reasons. One is that they may require different technologies. Another reason is that the level of demand may differ across different segments of the market. For example, firms producing mass-consumption goods will be larger than firms producing specialty goods. According to You (1995, p.451) it is possible of course for large firms to serve many different segments of the market. However, their attempt to capture specialised demand will be limited by bureaucratic costs owing to organisational dissonance, as it requires more and more dissimilar activities. Therefore they tend to focus on more standardised and large-sized demand, while specialised and fragmented demand is served by many small firms dedicated to such demand. In addition, the size of firms can also be affected by cyclical fluctuations of industry and distortions in input and output markets (Hallberg, 2000).

4. Stage of Development

According to the life-cycle models of firm growth based on learning focusing on the age-size-growth-survival relationship, firms tend to enter small and grow large through the process of learning. Owing to the greater uncertainty facing younger and smaller firms, they experience greater turbulence- a higher probability of death, a higher variance in growth rate, and in general a higher average growth rate than older and larger firms (You, 1995).

Based on these four theoretical arguments You (1995, pp. 458-459) suggests various factors that might account for the importance of SMEs.

1. De-industrialisation and expansion of the service sector will result in a decrease in average firm size and a rise in the share of small firms in the economy, since the service sector is generally characterised by lower scale economies and the demand for services tends to be more customised, dedicated and specialised.
2. Increasing demand for customisation and specialisation of goods and services will enlarge the market niche for small firms since the cost of production differentiation will be lower for the small firm compared to the larger firm.
3. A change in technology that reduces the minimum efficient scale of operation, or measurement difficulties and asset specificities in any given industry, will reduce the average size of firms in that industry. Similar effects can arise also from a change in the technological environment that shakes up a routines regime, creating new opportunities for innovation.

4. Increased uncertainty of the market environment owing to such factors as increasing foreign competition, volatility of exchange rates, volatility of demand, etc. will increase returns to flexibility, which is an important source of competitive advantage for small firms. This will therefore increase the share of small firms.
5. The share of small firms will increase if the supply of labour increases relatively more in the lower segments of the labour market, and if the terms and availability of finance for small firms improve.

Thus, these factors encourage SME start-up and other activities, which in turn increase the contribution of SMEs to individual economies.

2.2.2.2 Foundation of industrialisation

SMEs can be considered as a source of supply of goods, services, information and knowledge for larger enterprises, contributing to what is called the global production system. They also encourage competition among enterprises which in turn increase market efficiency. According to APEC (2003, p.11) the number of SMEs in an economy is one basic indicator of the entrepreneurial health and competitiveness of the economy. As Hayashi (2005) notes, modern manufacturing industry needs to have supporting industries to produce intermediate goods and parts/components, many of which are usually produced by SMEs. Due to the pressures of global competition many large enterprises focus only on core business activity and do not find it cost effective to internalise all manufacturing activities, leading to a growing trend toward the use of suppliers through subcontracting relationships (Meyanathan and Munter 1994). Furthermore, new communications technologies can lower the cost of transacting with other subcontractors, encouraging firms to outsource activities previously handled internally (Hallberg, 2000). A good example is Taiwan, where industrial development has relied on a multitude of SMEs. Many large foreign firms have fostered the establishment of many local electrics start-ups as a large number of local SMEs supply these foreign firms with goods and services, leading to booming subcontracting and original equipment manufacturing systems (Mathews and Cho, 1998). Evidence from Singapore shows the presence of large foreign multinational enterprises dominating manufacturing industry, especially the electronics industry, which has generated significant demand for local parts and component supplies from local SMEs (Wong 1991, Brown 1998, Perry and Tan 1998, and Mathews 1999). Spin-offs from the electronics industry have lead to a significant growth of SMEs in various supporting

industries such as printed circuit boards assembly, electronics components, metal stamping, plastic injection and others (Economic Development Board, 1996).

In addition to the supply of goods and services for large enterprises, SMEs also provide information, knowledge, know-how and innovation that large firms may lack. As many large firms concentrate on core activities they subcontract non-core activities to external firms. In this situation, SMEs may possess the specialist process know-how or provide intermediary services to manufacturers, which may not be related or central to the core business of large firms (Chew and Yeung 2001). One of the most important is the information and knowledge that relate to technology between supplier and buyer linkages. As Chew and Yeung (2001) note, SMEs are able to provide not only specific products needed by buyers, but also localised knowledge deemed useful by these buyers. Furthermore, SMEs also play an important role in initiatives that add value or creativity to the original specifications given by their buyers (Cooke and Morgan, 1998). In order for SMEs to achieve this, access to finance is one of the most important conditions.

2.2.2.3 Job Creation

One of the most important problems in East-Asian countries after the economic crisis of 1997-1998, and in OECD countries during the early 1990s, was high unemployment (OECD, 1997). Increasing attention is now being paid to SMEs as they are widely considered to be the principal generators of employment. However some of the literature (for example, Sengenberger et al. 1990, World Bank 1997, and ILO 1999) highlights issues of low productivity of labour, high amount of churning, low investment, inferior pay and working conditions of SMEs. Table 2.4 displays the contribution of SMEs to employment in selected Southeast Asian countries during 1998-1999. There is commonality in the percentage of workers employed by SMEs if Malaysia and Thailand are excluded. Over 95% of enterprises in Southeast Asia employ less than 100 people, and over 80% are micro-enterprises that employ less than 5 people. SME employment ranges from 50 percent to 80 percent of the workforce if these two countries are excluded. The data for Malaysia is an anomaly because of its focus on industries rather than firms.

Table 2.4: SMEs and employment in East Asian countries (1998-1999)

Please see print copy for table 2.4

Thailand has only collected SME statistics since 1998, and the figures may not yet be an accurate reflection of the real contribution of SMEs (Hall, 2002a, p.25). In addition, anecdotal evidence suggests that SMEs in this region contribute 70 percent of net employment growth, provide about 80% of employment in the services sector, and about 15 percent in the manufacturing sector. On average there are about 85 people for every SME. In developed countries there are only about 20 people per SME, but this ratio is above 100 in developing countries such as China, Vietnam, Philippines and Indonesia (Harvie 2007). The data for the Southeast Asian countries shows a similar trend to that of developed countries such as the United States and Canada. In the United States, small firm dominated sectors created 63.6 percent of the 2.4 million net jobs growth in 1996, whereas large-firm dominated sectors accounted for 18.2 percent of net new jobs (SBA, 1997). Between the second quarter of 1996 and the second quarter of 1997, Canadian firms created 580,000 net new jobs and SMEs accounted for 81 percent of this net job growth (Industry Canada, 1998). However, not all of the literature agrees

with the role of SMEs as job generators. According to Davis et al. (1994), Haltiwanger (1999) and Storey and Johnson (1987), while gross job creation rates are substantially higher for SMEs, so are gross destruction rates. The issue of “Churning” happens because small firms present high start-up rates and high death rates, and many SMEs fail to grow. Nasar (1994) shows that in the United States, between 1973 and 1988, small manufacturing firms did not consistently create more jobs on a net basis than large firms. Although SMEs add dynamism, entrepreneurialism, innovation and new ideas which are essential in a market economy, they have higher gross job creation and destruction rates than large enterprises, which may offer less job security than large firms (Hallberg, 2000).

In addition to the issue of “churning”, SMEs have also long been popularly associated with inferior pay and working conditions. Especially when compared to larger enterprises that may benefit from both the advantages of scale and superior resources. According to the ILO (1999, p.2) the growth in employment in SMEs has been associated with a parallel trend of a growth in non-standard forms of informal and flexible employment relationships, which have the potential to reduce access to a range of economic and social entitlements, as well as increased insecurity. SMEs are less likely to be included within formal industrial relations and social protection schemes and are often exempted from legal requirements to regulate employment and working conditions. Hazardous working condition can create risks, harm workers, and decrease productivity. Safe and secure workplaces not only meet vital human needs, they also boost productivity and enable businesses to grow.

2.2.2.4 Export Promotion

SMEs play an important role in facilitating both direct and indirect exports. Although SMEs’ share of world trade (direct export) still remains much lower than that of large enterprises, many SMEs are nevertheless providing parts to large enterprises, where the final product is exported. Moreover, SMEs are very active abroad and rely increasingly on the development of foreign markets to ensure corporate growth. For example, 70 percent of all exporting firms in the U.S. are small firms with fewer than 100 employees (Prozak, 1993). In the OECD countries, SMEs are producing about 20 percent of direct exports (OECD, 1997, p.7). In developing countries SMEs have played a key role in niche markets, subcontracting work such as the putting-out system, and the production of export goods in labour-intensive sectors (Takeuchi, 1991). They could be

competitive in international markets through the development and use of labour-intensive technologies. Berry and Levy (1999) show that Bali's garment and Jepara's furniture manufacturing in Indonesia are outstanding examples of SME exporters, taking advantage of indigenous design capacity, local raw materials and foreigners as marketing and technical helpers. In East Asian countries it is difficult to gauge the importance of SMEs by size of firm because few countries keep such export statistics. In addition, many SME exports are made indirectly via a larger firm or an agent and difficult to attribute to SMEs even when statistics are kept. The estimation of both direct and indirect contribution to exports is probably close to 50 percent for APEC Asian economies (Harvie 2007). In addition, SME foreign direct investment (FDI) is usually export oriented, thus adding further to regional exports. SMEs in this region, however, generate less than 10 percent of the value of FDI. Korean, Japanese and Taiwanese SMEs, specifically labour intensive SMEs, are major contributors to FDI in the region.

Table 2.5 shows the structural contribution of SMEs in Southeast Asian countries to exports during 1991-1992. Figures from the table show that the share of SMEs in total direct exports are around 10 percent of total exports in Thailand and Indonesia, around 15 percent of total direct exports in Malaysia and Singapore and up to 20 percent in Vietnam. For Korea, China, and Taiwan these values increase to 40, 60 and 56 percent, respectively (Hall, 2002a). For the weighted average of these countries the value is around 30-35%. Export growth rates of SMEs in these countries are generally higher than GDP growth rates.

Table 2.5: Structural contribution of SMEs in Southeast Asian countries to exports (1991-1992)

Please see print copy for table 2.5

A number of articles in the literature have explained firm-specific factors as being related to export performance (see, for example, Chetty and Hamilton, 1996, for a thorough review of the literature on the subject). According to the literature there are many factors that determine the level of firm export performance. However this section will review only factors that relate to SMEs. They are firm characteristics, technological capabilities, and commercial capabilities.

1. Firm Characteristics

Age and size are two key characteristics of a firm related to its export performance. First, the number of years that firms have been established can have both a positive and negative relationship with the level of exports. On the one hand mature firms may have accumulated a considerable stock of knowledge and built strong core capabilities that allow them to better penetrate foreign markets (Baldwin and Rafiquazzaman, 1998). On the other hand, core capabilities can become core rigidities or competence traps and younger firms may be more proactive, flexible and aggressive (Leonard-Barton, 1992). In certain situations, however, given technology developments such as E-Commerce, many SMEs can go global very quickly. Second, in terms of firm size, evidence from Australia, Denmark, Italy, Japan and Spain show that size is of considerable importance during the first stages of internationalisation, but does not seem to be a significant factor afterwards (OECD, 1997). The importance of relative size rather than absolute size can also be used to explain the relationship between size and exports. Some smaller firms may well be important players in their own niche markets, whereas other SMEs find that they cannot compete with their larger rivals that have a dominant market position (Lefebvre et al., 2000).

2. Technological Capabilities

According to Nicholls-Nixon (1995, p.7) technological capabilities refer to “the firm’s current ability and its future potential to apply firm-specific technology to solve technical problems and/or enhance the technical functioning of its production process and/or its finished products”. With increased competition it can be expected that technological capabilities would play a major role in determining a firm’s propensity to export. Kohn (1997, p.50) suggests that small exporters are able to compete on foreign markets because of their technological capabilities. In addition, results from Ong and Pearson (1984) show the positive relationship between R&D and exports in small firms.

The adoption of advanced technologies allows firms to increase productivity, improve product quality or reduce product rejection rates, all of which are essential in domestic and foreign markets (Naik and Chakravarty, 1992). For SMEs, the shortage of technological skills such as engineers, scientists, and technicians is the main disadvantage which results in lower innovative capacities and export performance (Lefebvre et al, 1996).

3. Commercial Capabilities

Market intelligence and marketing strategies are shown to be prerequisites to export entry and expansion (Harr and Ortiz-Buonafina, 1995). Exports by SMEs based on a diversification strategy (range of products and diversity of product lines) have proven successful and are a major factor in export growth (Namiki, 1988). SMEs that operate in a number of industries can transfer knowledge and experience acquired in one industry to others, particularly with respect to commercialisation (Christensen, 1991; and Cafferata and Mensi, 1995). In addition, competitive advantages from a unique product or product specificity can also help to increase export performance (Harr and Ortiz-Buonafina, 1995).

With new communications technologies such as the Internet, SMEs can grow faster in both domestic and international markets. According to Drew (2003) the benefits of these technologies include expanding the scope of marketing, wider and richer communication, reaching new markets, reducing the cost of operations and partnering with suppliers and other collaborators. On the one hand, many SMEs have made innovative uses of the Internet to invent new business models or to enhance existing practices (Drew, 2003; and Fruhling and Digman, 2000). On the other hand, a number of existing SMEs are threatened by these technologies, due to constraints that include high cost of Internet access, language barriers and lack of understanding of electronic commerce techniques and technology needed to use and effectively apply it, which result in losing market share and revenue (CastelAsia, 2002).

Even though SMEs have commercial capabilities they still face serious problems in the international market such as from asymmetry of information, entry barriers, and non tariff barriers, customs procedures and domestic regulations erected by entrenched firms and by government (Acs et al., 1997). In order to solve these problems SMEs have to turn to commercial agreements and strategic alliances with other firms

(networking) and rely on intermediaries (such as distributors and suppliers) to increase export performance. The creation of marketing and distribution channels and export entry based on intermediaries seem to sustain SMEs' international competitiveness (Chetty and Hamilton 1996 and Julien et al., 1994).

2.2.2.5 Sales, Output, and Value Added

Table 2.6 shows that SMEs contribute between 30 percent and 60 percent of GDP in East Asian countries. According to Hall (1995) SMEs contribute about 50 percent of value added or sales on average, but this ranges from about 30 percent to about 70 percent. In addition, small, particularly micro-enterprises, and medium enterprises make a significant contribution in developing countries (Hall 2000a).

Table 2.6: SME Contribution to GDP, Output, Sales, and Value Added

Please see print copy for table 2.6

According to the literature (Hall 2002a, Harvie and Lee 2002, and Harvie 2007) a numbers of observations can be made about the contribution of SMEs to economic growth. First, the SME contribution to growth of developing East Asia comes from net start ups while in developed East Asia the growth contribution comes more from high growth firms. In developed countries, especially in Japan, the start-up rate tends to be

relatively low. This situation was exacerbated by the country's recent economic downturn, and is reflective of cultural and institutional inhibitions to risk taking and starting a business. These factors need to be addressed if the country wants to use SMEs as the engine of future growth (Harvie 2007).

Second the number of SMEs in less developed countries of East Asia such as China, Indonesia, Philippines, Thailand and Vietnam, are fewer than might be expected (Harvie and Lee, 2002). Table 2.4 shows that the number of people per SME in these countries is much higher than in the developed countries. In other words, there are fewer start-ups, and the pool of SMEs from which high growth SMEs can emerge is much smaller. As a result there is less economic growth than there would be otherwise (Harvie 2007). For exporting SMEs, on the other hand, they pay higher salaries, invest more in training their staff, offer better job security and provide safer work environments (Savery and Luks, 2004)

Third, in countries for which there is reliable data, about 70 percent of employment growth in East Asian countries comes from SMEs. Even in countries for which there is no data such as China, Vietnam and Indonesia, SMEs also play a major role. In these countries, almost all net employment creation in the last five to ten years has been from SMEs and specifically those in the private sector (Hall, 2002a).

Finally, a number of SMEs, especially in Japan, Korea and Taiwan, have already expanded operations abroad, which is not limited to a specific region, such as East Asia, but is more global in nature. This happens as a result of efforts to reduce trade and non trade impediments by the WTO, APEC, and ASEAN. It is also part of the globalisation of business occurring as a result of improved communications such as e-commerce and the web (Harvie, 2007).

2.2.2.7 Poverty Alleviation

The role of SMEs in developing countries is not limited to the simple creation of wealth or capital. Rather it also helps to increase equity in income distribution and poverty alleviation. Nevertheless, it is often difficult for micro and small entrepreneurs to borrow the relatively small amount of money needed to start their activity and to sustain it with the necessary operational funding. In developing countries, in particular, there is usually a lack of opportunities for SMEs to borrow from the banking system, especially for young people and women. This is particularly visible in rural areas where

most of the poor live. The development of a microfinance system for micro-enterprises both for venture capital and operating costs, could be one of the missing links to allow business to bring more prosperity in many regions worldwide, principally in the poorest (Yunis, 2004). Thus, micro-enterprise development in conjunction with appropriate microfinance support can contribute to the attainment of social development, especially poverty reduction (Harvie, 2005).

According to Harvie (2005, pp.82-83) successful poverty-oriented micro-finance projects aimed at micro-enterprise development need to contain two essential design features. First, the poor cannot offer collateral and projects must rely instead on group collateral, or the joint and several liability of group members. Second, poverty-oriented microfinance projects usually exhibit a set of loan characteristics: small initial loan size, increasing gradually as the borrower builds up absorptive capacity and creditworthiness; frequent repayment installments to keep each repayment small and manageable, and maintain repayment discipline. There are three main reasons that these two characteristics are required. First, they conform to the needs of poor micro-entrepreneurs, who are looking for a working capital loan to expand an existing livelihood enterprise or small business activities that yield regular cash flow. Second, small initial loan size and repayment in small frequent installments contribute to ease of repayment and a good repayment record. Third poverty-oriented micro-finance is the most effective way of targeting the poor and especially women, who self-select themselves in response to loan terms and a lending technology that is not of interest to the non-poor (Harvie, 2005)

The overview and common features of SMEs in East and South-East Asia discussed in this section are summarised in Table 2.7.

Table 2.7: A summary profile of SMEs in East and South-East Asia

Please see print copy for table 2.7

2.3 OVERVIEW OF SMEs IN THAILAND

This section presents an overview of SMEs in Thailand. Most information used in this section is derived from The Office of Small and Medium Enterprises Promotion (SMEs Promotion) under the Ministry of Industry. Information on enterprises for the years 1994, 1997, and 1999 is not complete as most of the numbers are based on

registered enterprises in Bangkok and municipality areas (The Office of Small and Medium Enterprises Promotion, 2003). This section contains six main parts. Part 1 presents the definition of Thai SMEs used by the government. Part 2 emphasises the number and proportion of SMEs from 1994 to 2005, covering size, industry and region of location. Part 3 presents the number and proportion of employment by SMEs. Part 4 emphasises the contribution of SMEs to the country's GDP during 1999-2005. Part 5 presents some particular weaknesses of Thai SMEs. Finally, part 6 reviews some of the major Government policies aimed at promoting SMEs after the economic crisis in 1997.

2.3.1 The Definition of Thai SMEs

The definition of Thai SMEs according to the regulations issued by the Ministry of Industry on 11 September 2002 emphasises employment and the value of fixed assets excluding land, and then considers the one that is lower as a standard rule. Table 2.8 summaries the definitions of SMEs used in Thailand.

Table 2.8: Thai Ministry of Industry definition of SMEs

Please see print copy for table 2.8

Manufacturing Sector: employment not exceeding 50 people or fixed assets, excluding land, not exceeding THB 50 million is considered to be a small enterprise. If employment ranges between 51-200 people or fixed assets, excluding land, exceeds THB 50 million, but less than THB 200 million, then it is considered to be a medium sized enterprise.

Wholesale Sector: employment not exceeding 25 people or fixed assets, excluding land, not exceeding THB 50 million is considered to be a small enterprise. If employment ranges between 16-50 people or fixed assets, excluding land, exceeds THB 50 million but less than THB 100 million then it is considered to be a medium sized enterprise.

Retail Sector: employment does not exceed 15 people or fixed assets, excluding land, not exceeding THB 30 million is considered to be a small enterprise. If employment ranges between 16-30 people or fixed assets, excluding land, does not exceed THB 60 million then it is considered to be a medium sized enterprise.

Service Sector: employment does not exceed 50 people or fixed assets, excluding land, does not exceed THB 50 million is considered to be a small enterprise. If employment ranges between 51-200 people or fixed assets, excluding land, exceed THB 50 million but less than THB 200 million then it is considered to be a medium sized enterprise.

2.3.2 The Number of SMEs in Thailand

Table 2.9 displays the number and proportion of Thai enterprises by size in various years. From Table 2.9 it can be seen that SMEs accounted for more than 99 percent of overall enterprises with virtually all of these being small enterprises.

Table 2.9: The number and proportion of enterprises in Thailand by size (1994-2005)

Please see print copy for table 2.9

The growth rates of SMEs during the early period (1994-1999) of the study vary due to inadequate data. However, Figure 2.1 shows a dramatic decrease in the absolute numbers of SMEs and also all enterprises, except large enterprises, during 1997-1999 as a result of the financial and economic crisis in Thailand during the years 1997 and 1998. Foreign direct investment was the major reason for the increased number of large enterprises during this period. After 1999 the number of SMEs increased rapidly, stabilising after 2004. The number of SMEs after the economic crisis has been boosted by government promotion policies (These will be reviewed in section 2.3.6 of this chapter).

Figure2.1: Trends and numbers of SME in Thailand (1994-2005)

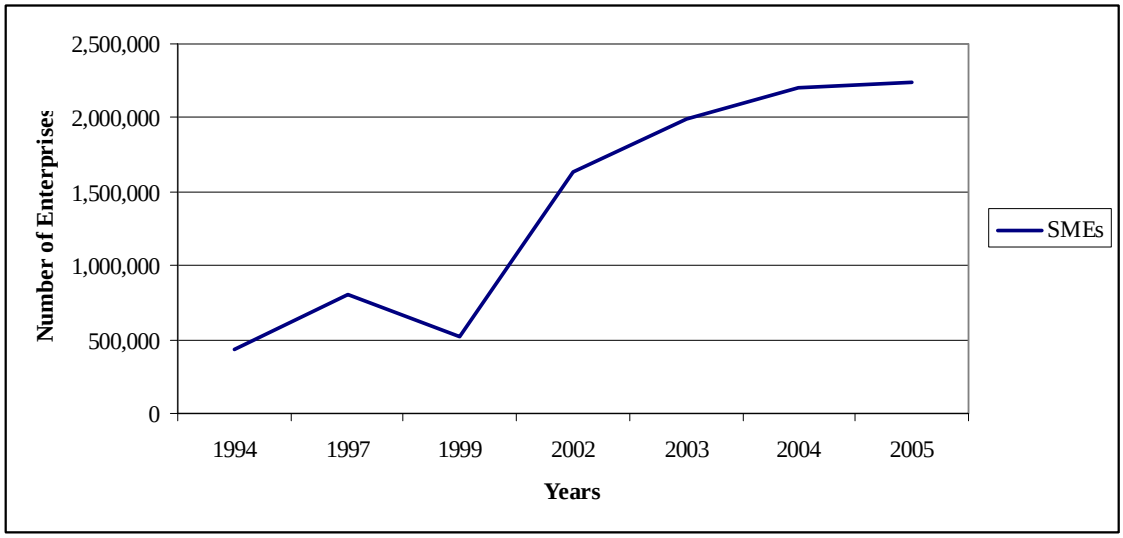


Table 2.10 shows that the largest numbers of SMEs were in the retail trade sector in 1999, accounting for 56.67 percent of all SMEs. After 1999, however, the distribution of SMEs moved away from the retail trade sector to the manufacturing and service sectors. According to the Office of SME Promotion (2002 and 2003) there are three main reasons for the increasing proportion of SMEs in the manufacturing and service sectors. First, increased competition from large discounted stores such as Tesco Lotus, Kafu, and BigC have increased the closure rate of SMEs in the retail trade sector (The Office of Small and Medium Enterprises Promotion, 2002). Second, the database in 2003-2005 indicated that there were some SMEs regarded as unidentified in terms of economic activities. This may cause the number of SMEs under the retail trade sector to

decrease (The Office of Small and Medium Enterprises Promotion, 2003). Third, in 2002 SMEs in the manufacturing sector received 573 promoted projects from The Office of the Board of Investments (BOI). These projects were agriculture products, steel machines and spares, mining and raw steel, electronic and electronic appliances, paper and plastic products, services and utilities. As a result of these projects there was an increase in the number of enterprises in both the industry and service sectors (The Office of Small and Medium Enterprises Promotion, 2002).

Table 2.10: The number and proportion of SMEs in Thailand by industry (1994-2005)

Please see print copy for table 2.10

The distribution of SMEs by region has not changed much during the period from 1994 to 2005. From Table 2.11 it can be seen that Bangkok and its vicinities contain the largest numbers of SMEs followed by the North-eastern region. In 2005 Bangkok and its vicinities had 674,838 SMEs (30.14% of the total), an increase of 14,449 from 2004. The North-eastern region ranked second with 625,402 SMEs in 2005 (27.93% of the total), an increase of 1,720 from 2004. The third most important is the Northern region, which accounted for 387,585 SMEs in 2005 (17.31% of the total), an increase of 1,353 enterprises from 2004. The Southern region accounted for 215,588 SMEs in 2005 (9.63% of the total), an increase of 1,889 from 2004. In the Central region, there were 190,061 SMEs (8.5% of the total), an increase of 3,545 from 2004. The region with the lowest SMEs share is the Eastern region with 129,210 SMEs in 2005 (5.8% of the total), an increase of 3,872 from 2004. The remaining 16,596 enterprises are unidentified.

Table 2.11: The number and proportion of SMEs by region (1994-2005)

Please see print copy for table 2.11

Table 2.12: The number and proportion of SMEs in Bangkok and its vicinities by industry (1994-2005)

Please see print copy for table 2.12

A closer examination of the structure of industry of SMEs in Bangkok and its vicinities shows a similar trend to that for the whole country (Table 2.12). The largest numbers of SMEs were in retailing in 1994 accounting for 57.69 percent of all SMEs. After 1997, however, the proportion of SMEs starts to move away from the retailing sector to services and manufacturing especially during 2004-2005. In 2005 there were

674,838 enterprises in these areas, with only 132,118 (19.6% of the total) located in five areas or vicinities. Of the 674,838 enterprises in these areas the services sector holds the highest share at 207,527 (30.8% of the total) enterprises. The manufacturing sector ranked second with 153,348 enterprises (22.7% of the total) followed by retail trade at 126,225 enterprises (18.7% of the total). The lowest share in Bangkok and its vicinities is Wholesale trade which accounted for 92,629 SMEs (13.7% of the total).

2.3.3 Employment in SMEs

Table 2.13 displays the number and proportion of employed persons by Thai enterprises in various years.

Table 2.13: The number and proportion of employed persons by firm size (various years)

Please see print copy for table 2.13

For almost every year in Table 2.13 SMEs accounted for more than 70 percent of total employment, except 2002 and 2003. In 1997 the number of employed persons by overall enterprises decreased by more than 2 million from 1994, as a result of the economic crisis. After 1997 these numbers increased from 5,313,370 to 8,332,600 persons in 1999[5], and continued rising to more than 10 million persons by 2004. The growth rates of employed persons by SMEs vary due to an inadequate database and

[5]According to the Office of SMEs Promotion (2001) improvement in the statistical collection technique is one of the main reasons for such a huge increase of SMEs during 1997-1999.

statistical collection technique. According to the Office of SMEs Promotion (2003) the number of employed during the years 1994-2003 is not complete due to some businesses not reporting numbers employed. As a result the number of employed persons by SMEs during this period might be underestimated.

Table 2.14 presents the number and proportion of employment by SMEs by industry. In 1994, manufacturing, retailing and services had an almost similar proportion of employment with 31.21%, 31.36% and 33.80% of total SME employed persons respectively, even though the manufacturing and services sectors' SMEs contributed only 19.31% and 18.83 % of the total number of SMEs. The main reason for this arises from a low average number of employed persons in the retail sector and relatively more labour intensity for the manufacturing and services sectors. According to the Office of SMEs Promotion (2005b) the retailing sector has an average number of employment of 2 employees for small enterprises and 54 employees for medium sized enterprises. The manufacturing and service sectors, on the other hand, have an average number of 4 employees for small enterprises in both sectors and 216 and 109 employees for medium sized enterprises in the manufacturing and service sectors respectively. After the economic crisis in 1997 SMEs in the manufacturing and services sectors became more important as a result of government support programs. The support programs encouraged new start up enterprises in these two sectors and this helped to increase the number of SMEs and the numbers employed by SMEs especially in the manufacturing sector. The numbers employed by SMEs in the manufacturing sector increased from 1,928,300 persons in 1999 to 3,420,120 persons in 2005. For the services sector the numbers employed by SMEs increased from 2,205,333 persons in 1999 to 2,378,657 in 2005. For the retail trade sector the proportion of employed persons by SMEs declined from 27.9% of total SME employed persons in 1999 to 15.35% of the total SMEs employed persons in 2005, as a result of a decrease in the number of retailing enterprises caused by intense competition from large discounted stores[6].

[6] Please note that the number of employed during 1994-2003 is not complete due to some businesses not reporting their number of employed. Thus, the number of employed by SMEs in this period might be underestimated.

Table 2.14: The number and proportion of employed persons by SMEs by industry (1994-2005)

Please see print copy for table 2.14

The distribution of employed persons by SMEs classified by region changed little during the period from 1994 to 2005. For almost every year in Table 2.15 Bangkok and its vicinities had the highest proportion of persons employed by SMEs followed by the North-eastern region. In 2005 the highest share of employment by SMEs is recorded in Bangkok and its vicinities at 4,644,179 (52.2% of total employment in SMEs). The second highest proportion of employment under SMEs is in the North-eastern region at 1,314,833. SMEs in the Northern, Central, Eastern, and Southern regions contributed 964,697 (10.8% of the total), 765,207 (8.6% of the total), 600,390 (6.7% of the total) and 587,906 (6.6% of the total) (Table 2.14) respectively. Although the number and proportion of SMEs between Bangkok and its vicinities and the North-eastern region during 2002-2004 are not much different (Table 2.11), the numbers employed by SMEs in these two regions are very different. Two reasons can be used to explain the difference. First, according to the Office of SMEs Promotion (2005b), most manufacturing firms in Bangkok and its vicinities are medium sized enterprises which have an average employment of 216 persons. In the North-eastern region, on the other hand, most manufacturing firms in the region are small enterprises, with an average employment of only 4 persons. Thus the difference in the proportion of employment between these two regions is affected by the difference in the size distribution of SMEs across these regions. Second, a large number of SMEs in the database of the government agencies such as the Office of SMEs, do not report their employment number. As a result the number of employed persons by SMEs in regions other than

Bangkok and its vicinities might be underestimated (The Office of Small and Medium Enterprises Promotion, 2003).

Table 2.15: The distribution of employed persons by SMEs classified by region (various years)

Please see print copy for table 2.15

SME employment in Bangkok and its vicinities is quite similar to that of other regions in terms of its structure. The manufacturing sector generally holds a higher share of employment compared to the trade and services sectors. From Table 2.16 it can be observed that for almost every year SMEs in the manufacturing sector accounted for more than 30 percent of total employment by SMEs in Bangkok and its vicinities. The services sector ranked second with an average of 30 percent of total employment by SMEs in Bangkok and its vicinities. For the retail trade sector the share of employed by SMEs in Bangkok decreased dramatically from almost 30 percent of the total in 1994 to less than 10 percent of the total in 2005, in accordance with a decline in numbers of SMEs in this sector. For the wholesale trade sector the share of persons employed by SMEs in Bangkok increased slightly from 9.19 percent in 1994 to 11.52 % of total employed person by SMEs in Bangkok and its vicinities.

Table 2.16: The number and proportion of employed by SMEs in Bangkok and its vicinities by industry (various years)

Please see print copy for table 2.16

2.3.4 The Contribution of SMEs towards Thailand's GDP

Table 2.17 presents the structure of Thailand's GDP for the period 1999-2005. The data in the table shows that the country's economic structure has not changed much during 1999-2005, with the non-agricultural sector continuing its critical role as a source of GDP. The major source of GDP in the non-agricultural sector comes from large enterprises with more than 40 percent of the total GDP, with a trend of continuing to be the major source of the country's GDP since 1999.

For SMEs the contribution to GDP at market prices was around 40 percent of the total during 1999-2005 (Table 2.17), with small enterprises continually adding more value than medium enterprises in every year since 1999, although the gap is closing. The strongest GDP growth of enterprises is that by large enterprises followed by medium and small enterprises. For GDP growth of SMEs it is obvious that they seem quite volatile but still achieving positive growth, reflected in the expansion of their contribution to GDP. Significant economic growth by Thai SMEs was registered in 2004 when their 6.3 percent growth rate of output exceeded the country's overall growth rate of 6.2 percent for the first time since 2000, but declined again in 2005.

Table 2.17: Thailand's GDP 1999-2005 by size of enterprise

Please see print copy for table 2.17

The structure of Thai GDP during 2001-2005 demonstrates that manufacturing remains the most important sector in the Thai economy. The services sector is the country's second source of income, contributing between 31-32 percent of total GDP at market prices during 2001-2005. The third important sector is trade and maintenance. The latter's participation in GDP grew steadily during the period. For SMEs, trade and maintenance is the most important economic activity contribution to GDP, trailed by services and manufacturing. However, while the trade and maintenance sector and services sector remained steady during the period 1999-2005, the contribution of manufacturing sector SMEs to GDP continued to increase each year except 2005. According to the Office of SMEs Promotion (2005b) the main reasons that the growth

rate of SMEs, in almost every sector except mining, decreased during 2005 are political uncertainty, violence in the Southern part of the country and an increase in the oil price.

Table2.18: GDP and GDP growth of enterprise by economic activity (1999-2005)

Please see print copy for table 2.18

2.3.5 Thai SME Weaknesses

Arising from the economic crisis of 1997 SMEs have been looked upon as the "solution" to the future development of the Thai economy and society (the Office of SMEs Promotion, 2001, p5). However, Thai SMEs still have a number of weaknesses that inhibit their competitiveness in the international market place.

1. Lack of managerial skill and high skilled labour

Thai SMEs are seen as lacking many of the vital skills required for modern management. Moreover, many Thai SME managers are deficient in basic skills such as those relating to computers, finance, marketing, accounting, market analysis and strategic planning (Brimble et al., 2002). One of the main reasons for this problem comes from the style of operation. Most SMEs are family operated businesses passed down from father to son which rely on their own limited experience. This traditional style of running a business may work well for a local market but may fare below an acceptable standard for involvement in international markets (Mephokee, 2006). In addition, lack of skilled labour in engineering, computer science, and research and development is another serious problem facing Thai SMEs (Brimble et al., 2002).

2. Access to sources of funds

A large number of SMEs are facing difficulties accessing formal sources of funding because of their small size, lack of fixed assets, lack of systematic accounting and lack of business plans. Such limitations lead to difficulty in obtaining loans from financial institutions. The eruption of the 1997 economic crisis imposed more severe financial constraints on SMEs as financial institutions encountered problems relating to non-performing loans (NPLs) (The Office of Small and Medium Enterprises Promotion, 2001).

3. Poor support from government agencies

Another weakness of Thai SMEs comes from government agencies. SME promotion has been under government consideration for many years, however government agencies are not equipped to play an effective role in promoting them. According to Brimble et al. (2002, p.224) the weak system of corporate governance and the infamous corruption found in Thai government are major concerns resulting in inefficient support from the government. There are several issues that must be revised

including government transparency, inadequate legal and regulatory framework, the structure of government agencies and the capability of human resources in the public sector (Mephokee, 2006).

4. Technology and information

The lack of technology utilised by Thai SMEs translates into an inability to meet customer's demands. Without adequate production technology or quality control, goods produced by SMEs are often below export quality standards (ISO standards) or fail to meet the assembler's requirements, making it very difficult to participate in multinational company supply chains. Also, many managers of SMEs are unaware of the prevailing international standards (Brimble et al., 2002)

Thai SMEs have a problem in keeping up with rapid changes occurring in the domestic and global markets. The absence of appropriate technology and the lack of information technology skills among managers of SMEs are a critical issue that need to be addressed (Brimble et al. 2002).

5. Competitiveness

Currently, Thai SMEs are subject to increasing pressure from foreign competitors. Thailand's labour costs have risen sharply since the 1980s and its labour supply is no longer competitive in the region with the likes of Indonesia, Pakistan, Vietnam, and many others (Brimble et al. 2002). Thai firms in general fail to employ greater use of technology, and when combined with rising wages the country has become less competitive in the region. One of the key challenges is for SMEs to shift towards competitive advantage as opposed to comparative advantage through applying higher technology, reducing imported inputs to production, and moving into higher-value-added products (Brimble et al. 2002)

2.3.6 The government's policy in promoting Thai SMEs

After the economic crises in Thailand in 1997 the Thai government and related organisations have referred to SMEs as the solution and mechanism to the recovery of the economy and society, and to drive the country's economy ahead. According to the Office of SMEs Promotion (2002) plans that help to promote SMEs have been classified and carried out by different government agencies. In general there are two major plans (1) a strategic plan and (2) an action plan

1. **Strategic Plan**

Emphasis of the strategy is to:

a) Give importance to addressing two problems facing SMEs since the 1997 crisis, that is financing and marketing.
b) Improve infrastructure so as to enhance the government's ability to respond to SME requirements.
c) Promote sustainable growth in SMEs by upgrading competency, enhancing potential, upgrading labour skills, technological aspects, R&D, clustering and integration.
d) Solve problems and laying new foundations for growth of exporting SMEs, and start-up SMEs

2. **Action Plan**

In order to implement the strategic plan an action plan for the promotion of SMEs has been formulated. The details of the action plan are as follows:

a) Develop SMEs in communities, regions, and rural areas, taking into account appropriate utilisation of local resources.
b) Provide financial support and assistance to improve and develop the efficiency and capability of SMEs.
c) Develop or establish a venture capital and financial markets for SMEs
d) Reinforce the capability of entrepreneurs and personnel in SMEs in the areas of administration, management, and marketing and production development.
e) Develop quality and standards, trademark image, design development and packaging of products.
f) Promote or support the marketing and expansion of both international and domestic markets
g) Promote R&D, including technology transfer and local know-how.
h) Provide business information and promote the development of information technology.
i) Promote linkages and networking among SMEs and large enterprises
j) Promote and develop private organisations supporting SMEs
k) Provide facilities for investment and operation.
l) Remove disadvantages or obstacles encountered by SMEs
m) Revise and amend rules and regulations

n) Promote and support intellectual property rights.

In addition to these two plans, other government agencies, such as the Ministry of Industry, the Office of Small and Medium Enterprises Promotion and the SME Development Bank of Thailand, also have their own developmental tactics. For example to: (1) promote innovation within SMEs with the purpose of using one's concepts and ideas to develop quality and variety of products; (2) increase the supply of funds for SMEs by releasing THB 400,000 million to increase the effectiveness of the financial system through the release of financial lines to financial institutions; (3) improve regulations and reduce barriers for SMEs; and (4) create a Thai brand information and trade information centre.

During 2004-2005 twenty-two government agencies and 9 financial institutions have been involved in the SME support programmes mentioned previously. Examples of progress made and the overall success of these programmes, include the following:

a. THB 145,529 million was released in 2004 to provide finance to 314,888 SMEs, with a further THB 194,990 million to 347,298 SMEs during 2005.
b. Seven major regulations have been modified in order to reduce market barriers for SMEs. Furthermore, guidelines for a basic accounting system have also been established and published for SMEs.
c. More than 320 SME community shops were established during 2005. These shops help to promote local products and raise income for the local community.
d. The Product Development Centre was created by the Department of Export Promotion in 2004. This Centre promotes creativity of product designs, especially home furnishing appliances, garments and weavings, jewelleries, food, and furniture and toys industries.
e. More than 53,000 high skilled workers, especially for automotives and IT industries, were trained during 2004.

Other than support policies from the government the problems and challenges facing Thai SMEs can also be reduced by using social and business network. As suggested by the guanxi network and organisational network literature (for example, Redding, 1996; Jones, Hesterly and Borgatti, 1997; and Nahapiet and Ghoshal, 1998), good connections between enterprises in a network might be able to reduce such problems. The guanxi network is a certain type of interpersonal relationship that binds

two persons through exchange of favours. The network can help to increase the level of trust, degree of closeness, bound of reciprocity, and encourage long-term benefits, which encourage strong relationships that can increase competitive advantage by providing access to the resources of other network members. In addition, the organisational network literature also shows that networks can enhance the survival and capabilities of organisations by providing opportunities for shared learning, transfer of technical knowledge, and resource exchange. Thus a key objective of this thesis is to empirically test such propositions in the context of the guanxi network for Sino-Thai SMEs. A basic understanding of guanxi and organisational networks which can be used to improve the strength of Thai SMEs will be discussed and examined in Chapter 3 of this thesis.

2.4 SUMMARY

SMEs are a major feature of the new economy in all developing countries today. In most developing countries the contribution of SMEs to employment, income, and economic growth has been increasing over time. Although SME definitions differ widely among the Southeast Asian economies, depending on the phase of economic development as well as the purpose of usage, SMEs still share many common attributes. They are normally relatively small and closely controlled by the owner or manager. In many developing countries SMEs constitute at least 90 percent of all enterprises (Hayashi, 2005). Economies of scale, transaction costs, market structure and stage of development are four main factors that determine the size of enterprises and help to explain why SMEs account for a large share of firms in developing countries. SMEs are also the foundation of industrialisation. They are considered as a source of supply of goods, services, information and knowledge for larger enterprises. For job creation, SMEs are considered to be the principal generator of employment. However, a number of contributions to the literature (for example, Haltiwanger, 1999) argue that small enterprises do not consistently create more jobs on a net basis than large enterprises. In addition, SMEs have played a key role in the production of export goods. However, the ability of SMEs to compete with competitors in the international market depends on (1) the firm’s characteristics, (2) technological capabilities, and (3) commercial capabilities.

Thai SMEs account for more than 99 percent of all enterprises with around 30 percent of all SMEs being in the manufacturing sector (the Office of SME Promotion 2004 and 2005a). The retailing and service sectors are ranked second and third,

accounting for 25.16 percent and 25.80 percent of total SMEs in 2005 (the Office of SME Promotion 2004 and 2005a), respectively. More than 30 percent of SMEs are located in Bangkok and its vicinities with the majority of them being in the services industry (the Office of SME Promotion 2004). In terms of employment, SMEs account for more than 70 percent of total employment in the country (the Office of SME Promotion 2003, 2004 and 2005a). In 2005, manufacturing, retailing and services contributed 38.44%, 15.34% and 26.74% of the total of all SME employed persons (the Office of SME Promotion 2005a), respectively. In addition, about 40 percent of Thai GDP is attributable to SMEs (the Office of SME Promotion 2005a).

While there are many potential advantages of Thai SMEs, there are also some significant disadvantages in certain contexts. For example, a large number of both formal and informal SMEs in Thailand are facing difficulties accessing formal sources of funding because of limitations related to their small size, lack of fixed assets, lack of systematic accounting and lack of business plans (The Office of Small and Medium Enterprises Promotion, 2005b). Especially, informal enterprises do not have formal sources as an option and must depend on informal sources such as family, relatives and friends. Such limitations lead to difficulty in obtaining loans from formal financial institutions. According to the network literature (for example, Redding, 1996; Jones, Hesterly and Borgatti, 1997; and Nahapiet and Ghoshal, 1998), good connections between enterprises in the network might be able to reduce such problems. Networking provides opportunities for shared learning, transfer of technical knowledge, legitimacy, and resource exchange between firms. Most of the recent networking literature has been largely concerned with the Western business context. However, this is somewhat ironic because history suggests that the Chinese guanxi network has been the dominant form of transactional governance in China since long before the concept was taken up by Western writers (Davies et al., 1995). Since large numbers of SMEs in Thailand are operated by Sino-Thais (Mackie, 1994) it would be interesting to understand how Sino-Thai SMEs use their guanxi network to increase their competitive advantage. The business network literature shows that networks can enhance the survival and capabilities of organisations by providing opportunities for shared learning, transfer of technical knowledge, legitimacy, and resource exchange. Thus a basic understanding of the guanxi Chinese network and organisational networks in a Western context will be discussed and examined in the next chapter.

CHAPTER 3

LITERATURE REVIEW

3.1 INTRODUCTION

As in other South-East Asian countries, the role and influence of the Chinese in Thailand has been particularly important. The Sino-Thai community has played an important role developing Thailand's private sector. It is estimated to control 81% of listed companies by market capitalisation (Mackie, 1994). The entrepreneur structure of Thailand in South-East Asia is unique because ethnic Thai can claim to be dominant amongst big business entrepreneurs. Even small enterprises in Bangkok, especially in retailing, are mostly owned and operated by Sino-Thais (Mackie, 1992). In order to understand why Sino-Thais are important to the Thai economy, some of the key issues will be reviewed.

The purpose of this chapter is to establish a basic understanding of the guanxi Chinese network and relate this to organisational networks in a Western context. This chapter contains two major parts. The first is concerned with definitions and background concepts relating to the guanxi network, while the second part is concerned with key concepts and theories of organisational networks. An overview of these is presented in the form of schematic diagrams, see Figures 3.1 and 3.2 respectively.

Definitions and background concepts of the guanxi Chinese network are discussed as follows. First, the definitions of guanxi according to Western and Chinese writers are examined, compared and contrasted. Second, factors important to the Chinese as background to the guanxi network are presented. These factors are Chinese philosophies and religion, political and economic conditions. Third, the concept of guanxi bases is examined. According to the literature there are two major types of guanxi bases: blood bases and social bases. Fourth, this section categorises the interpersonal relationship between parties under the guanxi network. Fifth, the norms of guanxi that help to shape outcomes and increase productivity in the network are reviewed and discussed. They are reciprocity, role obligation, and particularism. Section six of the first part examines and reviews factors that help to establish and maintain strong relationships between parties in the guanxi network. They are trust and credibility, ganqing (degree of closeness), renqing (bound of reciprocity), and long-term

mutual benefit. In section seven, benefits from the guanxi network to business activities are discussed and classified. The last section of the first part outlines the methods that help to create and maintain a strong guanxi.

In the second part the key concepts and theories of organisational networks are examined and reviewed. This part also compares and contrasts guanxi and Western networks. In the first section of the second part the concepts of organisation and business network are briefly introduced. Second, the key differences between perfectly competitive markets, hierarchies and networks are reviewed. Third, a number of theories that can assist in explaining how and why networks can increase firm efficiency and competitiveness are discussed and reviewed. These theories are resource dependency, transaction cost economics, and social capital theories. Section four presents and reviews the benefits that business networks can offer to firms. Some of these benefits are similar in both the guanxi and Western networks. For example, both the guanxi and Western networks help to establish trust, repeat transactions, and good relationships with government and financial agencies. In section five, differences of instrument value between guanxi and Western networks are compared. In the last section of the second part differences in network formation between guanxi and Western networks are reviewed including methods of formation and reasons for differences.

3.2 GUANXI CHINESE NETWORK

3.2.1 Definition of Guanxi

Guanxi is one of the major dynamics in Chinese society (Alston, 1989). The term guanxi in the Chinese language is very loose, taking on multiple meanings. The common thread across the definitions is that they all refer to a certain type of interpersonal relationship; one that is personal and built on particularistic criteria.

According to Chiao (1982) and King (1991), in Chinese society factors that promote shared social experience among individuals are considered as the core of guanxi. They include, being a relative (close or distant), having the same ancestral origin, being a former neighbour, classmate, colleague, teacher/student, or supervisor/subordinate, having the same hobbies, and so on. Bian (1994) shows that guanxi could refer to one of three things: (a) the existence of a relationship between people who share a group status or are related to a common person, (b) actual

connections with, and frequent contact between, people, and (c) a contact person with little direct interaction.

Yang (1994, pp.1-2) states that guanxi

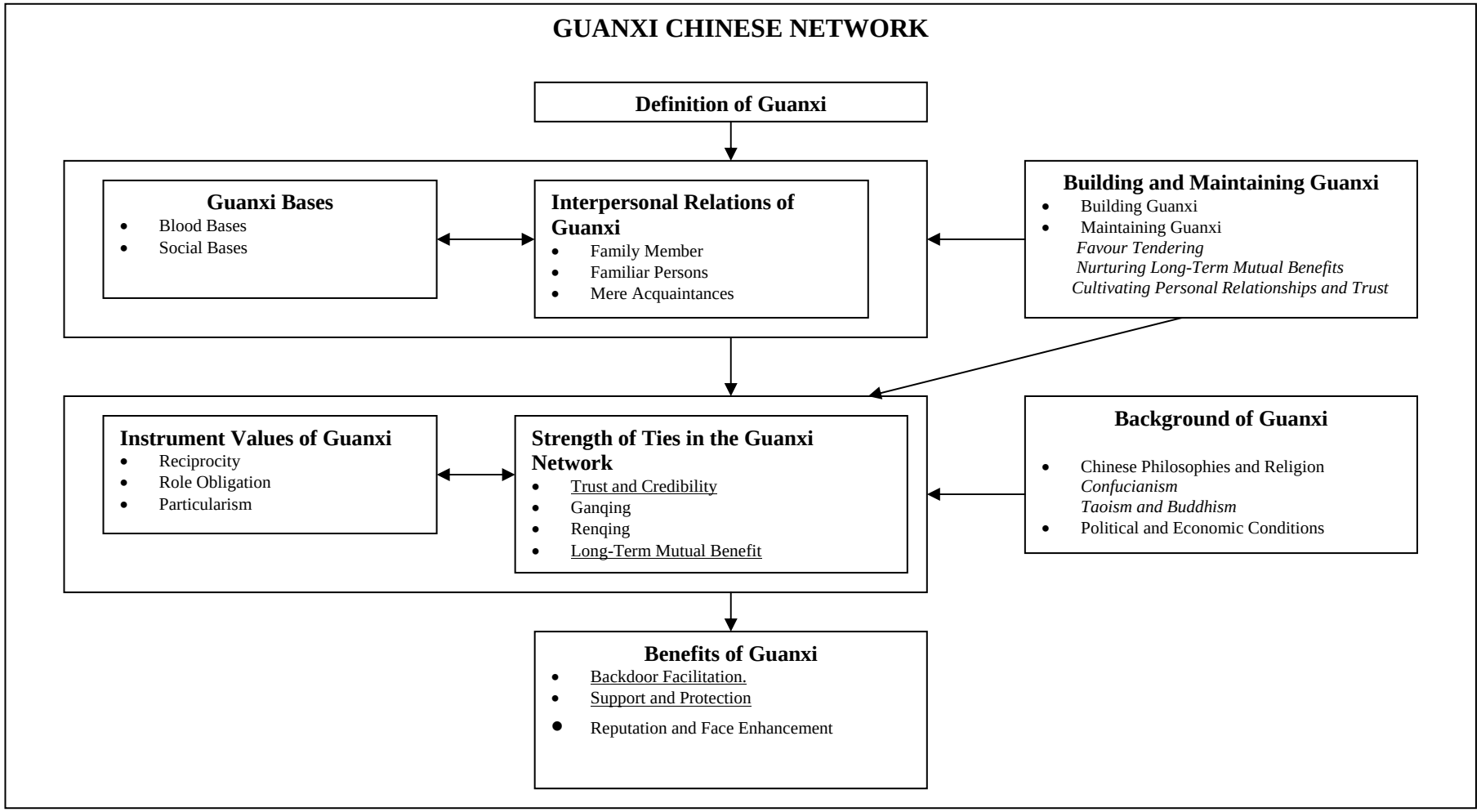
> *"Means literally "a relationship" between objects, forces, or persons. When it is used to refer to relationships between people, not only can it be applied to husband-wife, kinship and friend-ship relations, it can also have the sense of "social connection," dyadic relationships that are based implicitly (rather than explicitly) on mutual interest and benefit. Once guanxi is established between two people, each can ask a favour of the other with the expectation that the debt incurred will be repaid sometime in the future".*

Based on Yang's (1994) definition guanxi binds two persons through the exchange of favours rather than through sentiment. The guanxi relationship does not have to involve friends, although that is preferred, instead the relationship is basically utilitarian rather than emotional. The moral dimension operating here is that a person who does not follow a rule of equity and refuses to return favour for favour loses face and becomes regarded as untrustworthy. In other words, guanxi is a reciprocal obligation to respond to requests for assistance. It is not a pure interpersonal relationship (Tsang, 1998). According to Alston (1989, p.26) **"**guanxi relations that are no longer profitable or based on equal exchanges are easily broken". Thus, it can be concluded that guanxi refers to the establishment of a connection between two independent individuals to enable a bilateral flow of personal or social transactions. However, both parties must derive benefits from the transaction to ensure the continuation of such a relationship.

3.2.2 Guanxi Bases

The guanxi base refers to a situation when each person in a guanxi relationship shares an aspect of personal identification that is important to him or her as an individual. According to Jacob (1982, pp. 211) the existence of guanxi depends on "two or more people having a commonality of shared identification". For example, two people in a classmate guanxi share identification with an education experience important to both of them. Following the work of Tsang (1998) guanxi bases can be classified into blood bases and social bases.

Figure 3.1: Schematic Diagram of the Guanxi Chinese Network



3.2.2.1 Blood Bases

Blood bases consist of family members, relatives and members of the same clan. In most of the guanxi literature (Namazaki, 1997; Tsang, 1998; Tsui and Farh, 1997) these groups of guanxi bases are the most important and frequently highlighted. As Redding (1990) notes, one of the most distinctive features of Chinese societies is their family orientation. Since family is the basic building unit of Chinese society the Chinese usually feel obligated to help relatives and family members, and they are confident about their access to support from this personal network. In addition, Hamilton (1991) finds that family in the Eastern context is quite unlike that in the West. It extends to the farthest horizons, from close family, to distant family.

3.2.2.2 Social Bases

Social bases consist of those based on locality and those arising from social intermediaries, but locality is considered first. According to Farh et al. (1998) the home province in a Chinese context can be seen as the birthplace of the ancestors of one's father. As Redding (1990) notes Chinese people take the locality links as an extended form of their kinship relationship. Locality can refer to a natural village, a city, a province, or even a country. Depending on the situation, an individual can change the level of identification to increase the emotional energy that a locality relationship generates (Chen, 1995; Namazaki, 1997; Tsang, 1998). Yang (1986, 1989) reviewed numerous studies and found that, as a result of modernisation, Chinese people have become less socially and more individually oriented. However, some of the most important traditional attitudes, beliefs, and values persist and are unlikely to be replaced by modern ones. For example, two modern Chinese people meeting for the first time often inquire of each other, "Where is your home province?" Chinese people are attracted to others of the same provincial origin. Such in-group attraction may explain the large number of provincial associations among overseas Chinese.

Other types of social base are ones that arise from an intermediary or middle man. In the existing literature there is consensus that the position of the intermediary is particularly important in a business context (Yeung and Tung, 1996). Previous research has shown that a large number of non-Chinese investors use intermediaries to locate suitable joint venture partners and to establish connections in the Chinese market (Keijzer, 1992). Since business executives are reluctant to develop business relationships with those they do not personally trust (Xin and Pearce, 1996), it is

difficult for an outsider to be accepted into a business circle due to a lack of references (Brunner et al. 1989). Using an intermediary who has guanxi bases with both parties rather than self-initiated acquaintance is frequently mentioned to be a more effective altercasting[7] approach in China (Chiao, 1982; Walder, 1986; Yeung and Tung, 1996). According to Yang (1994, p.125) the relationship of the intermediaries with the target parties will largely add to the influence of the newcomers to the circle. For example, in the case that individual A wants to make a request of person C, with whom A does not have any guanxi, A usually seeks out a member of his guanxi network B, who also has guanxi with C and asks B to introduce him to C (Tsang, 1998).

3.2.3 Interpersonal Relations of Guanxi

In the literature interpersonal relationships of guanxi consist of different types. According to Yang (1994), these relationships can be categorised into four major groups. These are (1) family and kinship, (2) non-kin relations of equivalent status (e.g. classmates, co-workers and friends), (3) neighbours and native places and (4) non-kin superior and subordinate status (teacher-student, and others). Yan (1996) points out three types of relationship within a guanxi group, including real and close relatives; reliable friends who can always be counted on for help; and normal relatives or friends in a broader sense. Kipnis (1997) categorises four overlapping guanxi bases which are: family members; relatives; fellow villagers and friends. For a guanxi network of overseas Chinese in Malaysia and Singapore, Kiong and Kee (1998) highlight six basic relationships that are related to the business context: locality/dialect; close kinship; kinship; work place; trade association/social clubs; and friendship. In rural China Jacob (1982) suggests guanxi bases consist of: locality; kinship; co-worker; classmates; sworn brotherhood; surname; teacher-student; and economic or public relationship.

As the literature presented suggests there are many ways to categorise the types of interpersonal relationships. However, in this study, three categories of relationships from Yang's (1993) work are followed. The main reason these three taxonomies are chosen is because they are easily identified and are governed by very clear cut and different sets of social and interpersonal rules. According to the work of Yang (1993) there are three major categories of interpersonal relations in China: *chia-jen* (family members), *shou-jen* (familiar persons such as relatives outside the family, neighbours or

[7] Yeung and Tung (1996) refer to altercasting as the process of establishing guanxi between two individuals who have no ascribed commonalty.

people in the same village, friends, colleagues, or classmates), and *sheng-jen* (mere acquaintances or strangers). The differences in social and interpersonal relationships may affect strength of ties which result in differences in the level of network embeddedness. The concepts of strength of ties and network embeddedness will be discussed in chapters 4 and 5 of this thesis.

The *chia-jen* (family) relationship is characterised by relatively permanent, stable, expressive relationships in which the welfare of the other is part of one's duty. The general rule of exchange is that one must do his or her best to attend to the other's needs with no or little expectation of return in the future (Tsui and Farh, 1997, p.60). As noted by Bond and Hwang (1986) and Yang (1993), one of the most distinctive features of Chinese societies is their family orientation. The in-group favouritism based on kinship guanxi is due to strong family identification and role obligation as defined and reinforced by social norms permeating Chinese societies. In other words loyalty (and related favouritism) to family is an obligation, and it is rendered largely without an anticipation of reciprocity.

Shou-jen (friend) is someone with whom one has a friendship that may range from superficial to extremely intimate. The relationship with the *shou-jen*, therefore, is a mixture of that with *chia-jen* and *sheng-jen* and takes both utilitarian and expressive forms. Hwang (1987) and King (1989) suggest that in most friendships favouritism is often followed with a strong expectation of reciprocity.

The *sheng-jen* (stranger or mere acquaintance) category includes all those who are outside the family unit and with whom one has not established any meaningful relationship through past interaction. They could include members of one's local community, fellow employees who work in the same company, or customers of a business. Interactions with *sheng-jen* are superficial and temporary and are dominated by utilitarian concerns, focusing on personal gain and loss (Tsui and Farh, 1997, p.60). Table 3.1 summarises the principle of interactions and social treatment between these three categories.

Based on these preliminary research findings, at the individual level, it appears that role obligation may be the primary link between guanxi with *chia-jen* (family). Due to role obligation, an individual will act more favorably toward a family member than a non-family member. For the relationship of guanxi with *Shou-jen* (friend), it is governed primarily by friendship and interpersonal attraction. Exchanging favours between friends is the necessary ingredient to maintain friendship. Mutuality and

reciprocity are essential but for some individuals, such as those who hold strong traditional values, being loyal to one's friend may be considered as one's duty or role as well (Tsui and Farh, 1997). Thus, it is possible that both role obligation and friendship may mediate the relationship. However, in general, friendship can be expected to be the primary role for most individuals. For the relationship of guanxi and *sheng-jen* (stranger or mere acquaintance), it can be expected that benefits or utilitarianism are the major concerns of this relationship.

Table 3.1: Guanxi, Categories of Relationship and Modes of Interactions

Please see print copy for table 3.1

3.2.4 Instrument Values of Guanxi

What is special about guanxi in Chinese society is its important instrument values. These values are unique characteristics and also make guanxi productive in both social and business contexts. They are reciprocity, role obligation, and particularism.

3.2.4.1 Reciprocity

Reciprocity is the first important guanxi instrument value. According to Hwang (1987), the anticipation of repayment is the factor that motivates Chinese to do favours for people in their guanxi network, because of the strong binding power of the reciprocity norm. It is expected that the recipient will reciprocate some time in the future; otherwise, the guanxi cannot be sustained. Tsang (1998) highlights that guanxi is a double-entry system involving a continuous exchange of favours between the parties in the relationship. When one party receives a favour from the others, an entry should be made on the liability side as well as on the asset side. According to Huang, Andrulis and Chen, (1994) individuals that forget to return a favour are considered to be unethical people. In such a case, penalties might be inflicted upon parties who fail to honour the

reciprocity norm (Yang, 1994). This kind of Chinese ethic shows that when one gives to another, he/she can also rightly expect to receive from the person in the future (Ng, 1998). Besides, if mutually beneficial exchanges do not continue, people who are considered to be unworthy would drift away from the guanxi network (Huang, Andrulis and Chen, 1994). Thus, parties in a guanxi can confidently expect the eventual repayment to what they have offered as a result of reciprocity being the norm. At the same time the reciprocity norm creates a binding power that leads people to consider the negative effect of reciprocal penalty if they fail to honour such a norm and assures them of the right to isolate the offenders against it.

3.2.4.2 Role Obligation

Traditionally, Chinese people are assigned material and moral obligations according to their particular roles in the family (Hwang, 1987; Yang, 1994). Role obligation in the guanxi context can be referred to as the responsibilities arising from one's particular role in a certain context. It is one of the most important normative issues in the guanxi relationship (Bian and Ang, 1997). McGuinness et al. (1991) note that the role of obligation is not limited to family and kinship but also extends to non-kin ties. In other words, people involved in a guanxi network tend to represent their relationships in a more intimate way. For example, close friends address each other as brother or sister. Close neighbours refer to each other as uncle or aunt. Relations between masters and apprentices are considered as father-son relationships. In this way, high moral standards tie people together in close networks (Yang, 1994). In Chinese society if a person denies his/her obligations that particular person might pay the price of losing his/her kinship connections, which can be considered to be fatal in Chinese culture. Individuals in dyadic relationships are expected to help each other as if they are fulfilling obligations to their family members. Thus, when Chinese people connect their guanxi network and enjoy its benefits they also incur the burden of role obligations, which needs to be taken care of in the future (Chen, 1995; and Luo, 1997).

3.2.4.3 Particularism

Another guanxi norm is the mutual particular treatment provided by parties inside the guanxi network. As Brunner and Taoka (1977) state, in-group and out-group parties of a guanxi network are usually differentially treated. The favours of guanxi are normally granted to the parties in the network. In certain situations, particular favours

can be given to guanxi parties to honour the relationship, even if such activity goes against rules and law (Luo, 1997). Some observers, such as Butterfield (1983), have pointed out that the concept of particularism is an important characteristic of Chinese social relations. In-group members are treated as part of the family, privy to confidences, and not subject to formalities like distant people. Out-group people, however, are not only susceptible, but also excluded from any access to favours and support from people inside the network (Yang 1989, 1994). Role obligation, trust, altruism, and loyalty are highly network-specific in China. As Hui and Graen (1997) note, in Chinese tradition one is supposed to help one's family members and be devoted to the welfare of the clan. In a business context a study by Lee and Lo (1988) found that if a person is considered an insider, all business dealings will become easier and a significant business relationship could be established.

3.2.5 Strength of Ties in the Guanxi Network

The strength of interpersonal relationships in Chinese society is affected by many factors. These factors help to create and maintain strong relationships between parties in the network. They are trust and credibility, ganqing (degree of closeness), renqing (bound of reciprocity), and long-term mutual benefit.

3.2.5.1 Trust and Credibility

Trust and credibility are two of the important ingredients of guanxi. Wong (1995) and Kao (1993) claim that these two factors are personal and particularistic in nature. According to Bian (1997) trust and credibility are rooted in the community of blood or experience of long term reliable interaction, and rests on purely personal, familial relationships. Results from Yeung and Tung (1996) show that almost 85% of companies interviewed in China indicated that trust and credibility are a necessary condition for building and maintaining guanxi relationships. For example, according to Barton (1983), a Chinese deputy general manager of a Sino-foreign joint venture once urgently needed certain components in her factory. The components are in short supply, but, through her guanxi, she manages to obtain them from a friend in a factory in another city. Based on mutual trust a cash-on-delivery price is agreed verbally, and the components are sent to her factory. However, her factory is experiencing a cash flow problem when the components arrived. In order to uphold her credibility she paid the bill out of her own savings - an amount roughly equal to her annual salary. She says that

if she had not done so the guanxi with her friend would have been tarnished. In fact, “trust and credibility sometimes play a more salient role than legal contracts among overseas Chinese businessmen” (Tsang, 1998, p. 66).

3.2.5.2 Ganqing

An important dimension of guanxi, whether blood or social, is the degree of closeness or emotional attachment, which is determined by ganqing (Jacob, 1979). Ganqing is a measure of the emotional commitment of the parties involved. It is the component emphasising effective and emotional identification rather than duty, loyalty, or obligation (Yang, 1994). As Jacob (1979) notes, ganqing applies to a broad range of social relationships from the close linkage between parent and child, husband and wife to the hierarchical relationship between those of different social status or different ages. To build up ganqing the experience of sharing and interaction through living, working or studying together is a prerequisite. It can happen that two individuals have a guanxi base, but no ganqing. If two persons are not on good terms because of a clash of personalities, their ganqing is said to be bad. It also follows that their guanxi is bad. Hence, guanxi can be positive as well as negative (Tsang, 1998, p. 65). Thus key to obtaining a lasting and strong guanxi relationship is to cultivate a personal intimacy with the desired partner that cannot be imitated by others.

3.2.5.3 Renqing

Another instrument that is closely related to the ganqing in guanxi is renqing or debt of favour. Yang (1994) defines renqing as the bond of reciprocity and mutual aid between two people, based on their emotional attachment or the sense of obligation and indebtedness. Hwang (1987) argues that in a guanxi relationship, renqing can be transferred in the form of gifts or substantial assistance in social exchange. Under such circumstances the recipients will owe a renqing to the donors that should be paid back in the future. According to Hwang (1987, p. 963) “the debts of renqing are not often discharged rigidly and exactly, but they are remembered in minute detail and an individual can never pay off all the debt of renqing, even when some reciprocal action has been taken”. This means that the feeling of indebtedness is the key in the renqing component of guanxi. In addition, Yang, (1994) notes that while emotional sentiments are central to the notion of ganqing, the discourse of renqing articulates the moral and

decorous character of social conduct. In this way renqing can link a long-term personal relationship that is not filled with close ganqing.

3.2.5.4 Long-Term Mutual Benefit.

The last factor related to instruments of guanxi is long-term mutual benefit. This factor tends to "create interdependence between the two parties in the relationship so that there will be a great cost to each side in serving ties" (Yeung and Tung, 1996, p.62). Since neither side of the relationship dares to break the guanxi tie, because his/her own instrumental gains are dependent on it, the mutual support in the relationship is secured (Pye, 1992). Obviously, the interdependent interest in the guanxi relation serves as a kind of effective instrumental tie when the voluntary trust between both is absent.

3.2.6 Benefits of Guanxi

A brief review of the literature indicates that the most important benefits of guanxi in a business context can be classified into three main groups. These are backdoor facilitation, support and protection, and reputation and face enhancement.

3.2.6.1 Backdoor Facilitation.

Backdoor facilitations are considered an important guanxi function**.** According to Brunner et al. (1989) and Yang (1994) backdoor activities mean making use of closely-related people to get through bureaucracy, and to acquire favourable interpretation of regulations and rules and preferential treatment of one's demands. A survey conducted by Chu and Ju (1993) of 2,000 Chinese from Shanghai found that 72% of their respondents preferred using guanxi connections, over going through normal bureaucratic channels, to advance personal interests and solve problems. The backdoor function of guanxi in a business context mainly manifests itself in two ways. Firstly, guanxi gives business people a way to circumvent rules and create short cuts in the inefficient bureaucracy system (Yang, 1994). In this way business operations can be conducted more efficiently by avoiding formal mechanisms. Moreover, guanxi can also open back doors into the business community. That is, business people in the same relationship network are likely to offer each other preferential treatment and mutual support instead of arms length dealings in the market place (Amber, 1994, and Luo, 1997). Such preferential treatment can help them establish an immediate edge over competitors with less guanxi resources and also reduce transaction costs (Tsang, 1998).

3.2.6.2 Support and Protection

Xin and Pearce (1996) note that in a complex political and economic environment, business people are motivated to cultivate guanxi connections in order to access structural support. Government support and protection against threats are two of the guanxi benefits that come from structural support. Results from numerous studies (De Mente, 1994; Davies et al. 1995; Dixon and Newman, 1998) show that government support is considered a major benefit that firms operating in East and Southeast Asian countries might derive from their guanxi activities. They find that having a close relationship with government officials could secure various approvals and timely regulation information[8] (Davies et al. 1995). Yang (1994) points out that since government officials are usually the most proficient guanxi practitioners themselves, they may serve as effective intermediaries which help to establish a larger guanxi network. Thus, strong government connections can help firms to gain access to extensive governmental support for business operations.

In addition, it is very important to have connections with both senior and low-ranking officials. As Smart (1993) suggests it is equally important to include low-ranking officials in an effective guanxi network, since they might have influence on matters directly affecting the business operation. Thus, direct guanxi with officials in relevant government departments is extremely important while conducting business under the authority of local government (Dixon and Newman, 1998). For the guanxi connections with senior officials at the top level of decision making, they can be considered as a rare source of competitive advantage according to the resource-based view (Tsang, 1998)

Another benefit of the guanxi network is a protection role to business. As pointed out by Redding (1990) and Zucker (1986), personal connections like guanxi are particularly important as a means to secure protection in countries that do not have a stable legal and regulatory environment and that allows for impersonal business dealings. Since rule requirements are clear, and norm enforcement is effective within personal networks, guanxi could be taken as a substitute for the commercial legal system from which business people seek protection against threats. The reason that

[8] The distinction between the guanxi network and corruption is discussed by Yang (1989) and Smart (1993). Some perspectives on this issue will be focused upon in section 3.2.7.2 of this chapter.

businesses need protection by means of the guanxi network comes from the business environment in China which is highly complex, heterogeneous, and particularistic because the information is not codified and regulations are not made explicit. In addition, contract law in China has only just recently been developed and not many business operations can yet rely on it (Boisot and Child, 1988; and Dixon and Newman, 1998). Therefore, protection from unpredictable risk is highly necessary for Chinese business people.

The protection function of guanxi is a particularly prominent issue for Chinese entrepreneurs. As Xin and Pearce (1996) illustrated, in an environment characterised by weak market structures, poorly specified property rights, and insufficient institutional support, Chinese entrepreneurs need to compete with the nonprivate sectors for scarce resources, and they face various forms of interference. Therefore, they have to be more innovative and aggressive in order to obtain these resources by mobilising various guanxi tactics (Tan, Luo and Zhang, 1998).

3.2.6.3 Reputation and Face Enhancement

Guanxi can also be considered as an effective way to increase one’s reputation in China (Tsang, 1998) due to the concept of keeping face. Face is a key element in the development and maintenance of guanxi. Simply put, face is an individual's public image gained by performing one or more specific social roles that are well recognized by others (Redding and Ng, 1982). An individual’s social connections are important factors that others consider in judging his/her overall social status in Chinese society (Jacob, 1979). When estimating an individual’s social power people not only consider his/her personal qualities or visible resources, but also the social network to which that individual belongs. The larger (smaller) one’s social network is – and the more (less) powerful the people connected with it are – the more (less) impressive that individual’s power or image is perceived to be (Hwang, 1987). Though highly abstract the concept of face is treated by the Chinese as something that can be quantified and measured. How much face an individual has depends partly on his/her guanxi network. In addition, one needs to have a certain amount of face in order to cultivate a viable guanxi network (Hwang, 1987). Since it is crucial for the Chinese to enhance the value of their face and reputation in both personal and business relationships, business people in China actively set up guanxi with those who have a widespread reputation and employ guanxi activities to increase their reputation (Chen, 1995).

3.2.7 How to Build and Maintain Guanxi

3.2.7.1 Building Guanxi

Yang (1994) has described guanxi building as the process whereby two distinct individuals establish a basis of familiarity, which helps them to develop a relationship. In this process the gap between two hitherto unrelated individuals is bridged so that an outsider becomes part of the inside social circle of another person. In society not all people are related by blood and locality, thus interpersonal relationships need to be established. One way to do this is to use the concept of altercasting. Yeung and Tung (1996) refer to altercasting as the process of establishing guanxi between two individuals who have no ascribed commonality. The objective of altercasting is to rearrange the targeted person's social network in such a way as to involve the individual who wishes to be included in it. An effective way of attaining this goal is to use an intermediary who is a mutual friend of both parties. As presented before the intermediary can vouch for the behaviour and sincerity of either party.

3.2.7.2 Maintaining Guanxi

To maintain a guanxi relationship there are essentially three strategies that can be used: tendering favours, nurturing long-term mutual benefits, and cultivating personal relationships and trust (Yang, 1994; De Mente, 1994; Yeung and Tung, 1996; Leung, et al. 1996). It should be noted that these strategies are not mutually exclusive but rather should be viewed as complementary. None of the strategies alone is capable of building and maintaining strong guanxi relations (Yeung and Tung, 1996).

1. *Favour Tendering*

Initiating the flow of favours such as gift giving, banquet hosting and favour tendering is the most popular mentioned in the literature (Jacobs, 1979; Walder, 1986; Yang, 1989; De Mente, 1994). Gift giving is normal in guanxi activities. According to Yan (1996) this activity appears to have been central to Chinese culture throughout its long history. Yang (1994) observed Chinese society in the late 1980s and early 1990s and found that gift exchange was an important model of exchange in economic and political life, both as part of the state system of redistribution and, more recently, as part of business transactions.

Banquet hosting is another way to cultivate guanxi in the Chinese context. Attending a banquet together is often taken as a symbol of the starting point for a

guanxi relationship. As the shared dinner and the honoured toasts can be taken as tactics to break down successively formal postures and create instant intimacy between the hosts and the guests, and the lavish dinner and the guests' attendance at it are positive guanxi-constructing acts (Yang, 1994; Kipnis, 1997).

In addition, Yang (1994) shows that offering voluntary favours to a desired contact by tapping into one's own guanxi network or authority could also effectively raise the strength of the linkage. Other researchers (Leung, et al. 1996, Yeung and Tung 1996) found that offering intangible rewards, such as overseas trips and sponsoring and supporting the children of the targeted parties to study abroad, are the quickest way for foreign companies to establish guanxi relations in China.

The reason that these activities can initiate flows of favours and maintain relationships in a guanxi network is presented by Yang (1989, 1994). Yang points out that as the donor sacrificed the material wealth and labour to present a favour, he or she can gain an important moral advantage over the recipient in return. In other words the donor became the moral and symbolic superior of the recipient and could thus subject the latter to his/her will. Eventually, the effect of the gift or favour would materialise as the recipient repaid their debts by helping the donor to achieve his/her task to compensate for the loss sustained in accepting the gift.

Even though gift giving, banquet hosting, and favour offering are the popular methods to initiate a guanxi business network, these methods can also lead to bribery or corruption. Literature on the guanxi network provides a discussion that distinguishes guanxi activities from corruption. A clear distinction on this issue comes from Yang (1989) and Smart (1993), who study the process of gift giving in the Chinese economy. First, the rule of gift giving stresses the importance of the length and quality of personal relationships, while corruption is characterised by direct and immediate payment. Second, the exchange of gifts in guanxi is not only governed by the material values of those gifts or their supply and demand, but also by the quality of the personal relationship between the parties involved. Corruption, however, is conceived as a relationship linked only by material interest. Lastly, unlike corruption, "the offer of a gift, banquet or favour is not simply a transparent medium for the exchange of use values or economic exchanges, it also entails the transaction of symbolic capital in the form of face, social debt, and reciprocity" (Yang, 1989, p.49).

2. *Nurturing Long-Term Mutual Benefits*

Since one of the key goals of strong guanxi is to create long-term relationships between parties in the network, tactics that help to prolong personal ties are also important (Yang 1989, 1994; Yeung and Tung 1996). According to previous research, two subtle approaches are efficient in achieving the long term purpose.

The first method is to keep the debit and credit sides of the favour in balance from time to time, but never in complete equilibrium (Yeung and Tung, 1996). As mentioned before, reciprocity in guanxi is expected to remain in a dynamic state with one person or the other always waiting for a favour to be repaid at some time in the future (Engholm, 1991). According to Yang (1994), in a guanxi relationship, a repayment of merely equivalent value tends to end an ongoing guanxi. Since the other person is no longer indebted to respond to a future request, further interaction may be unnecessary. Thus, if one wishes to continue a guanxi the repayment will take the form of a more valuable offer, thereby obtaining moral superiority and keeping the other person indebted (Brunner et al. 1989).

The value of repayment is not the only factor that encourages long-term relationships between parties in guanxi, the interval of time before repayment is also an important consideration (Alston, 1989; Yang, 1994; Yeung and Tung, 1996). Yang (1994) notes that immediate reciprocation to a favour is considered inappropriate in guanxi. In order to establish a long-term guanxi relationship one should tactically lengthen the interval of repayment. From the donor's perspective once he/she has done someone a favour he/she will feel comfortable to leave it there unreclaimed for a long time, because this keeps him/herself in a superior position in future dealings. As Yeung and Tung (1996) point out every guanxi relationship is stock to be put away at times of abundance. The stock is then at their disposal in time of need. From the debtor's perspective there are also practical and social constraints against immediate repayment. The extension of a debt keeps a relationship open and encourages the donor to call in his/her debt with a request for help from the debtor, thus rendering the donor dependent on and indebted to the original debtor. In other words "an unpaid debt provides opportunities for future cultivation of the relationship" (Yang, 1994, p.144).

3. *Cultivating Personal Relationships and Trust*

Yeung and Tung (1996) point out that guanxi relations premised exclusively on material benefits can be fragile. Consequently, to maintain guanxi relationships many

feel that it is important to develop a personal relationship with the partner that cannot be readily imitated by others. Personal implies something specific to the two parties in the relationship, such as sharing inner feelings or personal secrets. To build an intimate relationship with the Chinese, most respondents indicated that sincerity and frankness are absolutely essential (Alston, 1989). To do this, one must create trust between parties. Without trust, it is virtually impossible to build and maintain guanxi (Yeung and Tung, 1996).

3.2.8 Background of Guanxi

To understand why guanxi is important and how it operates, one must understand some key background factors of guanxi which are Chinese culture, politics and economics.

3.2.8.1 Chinese Philosophies and Religion

King (1991), Tsui and Farh (1997) and Yeung and Tung (1996) traced the cultural origin of guanxi and found that Chinese philosophies and religion, such as Confucianism, Buddhism and Taoism, are some of the main factors behind the importance of guanxi. Many values and ethics related to the guanxi network are created by these factors. The conceptual meaning and the implications of these cultural heritages are briefly explained below

1. *Confucianism*

According to Confucianism, an individual is fundamentally a social or relation being. Social order and stability depend on a properly differentiated role relationship between particular individuals (King, 1991). In Confucianism there are five cardinal role relations (called wu-lun): emperor-subject, father-son, husband-wife, elder-younger brothers, and friend-friend. According to Yang (1993, pp.29-30),

> *"As a highly formalistic cultural system lun[9] required each actor to perform his or her role in a way that he or she should precisely say what he or she was supposed to say, and not to say what he or she was not supposed to say. In order to be a good role performer the actor actually had to hide his or her free will… is why Chinese has been said to be situation-centered situationally determined".*

[9] *lun* in Confucian ideology refers to the concept of guanxi or network in a Western context.

In a relation-centred world social relations are accorded much greater significance, and relationships are often seen as ends in and of themselves rather than being means for realizing various individual goals. As part of the emphasis on differentiated relationships, attention to others in China is highly selective and is most characteristic of relationships within group members (Yang, 1993). Many observers of Chinese social relations (Butterfield, 1983; Parsons, 1949) have noted that the Chinese have a much stronger tendency to divide people into categories and treat them accordingly, compared to Western society. This tendency of treating people differently, depending on one's relationship to them, constitutes the basic reason why guanxi is of such importance in Chinese societies. According to Butterfield (1983), Confucianism has evolved over the past two thousand years, but it still provides a moral, intellectual, and social nexus for the Chinese consciousness that even the socialist antipathy is unable to exorcise.

2. *Taoism and Buddhism*

In addition to Confucian doctrines, Taoism and Buddhism are two major religions in China that also play an important part for the harmony between people and their social environments (Scarborough, 1998). Chang (1984) notes that the durability and contradictions (yin/yang) which are inherent in all aspects of life are the key aspect of these two religions. Events that occur should be viewed as cyclical, not linear or discrete. Therefore time is considered to have no beginning or end. Following these viewpoints the Chinese usually take people and events as interrelated and emphasise the long-term harmony and balance among them (Yeung and Tung, 1996).

3.2.8.2 Political and Economic Conditions

The culture of guanxi is not only affected by Chinese Philosophies but also by political and economic conditions, especially after the Cultural Revolution (CR). From an economic perspective, Redding (1990) believes that guanxi is the side effect of the over idealistic communistic ideology. The unstable economic environment and insufficient institutional control during the period of the CR were factors that drive the guanxi tradition (Walder, 1986; and Smart 1993).

According to Yang (1986, 1989, 1994) there are several reasons for the use of the guanxi tradition in China. First, shortages of everyday necessities and scarce goods

throughout the country as a result of lagging economic development under the purely socialistic regime of the past few decades. Thus, when opportunities to obtain such necessities have arisen during the period of economic reform, people are prompted to seek access to them through their guanxi practices in the gift economy[10] (Yang, 1994). Second, Chinese people have to rely upon guanxi as a means of exchange to perform practical roles, due to insufficient institutional support and the bureaucratic mess particularly during the primitive stages of the new economic system. As a result, guanxi has become a necessary component in the daily lives of Chinese people (Yang, 1994). For example, results from Xin and Pearce (1996) show that in an underdeveloped legal framework, guanxi can be used as a substitute for formal institutional support. Private-company executives are more dependent on guanxi than executives in state-owned or collective-hybrid companies. Compared to other executives, private-company executives considered business connections more important, depended more on connection for protection, have more government connections, give unreciprocated gifts, and trust their connections more. Third, uncertainties in the political and economic environment after the CR made Chinese people disenchanted with the government and its ability to fulfil their needs. Hence, a widespread trend to emphasise bonds of mutual dependence, gratitude, and indebtedness as defences emerged in response to political and social uncertainties (Redding, 1990; Yang, 1986).

3.2.9 Guanxi and Market Failure

A number of contributions in the literature such as Chiao (1982), Bian (1994), and Tsang (1998) suggest that guanxi is a culture phenomena that can be used to reduce disadvantage, not only in society but also in the economy. Some of the important backgrounds for guanxi are Chinese philosophies and religion, such as Confucianism, Buddhism, and Taoism. These philosophies, religions and values of guanxi have been shared by many Chinese and overseas Chinese in many countries such as Hong Kong, Singapore, Thailand, and Vietnam. Furthermore, the guanxi network is also applied with overseas Chinese companies in order to increase opportunities of doing business in

[10] According to Yang, (1994) gift exchange is an important model of exchange in economic and political life in China. Gift giving is a process that creates reciprocation in the form of goods or services of comparable value, or of political support, general loyalty, honour to the giver, etc. or of the gift being passed on in some other manner.

those countries (Xin and Pearce, 1996). The degree of using guanxi in business networks across countries, however, can be differenced. Ramasamy et al. (2006) suggest that the degree of market failure and mixture of cultural backgrounds can affect the extent and level of the guanxi network. For example, comparing China with Singapore and Malaysia which are Chinese dominated markets, guanxi is more dominant in China than in Singapore and Malaysia. Since the degree of market failure is higher in the former (Ramasamy et al. 2006)

According to Bowles (2004) market failure can be describe as the condition where the allocation of goods and services by the market is not efficient. Market failure can occur for three main reasons. First an agent in a market can gain market power, allowing them to block other mutually beneficial gains from trade from occurring. This can lead to inefficiency due to imperfect competition which can take many different forms, such as monopolies, cartels, or monopolistic competition (Krugman and Wells, 2006). Second, the actions of an agent can have externalities, which are innate to the methods of production, or other conditions important to the market. Finally, some markets can fail due to the nature of certain goods, or the nature of their exchange. For example, goods can display the attributes of public goods, while markets may have significant transaction costs, agency problems, or information asymmetry (Krugman and Wells, 2006).

As suggested by the guanxi and social capital literature (De Mente 1994; Davies et al. 1995; Lin 1999; and Xin and Peace 1996), the guanxi and other kinds of social networks can be used to reduce the degree of market failure. For example, uncoordinated or opportunistic behaviour by economic agents can lead to market failure. Such behaviour can be reduced by increased information sharing, trust and credibility, and coordination, which are key value instruments of the guanxi network (Kao, 1993). Thus, the guanxi network in Singapore is likely to be less than in China, since the level of market failure is lower in the former than the latter. Nevertheless, many firms in Singapore still use their guanxi in order to do business with their partners from other countries such as China, Hong Kong, Taiwan, Vietnam, and Thailand. Furthermore, overseas Chinese in countries with lower in market failure, such as United Kingdom, Australia, and United States still use their guanxi network in doing business both at the local and international levels (Yang, 1994). Although market failure is an important factor that determines the level of guanxi used by individuals in the market, the benefits of applying the guanxi network in social and economic activities still

encourage people who have a shared common Chinese culture background to adopt guanxi.

3.3 ORGANISATIONAL NETWORKS

3.3.1 Overview

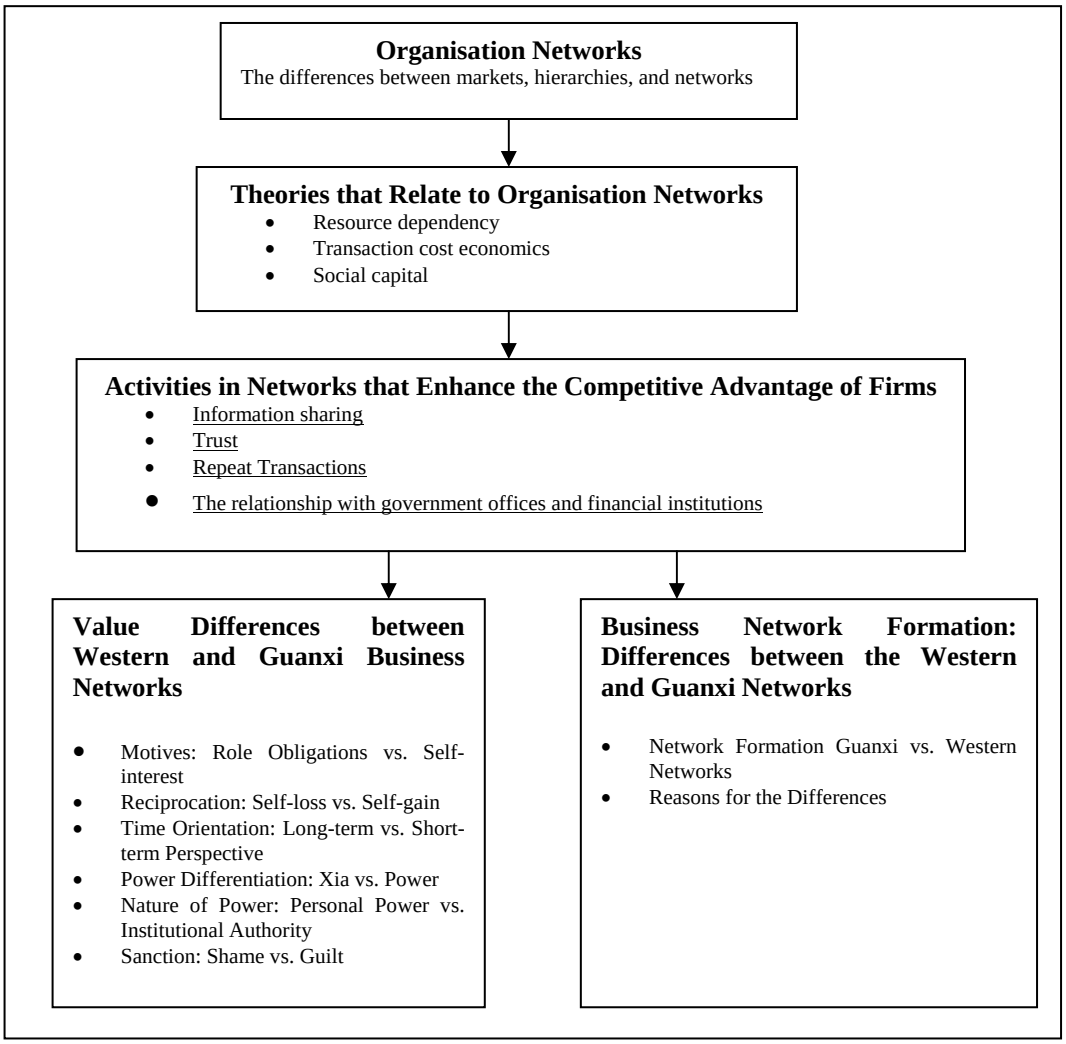
Since the 1980s, networks and relationship building have become critical for the success and survival of organisations around the world (Nohria and Eccles, 1992). Interorganisational networks are thought to enhance the survival and capabilities of organisations by providing opportunities for shared learning, transfer of technical knowledge, legitimacy, and resource exchange (Nohria and Eccles, 1992). Most of the recent networking literature has been largely concerned with the Western business context. However, this is somewhat ironic because history suggests that the Chinese guanxi network has been the dominant form of transactional governance in China since long before the concept was taken up by Western writers (Davies et al., 1995). Thus, the concept of networking is well-suited to capture some of the key features of guanxi. For example, it emphasises that networks are not discrete events in time, but are continuous relationships (Williamson, 1979). According to Hakansson and Snehota (1990) continuity requires that activities undertaken by the parties in a relationship cannot be completed without the active and reciprocal involvement of both parties. Thus, the Western concept of networking also includes the notion of continuing reciprocal obligation that is so firmly inherent in the Chinese concept of guanxi. In order to understand similarities between the guanxi network and the Western network, basic concepts and theories relating to organisation networks need to be reviewed and discussed.

3.3.2 Organisational Networks

There has been an impressive accumulation of studies related to Western networks focusing on inter-organisational relations and networks over the last decade. Most of the literature shows that networks are important and can help organisations to gain or sustain a competitive advantage. Figure 3.2 shows the theoretical background and many important aspects that relate to organisational network study. It also presents the difference in value and network formation between the Western network and the Guanxi business network. In this section these important issues as highlighted in Figure 3.2 will be discussed.

According to Jarillo (1988, p. 32) networks can be defined as "a mode of organisation that can be used by a manager or entrepreneur to position their firms in a stronger competitive stance". From this definition he argues that networks are long-term purposeful arrangements among distinct but related for profit organisations, that allow firms in them to gain or sustain competitive advantage vis-à-vis their competitors outside the network. In addition to this, networks can also be seen as a complex array of relationships between firms (Johanson and Mattson, 1987). Firms establish those relationships through interactions with each other. These interactions involve investments in time and other resources to build the relationships, which gives-

Figure 3.2: Schematic Diagram of the Western Network Context



Note: Underlined factors from Figure 3.1 and 3.2 are similar aspects that both the guanxi network and the Western network share together.

consistency to the network. Thus, care and nurturing of relationships becomes a priority for the management of firms. Contributions to the literature such as Thorelli (1986) and Johanson and Mattson (1987) suggest that networking is a mode of organisation that is not based strictly on the price mechanism or on hierarchy, but on coordination through adaptation. According to Thorelli (1986) networks can be seen as something between markets and hierarchies.

The differences between markets, hierarchies, and networks is summarised by Powell (1990). Perfectly competitive markets, Powell notes, offers choice, flexibility, and opportunity. They are a remarkable device for fast, simple communication. No one need rely on someone else for direction as the price alone determines production and exchange. The market is open to all comers. The participants in a market transaction are free of any future commitments. Competitive markets are, therefore, a paradigm of individually self-interested, non-cooperative, unconstrained social interaction. Markets have powerful incentive effects for they are the arena in which each party can fulfil its own internally defined needs and goals. While the market brings people together it does not, however, establish strong long-term relationships. At the same time markets are a poor device for learning and for the transfer of technological know-how. In a stylised perfect market, information is freely available, alternative buyers or sellers are easy to come by, and there are no carry-over effects from one transaction to another. But as exchanges become more frequent and complex the costs of conducting and monitoring them increase, giving rise to the need for other methods of structuring exchange (Powell, 1990, p. 302).

Organisation or hierarchy arises when the boundaries of a firm expand to internalise transactions and resource flows that were previously conducted in the marketplace. Within a hierarchy individual employees operate under a regime of administrative procedures and work roles defined by higher level supervisors. Management divides up tasks and positions and establishes an authoritative system of order. Because tasks are often quite specialised, work activities are highly interdependent. The large vertically integrated firm is thus an eminently social institution, with its own routines, expectations, and detailed knowledge (Powell, 1990, p.303). A hierarchical structure- (clear department boundary, clear lines of authority, detailed reporting mechanisms, and formal decision making procedures) is particularly well-suited for mass production and distribution. The requirements of high volume, high speed operations demand the constant attention of a managerial team. The strength of a

hierarchical organisation is its reliability, its capacity for producing large numbers of goods or services of a given quality repeatedly, its accountability, and its ability to document how resources have been used (DiMaggio and Powell, 1983; Hannan and Freeman, 1984). But when hierarchical firms are confronted by sharp fluctuations in demand and unanticipated changes, their weaknesses are exposed.

The basic assumption of a network relationship is that one party is dependent on resources controlled by another, and that there are gains to be had by the pooling of resources. In essence, the parties to a network agree to forego the right to pursue their own interests at the expense of others. According to Powell (1990, p. 303), networks can be complex; they involve neither the explicit criteria of the market, nor the familiar paternalism of the hierarchy. In network forms of resource allocation, individual units exist not by themselves but in relation to other units. These relationships take considerable effort to establish and sustain, thus they constrain both partners' ability to adapt to changing circumstances (Powell, 1990). As networks develop it becomes more economically sensible to create business activities rather than not. Benefits and burdens come to be shared. Expectations are not frozen, but change as circumstance dictates. A mutual orientation of knowledge which the parties assume each has about the other and upon which they draw in communication and problem solving, is established (Powell, 1990, p. 304). In short, complementarity and accommodation are the cornerstones of successful production networks.

In an industrial network, resources are used, processed, developed and exchanged within and between firms in the network in order to create value (Amit and Schoemaker 1993; and Hakansson and Snekota 1995). Exchange is a value realising process as the firms that are involved in the exchange are likely to be better off after the exchange than before (Peteraf, 1993). Resources are combined and activated by a set of actors in the network, who partly, but not completely, share knowledge. Knowledge is only tied to the resources in each specific network. This results in a multilateral dependence between resource collections controlled by several firms. The durability of the exchange of resources in the industrial network is determined by the level of complementarity and by the degree of transferability of the resource combinations (Dierickx and Cool, 1989). Hallen (1986) suggests that long-term resource exchange and relationships in the network is the predominant governance mode in industrial markets. A relationship in the industrial network is viewed as a governance mode where mechanisms like trust, commitment and co-operation are central features (Ganesan

1994; Morgan and Hunt 1994; Anderson and Weitz, 1992). Hallen (1992) suggests the facilitating role of non-business actors in what he terms “infrastructural networks”, which are the social ties of a particular organisation or person in a business network. Infrastructural networks, which often include political actors such as government officials, are not directly related to a specific purchase or sale, but can be seen as vehicles for information, communication and influence. They “may be as important as the business relationships” (Hallen, 1992, p. 79).

In addition to industrial networks, networks are also important for international business. Networking has been typically used to describe and understand firms’ internationalisation, and multinational companies’ structure and strategy (Johanson and Vahlne 1990; Forsgren et al., 2005). Existing studies of international business relating to networks can be categorised into four main areas. First, there are researchers dealing exclusively with the corporate subsidiary network, located within the boundaries of the multinational company (corporate network). For example, Bartlett and Ghoshal (1989) discuss transnational corporate networks and emphasize interdependence, cooperation and diversification within the network to achieve competitive advantage. Hedlund (1986) illustrates how the new entry multinational companies use networks to increase their access to overseas markets. In addition, Ghoshal and Nohria (1997) focus on internal organisation, and conceptualise large multinational firms as a Differentiated Network of subsidiaries.

Second there are studies that distinguish, from both a theoretical and empirical point of view, internal from external networks (corporate and external network). The focus here is upon problems and opportunities that corporate units face by participating and linking external sets of actors to internal ones. For example, Doz et al. (2001) present a Metanational model of the multinational company, where the organisation is formed by interlinked specialised unit networks spanning boundaries and integrating worldwide knowledge with the objective of achieving innovation and competitive advantage. Furthermore, Forsgren et al., (2005) discuss the difference between corporate and external networks. They argue that the external network is the most articulated network perspective concerning multinational companies. Furthermore, the embeddedness between companies in the network is a key factor that helps to create a strong network between companies.

Another issue relates to international business and networking strategies for management to develop their firms’ international competitiveness. There are two major

strategies that need to be focused upon. First, there is a need to develop and maintain effective relations with other organizations on which they depend for creating and accessing valued inputs. Often this requires the development of close cooperative, long-term relations, rather than relying on arms-length market transactions, in order to realize the benefits of resource and product adaptation; effective communication and coordination of activities; and knowledge transfer and creation (Morgan and Hunt 1994; Hakansson 1982). Such relations typically involve more direct, personal and social interactions among people from the firms involved (e.g., Hakansson and Snehota 1995; Nonaka and Tekeuchi 1995). The second general implication focuses on the position of firms in industrial networks. Network position refers to the pattern of relations a firm has with other members of the network, and the role(s) it is expected to play within the network. Its position both enables and constrains a firm's actions and focuses strategic attention on the issues and problems of understanding, establishing and changing a firm's position as well as defending and maintaining a position (Achrol and Kotler 1999; Johansson and Mattsson 1992; Thorelli 1986).

Finally, a number of studies focus on the external network and distinguish between the local and international dimensions. Important examples are Johanson and Mattsson (1986) and Johanson and Vahlne's (1990) work on the internationalisation process of firms, which is described as occurring from on going business relationships with external (international in the home market or local in a new market) counterparts (e.g. customers and suppliers).

3.3.3 Theories that Relate to Organisation Networks

Due to the importance of networks to business and organisations, a number of theories can be employed to explain how and why networks can increase efficiency and the competitiveness of firms. The literature on organisational networks has grown dramatically in the last decade, based on a number of theoretical approaches. According to Galaskieqicz (1985) there is no one theory of interorganisational networks. Similar to the suggestion from Oliver (1990) that the decision to initiate relations with another organisation is commonly based on multiple contingencies. According to Pfeffer and Salancik (1978) one of the dominant organisational theories for interorganisational networks is **resource dependency.** This theory focuses on the need of an organisation to gain access to scarce resources. In order to obtain such resources organisations must conduct exchanges with other organisations in the network. Thus, firms use networks to

overcome the uncertainty and distrust that plague economic transactions (Park and Luo, 2001). Similar to the resource dependency theory, economic studies view the organisational network as a connecting and transferring mechanism of complementary and interdependent competencies between firms (Uzzi 1997). The **transaction cost economics** theory describes networks as an intermediate form of governance between market and hierarchy (Jarillo, 1988). The long-term reciprocity in a network is an attribute of hierarchy, but networks also maintain the benefit of market efficiency that flows from scale and scope economies (Goes and Park, 1997). Another theory that can be used to explain organisational networks from the social perspective is **social capital.** According to Lin (1999) social capital is the process of investing both time and resources in social relations with expected returns in the marketplace. Since these three theories are dominant in the organisational literature and are also related to both social and business networks, they will be the main focus of this thesis.

3.3.3.1 Resource Dependency

Resource dependency is one of the most frequently employed theories within network studies (see, for example, Hayward and Boeker, 1998; Medcof, 2001; Scott, 2003). According to this theory, while the internal factors of an organisation have a role in organisational survival and sustainability, of more importance are the positions in which organisations are located and the pressures and constraints that emanate from those situations (Pfeffer and Salancik, 1978). Organisations cannot generate all needed resources internally so they must conduct exchanges with other organisations to obtain those resources. Since such resources are often scarce, and organisations tend to compete for them, the resource dependence model focuses on interorganisational efforts to gain power and control over essential resources, while minimising threats to organisational autonomy (Cummings, 1984).

According to Medcof (2001) there are a number of strategies that firms can adopt to minimise legal, political, economic and social environment impacts. Strategies such as cooperation, networking, and engaging in joint ventures with others to alter the environment in which organisations operate might be used to alter structures and systems. Pfeffer and Salancik (1978, p.p. 145-147) discuss the role and benefits of networks among organisations. According to them there are four primary benefits to specific organisations from networks. First, networks provide information for the organisation about the larger environment as a result of lessons derived from the

experience of other organisations in the environment. Second, networks help provide information to another organisation upon which the primary organisation depends.

Third, networks help to identify the potential sources that can provide support to the organisation. These include government, private agencies and other organisations. Finally, organisation behaviour is affected by external environments such as political, legal, economic and social. In order to survive in the market, organisations can either try to change their environment through political means or form interorganisational relationships to control or absorb uncertainties.

A study by Larson (1992) showed that network forms can be an alternative to vertical integration for high-growth entrepreneurial firms. The key reason for this is to build network exchange structures with outsiders that are identified as critical resource suppliers, and that can stabilise the new firm as a player in its targeted markets. According to Larson (1992, p.78) most SMEs lack a sufficiently strong financial position to contemplate the acquisition of critical functions within a single hierarchy, nor would such a strategy necessarily fit with the product and service focus that defines their business. Therefore, the use of a network exchange structure represents a critical leveraging opportunity whereby resources can be gained and competitive advantage realised without incurring the capital investments of vertical integration.

In addition, these network exchange structures can also be seen as a flexible alternative to integration, providing SMEs with many of the strategic benefits of vertical integration while avoiding the capital investments and bureaucratic inefficiencies of vertically integrated units. In addition, a study by Haynes and Senneseth (2001) on SME growth in networks found that by accessing and utilising external resources in a network, SMEs can overcome some of the disadvantages of limited size. They argue that the network can supply the firm with resources, which otherwise would not have been available to the firm. Thus, networking is assumed to enhance small firm performance and thereby small firm growth and competitiveness.

3.3.3.2 Transaction Cost Economics (TCE).

In economics and related disciplines, transaction costs are the costs of measuring what is being exchanged and enforcing agreements (Coase, 1937). Transaction costs can be classifieds into many kinds such as bargaining costs, search and information costs, and monitoring and enforcement costs. In microeconomic theory the total cost incurred by a firm can be mainly grouped into two sets; production costs and transaction costs.

Williamson (1973) sees production costs as the cost of producing goods and services in an efficient market, which requires perfectly competitive and full information to be available to all parties. Thus, departures from this efficient market can result in firms incurring costs which are transaction costs. For example, lack of information about customer creditworthiness might result in a bad debt. From this concept of transaction costs, a number of studies have shown that networks can play an important role in reducing transaction costs (Williamson 1973, Kogut 1988, Gulati 1995b, Uzzi 1997, Burr 2003).

Jarillo (1988) argues that networks are economically efficient by reducing transaction costs and allowing a firm to specialise in those activities of the value chain that are essential to its competitive advantage. Hennart (1988) and Kogut (1988) propose a TCE-based theory of joint ventures. Hennart (1988) suggests that joint ventures, a hybrid mode between market (arms-length agreement) and hierarchy (wholly owned subsidiary), are established to reduce transaction costs, to promote the pooling of complementary resources and to reduce behavioural uncertainty and consequential requirements for the sake of monitoring. Very close to Hennart (1988), Kogut (1988) demonstrates that high levels of uncertainty stimulate the formation of joint ventures when a firm's performance is critically affected by strategic uncertainties. Therefore, alliances are formed as a defence mechanism to tackle the problem of strategic uncertainty. He argues that joint ventures are used for the transfer of organisationally embedded knowledge that cannot be easily blueprinted or packaged through licensing or market transactions. In addition, Burr (2003) studied networking among financial companies and noted that networks can help to reduce transaction costs when counterparts act opportunistically. At the same time it also helps to encourage technology transfers, and joint production of goods and services.

In spite of the popularity of using the TCE perspective to explain business networks, numerous studies have criticised this perspective arising from partner opportunism. For example, Gulati (1995b) and Zaheer and Venhatraman (1995) point out that this approach fails to capture an important element in network governance, namely the role of interfirm trust and the evolution of interpartner relationships. Zajac and Olsen (1993) and Uzzi (1997) argue that a major weakness of TCE theory is that it over-emphasises cost minimization, neglects the value creation aspect of a transaction and barely recognises the influence of social structure on economic life (Uzzi, 1997).

In the entrepreneurship literature (e.g. Dunning 1993; and K'Obonyo 1999) networks and collaborate partnerships have been identified as solutions which can reduce transaction costs faced by SMEs, especially at the start-up stage. K'Obonyo (1999) points out that many problems small businesses face are related to their high transaction costs due to liabilities of smallness, newness, and therefore isolation. For small firms to get out of their liabilities of smallness and newness they must first overcome their liability of isolation by engaging in linkages or networks.

3.3.3.3 Social Capital

In the early stage of social science study capital was normally described as physical item, such as tools, buildings, and vehicles used in the production process. Since at least the 1960s economists have increasingly focused on broader forms of capital (Hayek, 1991). For example, investment in skills and education can be viewed as building up human capital or knowledge capital, and investments in intellectual property can be viewed as building up intellectual capital. Financial capital is referred to as the funds provided by lenders and investors to businesses to purchase real capital such as, equipment for the produce of goods and services. It can be defined in the form of capital assets which could be traded in financial markets. Its market value is not based on the historical accumulation of money invested but on the perception by the market of its expected revenues and of the risk entailed (Rugman, 2002). In addition to these, social capital is another kind of capital that has been of concern in the literature during the last few decades.

According to Lin (1999) social capital can be defined as the process of investing both time and resources in social relations with expected returns in the marketplace. Sabatini (2006) notes that enterprises devote some part of their financial resources to activities which are not directly related to the production process. Trying to build trustworthy relationships with external partners constitutes key tasks for management. Higher level participation and information transferred between companies are expected from the investment.

According to Lin (1999, p.31) there are four explanations as to why social capital will improve the outcome of activities in a network. First, networks can provide an individual with useful information about choice and opportunities otherwise not available in a situation of asymmetric information (Lin, 1995). This kind of information from a network would reduce transaction costs for the firm. Second, ties in a network

may exert influence on the agents (eg. owners or managers of companies) who play an important role in decision making (eg. buying or selling) involving the actor. Some ties in the network, due to their position in organisations, may have greater power in firms' decision making processes (Lin, 1999). Thus, being connected with agents who have high power or more valuable resources may increase a firm's advantage in the market. Third, individual's strong ties can be conceived by other agents as certification of the individual's social credentials, which reflect the individual's accessibility to resources through his/or her networks. These networks reassure other parties that the individual can provide additional resources beyond the individual's capability (Lin, 1999, p.31). Finally, being recognised as a member of the network can provide support and public acknowledgment to an individual or an organisation, which increases the individual's accessibility to certain resources (Lin, 1999). As Ahuja (2000) points out, participation and information sharing between members of the same network are higher than for non-members. For example, being a member of a Chinese business chamber might help the company gain access to valuable information (such as information about customers, suppliers, new technologies) which is difficult to acquire for non-members. From this literature it can be argued that social capital relates to both network and social relationship studies

In the process of network formation, social capital is also a key factor that can help an individual make a decision as to whether or not to join the network. As suggested by Goyal (2003), in the wide range of economic activities, individuals make decisions without being fully informed about the rewards from different options. In many of these actions individuals use their past experience and the experience of others in making current decisions. The experience of others is important for two reasons. First, it may provide information on different actions. Second, the outcomes from an action of the individual depend on the decisions made by others (Goyal, 2003, p.3.) These suggest that individual's interaction can influence the generation and dissemination of useful information and shape individual choices and social outcomes, since economic agents are often inefficient because they lack adequate or accurate information. Social capital can contribute to alleviating such failure by providing useful information and reduce transaction costs such as search and monitoring costs in the process on forming linkages (Gambetta, 1988).

In addition, social capital also plays a significant role in SME business performance. Feldman and Audretsch (1999); Cooke (2002); Cooke (2007) have

explored the role of social capital in SME performance. As suggested by the SME literature such as Hall (2002a), Harvie and Lee (2002) and Harvie (2007), there are considerable barriers preventing SMEs from growing. However, by collaborating with other SMEs on certain business functions such as joint marketing to get into or extend export markets, or by sharing non-confidential knowledge to enhance innovation capacity, they can, together, overcome barriers caused by small size in a relatively costless manner (Feldman and Audretsch, 1999). The main result from Cooke (2007) suggests a positive relationship between SME growth (in terms of employment, turnover, and also profit) and the use of external contacts. The importance of high trust relations with other firms or organisations is a key factor that helps to compensate for certain internal resource shortfalls. In other words, relational embeddedness is allowing social capital to be built up to compensate for some weak capabilities of SMEs. In addition, the result also suggests an association between the rate of innovation and the use of social capital.

3.3.4 Activities in Networks that Enhance the Competitive Advantage of Firms.

From the previous theories of organisation networks and empirical studies the efficiency and advantage of business in the market can be expected to increase as a result of information sharing, trust, repeat transactions, and relationship with government offices and financial institutions (Gulati 1995b; Uzzi 1997; K'Obonyo 1999; Burr 2003; Gulati, Nohria and Zaheer 2000; Cooke 2007). These activities not only affect the outcomes of business in a Western network context but also play an important role in building and maintaining strong guanxi network relationships.

3.3.4.1 Information sharing

One of the key obstacles to the enhancement of a firm's capabilities and progress is information deficiency. Therefore, a rationale for firms to join a business network is to seek business information sharing. Dyer (1997) shows that information sharing can reduce information asymmetry and the potential for opportunism that are the core causes of transaction costs. For example, a decrease in information asymmetries reduces contracting and monitoring costs because both parties are negotiating with similar information.

Furthermore, Wu and Choi (2004) argue that information sharing enhances not only business partners' capabilities but also compatibility between them. For example,

information sharing between buyers and suppliers can equip the latter with necessary technological know-how they may lack, and ensure that suppliers will be able to produce goods and services to the buyer's satisfaction and requirements. Moreover, information sharing enables business partners to adapt to each other's technological routines by learning from each other's capabilities and weaknesses. Most important of all, collaboration between business partners can result in enhanced technological capabilities that enable them to be more competitive in the market place. It is argued that rich information exchange in a business network can lead to greater cooperation and joint activities between the partners and higher levels of asset-specific investments, all of which translate into concrete performance benefits for the firms forming such ties (Gulati, 1998). Thus, information sharing can help firms develop new capabilities, enhance compatibility, and consequently increase efficiency and competitiveness in the marketplace.

3.3.4.2 Trust

A trusting relationship promotes reciprocity within a network and encourages business partners to engage in more information sharing (Harrigan, 1985). Barney and Hansen (1995) define trust as confidence in a partner who will not exploit the vulnerabilities of the other. Zaheer, McEvily and Perrone (1998) argue that trust reduces the inclination to guard against opportunistic behaviour that is the key source of transaction costs.

Gulati, Nohria and Zaheer (2000) show that the presence of interorganisational trust is extremely important for network partners to achieve better task coordination, because it makes firms more comfortable in sharing technologies and other business information with their business partners. As a result, it helps firms create greater value for there customers. Tasi and Ghoshal (1998) found that trust and trustworthiness contributed positively towards resource exchange and in becoming more competitive via the productive combination and utilisation of other network firm's complementary resources and skills. Nahapiet and Ghoshal (1998) argue that trust can indicate greater openness to the potential for value creation through exchange and combination. Therefore, trustworthiness increased the efficiency of resource exchange utilised between the firms and business partners, which in turn increased efficiency and competitiveness in the marketplace.

In the guanxi Chinese network, trust is also one of the key factors that determines the outcome of networks. As Yeung and Tung (1996) show, trust is a necessary condition for building and maintaining a guanxi relationship. To maintain relationships it is important to develop personal relationships that cannot be imitated by others. In the guanxi network, sincerity, frankness, and trust between parties are factors that help to create and maintain a strong relationship (Alson, 1989). Without trust it is almost impossible to build and maintain guanxi (Yeung and Tung, 1996).

3.3.4.3 Repeat Transactions

Repeat transactions can be defined as long-term ongoing business interactions between existing business partners (Wu and Choi, 2004). Polanyi, (1962) argues that repeat business interactions between a firm and its business partners enable both parties to establish an effective work routine that provides an incubator for the exchange of business information and knowledge, particularly tacit know-how, which is regarded as nonverbalizable, intuitive, and unarticulated knowledge.

Jones, Hesterly and Borgatti (1997) show that a repeat transaction helps transfer tacit knowledge in customised exchanges, especially for specialised processes or knowledge. In addition, it establishes the conditions for relational and structural embeddedness, which provide the foundation for social mechanisms to adapt, coordinate, and safeguard exchanges effectively. Thus, repeat transactions between a firm and its partners in a business network enables the development of a common language, which results in an exchange of information and know-how and helping firm business partners to become more efficient and competitive in the marketplace.

Another benefit of repeat transactions is reducing the chance of opportunistic behaviour, by building up institutional arrangements to minimise the sources of transaction cost occurrence (Tsang, 2000). In other words, business partners are willing to commit themselves to investing in relationship-specific routines because of reduced opportunistic behaviour.

In a guanxi network, concern about the long-term mutual benefit between parties is the main factor that creates repeat transactions. Long-term mutual benefit helps to create interdependence between two parties. As a result of interdependence there will be a greater cost to each party if one of them breaks the guanxi, because their own instrumental gains depend on the mutual support between each other (Yeung and Tung, 1996; Pye, 1992). Repeat transactions between two parties in guanxi are expected to be

dynamic until one party breaks or does not repay the favour. In addition, Tsang, (1998) notes that the more transactions between parties are repeated the higher will be the level of trust, which results in more support and more protection from another party.

3.3.4.4 The relationship with government offices and financial institutions

Wu and Choi (2004) point out that a good relationship with financial institutions can provide firms with a competitive advantage in obtaining benefits such as low interest rate loans. At the same time a strong connection with government offices can also help firms obtain access to valuable information, such as government policy on future economic development, taxation and import and export regulations. Access to valuable information can put firms in a better position to operate more efficiently with their business partners, and increase their competitiveness in the marketplace.

Similar to the guanxi network, Xin and Pearce (1996) note that government and financial institutions can provide support and protect parties who have guanxi with them. For example, Chu and Ju (1993) show that business people in China prefer to use guanxi connections over going through normal bureaucratic channels to advance their company interest and solve problems. These connections provide short cuts and reduce inefficiency from bureaucratic systems. For protection, Redding (1996) argues that connection to government and financial institutions are particularly important as a means to secure protection in societies that do not have stable law enforcement. In this case a personal network could be taken as a substitute for the legal system.

In addition to this Yang (1994) also notes that since government officials are usually the most proficient guanxi practitioners themselves, they may serve as effective intermediaries to parties at a higher rank whom the business people need to get through. This argument is similar to Granovetter's (1974, 1985) theory of ties. According to Granovetter there are strong and weak ties in the network. Strong ties are important sources of referrals that can enable prospective business partners to identify and learn about each other's capabilities. Another type is a weak tie. Granovetter (1974, 1985) argued that networks consisting of weak ties are more likely to exhibit different ideas, viewpoints and information and enable people to identify innovations. Therefore, government agencies and financial institutions can be intermediaries which help to increase the size of a network and provide more efficiency to the firm.

In addition, although the ties established between the firm and its business partners through referrals are weak ties, business partners are less likely to behave

opportunistically because of reputation and the possibility that their own relationship with government offices and financial institutions may be in jeopardy. With opportunism curbed and transaction costs reduced, business partners will be more forthcoming and ready to exchange innovative ideas and other information with each other (Wu and Choi, 2004).

3.3.5 Value Differences between Western and Guanxi Business Networks.

From the previous section, certain values and instruments of guanxi, such as trust and long term relationships, are similar to the Western concept of a network. However, according to Yang (1994), Redding (1996), and Yeung and Tung (1996) there are at least five paths which are different between a guanxi and Western network. There are the motives for engaging in social relations, reciprocation in social exchanges, time orientation, pattern of differentiation, nature of power, and sanction practice.

1. *Motives: Role Obligations vs. Self-interest*

In the west the primary influence on human behaviour is self-interest. Dawkins (1989) suggests self-interest is a common norm of some countries in the Western word. He defines self-interest as the act of placing one’s own needs or desires above the needs or desires of others. In Chinese culture, however, Confucianism stresses the importance of an individual’s place in the hierarchy of social relationships. Individuals are part of a system of interdependent relationships. A person's fulfilment of the responsibilities of a given role ensures the smooth functioning of society. Thus, the dissimilarity between the two cultures has led to the development of very different attitudes about reciprocation.

2. *Time Orientation: Long-term vs. Short-term Perspective.*

Guanxi is maintained and reinforced through continuous, long-term association and interaction. According to Yeung and Tung (1996, p. 55) “every guanxi relationship is regarded as stock to be put away in times of abundance and plenty. The "stock" will then be at their disposal in times of need and trouble. The debit and credit sides of this balance sheet are never in equilibrium, since such a status often means the end of a guanxi relationship”. However, social transactions in the West are usually seen as

isolated occurrences. The objective is to maintain balance in each transaction, with great emphasis placed on immediate gains from the interaction (Redding 1996).

3. *Power Differentiation: Xia vs. Power*

Another basic tenet of Confucianism is xia, a term that carries the same connotations as "knight" in the Western world. In striving to become a "righteous individual," each person must become a knight and attempt to right the wrongs of the world. Thus, those in positions of power and authority must assist the disadvantaged. In return the former gains face and a good reputation (Yang 1994). For Western society, while social conscience may be strong in the West, the powerful are under no role of obligation to assist those who are disadvantaged (Redding 1996).

4. *Nature of Power: Personal Power vs. Institutional Authority*

Emphasis on personal power promotes the practice of guanxi, since an individual (rather than institutional authority) defines what is permissible in a given context at a particular time. Based on Confucianism, governance by ethics is preferred over governance by law (Yeung and Tung, 1996). This accounts for the general aversion to law and litigation in Confucian societies. In contrast, Western society relies primarily on institutional law to ensure smooth and orderly progress. In many countries such as Britain the roles of common law and courts are very important to the society (Hyam, 2005)

5. *Sanction: Shame vs. Guilt*

In Confucian societies the primary deterrent against immoral or illegal behaviour is shame (Bian 1994). One of the factors that contribute to this is the emphasis on "face" and “face-saving." In Confucianism, face implies more than reputation. People who have lost face in Confucian societies are more than social outcasts. A loss of face brings shame not only to individuals, but also to family members. Because of this shame the family members are unable to function in society. Thus, to maintain guanxi, extra care must be taken in the acquisition and maintenance of face, generally referred to as face works. The West, on the other hand, under the influence of Judeo Christianity operates primarily on the basis of guilt (Yang 1994).

Because of an internalized understanding of sin, individuals feel guilty if their behaviour deviates from the cultural standards of morality (Yeung and Tung, 1996).

3.3.6 Business Network Formation: Differences between the Western and Guanxi Network

In addition to value differences between the guanxi and Western networks as seen from the previous section, network formation between these two networks are also different. In the next part of this section we present the differences in network formation between these two networks, while the reasons for these differences will be presented in the last part.

3.3.6.1 Network Formation: Guanxi vs. Western Networks

Buttery and Buttery (1995) and Fulop and Kelly (1997) suggest that in many Western countries, business networks, comprising SMEs, have been mainly formed through interventions of third parties, such as industry associations, industry bodies, development boards or governments or through a combination of these agents. For example, studies of contrived networks in Australia have shown that SME owners do not actively seek out network relations. Instead, they are usually either co-opted or enticed by a third party and they are less likely to join on their own initiative or through personal contacts with other business owners (Fulop and Kelly, 1997). In studies undertaken by Buttery and Buttery (1995) of SME-based networks in Australia, developing common goals, openness and trust were given high ranking by network participants as being important to a network's success. Yet Buttery and Buttery (1995) and Fulop and Kelly (1995 and 1997) have found that the incidence of planning in these SME networks was limited and often left to a third party, such as a consultant or network broker. Few SMEs in these two studies had strategic plans that included joining a business network. The attraction of government funds was often the major catalyst. For example, Ffowcs-Williams (1998) notes that in the case of Australia a number of specific network types have emerged as a result of the targeting that occurred in government funded business network programs. It also makes little sense to discuss networking and SMEs without addressing the issue of government sponsored business network programs in the country.

By contrast, in most of East and Southeast Asia business network relationships are organic[11] and have not required, or been given, deliberate help from outside agencies. SMEs may refuse to be helped by schemes that exist to facilitate networking rather than principle or contract oriented. In other words the relationship comes before the contract (Hampden-Turner and Trompenaars 1997).

Mead, (1998) shows that the organic Chinese business network in East Asia tends to have the following characteristics:

a. Relationships tend to be long-lived.
b. Collectivist loyalty is expected between family members, and communication is effective in terms of quality of information and level of information sharing between them.
c. The families are insiders and are clearly distinguished from outsiders who pose a threat from which they are protected by the loyalty and cohesion of family members.
d. Family and patronage loyalties, rather than bureaucratic norms, determine family relationships.

Looking at these characteristics it can be argued that the characteristics of East and Southeast Asian business networks are influenced by values and norms of guanxi. For example, Fulop and Richards (2002) claim that the overseas Chinese, who form an ethic minority yet play a commanding economic role in many countries of East and Southeast Asia, have as a dominant form the family business linked into a series of informal networks. These networks are very extensive and able to cross national boundaries, including into Mainland China, yet are not influenced by governments, but rather by a complex system of kinship and extended family ties. As a result of these it can be expected that Chinese family businesses do not join contrived networks, especially government-sponsored trade associations, partly because they are suspicious of bureaucratic agencies, especially if they are linked to taxation authorities and partly because they do not need to (Fulop and Richards, 2002).

[11] Fulop and Richards, (2002) use the term “organic network” to describe those networks that have been formed largely without the intervention of third parties.

3.3.6.2 Reasons for the Differences

From the information presented above it can be seen that guanxi business networks are formed without government intervention and focus on personal relationships, while Western networks are formed with third party intervention and are concerned less with personal relationships. Reasons for the differences between them can be explained by many different factors. A large part of the explanation for these different forms of networking lies both in cultural influences and the institutional arrangements that reinforce cultural differences between nations. Granovetter's (1985) embeddedness argument shows that economic life is inextricably bound with a society's culture and institutions which can sharply differ from one society to another. Notions such as market or hierarchy also vary from society to society and, in particular, the nature of inter firm relationships and networks is a key ingredient in explaining patterns of business organisation in some economic systems. In order to understand such systems one helpful way is to understand the context of culture.

A model that can be used to explain this context was developed by Hall (1976) who distinguished between high-and low-context cultures. In high context cultures the external environment is very important, many things are hidden and meaning is conveyed indirectly. Mead (1998) shows that high context cultures such as China, Japan, Korea, Vietnam and other Asian countries, are characterized by: long-lasting relationships; implicit, shared and indirect communication codes; personal authority with loyalty to superiors and subordinates; spoken rather than written agreement; clear distinctions between insiders and outsiders, and with cultural patterns that are slow to change. By contrast, in low context countries the environment is less important, things are made more explicit and meaning is often conveyed directly (Hall, 1976). Low-context cultures include the Anglo Saxon countries (Australia, Britain, Canada, New Zealand and the United States), Scandinavia and Germany. These cultures are characterized by short-term relationships; bureaucratic and diffuse authority with impersonal relationships; written rather than spoken agreement based on a legal system; imprecise distinctions between insiders and outsiders, and with cultural patterns which are more adaptable to change (Mead, 1998). Therefore, according to the Hall model, network formations in high culture context countries such as China and East Asian countries are likely to be formed without third party intervention and focusing more on personal relationships.

Another way to explain the different network formations is the Nooteboom, (1997) framework. Nooteboom (1997) develops a framework that has four key propositions that are related to factors which affect cross-cultural collaboration. The first of which refers to the legal infrastructure (laws, contracts, enforcement rules) in which collaboration takes place. Nooteboom argues that if this infrastructure is poor, then governance may not be feasible and so collaboration is unlikely to succeed. Second, if contractual attitudes are highly legalistic then the cost of establishing legally based governance mechanisms is likely to be excessive and inhibit collaboration. Third, when contractual attitudes and practices are relational or personal and morality is familial, clan based or based on similar exclusionary affiliations, then entry barriers are likely to be high and collaboration very difficult for outside parties. Lastly, he cites the differences between text-based and voice-based attitudes as creating problems in collaboration in as much as some forms of collaboration might allow for protest, complaints or dissenting voices while others do not.

From Nooteboom's framework it can be seen that countries in East Asia such as China, Thailand, and Vietnam are characterized by relatively low infrastructure, high legal cost, high concentration on personal relationships and voice-based attitudes. Hence, it can be suspected that the network formation in those communities are likely to be formed without third party intervention and focusing more on developing personal relationships. Hence the guanxi network is more relevant.

3.4 SUMMARY

The guanxi network is a certain type of interpersonal relationship that binds two persons through exchange of favours. In other words guanxi is a reciprocal obligation to respond to requests for assistance. Guanxi is very important in Chinese society because of the tradition of Confucianism, Taoism and Buddhism. From an economic perspective, an existence of market failure such as, uncertainties in political and economic life in China also increases the importance of the guanxi network to Chinese people. What is special about guanxi in Chinese society is its important instrument values. These values are unique characteristics and help to increase the benefits of networks in both social and business contexts. They are reciprocity, role obligation, and particularism. Reciprocity and anticipation of repayment are the factors that motivate Chinese to do favours for people in their guanxi network. Role obligation refers to the

responsibilities arising from one's particular role in a certain context. It is one of the most important normative issues in the guanxi relationship. Particularism, is special treatment for in-group members.

In this study, interpersonal relationships will be categorised into three groups: *chia-jen* (family members), *shou-jen* (familiar persons such as relatives outside the family, neighbours or people in the same village, friends, colleagues, or classmates), and *sheng-jen* (mere acquaintances or strangers). These three categories of relationships have completely different social and psychological meaning to the parties involved. In order to build and maintain strong guanxi, a number of techniques need to be used. They are tendering favours, nurturing long-term mutual benefits, and cultivating personal relationships and trust. These methods will help to increase the level of trust, degree of closeness, bound of reciprocity, and encourage long-term benefits, which encourage strong relationships between parties in the guanxi network.

For organisation networks they enhance competitive advantage by providing access to the resources of other network members, and are particularly important in respect of market entry where their strategic role has been well-documented. Most of the recent networking literature has been largely concerned with the Western business context. However, that is somewhat ironic because history suggests that networks, translated as guanxi, have been the dominant form of transactional governance in China since long before the concept was taken up by Western societies.

Based on organisation network theories such as resource dependency, transaction cost economics, and social capital, networks can increase efficiency and the advantage of businesses because they encourage information sharing, trust, repeat transactions, and good relationships with government offices and financial institutions. These factors not only affect outcomes of business activities in the Western network concept but also play an important role in building and maintaining strong guanxi network relationships. For example, both guanxi and Western networks show that trust reduces the inclination to guard against opportunistic behaviour that is the key source of transaction costs. It also contributes positively towards resource exchange and competitiveness via the productive combination and utilisation of other network firm's complementary resources and skills. At the same time, trust helps to create and maintain a strong relationship between parties. Therefore, it can be argued that the Western concept of networking is well-suited to capture some of the key features of guanxi.

Both the guanxi and Western networks literature have shown the importance and benefits that networks can provide to members. In order to link these two strands in the literature together a numbers of gaps in the literature need to be addressed. First, the guanxi literature suggests interpersonal relationships in the guanxi network can be categorised into three different groups. Each group has its own principles of interaction and ways of social treatment. However, whether or not the differences in social and interpersonal relationships can affect strength of ties in each group is needed to be answered. Furthermore, in the case when they do not have an effect, what are the key factors that influence the strength of ties. Second, the organisational network literature suggests networks can be used to increase the business performance of SMEs. The level of network embeddedness, such as trust, information sharing, coordination, and repeat transactions are the key factors that encourage a good business environment. Nevertheless, how the different social and interpersonal relationships in the guanxi network can affect the degree of network embeddedness is still not clear. In addition, what the key factors of strength of ties in the guanxi network are that impact the level of network embeddedness also requires to be answered. Finally, Yang (1994) describes guanxi as an important factor that can reduce uncertainty in the economy and increase business performance. However, for each of the strength of ties factors in the guanxi network and for each network embeddedness factor, what are the key aspects that can reduce business uncertainty and increase business performance. In order to fully understand the relationship between the guanxi network, strength of ties, network embeddedness and business performance, these gaps in the literature that have been indentified need to be filled. Thus the issue of strength of relationship in the guanxi network related to the level of uncertainty and business performance will be discussed and analysed in chapter 4 of this thesis.

CHAPTER 4

THEORETICAL FRAMEWORK

4.1 INTRODUCTION

The purpose of this chapter is to develop a framework that establishes links between guanxi, strength of ties in a network, network embeddedness, business performance and business uncertainty. In section 4.2 a relationship between strength of ties and the guanxi network is established. The literature relating to strength of ties and entrepreneur's performance, such as Granovetter (1973), Krackhardt (1992), and Rowley, Behrens and Krackhardt (2000) is reviewed in the first part of this section. In the second part, relevant literature relating to strength of ties measurement is reviewed. Furthermore, measurement items of strength of ties used in this thesis are also presented in the second part of this section.

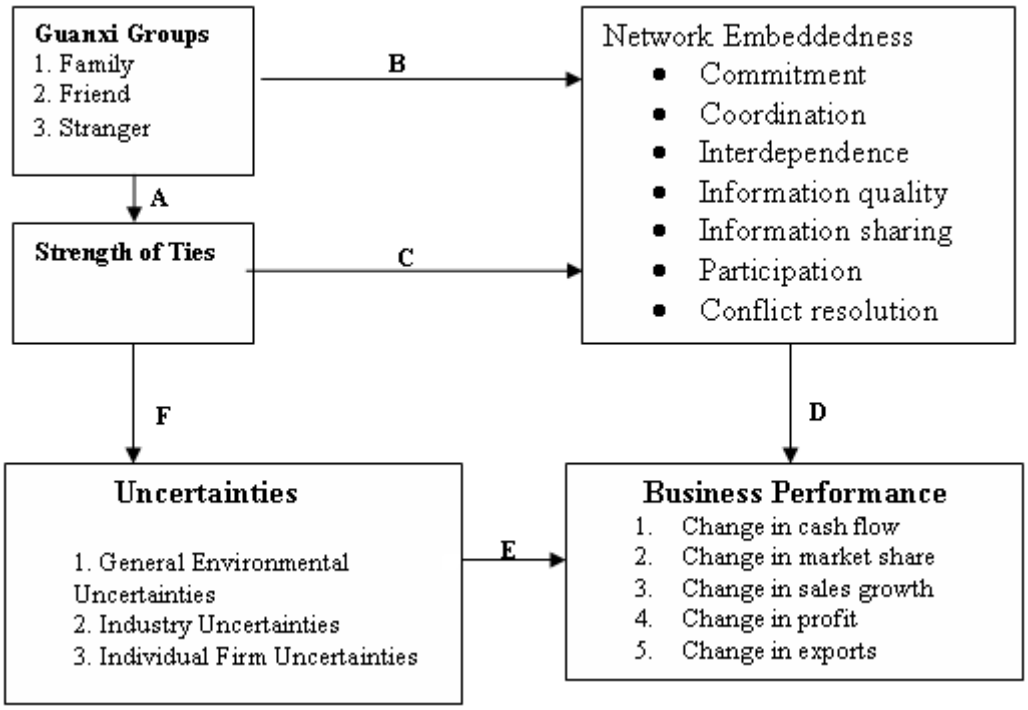
In section 4.3 a relationship between the guanxi relationships, strength of ties and network embeddedness is established. According to the literature, such as Gulati and Gargiulo (1999), Mohr and Spekman (1994), Naude and Buttle (2000), Powell (1990) and Uzzi (1996), relationship embedded ties between organisations are characterised by attributes of the partnership focusing on good communication behaviour and good conflict resolution techniques. Taking these three key characteristics of embedded ties, an organisation is said to be strongly embedded if it has recurring ties with suppliers, customers and other organisations that are characterised by factors such as commitment, trust, coordination, interdependence, participation and good conflict resolution technique. Conversely, an organisation is said to be weakly embedded if it has relatively few ties with these characteristics.

Granovetter, (1985); Uzzi, (1996, 1997); Mohr and Spekman, (1994); Naude and Buttle, (2000), have shown that business performance can be affected by the level of attributes of the partnership, good communication behaviour, and good conflict resolution technique, which are key factors of network embeddedness. In order to understand how network embeddedness can affect business performance a number of methodologies that can be used to measure business performance will be discussed in section 4.4 of this chapter. Furthermore, business performance measurement items to be used in this thesis are also developed in this section.

In addition to the relationship between network embeddedness and business performance in section 4.4, section 4.5 of this chapter also establishes a link between business performance, business uncertainty, and strength of ties. A number of assumptions relating to these three factors are identified. In order to test hypotheses that relate to these assumptions, measurement items of uncertainty are required. This section also identifies uncertainty measurement items that will be used in this thesis. According to Miller (1992) there are three groups of uncertainty that relate to business performance (1) general environment uncertainty, (2) industry uncertainty, and (3) individual firm-specific uncertainty.

Figure 4.1 of this chapter presents a framework which establishes relationships between guanxi relationships, strength of ties, network embeddedness, business performance and business uncertainty. This framework presents the relationships between key variables that are a major focus of this thesis.

Figure 4.1: The framework of guanxi relationship, strength of ties, network embeddedness, business uncertainty, and business performance



Note: A: Hypotheses 1.1-1.3
B: Hypotheses 2.1-2.3
C: Multiple Regression Analysis between strength of ties and network embeddedness
D: Multiple Regression Analysis between network embeddedness and business performance
E: Multiple Regression Analysis between business uncertainty and business performance
F: Multiple Regression Analysis between strength of ties and business uncertainty.

4.2 STRENGTH OF TIES IN A NETWORK

4.2.1 Strength of Ties

A number of studies (for example Granovetter, 1973; Krackhardt, 1992; Rowley, Behrens and Krackhardt, 2000) have shown how the strength of relationships in a network can affect entrepreneurship. These studies analyse the impact of the strength of ties on the performance of entrepreneurs. Weak and strong ties based on Granovetter's (1973) work have had a profound impact on the network literature. According to Granovetter (1973, p. 1370), strong ties normally tend to be with people who not only know the individual but also know others who the individual has connected with. For weak ties, however, they tend to be with people who know the individual and also know others who the individual does not have connections with. In other words weak ties are often links between actors who move in social circles other than those of the focal actor. Since a subcluster of strongly connected actors is likely to interact frequently, much of the information circulating in this network system is redundant (Kraatz 1998). Therefore, weak ties are more often important in spreading information or resources because they tend to serve as bridges between otherwise disconnected social groups. However, strong ties lead to less efficient transmission processes, particularly spreading new formation, because a large number of actors in the strong tie network also know each other, as well as knowing the focal actor (Granovetter, 1973).

Similar to Granovetter's argument, Ruef (2002) measures the strength of network ties of US entrepreneurs in a setting of either strong network ties through family linkages and friends or weak network ties through business associations and other acquaintances. The results show that weak ties have a positive relationship with levels of information sharing and innovation. Similar to Ruef (2002), Wong and Ellis (2002) describe strong ties as links that are inferred on the basis of familial connections such as old friends. In the context of the guanxi Chinese business network the term old friend means a long standing relationship which is more akin to a family tie in terms of intimacy and obligation than a mere friendship (Wong and Ellis, 2002, p. 280). In contrast, weak ties between casual friends, business associates and acquaintances tend to be more instrumental in nature serving as a means to attain goals that go beyond the value of the relationship itself. The study tries to find out what role social ties play in the search for potential alliance partners. The results show that social networks provide a valuable resource for reducing search costs. In the initial search and identification

process, weak ties between actors are most valuable in terms of generating the largest number of leads. However, strong ties, where they exist, expedite the search process and provide a more robust basis for final selection and subsequent inter-partner cooperation.

Contrary to Granovetter's argument for the advantages of weak ties, Jenssen and Koening (2002) study the importance of ties in accessing information. They indicate the strength of network ties of entrepreneurs according to the role played by acquaintances (weak ties) or friends and close friends (strong ties). The results show strong ties are important channels for information sharing. Jenssen and Koening (2002) explain the reason for this contradictory result. For financial information, some information might be regarded as so valuable that it will probably only be offered to friends. Also, some information might require extensive communication over time in order to be transferred from one individual to another. Such communication will probably most often be between close friends.

Other literature that supports the advantages of strong ties includes Bruederl and Preisendoerfer (1998), who measure strong ties of entrepreneurial firms in multiple industries as an index of support from multiple sources, i.e. spouses or life-partners, parents, friends and relatives. Weak ties are measured in terms of an index of support from other multiple sources such as business partners, acquaintances, former employers, and former co-workers. The key results show that support from strong ties seems to be more important than support from weak ties. The authors identify two main reasons for this result. Strong ties give access to unpaid family work and provides emotional support. Especially during start-up periods unpaid work from family members can compensate for financial restrictions. In addition, employees recruited from the family reduce time and the effort that the entrepreneur has to monitor worker's productivity, morale and ethics. Finally, emotional support received from strong ties might be very helpful in sustaining emotional stability during frustrating events (Bruederl and Preisendoerfer, 1998, p.215).

From chapter 3 of this thesis, there are three categories of relationship according to the guanxi Chinese network. These relationships are family, friend and mere acquaintance. In most of the literature presented in this section, strong ties in the network are between families and close friends, while weak ties are between strangers or mere acquaintances. Therefore, it can be assumed that differences in the guanxi relationship will have a significant impact on the strength of ties in the network (path A of Figure 4.1).

Hypothesis1.1: the strength of tie in the network for a family relationship will be stronger than a friend relationship.

Hypothesis1.2: the strength of tie in the network for a family relationship will be stronger than a stranger relationship.

Hypothesis1.3: the strength of tie in the network for a friend relationship will be stronger than a stranger relationship.

In order to test these hypotheses a strength of ties measurement is required. Most of the literature reviewed in this section measures the strength of ties with binary measurements (for example, mere acquaintances, friends and/or families). According to Marsden and Campbell (1984), these kinds of measurement are narrow and can create unreliable results. In order to improve reliability an appropriate measurement will be introduced.

4.2.2 Measurement of Strength of Ties

In this thesis a multidimensional measurement of the strength of network ties based on Granovetter (1973) will be used. According to Marsden and Campbell (1984), and Hagedoorn et al. (2006) a multidimensional measurement is reliable and better than narrow binary measurements (such as acquaintances, friends and families) because it combines different dimensions that can measure the strength of relationship from many perspectives (Granovetter, 1973). Furthermore, the multidimensional approach can increase understanding of how the strength of a relationship affects the levels of information exchange, search for new options, learning, and the impact of the level of cooperation on inter-firm network studies (Hagedoorn et al. 2006). According to the multidimensional approach there are four dimensions of network tie strength (1) amount of time, (2) emotional intensity, (3) intimacy (mutual confiding), and (4) reciprocity within a tie.

1. Amount of time

The amount of time invested in a relationship can be determined by looking at the duration and frequency of contact between the parties (Gulati, 1995a). For example, Marsden and Campbell (1984) measure the amount of time and frequency that individuals spend with other parties both inside and outside of work. Chung et al.

(2000) measure the amount of time by using the number of business and non-business transactions between the parties as a proxy.

2. Intensity

Based on the literature there are many ways to measure emotional intensity. Marsden and Campbell (1984) use closeness between parties as a measure of the intensity of the network ties. They argue that the measurement of closeness is the common tactic used to measure tie strength. For example, close friends can be defined as strong ties and acquaintances can be defined as weak ties. For Soh (2003) the intensity of the network ties of a company can be interpreted as the degree to which a company focuses on particular partners and has a special relationship with them. For Wanberg et al. (2000) network intensity can be measured as the thoroughness of using ties to help them in business.

3. Intimacy

According to Marsden and Campbell (1984), measurement of the extensiveness of topics discussed by the parties in the network and the extent of mutual confiding are used to represent intimacy. For Osborn and Baughn (1990), and Contractor and Lorange (2002) the measurement of intimacy between ties can be considered by the degree of trust, and commitment to the business.

4. Reciprocity

According to Chung et al. (2000) reciprocity can be translated into the degree of cooperation through the organisational interaction of partners. The firm shows the partner its willingness both to share the benefits of good economic opportunities in the uncertain future and to bear the possible risks and costs involved. The level of reciprocity between parties in the network can be measured by the level of coordination and information sharing (Nohria and Gracia-Pont, 1991 and Rowley et al. 2000).

In this thesis the strength of tie measurement items are questions 4.2-4.9 of the questionnaire. (See also the Appendix to this chapter)

4.2 How often do you contact the party (non physically i.e. phone, e-mail, letters, text sms)

4.3 How long have you known the party.

4.4 This party has been useful in helping you solve personal and business problems

4.5 If this party requested, you are willing to help the party solve problems

4.6 The party is generally honest and truthful with you

4.7 You are generally honest and truthful with this party

4.8 The activities between you and this party are well coordinated

4.9 Exchange of information between you and this party takes place frequently

These items use 7-point Likert scales. Items 4.2 and 4.3 measure the amount of time that individuals spend getting to know each other. Items 4.4 and 4.5 measure the level of intensity. Items 4.6 and 4.7 measure the level of intimacy and items 4.8 and 4.9 measure reciprocity. These items present a scale of reliability (Cronbanch's alpha) of 0.936, which is well above Nunnally's (1978) guideline of 0.7 for exploratory research. The results of hypotheses testing will be presented in section 5.3.1 of this thesis

While the literature shows that strength of ties can affect network outcomes such as through information sharing, financial support, good communication and coordination and reducing search costs, how these outcomes affect the business performance of SMEs is still not clear. In order to understand the relationship between outcomes of the network and business performance, the concept of network embeddedness will be introduced. In section 4.3 of this thesis a literature review of network embeddedness and a number of hypotheses that relate to the guanxi relationship, the strength of ties and network embeddedness, will be focused upon.

4.3 NETWORK EMBEDDEDNESS

Interorganisational relationships are said to be embedded if a social dimension exists that influences the economic behaviour of the partners (Granovetter 1985, Uzzi 1996, 1997, Mohr and Spekman 1994, Naude and Buttle, 2000). Compared to arms length relationships, embedded ties are characterised by attributes of the partnership, good communication behaviour and good conflict resolution technique (Gulati and Gargiulo 1999, Mohr and Spekman 1994, Naude and Buttle 2000, Powell 1990, Uzzi 1996). Taking these three key characteristics of embedded ties an organisation is said to be strongly embedded if it has recurring ties with suppliers, customers and other organisations that are characterised by factors such as high level of commitment, trust,

coordination, interdependence, participation, and good conflict resolution technique. Conversely, an organisation is said to be weakly embedded if it has relatively few ties with these three characteristics. Figure 4.2 summarises factors associated with the degree of network embeddedness. The detail of each of these factors will be discussed in sections 4.3.1-4.3.3

Figure 4.2: Factors Associated with the Degree of Network Embeddedness

Please see print copy for figure 4.2

4.3.1 Attributes of the Partnership

Kanter (1988) suggests that strategic partnerships result in blurred boundaries between firms in which there emerge close ties that bind the two parties. John (1984) describes the long-term nature of the relationship between firms that serves to reduce the potential for opportunistic behaviour. In such relationships there exists a set of process-related constructs that help guide the flow of information between partners, manage the depth and breadth of interaction, and capture the complex and dynamic interchange between partners. Anderson and Narus (1990), Day and Klein (1987), Dwyer, Schurr, and Oh (1987), Frazier, Spekman, and O'Neal (1988), Salmond and Spekman (1986) show that commitment, coordination, interdependence and trust are factors that determine the depth of attributes of partnerships. The existence of these

attributes implies that both partners acknowledge their mutual dependence and their willingness to work for the survival of the relationship.

1. Commitment

Commitment refers to the willingness of trading partners to exert effort on behalf of the relationship (Porter et al. 1974). It suggests a future orientation in which partners attempt to build a relationship that can weather unanticipated problems. Morgan and Hunt (1994) note that commitment not only helps to decrease turnover of employees (Porter et al. 1974), higher motivation between organisations (Farrell and Rusbult, 1981), and increase organisational citizenship behaviours (Williams and Anderson, 1991), but also increase the level of recruiting and training practice (Caldwell et al. 1990), job equity (Williams and Hazer, 1986) and organisation support (Eisenberger, Fasolo, and Davis-LaMastro, 1990). A high level of commitment provides the context in which both parties can achieve individual and joint goals without raising the spectre of opportunistic behaviour (Cummings, 1984). Because more committed partners will exert effort and balance short-term problems with long-term goal achievement, higher levels of commitment are expected to be associated with partnership success (Angle and Perry, 1981).

2. Coordination

Coordination is related to boundary definition and reflects the set of tasks each party expects the other to perform. Narus and Anderson (1977) suggest that successful working partnerships are marked by coordinated actions directed at mutual objectives that are consistent across organisations. Coordination encourages organisations to share their knowledge, helping to increase their capabilities (Kogut and Zander, 1996). Research by Grant (1996), Madhok (1996), and Zander and Kogut (1995) view coordination as a main factor that encourages information sharing between companies. In addition, Pfeffer and Salancik (1978) suggest that stability in an uncertain environment can be achieved via greater coordination. Without high levels of coordination, Just-in-Time processes fail, production stops, and any planned mutual advantage cannot be achieved.

3. Interdependence

As firms join forces to achieve mutually beneficial goals, they acknowledge that each is dependent on the other. This perspective flows directly from an exchange paradigm (Cook, 1977). According to Provan (1993, p. 842) interdependence between firms in the network create incentives for cooperation and long-term commitment while constraining opportunism. Interdependence results from a relationship in which both firms perceive mutual benefits from interacting (Levine and White, 1962) and in which any loss of autonomy will be equitably compensated through the expected gains (Cummings, 1984). These compensations take both pecuniary and non-pecuniary forms. Pecuniary gain is, for instance, the lower cost of monitoring business contracts and agreements as a result of lower opportunistic behaviour. Non-pecuniary gain is, for example, an increase in the level of trust, information sharing, and strong long-term relationships which in turn indirectly affect pecuniary gain in the future. Both parties recognise that the advantages of interdependence provide benefits greater than either could attain individually. Provan (1993) points out that when the level of interdependence between firms is high the level of opportunistic behaviour between organisations will be low. In addition, Hill (1990) notes that a high level of interdependence can also encourage the incentive to share information.

4. Trust

According to Thorelli (1986, p. 38) trust can be defined as "an assumption or reliance on the part of A that if either A or B encounters a problem in the fulfilment of his implicit or explicit transactional obligations, B may be counted on to do what A would do if B's resources were at A's disposal". For Andeson and Narus (1990, p.45) they define it as "the firm's belief that another company will perform actions that will result in positive outcomes for the firm as well as not take unexpected actions that result in negative outcomes". The importance of trust for the smooth and effective functioning of organisations has been argued by many others. Driscoll (1978) found evidence that a trustful environment is more important for work satisfaction than participation in decision-making. Zand (1972) found empirical evidence, confirmed by Boss (1987), that a high level of trust between team members is actually conducive to more efficient problem solving. Pruitt (1981) indicates that trust (i.e., the belief that a party's word is reliable and that a party will fulfil its obligation in an exchange) is highly related to firms' desires to collaborate. Williamson (1985) states that other things being equal

exchange relationships featuring trust will be able to manage greater stress and will display greater adaptability. Zand (1972) contends that lack of trust will be deleterious to information exchange, to reciprocity of influence, and will diminish the effectiveness of joint problem solving. In addition, Williamson (1991) suggests that trust is personal and disposes one to interpret favourably another's intentions and actions, unlike the impersonal and calculative orientation of arm's length exchange. Therefore, trust is important because it increases an organisation's access to resources and strengthens its ability to adapt to unforeseen problems in ways that are difficult to achieve through arm's length ties.

4.3.2 Communication Behaviour

The communication process underlies most aspects of organisational functioning, and communication behaviour is critical to organisational success. In order to achieve the benefits of collaboration, effective communications between partners is essential (Cummings, 1984). Communication captures the utility of the information exchanged and is deemed to be a key indicator of a partnership's vitality. According to the literature (Kapp and Barnett 1983, Mohr and Nevin 1990, Snyder and Morris 1984) three aspects of communication behaviour are established: communication quality, information sharing, and participation.

1. Communication quality

Communication quality is a key aspect of information transmission (Jablin et al. 1987). Huber and Daft (1987) show that communication quality has a positive relationship with the period that partners know each other. They suggest that the longer the period that partners know each other the stronger will be the strength of the relationship, which in turn increases the level of honesty and openness of communication. Following the work of Daft and Lengel (1986), Huber and Daft (1987), and Stohl and Redding (1987), the accuracy, timeliness, adequacy, and credibility of information exchanged are aspects of communication quality. These aspects relate to both internal communication, for example, between departments, and interorganisation communications, for example between partnerships. Across the range of potential partnerships, communication quality is a key factor of success. Timely, accurate and relevant information is essential if the goals of the partnership are to be achieved. In addition, Mohr and Spekman (1994) note that communication quality is important to

successful relationships, because it is a key to build successful and ongoing long-term relationships between organisations. Similar to Mohr and Spekman, MacNeil (1981) acknowledges the importance of honest and open lines of communication to the continued growth of close ties between trading partners.

2. Information sharing

Information sharing refers to the extent to which the right information is communicated in the right amount in the right place at the right time (Kind and Barton, 2005). Effective use of information, however, is far more complex. After the information has been shared the interpretation of that information by communities with specific backgrounds and expertise leads to understanding. The process of internalising these new interpretations leads to the creation of new knowledge. Knowledge and meaning on an individual basis enables individual action. Given new communication technologies information sharing implies availability in multiple places, but information sharing alone is not effective without context and mutual understanding (Kind and Barton, 2005). Huber and Daft (1987) show that exchange of information includes, but is not limited to, information about new technology, information about customer demand and information about market conditions. In a situation where partners trust each other, by sharing information and by being knowledgeable about each other's business, partners are able to act independently in maintaining the relationship over time. The systematic availability of information allows people to complete tasks more effectively (Guetzkow, 1965) and is associated with increased levels of satisfaction of partners in the network (Schuler 1979, and Devlin and Bleackley, 1988). In addition, Wu and Choi (2004) note that in the long-term a higher level information sharing will increase the number of other firms in a network that have access to substantive information, which in turn creates new knowledge to the individual.

3. Participation

Participation refers to the extent to which partners engage jointly in planning and goal setting. When one partner's actions influence the ability of the other to effectively compete, the need for participation in specifying roles, responsibilities, and expectations increase (Mohr and Spekman, 1994). Anderson, Lodish and Weitz (1987) and Dwyer and Oh (1988) suggest that input to decisions and goal formulation are important aspects of participation that help partnerships succeed. Driscoll (1978) also

found that participation in decision-making is associated with satisfaction among members of an organisation. The level of satisfaction can be measured by factors such as satisfaction with chances for promotion, the job overall, job security, and present salary. Furthermore, Dwyer and Oh (1988) also show that joint planning allows mutual expectations to be established and cooperative efforts to be specified.

4.3.3 Conflict Resolution Techniques

Conflict often exists in interorganisational relationships due to the inherent interdependencies between parties. Given that a certain amount of conflict is expected, an understanding of how such conflict is resolved is important (Borys and Jemison, 1989; Bartlett and Ghoshal, 1994). The impact of conflict resolution on the relationship can be both productive and/or destructive, depending on the significance or degree of conflict. (Assael, 1969; Deutsch, 1969). Thus, the manner in which partners resolve conflict has implications for partnership success.

Firms in a strategic partnership are motivated to engage in joint problem solving since they are linked, in order to manage an environment that is more uncertain and turbulent than each other alone can control (Cummings, 1984) and integrative outcomes satisfy more fully the needs and concerns of both parties (Thomas, 1976). When parties engage in joint problem solving a mutually satisfactory solution may be reached, thereby enhancing a strong long-term relationship between partners. Partners often attempt to persuade each other to adopt particular solutions to the conflict situation. These persuasive attempts, which are appropriate when partners are equal, will generally be more constructive than the use of coercion or domination (Deutsch, 1969).

In certain situations the method of conflict resolution is institutionalised, and third party arbitration is sought. According to Assael (1969, p. 580) and Anderson and Narus (1990) even such mediation can be helpful in producing beneficial outcomes. An internal solution shows a greater promise of long-term success. While outside arbitration may be effective for a particular conflict episode, ongoing use of arbitrators may indicate inherent problems in the relationship. Another type of conflict resolution technique is a destructive technique. The use of these techniques (domination confrontation) can sometimes be seen as an effective method, for example, in the case of a multinational company and a small business where the partnership may be a successful one. This method, however, is a less preferred technique when compared with the productive technique (Assael, 1969).

4.3.4 Hypothesis

From section 4.2.1 of this chapter the literature shows how the strength of ties in a network can affect network outcomes such as information sharing, coordination, participation, and financial and emotional support. Since these outcomes are factors under network embeddedness, it can be assumed that the strength of ties in the network have a significant impact on the level of network embeddedness. These relationships between the strength of ties and network embeddedness will be tested by a multiple regression analysis in section 5.3.2 of this thesis.

Furthermore, hypotheses 1.1-1.3 indicate that differences in the guanxi relationship will have a significant impact on the strength of ties in the network. In other words, the family relationship is expected to have stronger strength of ties than the friend and the stranger relationship and the friendship relationship is expected to have stronger strength of ties than the stranger relationship. Since a relationship between strength of ties and network embeddedness is assumed, it can also be expected that differences in the guanxi relationship will also have a significant impact on network embeddedness. The relationships between the guanxi relationship, the strength of ties and network embeddedness are presented by path B and C of Figure 4.1. From the figure, hypotheses 2.1-2.3 can be estimated.

Hypothesis2.1: a link that has a strong strength of tie will exhibit a higher degree of network embeddedness than a middle strength tie.
Hypothesis2.2: a link that has a strong strength of tie will exhibit a higher degree of network embeddedness than a weak strength tie.
Hypothesis2.3: a link that has a middle strength of tie will exhibit a higher degree of network embeddedness than a weak strength of tie.

In order to test these hypotheses, 8 measurement items of network embeddedness that relate to the literature in this section are created. These items are 7-point Likert scales and present the scale of reliability (Cronbanch' α) of 0.911. They relate to questions 4.10-4.17 of the questionnaire and are summarised in Table 4.1. The empirical test of hypotheses 2.1-2.3 and 3.1-3.3 will be presented in chapter 5 of this thesis

Table 4.1: Measurement items of network embeddedness

Questions	Network Embeddedness
4.10	This party is committed to making business transactions between your company and his or her a success.
4.11	The business activities between your company and this party are well coordinated.
4.12	Your company usually repeat business transaction with this party
4.13	Your company believes that business partners in the network that made transactions with your company never act opportunistically
4.14	Information that your company receives from this party is accurate and credible
4.15	Your company is willing to share business information with business partners in the network
4.16	Your company is willing to participate in activities that make business transactions between your company and this party successful
4.17	In the conflict resolution process, a good long term relationship between your company
	And this party is a major concern

4.4 BUSINESS PERFORMANCE.

In the previous section network embeddedness is defined as social dimensions that influence the economic outcomes of partners in a network. Furthermore, contributions in the literature (Granovetter, 1985; Uzzi, 1996, 1997; Mohr and Spekman, 1994; Naude and Buttle, 2000) also show that business performance can be affected by the level of attributes of the partnership, good communication behaviour, and good conflict resolution technique, which are factors of network embeddedness. In order to understand how network embeddedness can affect business performance a number of ways to measure business performance will be reviewed and discussed. Thus, the purpose of this section is to review the literature relating to measuring business performance, and also creating measurement items that will be used in this thesis.

4.4.1 Overview of Business Performance

Measuring business performance is an interesting issue for both academic scholars and practicing managers. According to Venkatraman and Ramanujam (1986) financial performance and a broader conceptualisation of business performance are two objective measurements that can be used to measure business performance. Financial performance measurement has been the dominant model of business empirical research. In entrepreneurship studies business performance is usually measured by objective financial criteria such as profit, turnover, return on investment, sales growth, earnings per share and capital (Barkham et al. 1996; Bruderl and Preisendorfer, 1998; Forsaith

and Hall, 2000; Gray, 1998; Ibrahim and Goodwin, 1986; Kalleberg and Leicht, 1991; Kelmar, 1991). These indicators are assumed to reflect the fulfilment of the economic goals of the company. For the broader conceptualisation of business performance, emphasis is put on indicators of operational performance such as market share, new product introduction, product quality, marketing effectiveness, manufacturing value-added, numbers employed, client satisfaction, and efficiency of production (Bruderl and Preisendorger, 1998).

However, evidence exists (for example, Dess and Robinson 1984, Anderson 1990, and Geringer and Hebert, 1990) to suggest that objective measurements, especially the financial performance measurement, may not be appropriate for SMEs. Since SMEs are relatively small, data relating to earnings per share and dividends are not normally reported. In addition, Killing (1983), and Artisien and Buckley (1985) argue that financial measurements may fail to adequately reflect the extent to which SMEs have achieved their short and long-term objectives. According to Geringer and Hebert (1990), many SMEs may operate in contexts where measures of short-term financial performance might suggest that the company is performing poorly. For example, the companies that try to create innovations or new markets are often not likely to generate a financial profit for many years. Furthermore, the ownership structure of the SME is also important. Share ownership may imply greater need for profit and less emphasis on the other objectives. Hence, motivation of the SMEs can be influenced by a number of factors. In such situations a financial or objective measure is unlikely to accurately capture SMEs' relative performance (Anderson, 1990).

4.4.2 Measurement of Business Performance

Despite inadequate objective measurements, Chandler and Hanks' (1993) review of the literature relating to the measurement of business performance suggests that subjective measurements, or so called self-reported methods, should be used in order to measure the business performance of SMEs. This measurement provides three main advantages (1) it reduces problems caused by an unwillingness to disclose information, (2) it helps to classify data into a limited number of categories which overcomes difficulties associated with extreme outliers, and (3) it provides strong evidence for the reliability of the measurement. According to Chandler and Hanks (1993), there are three types of such measurement.

*1. Broad Categories***.**

Begley and Boyd (1987), Chandler and Jansen (1992), and Cragg and King (1988) have attempted to measure business performance by requesting information only in broad categories, such as perceived growth in the market, change in cash flow and sales growth. Chandler and Hanks (1993, p. 394) argue that this measurement may overcome some of the problems caused by an unwillingness to disclose information. In addition, the measurement helps to classify data into a limited number of categories overcoming difficulties associated with extreme outliers.

2. Subjective measurement of executive satisfaction with firm performance.

A number of researchers such as Cooper (1984), and Gupta and Govindarajan (1984) have suggested that the subjective measurement of executive satisfaction with firm performance may be appropriate given the restrictions imposed by objective measures. Chandler and Hanks (1993) argue that researchers using this kind of measurement have consistently denigrated the use of objective measures of performance. However, objective measurement has not provided strong evidence for the reliability of such measures due to the fact that a number of factors beyond firm performance such as executive salaries, working conditions, and chance for promotion might be considered than just firm performance and this measurement of satisfaction with performance may be as much a function of the expectations of the founders as objective performance.

3. Performance relative to competitors

Another type of subjective business performance is that relative to competitors. This method comes from Porter (1980) who suggests that firms are aware of the activities of their competitors in industries. Thus, in order to measure business performance, researchers can ask owners or managers of companies to subjectively compare their business performances with competitors in the industry that are at the same age and stage of development (Dess and Robinson 1984). However, because firm performance data are often closely guarded, founders may not be able to provide accurate information about companies other than their own (Chandler and Hanks, 1993).

Comparing these three types of subjective business performance measurements, Brush and Vanderwerf (1992) Chandler and Hanks (1993) and Pearce and Segal (1998)

show that the broadly defined categories measurement has a high flexibility, internal consistency and is superior to executive satisfaction with performance and performance relative to competitors' scales in terms of content validity. Thus, in this thesis the broad categories of subjective measurement will be used to measure business performance. Table 4.2 summaries 5 measurement items that will be used to measure business performance in this thesis. These items are questions 2.1-2.5 of the questionnaire and present a scale of reliability (Cronbanch' α) of 0.960

Table 4.2: Measurement items of business performance

Question	Business Performance
2.1	Please identify the level of change in cash flow compared to previous years
2.2	Please identify the level of change in market share compared to previous years
2.3	Please identify the level of sales growth compared to previous year
2.4	Please identify the level of change in profit compared to previous year
2.5	Please identify the level of change in exports compared to previous year

The main purposes of this section are to establish a link between network embeddedness and business performance. From the literature business performance is expected to be influenced as a result of increasing network embeddedness (Uzzi 1996; Kogut and Zander 1996; and Morgan and Hunt 1994). Nevertheless, how each factor of network embeddedness affects business performance is still not clear. Thus relationships between network embeddedness and business performance will be tested in this thesis by a multiple regression analysis in section 5.5. The relationship between network embeddedness and business performance is presented in path D of Figure 4.1.

In addition to the relationship between network embeddedness and business performance, this thesis also focuses upon the impact of uncertainty on business performance, as this is one of the key factors that entrepreneurs have to cope with in business operation. It is interesting to understand how such uncertainties can affect business performance and how individuals can use their networks to reduce them. In the following section the literature on uncertainties and their effect upon business performance will be reviewed, and measures of uncertainty established.

4.5 UNCERTAINTY IN THE ECONOMY

4.5.1 Overview of Uncertainty in the Economy

In entrepreneurship studies, uncertainty is recognised as being one of the key factors that entrepreneurs have to cope with in business operation (Hebert and Link 1989, Ekelund and Hebert 1990). As Dijk and Thurik (1998) note, one of the major aims of economics is to achieve optimal resource allocation. However, since uncertainty is a fact of economic life, entrepreneurs are required to arbitrage, take risks and to innovate. Following this argument, entrepreneurs can be considered to be the primary agents dealing with uncertainty in the economy (Carree and Thurik, 1995). For example, in order to produce goods and services, entrepreneurs must make many decisions such as what goods to produce, what technical process to use in the production of those goods, and what magnitude of output to produce. With these decisions, entrepreneurs inevitably face considerable uncertainties. First, entrepreneurs face uncertainty over whether a particular industry is able to sustain its entry. In other words they face uncertainty of demand both in the present and in the future (Hey, 1979). Uncertainties also surround the technical processes available to produce the good, and whether new processes will become available in the future. Furthermore, uncertainties over input markets exist. For example, will entrepreneurs be able to get regular and continuing supplies? Will the price be stable? and so on. Clearly, these uncertainties are created from micro and macroeconomic conditions, and from inside and outside the country (Hey, 1979).

4.5.2 Measurement Uncertainty

Although measurement of business uncertainty can be alternatively characterised as an objective and perceptual concept (Jaunch and Kraft 1986; Milliken 1987), it has been argued that objective uncertainty in the business context may not directly impact on decisions and operations within an organisation because decision makers stand between the objective and the organisation's activities and strategic choice (Ford and Schellenberg 1982). Thus, it is how these decision makers perceive the environment and its uncertainties that determine managerial response (Sawyerr, 1993), with Tan and Litschert (1994, p.6) arguing that "only factors that participants perceive can enter into their strategy formulation behaviour". Therefore, researchers have focused on perceived uncertainty.

In the early stage of entrepreneurial and organisational studies, Burns and Stalker (1961); Lawrence and Lorsch (1967); Thompson (1967) and Duncan (1972) adopted two commonly applied approaches to measuring perceived uncertainty. In Lawrence and Lorsch there are three main areas of uncertainty which focus on the clarity of job requirements, the degree of difficulty in accomplishing assigned jobs, and the length of time required to receive performance feedback. According to Tosi et al., (1973) and Downey et al. (1975), however, Lawrence and Lorsch's uncertainty subscales do not demonstrate adequate reliability and also are not very useful for research on external uncertainties because their indicators are primarily intraorganisational. For Duncan (1972) there are five components of the external environment which cover uncertainties from customers, suppliers, competitors, socio-political, and technological. However, Downey et al. (1975) criticised Duncan's environment measurement due to deficiencies in scale construction and low scale reliability. The problem of uncertainty measurement pointed out by this literature suggests a need for some modification of Lawrence and Lorsch (1967) and Duncan (1972), which resulted in uncertainty measurement instruments developed by Miles and Snow (1978) and Miller (1992,1993). According to Werner et al. (1996) the perceived uncertainty measurements developed and tested by Miller (1992, 1993) are the most comprehensive framework to date and also show a high scale of reliability. According to Miller (1992) managers, or the owners, of businesses may perceive uncertainties as (1) general environmental, (2) industry, and (3) firm-specific variables. Each of these categories encompasses a number of uncertainty components.

Using the Miller (1992, 1993) measure this thesis develops and test hypotheses which relate to the business uncertainty and business performance of Sino-Thai SMEs. In this thesis, however, a number of new developments of uncertainty measurement items have been created here. First, as Murray and Kotable (1999) suggest, only a few studies have empirically examined how business uncertainty relates to social relationship. These studies tend to concentrate on a variety of factors that may affect the business performance of SMEs and analyse how social networks can be used to reduce such uncertainties. Second, most other studies tend to use a single measure of uncertainty. For example, Murray and Kotable (1999) use a perceived level of demand uncertainty in their study of US Fortune 500 firms. Agrawal and Ramaswami (1992) use a single composite index in their analysis of a single US industry. A single aggregate measure of uncertainty may measure uncertainty only for specific types of

uncertainty (Miller, 1998; Werner et al., 1996). For example, service providers and manufacturers may respond quite differently to distinctive types of risk. More specifically, manufacturing will be more sensitive to materials uncertainties than services because physical products tend to rely more on material inputs than service products (Campbell and Verbeke, 1994). Thus, it is important to incorporate a number of items into investigations of business uncertainty. Finally, none of the business uncertainty research that relate to the guanxi network has been done for Sino-Thai SMEs.

4.5.2.1 General Environmental Uncertainties

General environmental uncertainties correspond to factors that affect the business context across industries. General environmental uncertainties include political uncertainty, macroeconomic uncertainty, and social and natural uncertainties. These uncertainties tend to result in uncertainty spillovers across national borders. Table 4.3 summarises the general environmental uncertainties discussed in this section and provides a list of factors within each category.

1. Political Uncertainties

Several studies suggest political uncertainties should be taken into account when analysing factors that affect business performance. For example, Jorion and Goetzmann (1999) report events of a political nature have led to transaction interruptions in twenty-five countries, including Chile, France Germany, Japan and Portugal. According to Ting (1988) political uncertainties are generally associated with major changes in political regimes. They reflect the threats and opportunities associated with potential or actual change in the political system. Based on Brunetti et al. (1997) there are three major classes of political uncertainties. They are predictability of laws and policies, political stability and security of property, and uncertainty from corruption that affects the performance of SMEs.

2. Macroeconomic Uncertainties

According to Oxelheim and Wihlborg (1987) macroeconomic uncertainty is a broad concept encompassing fluctuations in the level of economic activity and prices. For economic activity, during the last 10-15 years, several countries have experienced large exchange rate depreciations with different results.

Table 4.3: General Environmental Uncertainties

General Environmental Uncertainties
Political Uncertainties
Predictability of laws and policies (Q3.1)
Political stability and security of property (Q3.2,Q3.3)
Uncertainty from corruption (Q3.4)
Macroeconomic Uncertainties
Inflation (Q3.5)
Exchange rate volatility (Q3.6)
World interest rate volatility (Q3.7)
Change in oil prices (Q3.8)
Social and Natural Uncertainties
Changing social concerns (Q3.9)
Social unrest and riots (Q3.10)
Natural disasters (Q3.11)

In some cases, such as Mexico in 1993-1994 and Thailand in 1997, currency depreciations were followed by large contractions in economic activity and collapse of the financial sector, due to panics and companies closely entwined, which in turn affected almost every firm in those countries (Carranza et al., 2003). A key issue relating to these financial crises was the resulting increase in cost of access to finance, particularly for SMEs. In addition to this, Senhadji (2003) argues that the performance of SMEs in developing countries are subject to variability in the terms of trade and world interest rates. Price fluctuations can take the form of general price inflation or movement in the relative price of inputs such as raw materials and consumer goods. Often associated with the movements in aggregate production and prices are fluctuations in exchange rates and interest rates. According to Miller (1993), macroeconomic uncertainties occur primarily from inflation, exchange rate volatility, change in government policy, world interest rate fluctuations and change in oil price.

3. Social and Natural Uncertainties

According to Dunn (1983) social uncertainty follows from the beliefs, values and attitudes of the population that are not reflected in current business practice or government policy. Social uncertainty results from difficulties inherent in predicting the likelihood of collective action and the direction of such action when people are faced with discrepancies between their own values and those embodied in the institutions

impacting upon their lives. Society may bypass existing government policy channels and appeal directly to business for reforms. The potential for collective action demanding socially responsive behaviour from the business and social sectors are most likely to occur when responsive behaviour adopted social values provide a basis for questioning the legitimacy of existing business practices. In such cases the business sector may respond proactively to the social pressures prior to government policy pressure (Miller, 1992). Social uncertainty occurs in contexts characterised by social unrest, riots, and demonstrations.

Natural uncertainty arises from natural phenomena or disasters that impact economic inputs and outputs. Earthquakes, floods, tsunamis, typhoons, and bush fire are examples of natural uncertainty that can impair numerous business functions and significantly decrease business activities in an affected region (Miller, 1993).

4.5.2.2 Industry Uncertainties

Industry uncertainty corresponds to factors that affect the business context in a particular industry. While there is a rather extensive literature on general environmental uncertainties, industry-level uncertainties have not been as fully explored. In this research, industry uncertainties involve five major classes: input market uncertainties, product market and demand uncertainties, competition uncertainties, regulatory regimes and international regulation uncertainties, and technological uncertainties. Table 4.4 summarises the industry uncertainties discussed in this section.

1. Input Market Uncertainties

Input market uncertainty refers to industry-level uncertainties surrounding the acquisition of adequate quantities and quality of inputs into the production process. Input market uncertainty may arise from either dynamism of the market, or competition in the market. According to Miller (1992) uncertainty surrounding the acquisition of inputs is likely to occur in a situation where there are only a few input suppliers. Such a situation can arise when supplying involves investment in specialised machinery, equipment, or organisational skills. When a supplier has invested in assets that are specialised to the input needs of a particular industry, competition in the input market is limited. As such, the potential exists for price and quantity manipulation by the supplier. Based on Miller and Friesen (1982), and Miller (1992) a number of items can be adapted to measure input market uncertainties. These items measure changes in

quantity, price, quality of inputs, changes in the quantity used by other buyers and changes in the number of suppliers.

Table 4.4: Industry Uncertainties

Industry Uncertainties
Input Market Uncertainties
Quantity uncertainty (Q3.12)
Price uncertainty (Q3.12)
Quality uncertainty(Q3.13)
Product Market and Demand Uncertainties
Market dynamism (product life cycle) (Q3.14)
Availability of substitute goods (Q3.15)
Competition Uncertainties
Uncertainties from local competitors (Q3.16)
Uncertainties from overseas competitors (Q3.17)
Entry of new firms into the market (Q3.18)
Regulatory Regimes and International Regulation Uncertainties
Price control (Q3.19)
Changes in the level of trade barriers (Q3.20)
Changes in international regulations (Q3.20)
Technological Uncertainties
Changes in patterns of products or processes (Q3.21)

2. Product Market and Demand Uncertainties

According to Miller (1992) product market uncertainty refers to unexpected changes in the demand for an industry's output. The changes in demand may be due to changes in client preferences and tastes, heterogeneity of demand for each product, the availability of substitute and complementary products. For example, the lack of availability of complementary goods, such as replacement parts for automobiles, can adversely impact demand for automobiles. Based on Miller and Friesen (1982), and Miller (1993) a number of items can be adapted to measure product market and demand uncertainties. These items measure market dynamism, changes in consumer tastes and availability of substitute goods.

3. Competition Uncertainties.

Competition uncertainties indicate an inability to predict the amount and type of goods available and competition in the product market. According to Miller and Friesen (1982), and Miller (1993) a number of items can be adapted to measure product market and demand uncertainties. A broad category of competition uncertainties cover the

uncertainties associated with uncertainty from local competitors, uncertainties from overseas competitors and uncertainty from new entry.

4. Regulatory Regimes and International Regulation Uncertainties

Regulatory regimes and international regulation uncertainties refers to instability in regulatory policies, both domestic (such as regulations from the ministry of Commerce, Finance and Industry) and international (such as regulations from the WTO, UN and IMF), that affect the business of particular industries. For example, the unpredictability of domestic and foreign government policies toward imported goods directly impacts product market uncertainty. This relationship is obvious in the context of negotiating and implementing multinational free trade zones and the opening up of new foreign markets (Zahra and Garvis, 2000). Some of the most relevant types of regulatory regimes and international regulation uncertainties are price control in certain products, changes in the level of trade barriers and change in international regulations.

5. Technological Uncertainties

Technological uncertainties happen as a result of changes in technology in the industry and covering the uncertainties associated with product innovations and process innovations. According to Porter (1980 and 1985), innovations affect an industry's product or production processes posing a threat because they can disturb the established patterns of competition and coordination among firms. Technological uncertainty results from not knowing when actual or potential rivals will introduce innovations that disturb the pattern of competition in an industry (Miller 1992).

4.5.2.3 Individual Firm Uncertainties.

Individual firm uncertainties are associated with firm-specific factors. The primary categories of firm-specific uncertainties are operational uncertainties, access to financing, and credit and liability uncertainties. Table 4.5 summarises individual firm uncertainties discussed in this section, and provides a list of examples within each category.

Table 4.5: Individual Firm Uncertainties

Individual Firm Uncertainties
Operation Uncertainties
Input and raw material suppliers uncertainties (Q3.22)
Labour uncertainties (Q.23)
Capital equipment uncertainties (Q.24)
Production uncertainties (Q.25)
Access to Financing
Difficulty in obtaining loans (Q.26)
Sources of loan (Q.27)
Ability to repay the loans (Q.28)
The amount of loans (Q.29)
Credit and Liability Uncertainties
Problems with collectibles (Q.30)
Product liability (Q.31)
External liability (Q.31)

1. Operational Uncertainties

Operational uncertainties include raw materials uncertainty, labour uncertainty, and capital equipment uncertainty. These uncertainties are often firm specific rather than having an effect on the industry in general. Raw materials shortages, quality changes in inputs and spare parts restrictions are all examples of firm operating uncertainties in the input supply category. Input supply uncertainties are likely to be greatest when a single suppler or organised group provides critical inputs to the firm (Mohr, 1969). Labour uncertainties include increased wages and changes in employees' productivity. Capital equipment uncertainty, includes equipment shortage and change in quality.

Production uncertainty is another type of uncertainty. Production uncertainty includes variations in output due to the production process, technical and machine failure. Production uncertainties also include random factors such as accidents that disturb the production process (Miller 1993)

2. Access to Financing

Access to financing is the most critical support system of all for SMEs. Without it other forms of support are of little use (Kim and Nugent, 1994). Financing is important at every stage in a firm's life cycle, from start-up through expansion, penetration of foreign markets, modernisation and technological acquisition, to the firm's every-changing needs for working capital. The relative importance of different

types of financing has changed over time and across sectors. However, the major sources of financing are corporate bonds, credit from commercial banks, credit from venture capital and credit from relatives and friends (Kim and Nugent, 1994). From this information a number of items can be created in order to measure the uncertainty of financial requirements. These items measure uncertainties that arise from difficulty in obtaining loans, source of loans, ability to repay the loans and the amount of loans.

3. Credit and Liability Uncertainties

Credit uncertainty involves problems with collectibles. Default by clients on their debts to a firm can be a direct cause of variation in the firm's income stream. The high levels of uncollectible loans accumulated by private bank lending to developing countries is an example of adverse performance or selection resulting from the extension of credit (Miller, 1992). Liability uncertainties are associated with unanticipated harmful effects arising from the production or consumption of a company's product. Product liability is uncertainty related to unanticipated negative effects associated with the use of a product that can result in legal actions against the producer. Liability uncertainties can also occur from external effects such as emissions of contaminants into the environment (Miller, 1992). According to Miller (1992) a number of items can be adapted to measure credit and liability uncertainties. These items measure problems with collectibles, product and external liability uncertainty.

The main purpose of this section has been to establish a link and provide a clearer understanding of the negative impact of uncertainties to business performance (path E of Figure 4.1). In order to achieve the latter a multiple regressions analysis will be used to test the relationship between business performance and business uncertainties. In this thesis, items 3.1-3.31 of the questionnaire will be used to measure uncertainty. These items are presented in Table 4.5-4.7 and are 7-point Likert scales, which present the scale of reliability (Cronbanch' α) of 0.98. The result of empirical evidence for this section will be presented in section 5.4.4 of this thesis.

In addition to the relationship between uncertainties and business performance, evidence from the guanxi network literature also shows that the strength of ties in the network can be used to reduce uncertainty (path F of figure 4.1). As discussed by Yang (1986, 1989, 1994), shortages of everyday necessities and scarce goods throughout China as a result of lagging economic development under the purely socialistic regime

of the past few decades is one of the main reasons encouraging individuals to connect to their guanxi. Furthermore, during the recent period of a rapidly developing market economy many entrepreneurs in China use their guanxi to compensate for the lack of the rule of law and transparency in rules and regulations. Thus, when opportunities to obtain such necessities have arisen, people are prompted to seek access to them through their guanxi connection. It can be assumed that the strength of ties in the network will have a significant negative impact on the level of uncertainty that affect business performance. This assumption can be tested empirically and the results from doing so will be presented in section 5.5.4 of this thesis.

4.6 SUMMARY

A number of studies (such as Granovetter 1973, Krackhardt 1992, Rowley, Behrens and Krackhardt 2000) have shown how strength of ties in a network can affect network outcomes. Most of the existing literature analyses the impact of the strength of ties to entrepreneurs' performance in terms of weak and strong ties. In general, strong ties in a network are identified as being within families and between close friends, while weak ties are strangers or mere acquaintances. Since these categories of relationship are similar to relationships under the guanxi network, it can be assumed that the differences in the guanxi relationship will have a significant impact on the level and strength of ties. In order to test the assumption, measurement items of strength of ties are created. These items include (1) amount of time, (2) emotional intensity, (3) intimacy (mutual confiding), and (4) reciprocity within a tie.

In addition to the relationship between the guanxi relationship and the strength of ties, this chapter also established a framework that presents the relationship between network embeddedness and business performance. According to the literature, such as Gulati and Gargiulo (1999), Mohr and Spekman (1994), Naude and Buttle (2000), Powell (1990), and Uzzi (1996), relationship embedded ties are characterised by attributes of the partnership, good communication behaviour, and good conflict resolution technique Taking these three key characteristics of embedded ties, an organisation is said to be strongly embedded if it has recurring ties with suppliers, customers and other organisations that are characterised by attributes of the partnership, good communication behaviour, and good conflict resolution technique. Conversely, an organisation is said to be weakly embedded if it has relatively few ties with these three characteristics. These factors of network embeddedness are expected to have a positive

effect on the business performance of enterprises. In this thesis business performance is measured by five subjective measurement items as used in other studies; (1) change in cash flow, (2) change in market share, (3) change in sales growth, (4) change in profit, and (5) change in exports. These five measurement items are not only linked and analysed with network embeddedness but also uncertainty. Since uncertainty is one of the key factors that entrepreneurs have to cope within business operation a negative impact of uncertainty to business performance is assumed in this chapter. In order to study the relationship between uncertainty and business performance, measurement items of uncertainty are required. According to Miller (1992) there are three groups of uncertainty that relate to business performance (1) general environment uncertainty, (2) industry uncertainty, and (3) individual firm-specific uncertainty.

Thus, this chapter has presented a number of hypotheses that relate to the guanxi network, the strength of ties, network embeddedness, business performance and uncertainty. These hypotheses can be summarised as follows:

Hypothesis1.1: the strength of tie in the network for a family relationship will be stronger than a friend relationship.
Hypothesis1.2: the strength of tie in the network for a family relationship will be stronger than a stranger relationship.
Hypothesis1.3: the strength of tie in the network for a friend relationship will be stronger than a stranger relationship.

Hypothesis2.1: a link that has a strong strength of tie will exhibit a higher degree of network embeddedness than a middle strength tie.
Hypothesis2.2: a link that has a strong strength of tie will exhibit a higher degree of network embeddedness than a weak strength tie.
Hypothesis2.3: a link that has a middle strength of tie will exhibit a higher degree of network embeddedness than a weak strength of tie.

In addition, before measurement items of uncertainties can be used to test relationships between uncertainties and strength of ties, network embeddedness and business performance, a factor analysis needs to be conducted in order to identify the structure of relationships among the variables and then create a smaller set of variables to replace the original set of variables. Furthermore, factor scores from the factor analysis will also

be calculated for inclusion in the subsequent analysis. Empirical study of the factor analysis and hypothesis testing that relate to this chapter will be conducted in chapter 5 of this thesis.

CHAPTER 5
EMPIRICAL STUDY

5.1 INTRODUCTION

In the previous chapter a number of hypotheses relating to the guanxi network, strength of ties, network embeddedness, business performance and business uncertainty have been established. In order to understand how these factors relate to each other these hypotheses have to be tested. Thus, the objective of this chapter is to test the hypotheses and assumptions specified in chapter 4. This chapter contains five major parts. Section 5.2 outlines the data collection, characteristics of samples and measurement items used in the questionnaire procedure. In this thesis a mail survey was used to collect data from a random sample of 1,800 Thai-Chinese enterprises registered in the Thai-Chinese Organization and Enterprises Directory and also based in Bangkok and its vicinities. The response rate from the mail survey was 328 or 18.22% of the 1,800 sample firms, providing 298 usable questionnaires on which to base the empirical analysis.

In section 5.3 there are three major parts relating to the guanxi relationship, strength of ties and network embeddedness. The first is concerned with hypothesis testing the relationship between the guanxi network and strength of ties. This is done by means of the Kruskal-Wallis Test, which is a nonparametric test. According to Perera (2006) the Kruskal-Wallis test does not assume a normal population and is appropriate for ranked data. In addition, since major parts of the questionnaire use a Likert scale, this test is suitable for the data used in this thesis. In the second part, a relationship between strength of ties and network embeddedness will be analysed using a multiple regression analysis. The third part is concerned with hypotheses relating to the relationship between the guanxi network and network embeddedness. The Kruskal-Wallis test will also be used to test these hypotheses. In addition to the Kruskal-Wallis tests in the first and third parts of section 5.3, the relationship between the guanxi relationship and strength of ties, and the guanxi relationship and network embeddedness will also be analysed by means of a multiple discriminant analysis. In this chapter this method is used to determine which of the variables measuring strength of ties and network embeddedness discriminate between the three groups of the guanxi relationship. The multiple discriminant analysis procedure is similar to multivariate

analysis of variance, but the computation is less complex and can be assigned to deal with unequal size samples (Davis, 1986). The results from each of these two discriminant analyses are presented in section 5.4 of this chapter.

In section 5.5 the relationship between network embeddedness and business performance will be analysed by means of a multiple regression analysis. In section 5.6 there are three major parts, relating to business uncertainty, business performance and strength of ties in a network. In the first part an explanatory factor analysis will be conducted for the uncertainty variables with the objective of reducing a large number of observed variables to fewer and more manageable unobserved variables. According to Tabachnick and Findell (2002) the specific goal of this method is to summarise patterns of correlations among observed variables and to reduce a large number of observed variables to a smaller number of factors. According to the results from the factor analysis in section 5.6.1 there are three main factors. These are General Environmental Uncertainties, Individual Firm Uncertainties, and Industry Uncertainties. In the second part of section 5.6 the relationship between business performance and business uncertainty will be analysed by means of multiple regression. Finally, the third part focuses on the relationship between strength of ties in a network and business uncertainty.

5.2 DATA COLLECTION AND MEASUREMENT

5.2.1 Data Collection and Sample Characteristics

As is the case with all research, this thesis involves the collection and analysis of data. There are several methods used to collect data, where the appropriate form of collection depends on the research topic and the form in which data resides (Blaxter el al., 1996). Some of these methods, particularly with respect to a survey, are outlined below.

The survey, or questionnaire, involves formulating precise written questions to be asked of individuals or groups whose experience, opinions and/or knowledge is of particular interest (Blaxter, et al., 1996, p.159). The questionnaire method of data collection is the most common technique among social science researchers (Blaxter et al., 1996, p.179). There are several different techniques discussed in the empirical literature on how to conduct these surveys.

Mail Out Surveys

Researchers have long recognised the advantages of mail questionnaire surveys. They are relatively low in cost, geographically flexible, and can reach a widely dispersed sample simultaneously without the attendant problems of interviewer access or the possible distortions of time lags (Kanuk and Berenson, 1975). Difficult to reach respondents, such as farmers, soldiers, or busy executives, can be surveyed with relative ease. According to Kephart and Bressier (1958) businessmen and academic researchers favour mail surveys for reasons of expediency, since data can be procured more quickly, more abundantly, and more cheaply than when a personal interview is employed. In addition, mail questionnaires are free from the costs and time consumption of interviewer bias or variability. Finally, mail questionnaires tend to be more valid than either telephone or personal interviews because they enable respondents to check information by verifying their records or consulting with other members of the organization and because they permit leisurely and thoughtful reply (Nuckols, 1964). Mail out surveys, however, have some disadvantages. The major disadvantages of mail surveys are generally believed to be their low response rates, with the attendant problems of response bias and non-response bias (Holbrook and Hughes, 1998). Also, respondents may not clarify any misunderstandings they have, which may lead to inaccurate results.

Email/Facsimile Surveys

Emailed and faxed surveys generally have low administration costs, due to the ability to mass-email and to use the same template to send to all potential respondents. However, they tend to result in a low response rate (Dillman, 2000), mainly explained by the lack of personal contact that brings a sense of obligation to the potential respondents. As with the mail outs, there is usually a staggered response rate and few detailed questions to avoid deterring responses. Respondents do not tend to clarify any misunderstandings. Furthermore, in the case of Thailand many SMEs do not have Email accounts or do not have access to fax machines.

Face-to-Face Surveys

This method involves considerably higher administration costs, due to organising appointments, travel and the fact that each survey must be administered separately. Face-to-face surveys tend to go into more detail than any of the other

methods, which adds to the considerable time required for each survey. As a result, either sample sizes tend to be small, which makes bias in the data analysis very likely, or considerable time needs to be taken to conduct the entire research project. The responses are usually staggered due to the lengthy process and the availability of respondents. This approach differs from informal interviews in that the survey follows a more structured procedure of asking questions (Blaxter, et al., 1996, p.153). The benefits of this approach are that the surveyor interacts with the respondent and is able to clarify any misunderstandings and the results are more detailed and possibly more accurate than email and mail out methods.

Telephone Surveys

There tends to be a higher response rate for telephone interviews. For example, a study by Holbrook and Hughes (1998) had a 90% affirmative response rate and Hodgkinson, et al. (2003) also had approximately the same response rate for telephone surveys they administered. Surveys tend to be conducted at similar times, so very little staggering of responses. Clarification can be made if certain questions or issues are misunderstood (Blaxter, et al., 1996). However, the issues associated with telephone surveys are mainly that they must be brief to attract responses, which sacrifices a lot of in-depth analysis. Also, administration costs are not as low as those associated with mail outs, emails and faxes, as they must be administered one at a time and consist of long distance telephone calls.

The present study was preceded by an extensive pilot study during November-December, 2006. There were 71 questions in the pilot study. The data from the pilot study was collected via a face to face survey (in Thai) of SME business owners or managers in Bangkok, Thailand. The face to face survey was chosen for the pilot study, as it allowed respondents to clarify any misunderstandings and provide more detail about their companies. Unlike a telephone survey, this method is considered more polite in Thailand since it requires initial contact from telephone calls or E-mails asking potential respondents for participation (Poonpatpibual and Limthammahisorn 2005). Thirty-four respondents were randomly selected from the Thai-Chinese Organization and Enterprises Directory (TCOD), (2006)[12]. Business owners or managers were

[12] Thai-Chinese Organization and Enterprises Directory (TCOD) is published by the Thai-Chinese Chamber of Commerce every year.

identified through telephone conversations and asked to participate. Once they agreed to participate in the study each participant met face to face with the research student and asked to do the survey (in Thai). If the respondent was initially unavailable, a later appointed time was made to complete the survey. The face to face surveys lasted for no longer than 25 minutes, and were not initially introduced to the potential respondents as interviews or surveys, but rather as a discussion of business activity. The respondents' comments about the questionnaire were also recorded in order to help to improve clarity and comprehensiveness of the final questionnaire. The respondent, in particular, to take note of any aspects he/she did not appreciate, and if the questions

- Were leading (presuming a particular answer),
- Were too complicated and should be broken down into simpler questions,
- Were ambiguous,
- Had an overall negative tone or,
- Involved issues too sensitive or offensive to discuss (for example, personal issues)

The pilots were useful for translating the questions from economic language into business language as much as possible. For example, the word 'innovation' and 'guanxi network' in Thai can be interpreted several different ways. In the case of 'innovation' most of the respondents understood innovation as something related to high technology development only, which is completely different to the economic interpretation. For the 'guanxi network' it was perceived by some respondents as only a family relationship. In addition, the pilot study was also helpful in confirming the accuracy of back translation of the questionnaire between Thai and English.

After the pilot study and a reconstruction of the questionnaire a mail survey (in Thai) was used to collect data from a random sample of 1,800 (from more than 4000) Thai-Chinese enterprises based in Bangkok and its vicinities, and registered in the TCOD (2006)[13]. A Mail out survey was chosen as the data collection method used for this thesis due to a number of factors

- The nature of the study is a quantitative approach requiring a large number of sample sizes,

[13] See appendix 1 for English version of the questionnaire and appendix 2 for the Thai version.

- The Directory listing of TCOD was relatively accurate since it is updated every year.
- The illiteracy rates of owners or managers of SMEs in Bangkok are relatively high when compared to other regions in the country (Poonpatpibual and Limthammahisorn 2005).
- The fact that the questionnaire was fairly long (8 pages) made it very difficult to conduct surveys by telephone or face to face,
- A limited time frame for the conduct of the study,
- A limited budget provided for the survey.
- High cost and other difficulties in accessing the internet and fax machines for SMEs.

These were the main reasons why Email, facsimile, telephone and face to face surveys were not chosen as an appropriate data collection method for this study.

The process of data collection proceeded during February-April, 2007. The first two weeks was dedicated to the distribution of the questionnaire. Questionnaires in both the pilot study and the mail survey were back translated between Thai and English by professional translators. This process helped to preserve the conceptual equivalence of the whole sentences of the survey instruments and also reduce errors from cultural differences. Three weeks after the distribution of the questionnaire a follow-up telephone reminder was conducted. The response rate from the mail survey and follow-up reminders was 328 or 18.22% of the 1,800 sampled firms, providing 298 usable questionnaires on which to base the empirical analysis. Thirty-four sets of the pilot study were not used in the final analysis of 298 useable questionnaires because the questionnaire has been changed. In addition, 30 unusable questionnaires were either not completed and/or the firm was not considered to be an SME according to the Thai Ministry of Industry.

The 298 companies represented in the sample varied in many different ways and can be summarised in Table5.1

Table 5.1 Characteristics of the sample

	Single business owner	**Partnership**	**Limited liability company**	**Limited partnership**
Business registration	**43**	**97**	**102**	**56**
Type of business				

Manufacturing	6	45	48	18
Service	11	22	24	19
Wholesaling	4	12	15	8
Retailing	22	18	15	11
Year established				
<1Year	4	12	7	7
1-3 Years	7	18	10	12
4-5 Years	10	28	21	10
6-10 Years	16	22	39	18
>10 Years	6	17	25	9
Fixed asset				
< 30 M.	21	38	18	21
30-50 M.	12	32	48	20
51-100.	5	21	20	10
101-200M.	5	5	12	4
>200M.	0	1	4	1
No. of employee				
<5 workers	12	25	7	8
5-20 worker	14	28	8	20
21-50 workers	12	27	60	17
51-100 workers	3	12	12	8
101-200workers	2	4	10	2
>200workers	0	1	5	1
Education level				
Below high school	11	6	5	7
High school	10	20	10	14
Diploma	4	29	24	10
Undergraduate	12	30	38	16
Post-graduate	6	12	25	9
Gender				
Female	6	12	3	8
Male	37	85	99	48
Chinese ancestors				
Yes	40	87	98	49
No	3	10	4	7
Speak Chinese				
Yes	10	33	17	20
No	33	64	85	36
Age of the owner				
<21 years	1	1	2	1
21-30	7	20	12	4
31-40	12	33	21	17
41-50	15	30	46	20
51-60	7	12	19	14
>60	1	1	2	0
Export				
Yes	20	79	93	34
No	23	18	9	22

1. Business registration

The primary response consisted of limited liability companies (34.23%) followed by single business owner (14.43%), limited partnership (18.79%) and partnership (32.55%). Of the limited liability companies more than half were in manufacturing. Furthermore, most of these limited liability companies had fixed assets between 30-50 million baht and employed 21-50 workers.

2. Type of business

The respondent businesses consisted most frequently of manufacturing (39.26%) and retailing (22.15%) enterprises. The rest of the respondents were in the service (25.50%) and wholesaling (13.09) sectors. In the retailing sector the majority of firms consisted of a single business owner, having fixed assets less than 30 million baht, employing less than 15 workers and exporting less than 10% of total product. For the service sector only a few of them exported.

3. Year established

19.13% of the companies represented in the sample had been established for more than 10 years. 31.88% of them were between 6-10 years old. The rest were between 1-3 years (15.77%), less than one year (10.07%) and 4-5 years (23.15%) old. For companies established for more than 10 years, more than half of them were in manufacturing, their owner's age was between 41-60 years, and they exported more than 50% of their total product.

4. Fixed assets

Most of the respondents had fixed assets of less than 30 million baht (32.89%) and between 30-50 million baht (37.58%). The remainder had more than 200 million baht (2.01%), 101.-200 million baht (8.72%) and between 51-100 million baht (18.79%). The majority of those having fixed assets worth less than 30 million baht were single business owner and limited partnership. Furthermore, these companies also employed less than 25 workers.

5. Number of employees

23.49% of the companies represented in the sample employed 5-20 workers, 38.93% employed 21-50 workers, and 17.45% employed less than 15 workers. Only 2.35% employed more than 200 workers, and 6.04% employed 51-200 workers. All of the retailing companies in the sample employed less than 15 workers. Manufacturing and service sector firms made the major contribution to employment. Most of them employed 51 to more than 200 workers.

6. Education level

32.21% of respondents have undergraduate degrees followed by diplomas (22.48%), post-graduate degree (17.45%) and high school education (9.73%). Only a few have below high school education. The majority of those who have undergraduate and post graduate qualifications are 21-40 years old, while the majority of those who have diplomas are 41-50 years olds.

7. Gender

90.27% of respondents are male (269 of the 298 owners or managers). The majority of female owners in the sample were operating in the service sector and a few of them were in the retailing sector.

8. Chinese ancestors and ability to speak Chinese

More than 92% of the respondents have Chinese ancestors and 26.85% of the respondents can speak Chinese. 70% of owners or managers who can speak Chinese are between 21-30 and 41-60 years old, and around 20% are younger than 30 years of age

9. Age

37.25% of the respondents are between 41-50 years old followed by 31-40 (27.85%) and 21-30 (14.43%) years old respectively. 17.45% of the respondents are between 51-60 years old and only 5 of the 298 respondents are younger than 21 years of age.

10. Exports

More than 75% of the companies represented in the sample exported to international markets. However, only 56% of the respondents exported more than 50% of their output. The majority of those who did not export were in the service sector.

5.2.2 Measurements

There are four sections in the questionnaire relating to measurement. The first section focuses on general information of the business such as business registration, year established, fixed assets, number of employees, education level, gender, age and export level. In the second section, there are 5 measurement items of business performance. These items are measured using 7-point Likert scales with one representing "decreasing significantly" and seven representing "increasing significantly". The reliability scale of these items (Cronbanch' α) is 0.96. Details of these items have been presented in section 4.4.2 of this thesis.

The third section presents 31 measurement items of business uncertainty. Most of these items are adapted from the literature such as Miller (1992, 1993) and Werner et al. (1996). These items are measured using 7-point Likert scales with a scale of one representing "strongly disagree" and seven representing "strongly agree" with the statement. Items 3.1-3.11 measure general environmental uncertainty, items 3.12-3.21 measure industry uncertainty, and items 3.22-3.31 measure individual firm uncertainty. These items present a scale of reliability (Cronbanch' α) of 0.98. Details of these items have been presented in section 4.5.2 of this thesis.

In section 4 there are 17 measurement items of the strength of ties, and the degree of network embeddedness. All of these items except items 4.1 are 7-point Likert scales. Item 4.1 identifies a relationship between the respondent and his/her business partner according to the Guanxi Chinese network concept (family, friend, stranger relationship). Items 4.2-4.9 measure the strength of ties in the network. The scale of reliability of these items is 0.936. Details of these items have been presented in section 4.2.2. Items 4.10-4.17 measure the degree of network embeddedness. The scale of reliability of these items is 0.911. Details of these items were presented in section 4.3.

5.2.3 Statistical Techniques

In this chapter a number of statistical techniques are applied to analyse the data. These include the Kruskal-Wallis test, multiple discriminant analysis, multiple regression analysis, and factor analysis.

Kruskal-Wallis Test

The Kruskal-Wallis test is a nonparametric test which can be applied to problems with the following characteristics;

- The problem objective is to compare two or more populations,
- The data are either ordinal or interval but nonnormal,
- The samples are independent (Keller and Warrack, 2003).

In the case that data are interval and of normal distribution, the analysis of variance *F* test can be used to determine whether two or more populations are different. When data are not of a normal distribution, it needs to be treated as ordinal and employ the Kruskal-Wallis test (Keller and Warrack, 2003). This method is very similar to the Wilcoxon rank sum except that the rank sum is used to compare two populations only. The null hypotheses for this test are similar to others that relate to the analysis of variance, except the population location is tested instead of population mean (Kenkel, 1984). Since major parts of the questionnaire use a Likert scale, which is treated as ordinal, the Kruskal-Wallis test is the only appropriate test that can be used to test the relationship between the guanxi network and strength of ties, and the relationship between the guanxi network and network embeddedness in this thesis.

Multiple Discriminant Analysis

In addition to the Kruskal-Wallis test this thesis also applies multiple discriminant analysis to test the relationship between the guanxi network and strength of ties, and the relationship between the guanxi network and network embeddedness. The main purpose of discriminant function analysis is to provide a better understanding of the data set, as a careful examination of the prediction model that results from the procedure can give insight into the relationship between group membership and the variables used to predict group membership (Hair et al., 2005). This procedure is closely related to the multiple linear regression procedure, but the weights are determined in such a way that the criterion classification groups are maximally separated in terms of the average values for the prediction scores in relation to their pooled standard deviations (Porebski, 1966). It can, however, be used with more than two groups, making it possible to find several equations (up to one less than the number of criterion groups) that optimally separate the groups (Porebski, 1966). Since there are three groups of guanxi relationships this method is appropriate to test whether there are any significant differences in the variables of strength of ties and variables of network embeddedness between the three groups of guanxi.

Multiple Regression Analysis

Multiple regression analysis can be used to predict the value of one variable on the basis of other variables. The technique involves developing a mathematical equation that describes the relationship between the variable to be forecast, which is called the dependent variable, and variables that the researcher believes are related to the dependent variables. These related variables are called independent variables (Keller and Warrack, 2003). Multiple regression analysis offers some advantages which include:

- It results in an optimal coefficient of the independent variable when they are used in combination with each other,
- The standardized coefficients indicate the relative importance of each independent variable in the context of all others in the equation,
- It can estimate each independent variables relative contribution to explaining variability in the outcome criterion, which thereby facilitates selection of predictor items (Kenkel, 1984).

However, the analysis also has some disadvantages;

- independent variables are assumed to be linearly related to the criterion measure,
- variables are normally distributed and measured on an interval scale (Kenkel, 1984)

Even though multiple regression analyse has some disadvantages the benefits that the method provides, when used to analysis the relationships between uncertainty and business performance, and strength of ties and business performance in this thesis, are still greater than the drawbacks.

Factor analysis

In this thesis there are thirty-one variables that relate to business uncertainty in the study questionnaire. In order to analyse the relationships between business uncertainty and business performance, an explanatory factor analysis is required to reduce a large number of observed variables to fewer and more manageable unobserved variables. According to Tabachnick and Findell (2002) factor analysis is a statistical technique that can be used to analyse interrelationships among a large number of variables and to explain these variables in terms of their common underlying factors. Variables that are correlated with one another, but largely independent of other subsets

of variables, are combined into factors. These factors reflect underlying processes that have created the correlations among variables. The specific goals of this method is to summarise patterns of correlations among observed variables, to reduce a large number of observed variables to a smaller number of factors, to provide an operational definition (a regression equation) for an underlying process by using observed variables or to test a theory about the nature of underlying processes (Stills, 1989; Sternberg, 1990; Abdi 2003 and 2007). Steps in principle component and factor analysis include selecting and measuring a set of variables, preparing the correlation matrix, extracting a set of factors from the correlation matrix, determining the number of factors, rotating the factors from the correlation matrix, and, finally, interpreting the results (Gorsuch 1983, Manly, 1994; Hutcheson and Sofroniou, 1999; and Pett et al. 2003;). A factor is more easily interpreted when several observed variables correlate highly with it and those variables do not correlate with other factors (Manly, 1994).

5.3 EMPIRICAL RESULTS FROM A STUDY OF THE GUANXI NETWORK, STRENGTH OF TIES, AND NETWORK EMBEDDEDNESS

The main purpose of this section is to study the strength of relationships between the guanxi network, strength of ties, and network embeddedness. There are three major parts in this section. The first is concerned with hypothesis testing relating to the relationship between the guanxi network and strength of ties. In order to test these hypotheses a Kruskal-Wallis Test, which is a nonparametric test, will be performed. In the second part the relationship between strength of ties and network embeddedness will be analysed by means of a multiple regression analysis. The third part is concerned with hypothesis testing relating the relationship between the guanxi network and network embeddedness. The Kruskal-Wallis test will also be used to test these hypotheses.

5.3.1 The Relationship between the Guanxi Network and Strength of Ties in the Network

From Figure 4.1 of this thesis a number of hypotheses relating to the three groups of the guanxi relationship and strength of ties in the network have been identified. From the literature on the guanxi Chinese network presented in chapter 3 and chapter 4 of this thesis, it was shown that there are three categories of relationship. These relationships are family, friend and mere acquaintance (stranger). In the strength

of ties literature presented in section 4.2., strong ties in the network are families and close friends, while weak ties are strangers or mere acquaintances. As stated in the questionnaire, family relationship also refers to remote ties such as family from marriage (e.g. sister in law). For the friend group this includes neighbours, class mates, co-workers, friends from social groups (e.g. sport clubs). For mere acquaintances, this refers to people met randomly and where no formal relationship is established. Thus, it can be assumed that differences in the guanxi relationship will have a significant impact on the strength of ties in the network.

Hypothesis1.1: the strength of tie in the network for a family relationship will be stronger than a friend relationship.
Hypothesis1.2: the strength of tie in the network for a family relationship will be stronger than a stranger relationship.
Hypothesis1.3: the strength of tie in the network for a friend relationship will be stronger than a stranger relationship.

To test these hypotheses, strength of ties (8 variables from section 4.2.2) between the three groups of the guanxi relationship will be compared using a Kruskal-Wallis Test, which is calculated by SPSS**.** Table 5.2 presents the variables relating to strength of ties used in this chapter. The Kruskal-Wallis test is a generalisation of the procedure used by Mann-Whitney and offers a nonparametric alternative to the usual one-way ANOVA.

Table 5.2: Strength of ties measurement variables

Question	Measurement item	Variable
4.2	Amount of time	*Contact*
4.3	Amount of time	*Known*
4.4	Emotional intensity	*Solveprob*
4.5	Emotional intensity	*Willsolve*
4.6	Intimacy	*Honest*
4.7	Intimacy	*Truthful*
4.8	Reciprocity	*Cord*
4.9	Reciprocity	*Inforshare*

The object of this test is to compare K populations of ranked data where the normality requirement is not satisfied (Perera, 2006). This test assumes the data arise as K independent random samples from a continuous distribution. From 298 usable samples,

94 (31.54% of sample size) of them identify a family connection as the most important link in the business network. 119 (39.93% of sample size) and 85 (28.53% of sample size) samples identify friend and stranger connections as the most important links in the business network, respectively.

A **Ranks** table (Table 5.3A) shows the means or average ranks for the three groups of the guanxi relationship on each of the eight strength of ties variables. From this table, the mean of the family relationship is higher than the means of the friend and the stranger relationships. At the same time the mean of the friend relationship is higher than the mean of the stranger relationship, for all of the strength of ties variables. A **Test Statistics** table (Table 5.3B) shows whether there is an overall difference among the three guanxi groups for each of the eight variables. All of the strength of ties variables is significant, at the 0.05 level of significance, and the null hypothesis from Chi-square testing that the means of two groups are not statistically significantly different can be rejected.

Furthermore, values of the mean rank for all the variables for the family group are higher than the friend and stranger groups, and also values of mean rank of all variables for the friend group are higher than the stranger group. Thus it can be concluded that at the 5 percent significance level the data does provide sufficient evidence to support the claim that

1. the strength of tie in the network for a family relationship is stronger than a friend relationship.

2. the strength of tie in the network for a family relationship is stronger than a stranger relationship.

3. the strength of tie in the network for a friend relationship is stronger than a stranger relationship

It is clear from these results that the family link has a stronger relationship with guanxi than the friend and the stranger relationships, while the friend link has a stronger relationship than the stranger relationship. Under the guanxi Chinese network, principles of interaction and ways of social treatment between these groups are totally different. The family relationship is characterised as being relatively permanent, stable and contain expressive relationships in which the welfare of the other is part of one’s duty. The general rule of exchange is that one must do his or her best to attend to the

other's needs with no or little expectation of return in the future (Tsui and Farh, 1997, p.60). A loyalty (and related favouritism) to family is an obligation, and is rendered largely without an anticipation of reciprocity (Yang, 1993). These factors create an invisible bond between parties, which in turn create a very strong relationship.

Table 5.3A: Ranks

	Guanxi	N	Mean Rank
Contact	Family	94	190.45
	Friend	119	144.06
	Stranger	85	111.82
	Total	298	
Known	Family	94	198.98
	Friend	119	141.04
	Stranger	85	106.62
	Total	298	
Sloveprob	Family	94	200.66
	Friend	119	142.84
	Stranger	85	102.24
	Total	298	
Willslove	Family	94	206.02
	Friend	119	144.16
	Stranger	85	94.47
	Total	298	
Honest	Family	94	193.01
	Friend	119	149.75
	Stranger	85	101.04
	Total	298	
Truthful	Family	94	206.11
	Friend	119	144.92
	Stranger	85	93.31
	Total	298	
Cord	Family	94	195.84
	Friend	119	149.96
	Stranger	85	97.62
	Total	298	
Inforshare	Family	94	206.99
	Friend	119	143.50
	Stranger	85	94.32
	Total	298	

Table 5.3B: Test Statistics(a,b)

	Contact	Known	Sloveprob	Willslove	Honest	Truthful	Cord	Inforshare
Chi-Square	40.68	56.58	62.40	80.29	54.13	81.73	61.90	82.32
Df	2	2	2	2	2	2	2	2
Asymp. Sig.	0	0	0	0	0	0	0	0

a Kruskal-Wallis Test
b Grouping Variable: Guanxi

For the stranger relationship the principle of interaction is utilitarian exchange focusing on personal gain and loss, favouritism, discretion, and caution. If utilitarian exchange is no longer applied the link between parties can be easily disconnected (Tsui and Farh, 1997, p.60). Since the major concern of the relationship is personal gain and loss, not interpersonal relationship, the strength of relationship between parties under this group is weak. In some certain situations, however, this can vary depending upon the extent of the gain or loss.

For the friend relationship the principle of interaction is a mixture of family and stranger, and takes both utilitarian and expressive forms. Hwang (1987) and King (1989) suggest that in most friendships favouritism is often followed by a strong expectation of reciprocity. The generosity and trust in the network make the friend relationship stronger than the stranger group, but exchange of favour and social accommodation make the friend relationship weaker than the family group.

5.3.2 The Relationship between the Strength of Ties in the Network and Network Embeddedness.

The relationship between the guanxi relationship and strength of ties in the network has been analysed in a previous section. In this section the relationship between strength of ties in the network and network embeddedness will be focused upon. The literature in section 4.2.1 of this thesis has presented how strength of ties in a network can affect network outcomes such as information sharing, coordination, participation, and financial and emotional support. Since these outcomes are factors under network embeddedness, it can be assumed that strength of ties in the network have a significant impact on the level of network embeddedness. In order to test the assumption a multiple regression analysis will be used. The dependent variable for each multiple regression model is the measurement items of network embeddedness as summarised in Table 5.4. The independent variables consist of the eight measuring strength of ties. These variables relate to questions 4.2-4.9 of the questionnaire and are similar to the strength of ties variable in a previous section (Table 5.2).

Table 5.4: Measurement items of network embeddedness

Network Embeddedness	Questions
Commitment	4.10
Coordination	4.11
Interdependence	4.12
Trust	4.13
Information quality	4.14
Information sharing	4.15
Participation	4.16
Conflict resolution	4.17

Table 5.5 reports results of eight multiple regression models, for the eight dependent variables of network embeddedness. The first model focuses on the relationship between *commitmen*t and the strength of ties variables. Models 2-8 focus on relationships between *coordination, interdependence, trust, information quality, information sharing, participation,* and *conflict resolution* with the strength of ties variables, respectively. In order to detect multicollinearity, scores of a VIF (*variance inflation factor)* and a Tolerance for each independent variable are used. According to Rathor (2004) VIF and Tolerance measure the impact of collinearity among the independent variables in a regression model. It expresses the degree to which collinearity among the predictors degrades the precision of an estimate. As a rule of thumb, variables whose VIF values are greater than 4 or a Tolerance less than 0.2 may have a multicollinearity problem. In order to solve this problem the variable that has a high correlation coefficient to the other independent variables is dropped and the model re-analysed. From the initial analysis the variable *solveprob* (question 4.4) has a problem with multicollinearity (score of VIF equal to 4.7). Since *solveprob* is the only variable with a high collinearity it is dropped from the subsequent analysis, which reduces the total number of independent variables from eight to seven for every model.

For the commitment model, the *Willsolve, Honest* and *Cord* variables are three independent variables that are positive and significant at the 0.01 level of significance. The adjusted R square of this model is 0.67. For the coordination model the *Known, Willsolve, Honest, Truthful,* and *Cord* variables are five independent variables that are positive and significant, at the 0.05 level of significance for *Willsolve* and at the 0.01 level of significance for the rest. In addition, the adjusted R square of this model is 0.61.

In the third model the *Contact, Known, Willsolve, Cord,* and *Inforshare* variables are five independent variables that are positive and significant at the 0.05 level of significance for *Contact* and at the 0.01 level of significance for the rest. The adjusted R square of this model is 0.76. For the trust model, the *Know, Willsolve, Truthful, Cord,* and *Inforshare* variables are five independents variables that are positive and significant, at the 0.05 level of significance for *Truthful* and at the 0.01 level of significance for the rest. In this model the adjusted R square is 0.65.

Table 5.5: Multiple regression between network embeddedness and strength of ties

Variables	Commitment	Coordination	Interdependence	Trust	Information quality	Information sharing	Participation	Conflict resolution	Tolerance	VIF
Constant	0.64	0.87	-0.89	-0.58	0.58		0.86	0.42		
	(3.74)	(4.97)	(-5.39)	(-2.76	(3.35)		(3.93	(1.96)		
Contact			0.13		0.46	0.22		0.33	0.359	2.79
			(2.38)		(8.13)	(3.84		(4.60)		
Known		0.13	0.20	0.21	0.13		0.23		0.441	2.27
		(2.65)	(4.22)	(3.57)	(2.74		(3.69)			
Willsolve	0.15	0.12	0.29	0.33	0.09*		0.24		0.422	2.37
	(2.96)	(2.41)	(5.90)	(5.37	(1.95)		(3.75)			
Honest	0.22	0.17							0.415	2.41
	(4.41)	(3.27)								
Truthful		0.12		0.11	0.11	0.10	0.13	0.26	0.465	2.15
		(2.65		(2.08	(2.39)	(2.21	(2.35	(4.52		
Cord	0.48	0.35	0.22	0.23			0.35		0.410	2.44
	(9.70)	(6.95)	(4.61)	(3.83)			(5.52)			
Inforshare			0.24	0.19		0.58		0.19	0.387	2.59
			(4.43)	(2.86		(9.92		(2.66)		
Adjusted R Square	0.67	0.61	0.76	0.65	0.66	0.70	0.53	0.50		

n = 298
t-statistic in parentheses
All coefficients presented in this table have a *P*-value <0.05, except ***** that has *P*-value <0.1.

In the fifth model the multiple regression analysis of the Information quality model show that the *Contact, Known, Willsolve,* and *Truthful* variables are four independent variables that are positive and significant. The *Contact* and *Know* variables are significant at the 0.01 level of significance, while *Willsolve* and *Truthful* are significant at the 0.1 and 0.05 levels of significance, respectively. The adjusted R square of this model is 0.66. For the Information sharing model the *Contact, Truthful,* and

Inforshare variables are three independent variable that are positive and significant, at the 0.05 level of significance for *Truthful* and at the 0.01 level of significance for *Contact* and *Inforshare*. In addition, the adjusted R square of this model is 0.70. For the Participation model the *Know, Willsolve, Truthful,* and *Cord* variables are four independent variables that are positive and significant at the 0.01 level of significance. The adjusted R square of this model is 0.53. In the last model the *Contact, Truthful*, and *Inforshare* variables are three independent variables that are positive and significant at the 0.01 level of significance. The adjusted R square of this model is 0.50.

5.3.3 The Relationship between the Guanxi Network and Network Embeddedness

The results for the multiple regressions in Table 5.5 of this chapter show that strength of ties in the network has a positive impact on network embeddedness. In addition, results from section 5.3.1 of this chapter have also indicated that differences in the guanxi relationship can have a significant impact on the strength of ties in the network. In other words the family relationship has a stronger strength of tie than the friend and the stranger relationships, and the friend relationship has a stronger strength of tie than the stranger relationship. The results from sections 5.3.1 and 5.3.2 help to establish assumptions that relate to the relationship between the guanxi relationship and network embeddedness. Thus, it can be expected that differences in the guanxi relationship will also have a significant impact on network embeddedness.

Hypothesis2.1: the degree of network embeddedness of a family relationship will be stronger than a friend relationship.
Hypothesis2.2: the degree of network embeddedness of a family relationship will be stronger than a stranger relationship.
Hypothesis2.3: the degree of network embeddedness of a friend relationship will be stronger than a stranger relationship

To test these hypotheses the level of network embeddedness between the three groups of a guanxi relationship will be compared using the Kruskal-Wallis Test. The statistical method and the sample size for the three groups of the guanxi relationship are similar to that used to test hypotheses 1.1-1.3 in section 5.3.1. In addition, the network embeddedness variables are similar to the analysis in the previous section and are summarised in Table 5.4 of this chapter.

Table 5.6A: Ranks

	Guanxi	N	Mean Rank
Commitment	Family	94	189.07
	Friend	119	152.63
	Stranger	85	101.35
	Total	298	
Coordination	Family	94	196.04
	Friend	119	134.84
	Stranger	85	118.56
	Total	298	
Interdependence	Family	94	213.23
	Friend	119	135.77
	Stranger	85	98.24
	Total	298	
Trust	Family	94	212.56
	Friend	119	138.96
	Stranger	85	94.51
	Total	298	
Information quality	Family	94	176.27
	Friend	119	162.45
	Stranger	85	101.76
	Total	298	
Information sharing	Family	94	205.32
	Friend	119	151.58
	Stranger	85	84.85
	Total	298	
Participation	Family	94	193.95
	Friend	119	151.55
	Stranger	85	97.47
	Total	298	
Conflict resolution	Family	94	185.15
	Friend	119	144.45
	Stranger	85	117.14
	Total	298	

Table 5.6B: Test Statistics(a,b)

	Commitment	Coordination	Interdependence	Trust	Information quality	Information sharing	Participation	Conflict resolution
Chi-Square	50.495	45.531	89.319	91.253	41.080	92.524	59.469	30.252
Df	2	2	2	2	2	2	2	2
Asymp. Sig.	.000	.000	.000	.000	.000	.000	.000	.000

a Kruskal-Wallis Test
b Grouping Variable: Guanxi

A **Ranks** table (Table 5.6A) shows the means or average ranks for the 3 groups of the guanxi relationship on each of the eight network embeddedness variables. From this table the mean of the family relationship is higher than the means of the friend and the stranger relationships. The mean of friend relationship is also higher than the mean of stranger relationship, for all network embeddedness variables. A **Test Statistics** table (Table 5.6B) shows whether there is an overall difference among the three groups for each of the eight variables. All of the network embeddedness variables is significant, at the 0.05 level of significance, and the null hypothesis of Chi-square testing that the means of the two groups are not statistically significantly different can be rejected. Furthermore, values of the mean rank for all of the variables for the family group are higher than the friend and stranger groups, and also values of the mean rank for all of the variables for the friend group are higher than the stranger group. Thus it can be concluded that at the 5 percent significance level the data does provide sufficient evidence to support the claim that

1. the degree of network embeddedness of a family relationship is stronger than a friend relationship.
2. the degree of network embeddedness of a family relationship is stronger than a stranger relationship.
3 the degree of network embeddedness of a friend relationship is stronger than a stranger relationship.

The statistical evidence presented in sections 5.3.1 and 5.3.2 of this chapter can be used to explain the results in this section. From section 5.3.1 the family link has a stronger relationship than the friend and stranger relationships, while the friendship links have a stronger relationship than the stranger links. Since the strength of ties in the network have a positive effect on network embeddedness as shown in section 5.3.2, it is not surprising that differences between the three groups of the guanxi relationships, according to the strength of ties, are similar to differences between the three groups of the guanxi relationship according to network embeddedness, since both the strength of ties and the degree of embeddedness depend on personal relations and principle of interaction.

5.4 MULTIPLE DISCRIMINANT ANALYSIS

In addition to hypotheses 1.1-1.3 and 2.1-2.3 a multiple discriminant analysis will also be used to find two other important results. The first analysis will test whether there are any significant differences, for the eight variables of strength of ties, between the three groups of the guanxi relationship. The second analysis will test whether there are any significant differences, for the eight variables of network embeddedness, between the three groups in the guanxi relationship. According to Hair et al. (2005) the main purpose of discriminant function analysis is to provide a better understanding of the data set, as a careful examination of the prediction model that results from the procedure can give insight into the relationship between group membership and the variables used to predict group membership. The application and interpretation of discriminant analysis is much the same as in regression analysis in that the discriminant function is a linear combination of metric measurements for two or more independent variables and is used to describe or predict a single dependent variable. The key difference is that discriminant analysis is appropriate for research problems in which the dependent variable is nominal and where regression is utilised when the dependent variable is metric. Results of these multiple discriminant analyses of the guanxi relationship and strength of ties, and the guanxi relationship and network embeddedness will be presented in sections 5.4.1 and 5.4.2 of this thesis.

5.4.1 Discriminant Analysis of the Strength of Ties and the Guanxi Relationship

The purpose of this section is to test whether there are any significant differences in the eight variables of strength of ties between the three groups of the guanxi relationship. Similar to section 5.3.1 of this chapter, from 298 usable samples, 94 (31.54% of sample size) of them identify family connections (group1) as the most important link in the business network. 119 (39.93% of sample size) and 85 (28.53% of sample size) samples identify friend (group2) and stranger (group3) connections as the most important links in the business network, respectively. Since there are three groups and eight predictors in this analysis, two discriminant functions can be estimated (Dillon and Goldstein, 1984). Tables 5.7A-5.7I present the results of estimating a three group discriminant analysis. The following comments can be made about these results:

Table 5.7A: Group Statistics

Guanxi		Mean	Std. Deviation	Valid N (listwise)	
		Unweighted	Weighted	Unweighted	Weighted
Family	Contact	4.82	1.097	94	94.000
	Known	5.02	1.209	94	94.000
	Sloveprob	4.80	1.232	94	94.000
	Willslove	4.80	.979	94	94.000
	Honest	4.82	1.116	94	94.000
	Truthful	5.01	1.223	94	94.000
	Cord	4.80	1.232	94	94.000
	Inforshare	4.77	1.186	94	94.000
Friend	Contact	4.23	1.123	119	119.000
	Known	4.25	1.137	119	119.000
	Sloveprob	3.98	1.150	119	119.000
	Willslove	3.92	1.001	119	119.000
	Honest	4.27	1.047	119	119.000
	Truthful	4.13	1.112	119	119.000
	Cord	4.21	1.049	119	119.000
	Inforshare	3.89	.928	119	119.000
Stranger	Contact	3.81	1.118	85	85.000
	Known	3.81	1.029	85	85.000
	Sloveprob	3.34	1.201	85	85.000
	Willslove	3.27	1.148	85	85.000
	Honest	3.58	1.179	85	85.000
	Truthful	3.40	1.104	85	85.000
	Cord	3.39	1.226	85	85.000
	Inforshare	3.20	1.163	85	85.000
Total	Contact	4.30	1.178	298	298.000
	Known	4.37	1.225	298	298.000
	Sloveprob	4.06	1.316	298	298.000
	Willslove	4.01	1.195	298	298.000
	Honest	4.24	1.205	298	298.000
	Truthful	4.20	1.303	298	298.000
	Cord	4.16	1.280	298	298.000
	Inforshare	3.97	1.240	298	298.000

Table 5.7B: Tests of Equality of Group Means

	Wilks' Lambda	F	df1	df2	Sig.
Contact	.888	18.640	2	295	.000
Known	.847	26.583	2	295	.000
Sloveprob	.814	33.786	2	295	.000
Willslove	.751	48.984	2	295	.000
Honest	.840	28.127	2	295	.000
Truthful	.768	44.444	2	295	.000
Cord	.817	33.123	2	295	.000
Inforshare	.758	47.186	2	295	.000

Table 5.7A presents the means and standard deviations of eight variables of the strength of ties for each group in the guanxi relationship. In this table the means of the strength of ties variables of the family group is higher than the friend and the stranger groups. In addition the means of the friendship group is also higher than the stranger group. From Table 5.7B the value of the *F* ratios indicate that when the predictors are considered individually the eight variables are significant in discriminating between the three guanxi groups. The level of significance of *Box's M* in Table 5.7C suggests that the null hypothesis that the covariance matrices are equal can be rejected (Manly, 1994). From Table 5.7D the eigenvalue for function 1 is 0.508 and for function 2 it is 0.30. Function 1 accounts for 94.5% of the variability while function 2 accounts for the remaining 5.5% of the between groups variability. Wilk's lambda in Table 5.7E, associated with function 1, is 0.644. This transforms to a chi-square value of 128.252, which is statistically significant at the 0.01 level of significance. Wilks' lambda of function 2, after function 1 has been removed, is 0.971. This transforms to a chi-square value of 8.53 which is not statistically significant at the 0.05 level of significance. Hence, only the first function contributes significantly to group differences (Morrison, 1969). The unstandardised canonical discriminant function coefficients in Table 5.7F give two discriminant functions. These two functions can be used to calculate discriminant scores for future analysis.

Table 5.7C: Test Results

Box's M		521.377
,F	Approx.	6.958
	df1	72
	df2	212280.079
	Sig.	.000

Tests of null hypothesis of equal population covariance matrices.

Table 5.7D: Eigenvalues

Function	Eigenvalue	% of Variance	Cumulative %	Canonical Correlation
1	.508(a)	94.5	94.5	.580
2	.030(a)	5.5	100.0	.170

a First 2 canonical discriminant functions were used in the analysis.

Table 5.7E: Wilks' Lambda

Test of Function(s)	Wilks' Lambda	Chi-square	df	Sig.
1 through 2	.644	128.252	16	.000
2	.971	8.525	7	.289

Table 5.7F: Canonical Discriminant Function Coefficients

	Function	
	1	2
Contact	-.406	.227
Known	-.095	.459
Sloveprob	.109	.742
Willslove	.457	.021
Honest	.108	-.536
Truthful	.299	.091
Cord	.042	-1.132
Inforshare	.524	.117
(Constant)	-4.082	.060

Unstandardized coefficients

Table 5.7G: Standardized Canonical Discriminant Function Coefficients

	Function	
	1	2
Contact	-.452	.253
Known	-.108	.519
Sloveprob	.130	.884
Willslove	.474	.022
Honest	.120	-.594
Truthful	.342	.105
Cord	.049	-1.313
Inforshare	.567	.127

The standardised canonical discriminant function in Table 5.7G, indicates a large negative coefficient for *Contact* and small negative coefficient for *Known* for function 1 and also large negative coefficients for *Honest* and *Cord* for function 2.

Table 5.7H: Functions at Group Centroids

Guanxi	Function	
	1	2
Family	.912	.123
Friend	-.067	-.210
Stranger	-.915	.157

Unstandardized canonical discriminant functions evaluated at group means

Table 5.7I: Classification Results(a)

		Guanxi	Predicted Group Membership			Total
			1	2	3	1
Original	Count	Family	75	10	9	94
		Friend	29	57	33	119
		Stranger	13	10	62	85
	%	Family	79.8	10.6	9.6	100.0
		Friend	24.4	47.9	27.7	100.0
		Stranger	15.3	11.8	72.9	100.0

a 65.1% of original grouped cases correctly classified.

From Table 5.7H the canonical discriminant functions evaluated at group means (group centroids) suggest that family relationship has a high positive value for function 1 (.912) (from Table 5.7.E, function 2 is not significant and does not contribute to group difference). From the standard canonical discriminant function coefficients table, variables *Willsolve, Truthful* ,and *Inforshare* have a high positive value for the first function. This suggests that individuals who perceive family relationships as the most important connection in the business network focus their emphasis on a willingness to solve problems, being truthful, and sharing information. According to the strength of ties literature, such as Soh (2003), Osborn and Baughn (1990), and Marsden and Cambell (1984), such behaviour helps to create a long-term and stronger relationship between parties. From the guanxi Chinese network literature, such as Tsui and Farh (1997) and Yang (1994), the family group is the one that focuses on the long-term relationship. The principle of interaction of the family group is characterised by relatively permanent, stable, and expressive relationships in which the welfare of the other is part of one's duty. These kinds of interaction are activities that help to encourage long-term mutual benefits and support between parties. Thus it is not surprising that willingness to solve a problem, being truthful, and sharing information are major concerns of individuals who perceive family relationships as being the most important connection in the business network.

For the friend relationship the canonical discriminant function evaluated at group means (Table 5.7H) suggests that this group has a small negative sign for function 1 (-.067), since *Known* has a small negative value in function 1 as revealed by the standard canonical discriminant function coefficients (Table 5.7G). This suggests that individuals who perceive the friendship relationship as being the most important connection in the business network, focus their emphasis on the period during which

both parties have known each other. According to Yang (1994), individuals that are connected under the friend relationship tend to have shared some experience together. The longer the experience has been shared the higher would be the emotional attachment to each other. From the guanxi network literature the emotional attachment, or the ganqing, is directly related to the strength of tie under the guanxi network (Tsang, 1998). Thus the period that individuals have known each other can be considered as an important factor for the individual who perceives the friend relationship as the most important connection in the business network, because it can increase the emotional attachment between parties.

For the stranger group the canonical discriminant function evaluated at group means (Table 5.7H) suggests that this group has a large negative value for function 1 (-0.915). Since the *Contact* variable has a high negative value this suggests that individuals who perceive the stranger relationship as the most important connection in the business network focus their emphasis on the frequency of contact between parties. According to Tsui and Farh (1997) the principle of interaction of the stranger group is utilitarian exchange focusing on personal gain and loss, favouritism, discretion, and caution. In order to maintain the relationship between parties under this group, regular exchanges of favour and visits need to occur. These exchanges of favouritism include, but are not limited to, gift giving, banquet hosting, and information sharing. Yang (1994) argues that regular visits help to cultivate personal relationships and trust because it shows respect by the individual to others. Thus, it is necessary for individuals who want to maintain relationships with others, with whom they have a stranger relationship, to engage in regular visits and to continue the exchange of favouritism.

The classification results based on the analysis sample suggest a hit ratio, or percentage of correctly classified cases (Table 5.7I), equal to 65.1%. This implies that around 65% of the cases are correctly classified. Since there are three groups of different sizes a "chance" hit ratio would be $[(94/298)^2 + (119/298)^2 + (85/298)^2] = 34.04\%$. The improvement over chance is more than 25%, indicating at least satisfactory validity (Klecka, 1980). *Press' Q* statistic is also given by:

$$\textit{Press' Q} = [298-(194)(3)]^2 / (298-2) = 272.49$$

This value exceeds by far the critical value at a significance level of 0.01 which is 6.63, suggesting that the predictions are significantly better than chance (Klecka, 1980).

5.4.2 Discriminant Analysis of Network Embeddedness and the Guanxi Relationship

Results from the previous section show differences in eight variables of the strength of ties between three groups in the guanxi network. In this section the main purpose is to test whether there are any significant differences in the eight variables of network embeddedness for the three groups in the guanxi relationship.

Table 5.8A: Group Statistics

Guanxi		Mean	Std. Deviation	Valid N (listwise)	
		Unweighted	Weighted	Unweighted	Weighted
Family	Commitment	4.82	1.067	94	94.000
	Coordination	4.82	1.097	94	94.000
	Interdependence	4.84	1.298	94	94.000
	Trust	4.98	1.287	94	94.000
	Information quality	4.82	1.126	94	94.000
	Information sharing	4.74	1.319	94	94.000
	Participation	5.06	1.171	94	94.000
	Conflict resolution	4.44	1.258	94	94.000
Friend	Commitment	4.34	1.091	119	119.000
	Coordination	4.06	.923	119	119.000
	Interdependence	3.58	.934	119	119.000
	Trust	3.74	1.069	119	119.000
	Information quality	4.61	1.098	119	119.000
	Information sharing	3.93	.972	119	119.000
	Participation	4.50	1.104	119	119.000
	Conflict resolution	3.86	1.099	119	119.000
Stranger	Commitment	3.68	1.115	85	85.000
	Coordination	3.87	1.110	85	85.000
	Interdependence	3.09	1.250	85	85.000
	Trust	3.07	1.252	85	85.000
	Information quality	3.87	1.067	85	85.000
	Information sharing	2.98	.913	85	85.000
	Participation	3.71	1.183	85	85.000
	Conflict resolution	3.48	1.201	85	85.000
Total	Commitment	4.30	1.173	298	298.000
	Coordination	4.24	1.106	298	298.000
	Interdependence	3.84	1.349	298	298.000
	Trust	3.94	1.411	298	298.000
	Information quality	4.47	1.161	298	298.000
	Information sharing	3.92	1.275	298	298.000
	Participation	4.45	1.260	298	298.000
	Conflict resolution	3.93	1.235	298	298.000

The sample size and the statistical methodology used in this section are similar to that of the previous section. Tables 5.8A-5.8I present the results of estimating a three group discriminant analysis. The following comments can be made about these results.

Table 5.8A presents the means and standard deviations of eight variables of network embeddedness for each group in the guanxi relationship. In this table the means of the network embeddedness variables of the family group is higher than the friend and the stranger groups. In addition, the means of the friendship group are also higher than the stranger group. From Table 5.8B the value of the *F* ratios indicate that when the predictors are considered individually the three factors are significant in discriminating between the three guanxi groups. The level of significance of *Box's M* in Table 5.8C suggests that the null hypothesis that the covariance matrices are equal can be rejected (Manly, 1994).

Table 5.8B: Tests of Equality of Group Means

	Wilks' Lambda	F	df1	df2	Sig.
Commitment	.858	24.344	2	295	.000
Coordination	.870	21.945	2	295	.000
Interdependence	.723	56.391	2	295	.000
Trust	.712	59.797	2	295	.000
Information quality	.889	18.429	2	295	.000
Information sharing	.711	59.988	2	295	.000
Participation	.824	31.406	2	295	.000
Conflict resolution	.908	14.985	2	295	.000

Table 5.8C: Test Results

Box's M		250.349
F	Approx.	3.341
	df1	72
	df2	212280.079
	Sig.	.000

Tests null hypothesis of equal population covariance matrices.

From Table 5.8D the eigenvalue for function 1 is 0.593 and for function 2 it is 0.151. Function 1 accounts for 79.7% of the variability while function 2 accounts for the remaining 20.3% of the between groups variability. Wilk's lambda in Table 5.8E, associated with function 1, is 0.546. This transforms to a chi-square value of 176.599, which is statistically significant at the 0.01 level of significance. Wilks' lambda of

function 2, after function 1 has been removed, is 0.869. This transforms to a chi-square value of 40.888 which is also statistically significant at the 0.01 level of significance. Hence, the second function also contributes significantly to group differences (Morrison, 1969).

Table 5.8D: Eigenvalues

Function	Eigenvalue	% of Variance	Cumulative %	Canonical Correlation
1	.593(a)	79.7	79.7	.610
2	.151(a)	20.3	100.0	.362

a First 2 canonical discriminant functions were used in the analysis.

Table 5.8E: Wilks' Lambda

Test of Function(s)	Wilks' Lambda	Chi-square	df	Sig.
1 through 2	.546	176.599	16	.000
2	.869	40.888	7	.000

The unstandardised canonical discriminant function coefficients in Table 5.8F give two discriminant functions. These two functions can be used to calculate discriminant scores for future analysis. For the standardised canonical discriminant function in Table 5.8G, there are negative coefficients for *Information quality* and *Conflict resolution* for function 1 and also large negative coefficients for *Coordination, Interdependence, Trust,* and *Conflict resolution* for function 2

Table 5.8F: Canonical Discriminant Function Coefficients

	Function	
	1	2
Commitment	.042	.345
Coordination	-.032	-.426
Interdependence	.209	-.743
Trust	.430	-.310
Information quality	-.243	.536
Information sharing	.556	.550
Participation	.061	.502
Conflict resolution	-.089	-.107
(Constant)	-3.558	-1.963

Unstandardized coefficients

Table 5.8G: Standardized Canonical Discriminant Function Coefficients

	Function	
	1	2
Commitment	.046	.376
Coordination	-.033	-.441
Interdependence	.241	-.855
Trust	.513	-.370
Information quality	-.267	.589
Information sharing	.600	.593
Participation	.070	.577
Conflict resolution	-.105	-.126

From Table 5.8H the canonical discriminant functions evaluated at group means (group centroids) suggest that family relationship has a positive value for function 1 (1.027) and a negative value for function 2 (-.235). From the standard canonical discriminant function coefficients table (Table 5.8F), the variables *Interdependence* and *Trust* have a positive sign for function 1 and a negative sign for function 2. This suggests that individuals who perceive family relationship as the most important connection in the business network focus their emphasis on interdependence and trust. According to the network embeddedness literature, such as Anderson and Narus (1990), Mohr and Spekman (1994), and Kanter (1988), interdependence and trust are factors under the attributes of a partnership. These factors result in blurred boundaries between firms in which there emerge stronger ties that bind the two parties, which in turn help to encourage future orientation in which partners attempt to build a long-term relationship. From the guanxi Chinese network literature, such as Tsui and Farh (1997) and Yang (1994), the main focus of the family group is the long-term relationship. Relatively permanent, stable, and expressive relationships are the principle of interaction of the family group. These kinds of interaction are activities that help to encourage long-term mutual benefits and support between parties. Thus it is not surprising that interdependence and trust, which help to encourage a long-term relationship, are a major concern of individuals who perceive family relationship as the most important connection in the business network.

Table 5.8H: Functions at Group Centroids

Guanxi	Function	
	1	2
Family	1.027	-.235
Friend	-.149	.467
Stranger	-.927	-.394

Unstandardized canonical discriminant functions evaluated at group means

Table 5.8I: Classification Results(a)

		Guanxi	Predicted Group Membership			Total
			1	2	3	1
Original	Count	Family	77	7	10	94
		Friend	24	66	29	119
		Stranger	10	11	64	85
	%	Family	81.9	7.4	10.6	100.0
		Friend	20.2	55.5	24.4	100.0
		Stranger	11.8	12.9	75.3	100.0

a 69.5% of original grouped cases correctly classified.

For the friend relationship the canonical discriminant function evaluated at group means or group centroids (Table 5.8.H) suggest that this group has a negative sign on function 1 (-.149) and positive sign on function 2 (.467). Since *Information quality* has a negative sign for function 1 and positive sign for function 2, as revealed by the standard canonical discriminant function coefficients (Table 5.8G), this suggests that individuals who perceive the friend relationship as the most important connection in the business network focus their emphasis on information quality. Information quality is one of the key aspects of information transmission. It includes such aspects as the accuracy, timeliness, adequacy, and credibility of information exchanged (Daft and Lengel 1986, Huber and Daft 1987, Stohl and Redding 1987). MacNeil (1981) suggests that honest and open lines of communication are important for the continuous growth of close ties between trading partners. It is a key to build long-term and successful relationships between organisations, since building trust and creating long-term relationships is one of the major concerns of the friend relationship. It is necessary for partners to focus their attention on the quality of communication.

For the friend relationship the principle of interaction is a mixture of that of the family and stranger, and takes both utilitarian and expressive forms. Hwang (1987) and King (1989) suggest that in most friendships favouritism is often followed with a strong expectation of reciprocity. The generosity and trust in the network make the friend

relationship stronger than the stranger group, but exchange of favour and social accommodation make the friend relationship weaker than the family group

For the stranger group, the canonical discriminant function evaluated at group means or group centroids (Table5.8H) suggest that this group has a negative value on both functions (-.927 and -.394, respectively). Since *Coordination* and *Conflict resolution* have a negative sign for both functions this suggests that individuals who perceive the stranger relationship as the most important connection in the business network focus their emphasis on coordination and conflict resolution. According to Anderson and Narus (1990), when parties engage in problem solving a mutual satisfactory solution may be reached, thereby enhancing partnership success. Furthermore, a productive conflict resolution technique can also help individuals to manage an uncertain environment, that is uncertainty that each other alone cannot control (Cummings, 1984). For the case of coordination the literature on network embeddedness, such as Grant (1996), Madhok (1996), and Zander and Kogut (1995) suggest that it encourages organisations to share their knowledge and information. It also helps to encourage productive conflict resolution which in turn enhances partnership success. Section 5.3.1 of this chapter showed that strength of ties for the stranger relationship is weak and can be easily disconnected, so if a link between partners in the network is disconnected benefits received from the network will be lost. In order to continue to receive the benefits from partners in the network it is necessary for the individual to create a high level of coordination and a good conflict resolution technique.

The classification results based on the analysis sample suggest a hit ratio, or the percentage of correctly classified cases (Table 5.8I), equal to 69.5%. This implies that around 70% of the cases are correctly classified. Since there are three groups of different sizes a "chance" hit ratio would be $[(94/298)^2 + (119/298)^2 + (85/298)^2] = 34.04\%$. The improvement over chance is more than 25%, indicating at least satisfactory validity (Klecka, 1980). *Press' Q* statistic is also given by:

$$\textit{Press' Q} = [298-(207.11)(3)]^2 / (298-2) = 353.18$$

This value exceeds by far the critical value at a significance level of 0.01 which is 6.63, suggesting that the predictions are significantly better than chance (Klecka, 1980).

5.5 THE RELATIONSHIP BETWEEN NETWORK EMBEDDEDNESS AND BUSINESS PERFORMANCE

According to the network embeddedness literature, such as Uzzi (1996), Kogut and Zander (1996), and Morgan and Hunt (1994) the business performance of entrepreneurs is expected to increase as a result of a high level of network embeddedness between partners. Nevertheless, how each factor for network embeddedness affects business performance is still not clear. Thus the main purpose of this section is to study the relationship between network embeddedness and business performance. To test this relationship a multiple regression analysis is employed. In this analysis the dependent variable for the regression models are the five measurement items of business performance. These items are summarised in Table 5.9. The independent variables are the eight variables of network embeddedness, summarised in Table 5.4.

Table 5.9: Measurement items of business performance

Business Performance	Question
Change in cash flow	2.1
Change in market share	2.2
Change in sales growth	2.3
Change in profit	2.4
Change in exports	2.5

The estimated parameters for the five multiple regression models according to the five dependent variables of business performance, are reported in Table 5.10. The first model focuses on the relationship between change in cash flow and the network embeddedness variables. Models 2, 3, 4, and 5 present the relationships between change in market share, sales growth, change in profit and change in exports with the network embeddedness variables, respectively. For multicollinearity testing the values of VIF and Tolerance for all independent variables are less than 4 and greater than 0.2, respectively. Hence, multicollinearity is not a problem in this analysis.

From Table 5.10 the coefficients for *coordination, interdependence, trust*, and *information sharing* are positive and highly significant at the 0.05 level of significance for all five models. For *commitment* the variable is positive and significant at the 0.05 level of significance for all five models except the profit model. For *participation* the variable is only significant at the 0.05 level of significance for the profit model. For

Information quality and *conflict resolution* these variables are not significant at the 0.05 level of significance for all models. In addition, the values of adjusted R square for all five models are around 0.8. These values are relatively high indicating the quality and reliability of the models.

Table 5.10 Multiple Regression between Network Embeddedness and Business Performance

Variables	Cash flow	Market share	Sales growth	Profit	Export	Tolerance	VIF
Constant	-.693	-.593	-.540	-.614	-.594		
	(-4.381)	(-3.576)	(-3.357)	(-3.704)	(-3.626)		
Commitment	.097	.123	.122		.128	.329	3.041
	(2.098)	(2.550)	(2.385)		(2.693)		
Coordination	.143	.141	.108	.160	.127	.398	2.513
	(3.222)	(3.028)	(2.391)	(3.441)	(2.750)		
Interdependence	.316	.318	.343	.317	.258	.257	3.885
	(6.979)	(6.688)	(7.435)	(6.662)	(5.494)		
Trust	.201	.173	.182	.166	.226	.311	3.215
	(5.103)	(4.179)	(.4.549)	(4.020)	(5.533)		
Information quality						.466	2.146
Information sharing	.194	.170	.157	.168	.181	.410	2.441
	(5.117)	(4.264)	(4.072)	(4.229)	(4.595)		
Participation				.088		.384	2.607
				(2.120)			
Conflict resolution						.533	1.877
Adjusted R Square	0.828	0.805	0.815	0.805	0.808		

n = 298
t-statistic in parentheses
All coefficients presented in this table have a *P*-value <0.05

The results from Table 5.10 suggest that coordination, interdependence, trust and information sharing are key factors in network embeddedness that have a highly significant impact on the business performance of Sino-Thai SMEs. Recall from section 4.3 of this thesis that coordination, interdependence, and trust are factors of network embeddedness under attributes of the partnership. Information sharing is a factor under communication behaviour. A number of contributions in the literature relating to network embeddedness can help to explain how coordination, interdependence, trust, and information sharing affect business performance

For coordination, Narus and Anderson (1977) suggest that successful working partnerships are characterised by coordinated actions directed at mutual objectives that

are consistent across organisations. Coordination encourages organisations to share their knowledge which helps to increase their capabilities (Kogut and Zander, 1996). Contributions by Grant (1996), Madhok (1996), and Zander and Kogut (1995) view coordination as a major factor encouraging information and knowledge transfer between companies. In addition, Pfeffer and Salancik (1978) suggest that stability in an uncertain environment can be achieved via greater coordination. Without high levels of coordination the Just-in-Time process fails, production stops, and any planned mutual advantage cannot be achieved.

For interdependence, it results from a relationship in which both firms perceive mutual benefits from interacting (Levine and White, 1962), and in which any loss of autonomy will be equitably compensated through expected gains (Cummings, 1984). Both parties recognise that the advantages of interdependence provide benefits greater than either could attain individually. Provan (1993), points out that when the level of interdependence between firms is high the level of opportunistic behaviour between organisations will be low. In addition, Hill (1990) notes that a high level of interdependence also encourages information sharing.

Williamson (1991), and Andeson and Narus (1990) show that trust is important because it increases an organisation's access to resources and strengthens its ability to adapt to unforeseen problems in ways that are difficult to achieve through arm's length ties. Furthermore, trust also helps create a smooth and effective functioning of organisations.

Information sharing refers to the extent to which critical, often proprietary, information is communicated to one's partner. By sharing information and by being knowledgeable about each other's business, partners are able to act independently in maintaining the relationship over time (Huber and Daft, 1987 and Schuler, 1979). In addition, Wu and Choi (2004) note that a higher level of information sharing increases the number of other firms in the network that can gain access to knowledge and information. The higher knowledge gained from networking thereby increases the incentive to invest in research and development.

5.6 UNCERTAINTY, BUSINESS PERFORMANCE AND STRENGTH OF TIES

In the study of entrepreneurship, uncertainty is one of the key factors that entrepreneurs have to cope with in business operations (Hebert and Link 1989, Ekelund

and Hebart 1990). As Dijk and Thurik (1998) suggest one of the major aims of economics is to achieve optimal resource allocation in an economy. However, since uncertainty is a fact of economic life entrepreneurs need to arbitrage, take risks and innovate. Following this argument, entrepreneurs can be considered to be the primary agents dealing with uncertainty in an economy (Carree and Thurik, 1995). In this section two studies relating to business uncertainty are emphasised. The first study focuses on the relationship between business uncertainty and business performance. The second study focuses on the relationship between strength of ties in the network and business uncertainty. In the next section results from the factor analysis as applied in the case of this study will be presented.

5.6.1 Factor Analysis for Business Uncertainty

Table5.11: Variables of business uncertainties

Question	Measurement Item	Variable
Q3.1	Predictability of laws and policies	Q3.1
Q3.2	Political stability and security of property	Q3.2
Q3.3	Political stability and security of property	Q3.2
Q3.4	Uncertainty from corruption	Q3.4
Q3.5	Inflation	Q3.5
Q3.6	Exchange rate volatility	Q3.6
Q3.7	World interest rate volatility	Q3.7
Q3.8	Change in oil prices	Q3.8
Q3.9	Changing social concerns	Q3.9
Q3.10	Social unrest and riots	Q3.10
Q3.11	Natural disasters	Q3.11
Q3.12	Quantity and price of input uncertainty	Q3.12
Q3.13	Quality of input uncertainty	Q3.13
Q3.14	Market dynamism	Q3.14
Q3.15	Availability of substitute goods	Q3.15
Q3.16	Uncertainties from local competitors	Q3.16
Q3.17	Uncertainties from overseas competitors	Q3.17
Q3.18	Entry of new firms into the market	Q3.18
Q3.19	Price control	Q3.19
Q3.20	Changes in the level of trade barriers	Q3.20
Q3.21	Changes in patterns of product or process	Q3.21
Q3.22	Input and raw material suppliers uncertainties	Q3.22
Q3.23	Labour uncertainties	Q3.23
Q3.24	Capital equipment uncertainties	Q3.24
Q3.25	Production uncertainties	Q3.25
Q3.26	Difficulty in obtained loans	Q3.26
Q3.27	Sources of loan	Q3.27
Q3.28	Ability to repay the loans	Q3.28
Q3.29	The amount of loans	Q3.29
Q3.30	Problems with collectibles	Q3.30
Q3.31	Product and external liability	Q3.31

Recalling from section 4.5 of this thesis, questions 3.1-3.31 of the questionnaire contain measurement items of business uncertainty. Table 5.111 summarises variables that represent the measurement of each item. The factor analysis for these variables is analysed by SPSS and the results presented in Table 5.12A-5.12E.

Table 5.12A presents means and standard deviation scores for variables related to business uncertainty. The data in this table suggests that both the mean scores and standard deviations of thirty-one variables differ only slightly. In addition, the correlation coefficients show high correlation and are statistically significant at the 5 percent level of significance. Furthermore, coefficients on the diagonal of the Anti-image correlation matrix are greater than 0.5 for each variable, which suggests adequacy of the sample size. According to Malhotra (2004) and Stevens (1996) these results suggest that factor analysis is appropriate to reduce these highly correlated variables to a smaller manageable number of factors.

Table 5.12A: Descriptive Statistics

	Mean	Std. Deviation	Analysis N
Q3.1	4.18	1.314	298
Q3.2	4.19	1.329	298
Q3.3	4.19	1.298	298
Q3.4	4.22	1.305	298
Q3.5	4.23	1.336	298
Q3.6	4.20	1.338	298
Q3.7	4.20	1.318	298
Q3.8	4.23	1.347	298
Q3.9	4.21	1.359	298
Q3.10	4.13	1.315	298
Q3.11	4.19	1.340	298
Q3.12	4.28	1.333	298
Q3.13	4.28	1.303	298
Q3.14	4.27	1.316	298
Q3.15	4.23	1.339	298
Q3.16	4.24	1.342	298
Q3.17	4.27	1.337	298
Q3.18	4.26	1.335	298
Q3.19	4.28	1.351	298
Q3.20	4.26	1.320	298
Q3.21	4.26	1.357	298
Q3.22	4.28	1.392	298
Q3.23	4.23	1.384	298
Q3.24	4.16	1.327	298
Q3.25	4.20	1.373	298

Q3.26	4.22	1.319	298
Q3.27	4.17	1.355	298
Q3.28	4.19	1.365	298
Q3.29	4.19	1.369	298
Q3.30	4.22	1.348	298
Q3.31	4.24	1.384	298

Table 5.12B: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.983
Bartlett's Test of Sphericity	Approx. Chi-Square	10160.560
	Df	465
	Sig.	.000

In Table 5.12B, Barlett's test of sphericity is used to test the null hypothesis that the variables are uncorrelated in the population. The test examines the presence of a non zero correlation coefficient in the correlation matrix. Technically, it is used to test the null hypothesis that the correlation matrix is an identity matrix, i.e. 1 in the diagonal and all off diagonal terms are zero (Metwally and Perera, 2006). The test gives a value of 10160.56 with a *p*-value equal to 0.01, which is highly significant and favouring a rejection of the null hypothesis (Dillon and Goldstein, 1984). In addition, the Kaiser-Meyer-Olkin (KMO) test statistic is also calculated to measure sampling adequacy. The KMO ranges from 0 to 1, with a value closer to 1 implying that each variable is nearly perfectly predicted without error by the other variable. Normally, if the KMO value is less than 0.5 then the appropriateness of using factor analysis should be questioned (Hair et al., 1992). In this case, however, a KMO value of 0.983 is obtained indicating that factor analysis is highly appropriate

In Table 5.12C the value of communalities, which are defined as the proportion of the variance of the variable that can be explained by the common factors, are reported before and after the desired number of factors are extracted. In the principle component solution all **Initial** communalities are equal to 1 (Perera, 2006). The second column shows a proportion of variation explained by the number of factors after the extraction by the principle component method. Communalities range from 0 to 1, with 0 indicating that the common factors explain none of the variance of the variable. In this case variations explained by the common factors are greater than 0.5. In other words, most of the variables are related to the factors of the model (Perera, 2006).

Table 5.12C: Communalities

	Initial	Extraction
Q3.1	1.000	.772
Q3.2	1.000	.774
Q3.3	1.000	.762
Q3.4	1.000	.759
Q3.5	1.000	.770
Q3.6	1.000	.781
Q3.7	1.000	.768
Q3.8	1.000	.784
Q3.9	1.000	.776
Q3.10	1.000	.749
Q3.11	1.000	.780
Q3.12	1.000	.775
Q3.13	1.000	.737
Q3.14	1.000	.772
Q3.15	1.000	.743
Q3.16	1.000	.773
Q3.17	1.000	.758
Q3.18	1.000	.753
Q3.19	1.000	.750
Q3.20	1.000	.770
Q3.21	1.000	.763
Q3.22	1.000	.763
Q3.23	1.000	.781
Q3.24	1.000	.751
Q3.25	1.000	.760
Q3.26	1.000	.745
Q3.27	1.000	.774
Q3.28	1.000	.719
Q3.29	1.000	.763
Q3.30	1.000	.741
Q3.31	1.000	.759

Extraction Method: Principal Component Analysis

Table 5.12D presents relevant information after the desired number of factors have been extracted. The table gives the commonalities for the variable, along with the variance accounted for by each factor that is retained. It can be seen from the table that there are three components that have eigenvalues greater than one. In other words, 31 explanatory variables are grouped into three factors with an eigenvalue greater than one. These three factors account for approximately 76.22 percent of the total variance.

Table 5.12D: Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	20.84	67.235	67.235	20.84	67.235	67.235	8.794	28.366	28.366
2	1.741	5.618	72.853	1.741	5.618	72.853	7.871	25.391	53.757
3	1.042	3.362	76.215	1.042	3.362	76.215	6.962	22.458	76.215
4	.493	1.590	77.805						
5	.455	1.466	79.271						
6	.406	1.310	80.581						
7	.386	1.245	81.826						
8	.370	1.194	83.020						
9	.344	1.109	84.129						
10	.316	1.021	85.149						
11	.309	.996	86.146						
12	.303	.978	87.124						
13	.294	.948	88.072						
14	.285	.918	88.990						
15	.274	.883	89.874						
16	.262	.847	90.720						
17	.253	.818	91.538						
18	.245	.791	92.329						
19	.236	.762	93.091						
20	.229	.737	93.829						
21	.212	.683	94.511						
22	.210	.679	95.190						
23	.201	.649	95.840						
24	.200	.646	96.486						
25	.182	.588	97.074						
26	.180	.580	97.653						
27	.172	.554	98.207						
28	.161	.521	98.728						
29	.151	.486	99.214						
30	.134	.433	99.647						
31	.109	.353	100.000						

Extraction Method: Principal Component Analysis.

Table 5.12E presents the rotated factor matrix obtained by the varimax procedure. Examination of this table suggests that the three factors identified empirically are similar to the three categories that have been mentioned in the literature (see section 4.5 of this thesis for more detail). It also helps to confirm the quality and reliability of the uncertainty measurement instruments developed by Miles and Snow (1978) and Miller (1992, 1993).

Table 5.12E: Rotated Component Matrix(a)

	Component		
	1	2	3
Q3.1	***.749***	.355	.292
Q3.2	***.755***	.333	.305
Q3.3	***.716***	.384	.320
Q3.4	***.743***	.307	.337
Q3.5	***.738***	.326	.345
Q3.6	***.746***	.358	.310
Q3.7	***.727***	.346	.345
Q3.8	***.746***	.354	.320
Q3.9	***.760***	.263	.360
Q3.10	***.758***	.281	.311
Q3.11	***.779***	.286	.302
Q3.12	.377	.398	***.689***
Q3.13	.348	.338	***.709***
Q3.14	.374	.371	***.703***
Q3.15	.374	.339	***.699***
Q3.16	.377	.424	***.672***
Q3.17	.381	.446	***.644***
Q3.18	.400	.445	***.628***
Q3.19	.388	.417	***.652***
Q3.20	.371	.386	***.695***
Q3.21	.434	.391	***.649***
Q3.22	.345	***.748***	.290
Q3.23	.349	***.755***	.297
Q3.24	.349	***.703***	.368
Q3.25	.269	***.714***	.422
Q3.26	.298	***.701***	.406
Q3.27	.378	***.727***	.320
Q3.28	.374	***.664***	.372
Q3.29	.352	***.718***	.351
Q3.30	.344	***.701***	.363
Q3.31	.367	***.712***	.342

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a Rotation converged in 7 iterations.

The data in this table imply that Factor 1 has high coefficients on the variables which represent: ‘unexpected changes in laws’ (Q3.1), ‘change in regulation from constitutional changes’ (Q3.2), ‘change in regulation from unconstitutional changes’ (Q3.3), ‘corruption’ (Q3.4), ‘level of inflation’ (Q3.5), ‘exchange rate fluctuation’ (Q3.6), ‘interest rate volatility’ (Q3.7), ‘increase in oil price’ (Q3.8), ‘change in social concern’ (Q3.9), ‘social unrest and riots’ (Q3.10), and ‘natural disasters’ (Q3.11). All of

these 11 variables are in Table 4.5 and relate to general environmental uncertainties. Therefore the first factor can be labelled "***General Environmental Uncertainties"***.

In factor 2, there are ten variables that have high factor loading scores. These variables are 'input and raw material uncertainties' (Q3.22), 'labour uncertainty' (Q3.23), 'capital equipment uncertainty' (Q.3.24), 'production uncertainty' (Q.3.25), 'difficulty in obtaining loans' (Q3.26), 'sources of loan' (Q3.27), 'ability to repay the loans' (Q3.28), 'the amount of loan' (Q3.29), 'problems with collectibles (Q.3.30), and 'product and external liabilities' (Q3.31). All of these 10 variables are in Table 4.7 and relate to individual firm uncertainties. Therefore the second factor can be labelled "***Individual Firm Uncertainties"***.

Factor 3 has high coefficients on the variables which represent: 'quantity and price of input uncertainties' (Q3.12), 'quality uncertainty' (Q3.13), 'market dynamism' (Q3.14), 'availability of substitute goods' (Q3.15), 'domestic competitor' (Q3.16), 'overseas competitor' (Q3.17), 'new entry competitor' (Q3.18), 'the level of trade barriers' (Q3.19), 'international regulations' (Q3.20), and 'changes in patterns of product or process' (Q3.21). All of these 10 variables are present in Table 4.6 and relate to industry uncertainties. Thus this factor can be labelled as ***"Industry Uncertainties"***.

The factor analysis in this section not only assists in reducing a large number of variables to only a few factors, but also provides factor scores for each respondent. These factor scores are linear combinations of variables which can be used to estimate the cases' scores on the factor or components (Pohlmann, 2007). These factor scores will be used in the subsequent analysis.

5.6.2 Multiple Regressions between Business Uncertainty and Business Performance

In this section the relationship between business uncertainty and business performance will be analysed. Three separate tables (Table 5.13-5.15) are used to summarise the results of the multiple regressions between business performance and uncertainty variables. Five measurement items of business performance (in Table 5.11) are used as a dependent variable, while thirty-one uncertainty variables (questions 3.1-3.31 of the questionnaire) are used as independent variables. Table 5.13 presents the results of multiple regressions between business performance and 11 uncertainty variables of the ***General Environmental Uncertainties*** factor. Tables 5.14 and 5.15 present results of multiple regressions between business performance and 10 uncertainty

variables of the ***Individual Firm Uncertainties*** and 10 uncertainty variables of the ***Industry Uncertainties*** factor, respectively. In each table there are five multiple regression models according to five dependent variables of business performance. The first model focuses on the relationship between change in cash flow and uncertainty variables. Models 2, 3, 4, and 5 present relationships between change in market share, sales growth, change in profit and change in exports and the uncertainty variables, respectively.

In each table scores of VIF (*variance inflation factor)* and Tolerance for each independent variable are presented. Similar to section 5.3.2 these two statistical tests can be used to detect for multicollinearity amongst the variables. As a rule of thumb, variables whose VIF values are greater than 4 or Tolerance less than 0.2 may have a multicollinearity problem. In Tables 5.13-5.15, however, all independent variables have VIF and Tolerance values less than 4 and greater than 0.2, respectively. Thus, multicollinearity is not a problem in this analysis.

The estimated parameters of the multiple regressions between business performance and variables of the General Environmental Uncertainties factor are reported in Table 5.13. Results from the table show that *unconstitutional changes* (Q3.3), *exchange rate volatility* (Q3.6), *interest rate volatility* (Q3.7), and *increase in oil price* (Q3.8) exert a negative impact and are significant at the 0.05 level of significance for all five models, except *unconstitutional changes* (Q3.3) in the sales growth model which is significant at the 0.1 level of significance. *Inflation* (Q3.5) has a negative and significant impact on the cash flow and sales growth models. *Change in social concern* (Q3.9) is significant only for the cash flow model. In addition, the values of adjusted R square for all five models are around 0.75. These values are relatively high indicating the quality and reliability of the models.

The results from Table 5.13 signify that general environmental uncertainties, especially political (Q.3.3) and macroeconomic uncertainties (Q3.6-Q3.9) are major problems for entrepreneurs. Even though these uncertainties do not happen frequently, when they do they tend to result in strong negative impact spillovers across national borders (Brunetti et al., 1997). For example, Jorion and Goetzmann (1999) report events of a political nature leading to transaction interruptions in twenty-five countries, including Chile, France, Germany, Japan and Portugal. In the case of macroeconomic uncertainty, evidence from Mexico in 1994 and Thailand in 1997 shows that currency

depreciations are followed by large contractions in economic activity and the collapse of-

Table 5.13: Multiple Regression of General Environmental Uncertainties Factor

Variables	Cash flow	Market share	Sales growth	Profit	Export	Tolerance	VIF
Constant	7.834	7.738	7.681	7.712	7.676		
	(57.703)	(-55.836)	(55.509)	(55.018)	(54.720)		
Q3.1						0.266	3.759
Q3.2						0.266	3.755
Q3.3	-.120	-.176	-.103*	-.134	-.142	0.28	3.574
	(-2.277)	(-3.283)	(-1.924)	(-2.467)	(-2.608)		
Q3.4						0.282	3.542
Q3.5	-.121		-.126			0.255	3.916
	(-2.281)		(-2.329)				
Q3.6	-.105	-.125	-.152	-.118	-.141	0.259	3.86
	(-1.978)	(-2.305)	(-2.806)	(-2.164)	(2.568)		
Q3.7	-.192	-.128	-.179	-.206	-.160	0.271	3.684
	(-3.659)	(-2.378)	(-3.346)	(3.789)	(-2.954)		
Q3.8	-.139	-.135	-.160	-.138	-.142	0.268	3.727
	(-2.673)	(-2.527)	(-3.005)	(-2.569)	(-2.630)		
Q3.9	-.108					0.271	3.685
	(-2.114)						
Q3.10						0.293	3.412
Q3.11						0.263	3.806
Adjusted R Square	0.767	0.750	0.748	0.744	0.741		

n = 298
t-statistic in parentheses
All coefficients presented in this table have a *P*-value <0.05, except ***** that has *P*-value <0.1.

the financial sector, which in turn affects almost every firm in these countries especially SMEs due to their dependence upon external finance (Carranza et al. 2003). In the case of Thailand, results from the table are similar to a business report for the first quarter of year 2007 from the Bank of Thailand. According to the Bank of Thailand (2007) most enterprises in Thailand view political uncertainty, as well as the continuity and consistency of government policies, as important limitations affecting both domestic and foreign consumers, and business confidence. Furthermore, the direction of the Thai baht, the potential slowdown of the global economy, the threat of rising oil prices and

violence in the Southern part of the country are risk factors that need to be monitored closely. This report from the Bank of Thailand helps to confirm that political and macroeconomic uncertainties are major barriers under general environmental uncertainties for Sino-Thai SMEs.

Table 5.14: Multiple Regression of Individual Firm Uncertainties Factor

Variables	Cash flow	Market share	Sales growth	Profit	Export	Tolerance	VIF
Constant	7.745	7.586	7.575	7.626	7.585		
	(55.524)	(51.727)	(52.565)	(53.456)	(53.104)		
Q3.22						0.267	3.741
Q3.23						0.253	3.959
Q3.24	-.117	-.136				0.256	3.901
	(-2.099)	(-2.315)					
Q3.25						0.254	3.931
Q3.26	-.170	-.186	-.180	-.149	-.131	0.281	3.562
	(-3.326)	(-3.455)	(-3.413)	(-2.846)	(-2.506)		
Q3.27	-0.90*		-.138	-.113	-.187	0.256	3.909
	(-1.654)		(-2.448)	(-2.027)	(-3.331)		
Q3.28	-.178	-.156	-.168	-.214	-.167	0.302	3.315
	(-3.564)	(-2.967)	(-3.245)	(-4.176)	(-3.269)		
Q3.29	-.116		-.111			0.254	3.935
	(-2.141)		(-1.979)				
Q3.30			-.114			0.262	3.818
			(-2.022)				
Q3.31						0.258	3.874
Adjusted R Square	0.749	0.714	0.720	0.729	0.725		

n = 298
t-statistic in parentheses
All coefficients presented in this table have a *P*-value <0.05, except ***** that has *P*-value <0.1.

In Table 5.14 the results of multiple regressions between business performance and variables of the Individual Firm Uncertainties factor are presented. The results show that *difficulty in obtaining loans* (Q3.26) and *ability to repay the loans* (Q3.28) are two independent variables that exert a negative impact and are highly significant at the 0.05 level of significance for all five models. S*ources of loan* (Q3.27) also exert a negative impact and is significant at least at the 0.1 level of significance for all models except the market share model. *Capital equipment uncertainty* (Q.3.24) exerts a negative impact

and is significant for the cash flow and market share models. *The amount of loan* (Q.3.29) exerts a negative impact and is significant for the cash flow and sales growth models. In addition, *the problems with collectibles* (Q.3.30) variable is also significant for the sales growth model. The values of adjusted R square for all five models in this table are around 0.72 which is relatively high.

According to the results presented in Table 5.14 the majority of variables that are statistically significant can be classified under the access to financing category. According to Kim and Nugent (1994), access to financing is the most critical support system of all for SMEs. Without it other forms of support are of little use. In the case of Thai SMEs access to financing is one of the major obstacles for SME development, especially for small firms (Bank of Thailand 2007). There are a number of factors that prevent Thai SMEs from gaining access to finance. According to Poonpatpibul and Limthammahisorn (2005) there are at least five key factors. The first and most important factor limiting loans to SMEs especially for start-up and very small SMEs is inadequacy of collateral. Second, 'full of optimism but lack of business experience' is how banks describe a significant proportion of aspiring new entrepreneurs requesting SME loans. Third, not being able to provide a business plan such as income or cash flow statements and opaque accounts prepared are the next important problem preventing loan approvals. Having an accounting book implies administration costs for firms. In addition, a great number of firms purposely omit formal and correct accounting practice to avoid taxes. The fourth important problem is lack of business plan writing capability. Those with good business ideas and potential entrepreneurial talents need to be equipped with this ability or be helped by professionals. The last problem that prevents SMEs receiving loans is having a non performing loans (NPLs) history. Thus it can be concluded that access to financing is a major uncertainty under the Individual Firm Uncertainties factor that Sino-Thai SMEs have to face.

The estimated parameters for multiple regressions between business performance and the Industry Uncertainties factor, are presented in Table 5.15. In this table *domestic competitor* (Q3.16), *overseas competitors* (Q3.17), *new entry competitor* (Q3.18), and *the level of trade barriers* (Q3.19), are uncertainty variables that exerts a negative impact and are significant at the 0.05 level of significance for all five models. In addition, *international regulations* (Q3.20) is the independent variable that exerts a negative impact and is significant at the 0.05 level of significance for all models except

the cash flow model. *Quantity and price of input uncertainty* (Q3.12) exerts a negative impact and is significant for the cash flow, market share and export models.

Table 5.15: Multiple Regression for Industry Uncertainties Factor

Variables	Cash flow	Market share	Sales growth	Profit	Export	Tolerance	VIF
Constant	8.065	7.940	7.917	7.954	7.925		
	(68.023)	(65.157)	(65.530)	(66.249)	(65.335)		
Q3.12	-.096	-.111			-.133	0.269	3.713
	(-2.141)	(-2.406)			(-2.899)		
Q3.13	-.105	-.085				0.326	3.069
	(-2.509)	(-1.981)					
Q3.14						0.282	3.548
Q3.15						0.321	3.114
Q3.16	-.140	-.175	-.213	-.175	-.169	0.275	3.635
	(-3.217)	(-3.919)	(-4.806)	(-3.958)	(-3.795)		
Q3.17	-.130	-.128	-.102	-.087	-.117	0.281	3.555
	(-2.965)	(-2.840)	(-2.278)	(-1.965)	(-2.615)		
Q3.18	-.201	-.154	-.144	-.120	-.115	0.286	3.499
	(-4.632)	(-3.460)	(-3.254)	(-2.733)	(-2.592)		
Q3.19	-.102	-.161	-.111	-.120	-.098	0.29	3.443
	(-2.400)	(-3.673)	(-2.567)	(-2.782)	(-2.255)		
Q3.20		-.105	-.105	-.142	-.131	0.283	3.54
		(-2.304)	(-2.341)	(-3.162)	(-2.890)		
Q3.21				-.100		0.263	3.809
				(-2.185)			
Adjusted R Square	0.828	0.813	0.814	0.818	0.813		

n = 298
t-statistic in parentheses
All coefficients presented in this table have a *P*-value <0.05

Quality of input uncertainty (Q3.13) has a negative and significant impact on the cash flow and market share models. Furthermore, values of adjusted R square for all five models are around 0.81 indicating quality and reliability of the models. The results from this table show that competition uncertainties and international regulations uncertainties are major Industry Uncertainties factor problems for Sino-Thai SMEs. According to the Office of Small and Medium Enterprises Promotion (2005a), in recent years many Thai SMEs have had to face fierce competition from overseas. These companies are neither capital-intensive enough to withstand cheap products from China and Vietnam, nor quality-oriented enough to compete with high-end products from the United States and

Europe. Many SMEs in various industries have gone out of business now that free-trade agreements with countries like Australia, China and New Zealand are in effect. At the same time SMEs also face strong domestic competition from large foreign investors expanding in Thailand, especially in the retail sector. Ekvitthayavechnukul and Srimalee (2006) show that 45% of all Thai SMEs surveyed by the Office of Small and Medium Enterprises Promotion cite competition as the biggest challenge to their growth. This competition includes both domestic and foreign markets. Data from the survey show that 69% of Thai SMEs face competition from local players and 37% from foreign companies in their domestic markets.

International regulations also present a number of obstacles to Thai SMEs. According to Jarengpasert and Tuntiparpa (2005) these problems include, but are not limited to, (1) complex licensing procedures that hinder the participation of SMEs in legitimate import/export business, (2) technical trade restrictions (like standardization, quality requirements, conformity assessment, packaging and labelling, ecology requirements, etc.), and (3) the absence of harmonized regulations among countries create additional non-tariff barriers. In order to reduce these problems Jarengpasert and Tuntiparpa (2005) suggest that Governments need to simplify their own regulations regarding importing/exporting and harmonize their trade procedures with international standards. Lack of uniform laws cause problems for SMEs as different countries specify different testing and certification procedures. It would be helpful to introduce a one-stop test and certification system such as that for environmental management systems (EMS) and the International Organization for Standardization (ISO). In order to receive both EMS and ISO accreditation SMEs require some support from the government, since the cost of acquiring such standards is very high. A number of organisations such as The Asian Society for Environmental Protection (ASEP) in Thailand have been conducting training to help SMEs acquire EMS and ISO (Leung, 2001). Principles of mutual recognition should be put into practice to guarantee that a product accepted in one country will be accepted by others. Thus it can be concluded that competition uncertainties and international regulations uncertainties are major Industry Uncertainties factor problems for Sino-Thai SMEs.

5.6.3 The Strength of Ties and Business Uncertainty

In addition to the relationship between uncertainties and business performance, evidence from the guanxi network literature also shows that the strength of ties in the

network can be used to reduce uncertainty. For example, Ewing et al., (2000) show that Sino-Singaporeans use their guanxi in China to compensate for the lack of the rule of law and transparency in rules and regulations. Therefore, the purpose of this section is to study how strength of ties in the network can be used to reduce business uncertainty. In order to do this, once again a multiple regression analysis is employed. The dependent variable of this model is factor score from the factor analysis in section 5.6.1 of this chapter. There are three factors (*General Environmental Uncertainties* (Factor 1), *Individual Firm Uncertainties* (Factor 2), *Industry Uncertainties* (Factor 2) according to the results from section 5.6.1. For the independent variables there are eight strength of ties measurements. Similar to section 5.3.2 of this chapter the variable *solveprob* will be dropped from the model due to the problem of multicollinearity. Thus there are only seven independent variables in the analysis.

Table 5.16 reports estimated parameters from the multiple regression analysis. There are three models according to three dependent variables of uncertainties factor scores. The first model focuses on the relationship between the strength of ties and General Environmental Uncertainties factor score. The second and the third focus on the relationship between the strength of ties and Individual Firm Uncertainties and Industry Uncertainties factor scores, respectively.

In the first model, *Contact, Known, Honest,* and *Cord* are 4 independent variables that exert a negative impact and are significant at the 0.05 level of significance. The adjusted R square of this model is 0.40. Results from this model suggest that frequency of contact, period of time that partners have known each other, honesty, and coordination are factors that help to reduce general environmental uncertainties.

In the second model, *Honest* and *Inforshare* are the only 2 independent variables that exert a negative and significant impact at the 0.05, and 0.01 levels of significance, respectively. In this model the adjusted R square is only 0.27. Results from this section suggest that truthful, honesty, and information sharing are factors that help to reduce individual firm uncertainties.

In the last model, *Known, Willsolve, Honest, Truthful*, and *Inforshare* are five from seven independent variables that exert a negative and significant impact at the 0.05 level of significance. The adjusted R square of this model is 0.42. Results from this section suggest that the period of time over which partners have known each other, the

degree of individual willingness to solve problems, truthful, honesty, and information sharing are factors that help to reduce industry uncertainties.

The 5.16: Multiple Regression of Strength of Ties and Business Uncertainty

Variables	Factor1	Factor2	Factor3	Tolerance	VIF
Constant	2.113	1.771	2.224		
	(10.752)	(8.153)	(11.333)		
Contact	-.142			0.359	2.786
	(.-2.225)				
Known	-.162		-.154	0.441	2.265
	(-2.937)		(-2.789)		
Willsolve			-.239	0.422	2.368
			(-4.133)		
Honest	-.123	-.137	-.188	0.415	2.409
	(-2.133)	(-2.098)	(-3.255)		
Truthful			-.205	0.465	2.15
			(-4.063)		
Cord	-.422			0.41	2.441
	(-7.466)				
Inforshare		-.386	-.164	0.387	2.585
		(-5.375)	(-204)		
Adjusted R Square	.400	.267	.402		

n = 298
t-statistic in parentheses
All coefficients presented in this table have a *P*-value <0.05

5.7 SUMMARY

This chapter has presented empirical results relating to the guanxi network, strength of ties, network embeddedness, business performance and business uncertainty. Using data obtained from the survey instrument the relationship between the guanxi network and strength of ties can be tested. Results from the Kruskal-Wallis Test show that strength of ties in the network for the family relationship is stronger than the friend and stranger relationship, while the strength of ties in the network for friend relationship is stronger than the stranger relationship. The relationship between strength of ties and network embeddedness is also analysed by means of a multiple regression analysis. The main result from the study shows that strength of ties in the network has a positive impact on the level of network embeddedness. In the third section of the empirical study the relationship between the guanxi network and network embeddedness was the major concern. Results of the Kruskal-Wallis Test show that the level of network embeddedness for family relationship is stronger than that for the friend and stranger

relationship, while the level of network embeddedness for the friend relationship is stronger than the stranger relationship.

In addition to the Kruskal-Wallis tests in the first and third parts of the empirical analysis the relationship between the guanxi network and strength of ties, and the guanxi network and network embeddedness, was also analysed by means of a multiple discriminant analysis. The first discriminant analysis was concerned with the strength of ties in the network and the guanxi relationship. The main results from this section show that individuals who perceive family relationship as the most important connection in the business network focus their emphasis on the degree of willingness to solve problems, being truthful, and engaging in information sharing. Individuals who perceive the friendship relationship as being the most important connection in a business network, focus their emphasis on the period during which both parties have known each other. Finally, for individuals who perceive the stranger relationship as the most important connection in a business network, the results showed that they focus their emphasis on the frequency of contacts between parties.

The relationship between network embeddedness and business performance was also analysed by means of a multiple regression analysis. The main results in this section show that network embeddedness has a positive impact on Sino-Thai SMEs' business performance. The last section of this chapter related to the relationships between business uncertainty, business performance, and strength of ties. This section contained three major parts. In the first part an explanatory factor analysis was conducted. The result of the factor analysis showed that 31 variables capturing business uncertainties can be grouped into three factors. They are General Environmental Uncertainties factor, Individual Firm Uncertainties factor and Industry Uncertainties factor. In the second part the relationship between business performance and business uncertainty was analysed by means of multiple regressions. The main results in this section show that uncertainties have a negative effect on Sino-Thai SMEs' business performance. Finally, the third part focused on the relationship between strength of ties and business uncertainty. The main result from Table 5.15 was that strength of ties in the network has a negative effect on business uncertainties. In other words, individuals can use their relationship to help reduce business uncertainties.

In this chapter a numbers of hypotheses and relationships between variables have been analysed. These relationships, however, have only been analysed separately (i.e. strength of ties and network embeddedness) and not simultaneously. If these

relationships are tested simultaneously the results and structural relations between these variables might be different. In order to analyse these relationships simultaneously a structural equation modelling (SEM) approach is required. The SEM is a statistical methodology that takes a confirmatory approach to the analysis of a structural theory bearing on some phenomenon (Byrne, 2001). It helps to determine the extent to which the theory is supported by sample data. If the data do not support the model then the original model needs to be modified (Schumacker and Lomax 2004). Thus, the full framework of the strength of ties in the network, network embeddedness, business performance, and business uncertainties and indirect relationships between these variables will be studied by using SEM in the next chapter.

CHAPTER 6
STRUCTURAL EQUATION MODELING

6.1 INTRODUCTION

From chapter 5 of this thesis a number of hypotheses relating to relationships between strength of ties, network embeddedness, business uncertainty, and business performance have been tested separately (ie. strength of ties and network embeddedness, network embeddedness and business performance, and/or business uncertainty and business performance). If these relationships are tested simultaneously, however, the structural relations between these variables and the statistical results might be different. In order to test such relationships simultaneously, structural equation modeling (SEM) is required. With SEM the structure of relations can be modelled pictorially enabling a clearer conceptualisation of the theory under study. The hypothesised model can then be tested statistically in a simultaneous analysis of the entire system of variables to determine the extent to which it is consistent with the data. In this chapter the AMOS programme is used as a tool to analyse SEM. The programme is powerful and very easy to use. It helps to establish a model that reflects complex relationships with the ability to use observed variables to predict any other numeric variables. Furthermore, it is the only programme that allows researchers to analyse SEM in graphical form, rather than complicated command functions.

This chapter contains three major sections. Section 6.2 introduces a basic concept and model fit criteria of SEM. There are four parts in this section. The first is concerned with basic theories which include two major types of variables that relate to SEM. The second is focused on three types of models that will be used in this chapter. They are (1) measurement model, (2) path model and (3) full latent variable model. The third section is concerned with some specific rules and detail of using standardised and unstandardised estimation in SEM. Finally, part 4 of section 6.2 is concerned with eight model fit criteria of SEM. In section 6.3 the SEM framework relating to relationships between strength of ties, business uncertainty, network embeddedness and business performance will be analysed. This section contains three major parts. The first is concerned with model development and specification. The second is concerned with establishing assumptions and hypotheses that will be analysed by means of SEM. The third section presents results of hypotheses testing along with a final model of SEM, and

model fit-index. In section 6.4 SEM relating to multigroup invariance is introduced. There are three parts in this section. The first part explains the general procedure and the first step in testing for invariance across groups. The second part emphasises the second step or the testing for invariance when specification of equality constraints are included in the model. Finally, part three examines invariance for two group models, which are family group vs. friend group, family group vs. stranger group, and friend group vs. stranger group.

6.2 INTRODUCTION TO STRUCTURAL EQUATION MODELING (SEM)

The purpose of this section is to introduce the basic concept of SEM. This section contains four major parts. The first is concerned with basic theories and variables that relate to SEM. The second is focused on three types of models that will be used in this chapter (1) measurement model, (2) path model and (3) full latent variable model. In the third section detail about standardised and unstandardised estimation is presented. Finally, part 4 of this section is concerned with eight model fit criteria of SEM which will be used in this chapter.

6.2.1 What is Structural Equation Modeling?

Structural equation modeling (SEM) is a statistical methodology that takes a confirmatory approach to the analysis of a structural theory bearing on some phenomenon (Byrne, 2001). It uses various types of models to depict relationships among observed variables, with the same basic goal of providing a quantitative test of a theoretical model hypothesised by a researcher. According to Schumacker and Lomax (2004, p.3) the goal of SEM analysis is to determine the extent to which the theoretical model is supported by sample data. If the sample data support the theoretical model then more complex theoretical models can be hypothesised. If the sample data do not support the theoretical model then either the original model needs to be modified and re-tested or other theoretical models need to be developed and tested.

To better understand the model two major types of variables will be introduced. First, latent variables or factors are variables that are not directly observable or measured. They are indirectly observed and hence are inferred from a set of variables that researchers measure using statistical techniques such as tests or surveys. In other words, the researcher must operationally define the latent variable of interest in terms of behaviour believed to represent it (Byrne, 2001). Therefore, the latent (unobserved)

variable is linked to one that is observable, making its measurement possible. In SEM the unobserved latent variable is represented by a circle (or an ellipse). Second, observed or manifest variables are a set of variables that researcher use to define or infer the latent variable (Schumacker and Lomax, 2004). These variables serve as indicators of the underlying construct that they are presumed to represent. In SEM the observed variable is represented by a square (or a rectangle). In addition, these two types of variables can be defined as either independent variables (exogenous) or dependent variables (endogenous). According to Schumacker and Lomax (2004, p.3) an independent variable is a variable that is not influenced by any other variable in the model. A dependent variable is a variable that is influenced by another variable in the model.

6.2.2 Basic Model

SEM in this thesis relates to three types of model. First a measurement model or a confirmatory factor analysis model (CFA) is a model that focuses solely on the link between factors and their measurement variables. According to Byrne (2001) there are two basic types of factor analysis: exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). EFA is designed for a situation where links between the observed and latent variables are unknown or uncertain. The analysis proceeds in an exploratory model to determine how and to what extent the observed variables are linked to their underlying factors. Typically, the researcher wishes to identify the minimal number of factors that underlie covariation among the observed variables (Fabrigar et al., 1999). In contrast to EFA, CFA is appropriately used when the researcher has some knowledge of the underlying latent variable structure. Based on knowledge of the theory, empirical research, or both, he or she postulates relations between the observed measures and the underlying factors a priori and this hypothesised structure statistically (Byrne, 2001). Thus, in CFA the researcher specifies a certain number of factors, which are correlated, and for which observed variables measure each factor. In EFA, the researcher explores how many factors there are, whether the factors are correlated, and which observed variables appear to best measure each factor. In CFA the researcher has an a priori specified theoretical model, in EFA the researcher does not have such a model.

The second type of model is a Path model or a Path analysis which involves the estimation of presumed causal relations among observed variables. According to Kline (2005, p.94) in path analysis the researcher specifies a model that attempts to explain

why X and Y are correlated. Part of this explanation may include presumed causal effects (e.g. X causes Y), or presumed noncausal relations, such as a spurious association between X and Y. The overall goal of the path analysis is to assess how well the model accounts for the data, that is the observed correlations or covariances.

The third type of model is the full latent variable model. This type of model allows for the specification of a regression structure among the latent variables. In other words the researcher can hypothesise the impact of one latent construct on another in the modeling of causal direction. The model is termed full because it comprises both a measurement model (CFA) and a structural model (depicting the links among the latent variables) (Byrne, 2001).

6.2.3 Standardised and Unstandardised Estimation

According to Kline (2005) there is a strong preference in the SEM literature for unstandardised estimates. The main reason is that the most widely used estimation methods in SEM assume the analysis of unstandardised variables. In addition, there are also situations where standardised estimates may be inappropriate. These include (1) the analysis of an SEM across multiple samples that differ in their variabilities, and (2) instances where the original metrics of the variables are meaningful rather than arbitrary (e.g., survival in years, salaries in dollars). In all cases, important information may be lost when variables are standardised (Kline, 2005, p.20). Thus, results of SEM in this chapter will be analysed by unstandardised estimates.

6.2.4 Model Fit

Determining model fit is complicated because several model fit criteria have been developed to assist in interpreting structural equation models under different model-building assumptions. In addition, the determination of model fit in structural equation modeling is not as straightforward as it is in other statistical approaches in multivariable procedures such as the analysis of variance, multiple regression and discriminant analysis. According to Schumacker and Lomax (2004) SEM fit indices have no single statistical test of significance that identifies a correct model given the sample data, especially since alternative models can exist that yield exactly the same data to model fit. It is recommended that various model fit criteria be used in combination to assess model fit as global fit measures (Hair et al. 1992). Following

Schumacker and Lomax (2004), Kline (2005), and Cheung and Rensvold (2002) this chapter uses eight model fit criteria to test for the overall fit of the model.

1. Chi-square (χ^2)

A non-statistically significant chi-square value indicates that the sample covariance matrix and the reproduced model-implied covariance matrix are similar. The chi-square value of zero indicates a perfect fit, or no difference between values in the sample covariance matrix and the reproduced implied covariance matrix. The goal in SEM is to achieve non-statistical significance which indicates little difference between the sample variance-covariance matrix and the reproduced implied covariance matrix (Schumacker and Lomax, 2004, p.83). The difference between these two covariance matrices is contained in a residual matrix. When the chi-square value is nonsignificant (close to zero), residual values in the residual matrix are close to zero, indicating that the theoretically specified model fits the sample data (Schumacker and Lomax, 2004).

2. Goodness-of-fit index (GFI)

GFI varies from 0 to 1 but theoretically can yield meaningless negative values. A large sample size pushes GFI up. Though analogous to R square, GFI cannot be interpreted as percent of error explained by the model. Rather, it is the percent of observed covariances explained by the covariances implied by the model. That is R square in multiple regression deals with error variance whereas GFI deals with error in reproducing the variance-covariance matrix. By convention, GFI should by equal to or greater than 0.90 to accept the model (Bollen, 1990).

3. Root mean square residual (RMR)

RMR represents the average residual value derived from the fitting of the variance-covariance matrix for the hypothesized model to the variance-covariance matrix of the sample data. However, because these residuals are relative to the sizes of the observed variance and covariances, they are difficult to interpret. Thus they are best interpreted in the metric of the correlation matrix. The result from the matrix represents the average value across all standardised residuals and range from 0 to 1. The closer the RMR is to 0 for the model being tested, the better the model fit (Hu and Bentler, 1995).

4. The norm fit index (NFI)

NFI was developed as an alternative to CFI, but one which did not require making chi-square assumptions. It varies from 0 to 1, with 1 equal to perfect fit. NFI reflects the proportion by which the researcher's model improves fit compared to the null model (random variables). For example, NFI = 0.60 means the researcher's model improves fit by 60 percent compared to the null model. By convention, NFI values below 0.90 indicate a need to respecify the model (Hu and Bentler, 1995).

5. The comparative fit index (CFI)

CFI is known as the Bentler Comparative Fit Index which compares the existing model fit with a null model that assumes the latent variables in the model are uncorrelated. That is, it compares the covariance matrix predicted by the model to the observed covariance matrix, and compares the null model with the observed covariance matrix, to gauge the percent of lack of fit which is accounted for by going from the null model to the researcher's SEM model. CFI varies from 0 to 1. A CFI close to 1 indicates a very good fit. By convention, CFI should be equal to or greater than 0.9 to accept the model, indicating that 90 percent of the covariation in the data can be reproduced by the given model (Fan et al., 1999).

6. The incremental fit index (IFI)

The IFI was developed by Bollen (1989) to address the issue of parsimony and sample size which were known to be associated with the NFI. As such, its computation is basically the same as the NFI, except that degrees of freedom are taken into account. By convention, IFI should be equal to or greater than 0.9 to accept the model. IFI can also be greater than 1 under certain circumstances (Fan et al., 1999).

7. Root mean square error of approximation (RMSEA)

The RMSEA takes into account the error of approximation in the population. This value will answer the question how well would the model, with unknown but optimally chosen parameter values, fit the population covariance matrix if it were available (Brown and Cudeck, 1993, pp.137-138). This discrepancy, as measured by the RMSEA, is expressed in per degree of freedom, thus making the index sensitive to the number of estimated parameters in the model. By convention, there is a good model fit

if RMSEA is less than or equal to .05 and an adequate fit if RMSEA is less than or equal to .08 (Brown and Cudeck, 1993).

8. Parsimonious norm fit index (PNFI)

The PNFI measure is a modification of the NFI measure. The PNFI, however, takes into account the number of degrees of freedom used to obtain a given level of fit. Parsimony is achieved with a high degree of fit for fewer degrees of freedom in specifying coefficients to be estimated. A PNFI close to 1 indicates a very good fit (Schumacker and Lomax, 2004).

Table 6.1 summarises the eight model fit criteria and the acceptable fit level that will be used in this chapter

Table 6.1: Model fit criteria and acceptable fit level

Model fit criterion	**Acceptable level**	**Interpretation**
Chi-square	Tabled Chi-square value	Compares obtained Chi-square value with tabled value for given *df*
Goodness-of-fit (GFI)	Value equal to or greater than 0.90	0 (no fit) to 1 (perfect fit)
Root-mean-square (RMR)	close to 0 is good	Researcher defines level
Norm-fit-index (NFI)	Value equal to or greater than 0.90	0 (no fit) to 1 (perfect fit)
Comparative fit index (CFI)	Value equal to or greater than 0.90	0 (no fit) to 1 (perfect fit)
Incremental fit index (IFI)	Value equal to or greater than 0.90	0 (no fit) to 1 (perfect fit)
Root mean square error of approximation (RMSEA)	<0.05	Value less than 0.05 indicates a good model fit
Parsimonious norm fit index (PNFI)	0 (perfect fit) to negative value (poor fit)	Compares values in alternative models

6.3 SEM FOR A SINGLE GROUP

In the previous section the basic concept of SEM was introduced. In this section an SEM relating to relationships between strength of ties, business uncertainty, network embeddedness and business performance will be analysed. Similar to chapter 5 298 usable questionnaires are also used as data for the analysis. From these 298 useable samples, 94 are categorised under family group. 119 and 85 are categorised under friend and stranger groups, respectively. For the purpose of model development and specification these three groups, however, will be combined and analysed as a single

group for SEM in this section. In this section there are three major parts. The first is concerned with model development and model specification. In the second part a number of hypotheses relating to the SEM in this thesis are identified. In the third section results from a final model of SEM along with model fit-index are presented.

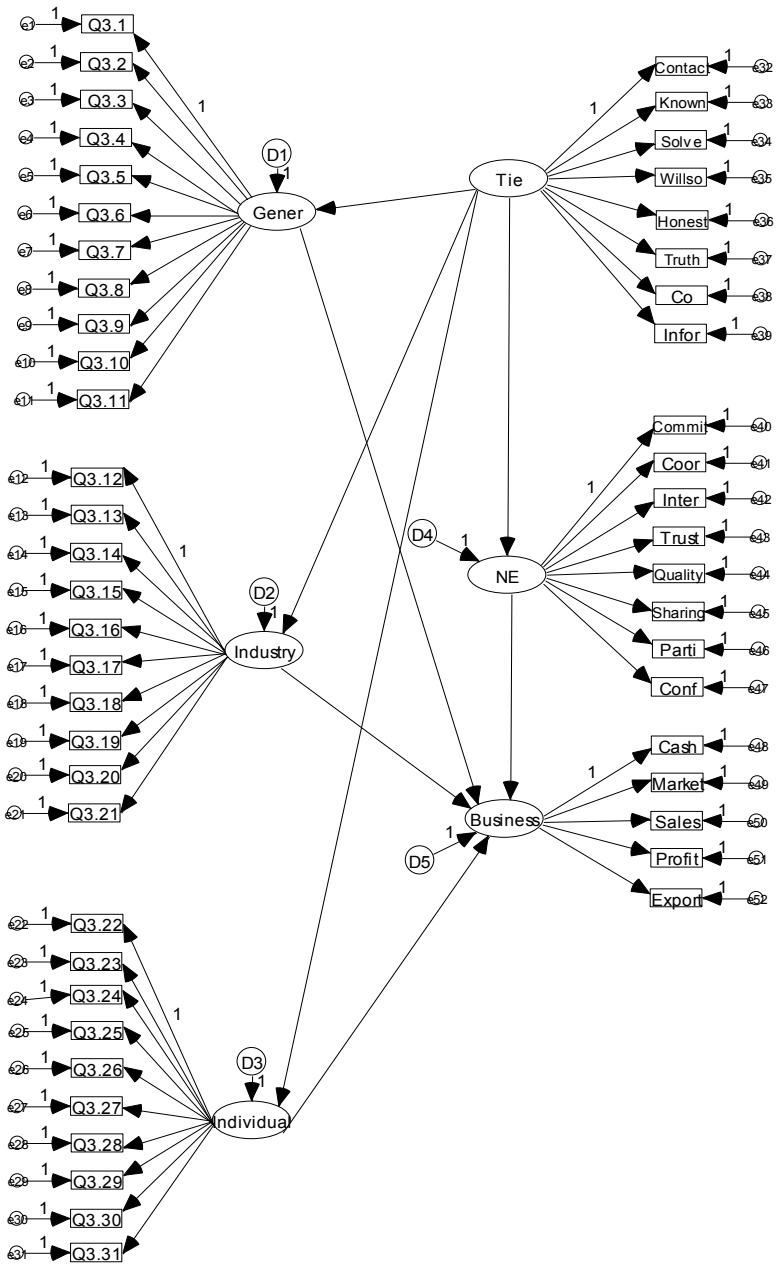
6.3.1 Model Development and Model Specification

Based on the literature in chapter 4 and the quantitative research and exploratory factor analysis in chapter 5, a number of structural equation models are developed and tested, each of which hypothesised different inter-relationships among the six latent variables. Figure 6.1 presents observed variables and six latent variables that relate to SEM in this chapter.

These six latent constructs in the model are presented by ellipses in Figure 6.1. In the model, Strength of ties (*Tie*) is the primary independent variable with Business performance (*Business*) as the dependent variable. General Environment Uncertainties (*Gener*), Industry Uncertainties (*Industry*), Individual Firm Uncertainties (*Individual*) and Network Embeddedness (*NE*), are mediator variables. According to Baron and Kenny (1986) the model that co-aligns as a mediation effect represents the generative mechanism through which the independent variable is able to influence the dependent variable of interest. Specifically, mediation decomposes the effects that a set of independent and mediator variables have on the criterion variable into direct and indirect effects. In doing so, mediation explains why such effects occur, as opposed to moderation which addresses when particular events will hold (Baron and Kenny, 1986). Thus, the presence of the mediator variable is necessary for a significant outcome between the independent variable and the dependent variable. With respect to the initial model, network embeddedness (*NE*) and business uncertainties (*Gener*, *Industry*, and *Individual*) are necessary for model significance between the strength of ties (*Tie*) and business performance (*Business*). These four variables are very important, indicating that, network embeddedness and general, industry, and individual uncertainties play a critical role in translating the strength of ties into business performance.

Table 6.2 presents the fifty-two observed variables included in Figure 6.1 within the six latent construct variables. In Figure 6.1 these observed variables are enclosed by rectangles. The first latent variable is *Tie*, which is constructed by eight observed variables.

Figure 6.l: Initial model of SEM



These observed variables are questions 4.2-4.9 of the questionnaire and details of these items have been presented in section 4.2 of this thesis. The second latent variable is *NE*.

It is defined by using eight observed variables, which are questions 4.10-4.17 of the questionnaire. Details of these items have been presented in section 4.3 of this thesis. For *Business,* it is constructed using five observed variables from questions 2.1-2.5 of the questionnaire. The last three latent variables are created based on the results of the exploratory factor analysis in section 5.6.1 of this thesis. According to these results, there are three main factors of business uncertainty. These factors are the last three latent variables in this chapter. *Gener* is defined by using eleven observed variables from questions 3.1-3.11 of the questionnaire. *Industry* and *Individual* are defined by using ten observed variables from question 3.12-3.22 and 3.21-3.31 of the questionnaire, respectively.

Figure 6.1 also includes the error terms (e1-e52) and disturbance terms (D1-D5) associated with each observed variable, and each endogenous latent variable, respectively. These terms are enclosed in circles in the figure. The one-way arrows pointing from the enclosed error terms (e1-e52) indicate the impact of measurement error on the observed variables. For example, the arrow pointing from e48→ *Trust* indicates the impact of measurement error on the variable trust. Similarly, the one-way arrows pointing from the enclosed disturbance term (D1-D5) to the endogenous latent variables (*Gener, Industry, Individual, NE,* and *Business*) also indicate the impact of error in the prediction of these endogenous latent variables from the exogenous latent variable (*Tie*). For example, the disturbance term D4 (D4→NE) in Figure 6.1 represents error in the prediction of *NE* from *Tie*.

Table 6.2: Variables of Structural Equation Modeling

Latent Variables	Observed variables	Question	Measurement Item
Strength of Ties (Tie)	*Contact*	4.2	Amount of time
	Known	4.3	Amount of time
	Solve	4.4	Emotional intensity
	Willso	4.5	Emotional intensity
	Honest	4.6	Intimacy
	Truth	4.7	Intimacy
	Co	4.8	Reciprocity
	Infor	4.9	Reciprocity
Network Embeddedness (NE)	*Commit*	4.10	Commitment
	Coor	4.11	Coordination
	Inter	4.12	Interdependence
	Trust	4.13	Trust
	Quality	4.14	Information quality
	Sharing	4.15	Information sharing

	Parti	4.16	Participation
	Conf	4.17	Conflict resolution
Business Performance (Business)	*Cash*	2.1	Change in cash flow
	Market	2.2	Change in market share
	Sales	2.3	Change in sales growth
	Profit	2.4	Change in profit
	Export	2.5	Change in exports
General Environment Uncertainties (Gener)	*Q3.1*	3.1	Predictability of laws and policies
	Q3.2	3.2	Political stability and security of property
	Q3.3	3.3	Political stability and security of property
	Q3.4	3.4	Uncertainty from corruption
	Q3.5	3.5	Inflation
	Q3.6	3.6	Exchange rate volatility
	Q3.7	3.7	World interest rate volatility
	Q3.8	3.8	Change in oil prices
	Q3.9	3.9	Changing social concerns
	Q3.10	3.10	Social unrest and riots
	Q3.11	3.11	Natural disasters
Industry Uncertainties (Industry)	*Q3.12*	3.12	Quantity and price of input uncertainty
	Q3.13	3.13	Quality of input uncertainty
	Q3.14	3.14	Market dynamism
	Q3.15	3.15	Availability of substitute goods
	Q3.16	3.16	Uncertainties from local competitors
	Q3.17	3.17	Uncertainties from overseas competitors
	Q3.18	3.18	Entry of new firms into the market
	Q3.19	3.19	Price control
	Q3.20	3.20	Changes in the level of trade barriers
	Q3.21	3.21	Changes in patterns of product or process
Individual Firm Uncertainties (Individual)	*Q3.22*	3.22	Input and raw material suppliers uncertainties
	Q3.23	3.23	Labour uncertainties
	Q3.24	3.24	Capital equipment uncertainties
	Q3.25	3.25	Production uncertainties
	Q3.26	3.26	Difficulty in obtained loans
	Q3.27	3.27	Sources of loan
	Q3.28	3.28	Ability to repay the loans
	Q3.29	3.29	The amount of loans
	Q3.30	3.30	Problems with collectibles
	Q3.31	3.31	Product and external liability

6.3.2 Hypotheses

From Figure 6.1 a numbers of hypotheses are formulated based on the literature in chapter 4 and statistical results in chapter 5 of this thesis. In the figure relationships between each variable under these hypotheses are presented by one-way arrows in the path diagrams of the initial model, for example, *Tie* → *NE*. These arrows represent

structural regression coefficients and thus indicate the impact of one variable on another. In Figure 6.1, for example, the unidirectional arrow pointing toward the endogenous variable, *NE*, implies that the exogenous variable *Tie* (strength of ties) affects *NE* (network embeddedness). Likewise, the eight unidirectional arrows leading from *NE* to each of the eight observed variables suggests that score values of observed variables are each influenced by their respective underlying latent variable (*NE* in this case). As such, path coefficients from latent variables to each observed variable, for example *NE* → *Conf*, represent the magnitude of expected change in the observed variables for every change in the related latent variable (or factor). Hypotheses relating to the initial SEM are:

1. The strength of ties and network embeddedness

From section 4.2.1 of this thesis the literature shows how the strength of ties in a network can affect network outcomes such as information sharing, coordination, participation, and financial and emotional support. According to the network embeddedness literature these outcomes are factors under network embeddedness. In addition, the empirical results in section 5.3.2 of this thesis show strength of ties in the network has a positive impact on the level of network embeddedness. In order to confirm this result, SEM will be used to test the relationship. Therefore

Hypothesis3: The strength of ties in the network is positively associated with network embeddedness

2. The strength of ties and business uncertainty

The evidence from the guanxi network literature in chapter three of this thesis shows that the strength of ties in the network can be used to reduce uncertainty. As discussed by Yang (1986, 1989, 1994) shortages of everyday necessities and scarce goods throughout China as a result of lagging economic development and increased market competition more recently are one of the main reasons encouraging individuals to connect to their guanxi. Thus, when opportunities to obtain such necessities have arisen, people are prompted to seek access to them through their guanxi connection. In addition, empirical results from the multiple regression analysis testing the relationship between the strength of ties and three factors of business uncertainty in section 5.6.3, showed that strength of ties in the network can be used to reduced general environment

uncertainties, industry uncertainties, and individual firm uncertainties. The adjusted R square for the regression models, however, is relatively low, indicating low reliability of results. In order to improve the quality of the results in section 5.6.3, SEM will be used to test these relationships once more. Therefore:

Hypothesis4.1: *The strength of ties has a negative impact on general environment uncertainties.*

Hypothesis4.2: *The strength of ties has a negative impact on industry uncertainties.*

Hypothesis4.3: *The strength of ties has a negative impact on individual firm uncertainties.*

3. Business uncertainty and business performance

In addition to the relationship between the strength of ties and business uncertainty, the literature in section 4.5 and statistical results in section 5.6.2 of this thesis also showed that general environment uncertainties, industry uncertainties, and individual firm uncertainties have a negative impact on business performance. In order to confirm these results, hypotheses related to business uncertainties and business performance will be tested by SEM. Thus:

Hypothesis5.1: *General environment uncertainties have a negative impact on business performance*

Hypothesis5.2: *Industry uncertainties have a negative impact on business performance*

Hypothesis5.3: *Individual firm uncertainties have a negative impact on business performance*

4. Network embeddedness and business performance

From section 4.3 of this thesis the literature on network embeddedness shows business performance is expected to increase network embeddedness. Furthermore, the empirical results of multiple regressions in section 5.5 of this thesis also show that network embeddedness has a positive impact on Sino-Thai SMEs' business performance. In order to support these results SEM will be used to test the relationship between network embeddedness and business performance.

Hypothesis6: *Network embeddedness has a positive impact on business performance.*

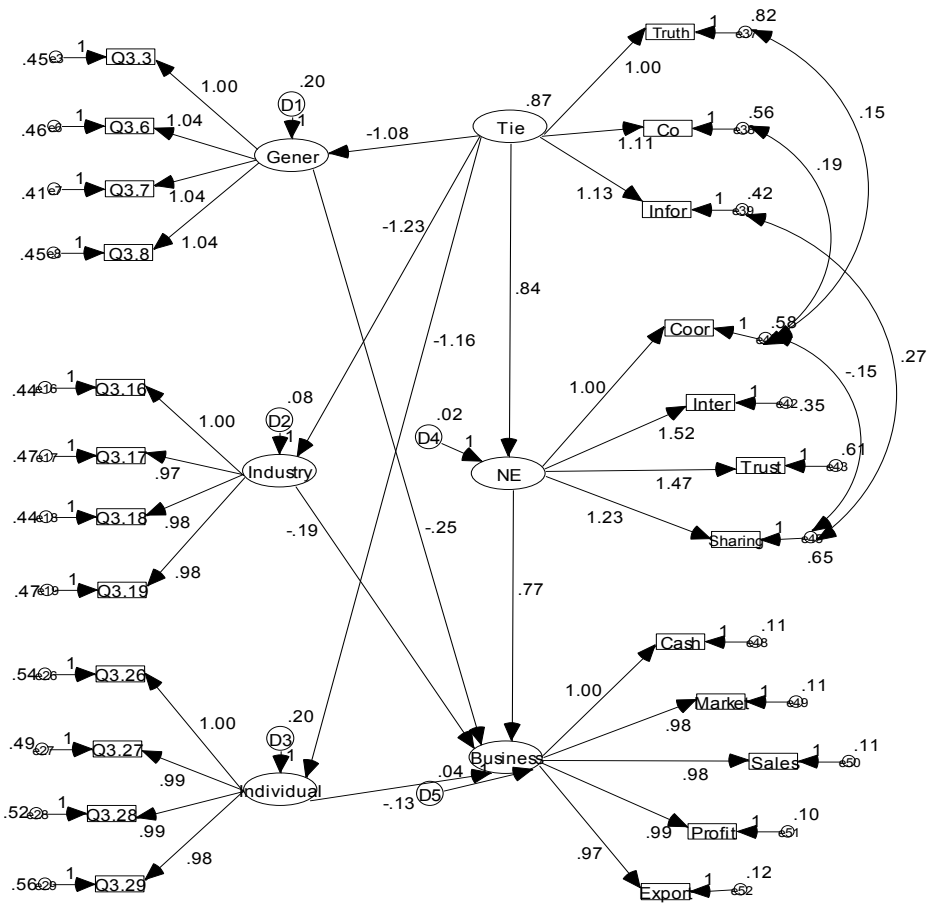
6.3.3 Results of SEM for a Single Group

Before applying SEM to the initial model the data needs to be screened extensively for missing values, non-normality, non-linearity, and multicollinearity. The multivariate normality, an underlying assumption necessary for obtaining unbiased estimates by the SEM technique, is checked using multivariate kurtosis, a measure of multivariate normality. The result shows that the absolute value of kurtosis is less than 3 for every variable, indicating no non-normality problem (Bryant, 2000). Multicollinearity, another required assumption, is investigated through Pearson correlations. Results reveal that no serious multicollinearity is observed between the latent variables (correlation<0.7). Correlations greater than 0.7 apply solely to indicators that measure the same construct, i.e. a single latent variable (Grace, 2006). Thus, the results show that data is deemed more than sufficiently robust for the structural equation model.

The estimation of the initial model (Figure 6.1) based on maximum likelihood, however, shows signs of model misspecification. The goodness-of-fit index (GFI) is only 0.753 and the variance of *NE* (D4) is negative. Thus, the initial model requires a modification. Model modifications are then performed over several iterations to arrive at a final model specification using a combination of modification indices (Hoyl, 1995) and theoretical justifications until a final satisfactory model is identified by strong model fit indices and theoretical support.

Figure 6.2 presents the final model with the regression coefficients after SEM testing. The final model differs from the initial model in two major ways. On the one hand a number of observed variables have been dropped. The criteria for dropping these variables comes from a combination of standard error, statistical significance, and modification indices from the SEM tests. Every time the SEM has been analysed, variables that have a high standard error and/or are statistically insignificant have been dropped, and the model is re-analysed (Loehlin, 1992). In addition, empirical evidence in chapter 5 of this thesis is also used to confirm the structure of the final model in Figure 6.2 as follows. From Figure 6.2 *Coor, Inter, Trust,* and *Sharing* are the four remaining observed variables for the latent variable network embeddedness (*NE*).

Figure 6.2: Final model of SEM



Results from the multiple regression analysis of section 5.5 of this thesis are supportive that these four variables are statistically significant for all five dependent variables of business performance. For the latent variable *Tie*, observed variables *Truth*, *Co*, and *Infor* are the only three remaining. From section 5.3.2 *Truth*, *Co*, and *Infor* are three independent variables that are statistically significant for *Coor*, *Inter*, *Trust*, and *Sharing*

(Coordination, Interdependence, Trust, and Information sharing models) which are four remaining observed variables for the *NE* latent variable. For the last three latent variables of business uncertainty each variable is constructed with four remaining observed variables. From section 5.6.2 of this thesis these variables are statistically significant for almost five dependent variables of business performance. On the other hand, a number of curved two-way arrows, which represent covariances or correlations between pairs of error terms, are added. These arrows imply that measurement error associated with, i.e. *Truth* (e37) is correlated with that associated with *Coor* (e40). The criteria for adding these arrows to the model come from modification indices of the AMOS output.

Table 6.3: Parameter estimates of the measurement model.

Latent variables	Observed variable	Estimate	S.E.	C.R.	P	R^2
Strength of ties	Truth	1				0.514
	Co	1.11	0.079	13.971	0.001	0.656
	Infor	1.132	0.077	14.726	0.001	0.726
Network Embeddedness	Coor	1				0.525
	Inter	1.516	0.096	15.801	0.001	0.809
	Trust	1.468	0.101	14.56	0.001	0.694
	Sharing	1.226	0.102	12.061	0.001	0.595
Business Performance	Cash	1				0.934
	Market	0.982	0.022	44.938	0.001	0.931
	Sales	0.978	0.022	45.464	0.001	0.934
	Profit	0.985	0.021	45.894	0.001	0.936
	Export	0.975	0.022	44.301	0.001	0.927
General Environment Uncertainties	Q3.3	1				0.731
	Q3.6	1.038	0.053	19.549	0.001	0.741
	Q3.7	1.039	0.052	20.126	0.001	0.765
	Q3.8	1.042	0.053	19.755	0.001	0.749
Industry Uncertainties	Q3.16	1				0.762
	Q3.17	0.967	0.047	20.421	0.001	0.735
	Q3.18	0.977	0.047	20.9	0.001	0.752
	Q3.19	0.983	0.048	20.648	0.001	0.743
Individual Firm Uncertainties	Q3.26	1				0.715
	Q3.27	0.991	0.053	18.821	0.001	0.732
	Q3.28	0.99	0.053	18.577	0.001	0.721
	Q3.29	0.982	0.054	18.154	0.001	0.702

Table 6.3 presents parameter estimates of the final SEM model in Figure 6.2 for the measurement model along with the standard error (S.E.), t-value (C.R.), and p-value (p). The path coefficients for the influence of the observed variables on the latent variables range from 0.97 to 1.5. These influences from observed variables to each

latent variable are not much different, due to the high reliability (Cronbanch' α) of the questionnaire[14]. Standard errors for the parameter estimates of the observed variables do not exhibit any extremely large values. The t-values for all the parameter estimates of the measurement model also exceed the critical value of 2.58 for two-tailed statistical significance at the .01 level.

Table 6.4: Parameter estimates of error and disturbance terms

Variance	Estimate	S.E.	C.R.	P
Strength of ties	0.869	0.123	7.089	0.001
Disturbe4	0.020	0.008	2.346	0.019
Distrube1	0.205	0.033	6.283	0.001
Distrube2	0.084	0.024	3.502	0.001
Distrube3	0.203	0.036	5.693	0.001
Distrube5	0.039	0.009	4.154	0.001
E3	0.451	0.044	10.252	0.001
E6	0.463	0.046	10.153	0.001
E7	0.408	0.041	9.865	0.001
E8	0.446	0.044	10.056	0.001
E16	0.436	0.042	10.374	0.001
E17	0.472	0.044	10.637	0.001
E18	0.441	0.042	10.481	0.001
E19	0.467	0.044	10.565	0.001
E39	0.421	0.038	11.13	0.001
E38	0.561	0.049	11.433	0.001
E37	0.822	0.070	11.774	0.001
E45	0.653	0.056	11.628	0.001
E43	0.607	0.055	11.083	0.001
E41	0.578	0.049	11.862	0.001
e42	0.346	0.035	9.882	0.001
e51	0.103	0.010	10.122	0.001
e50	0.105	0.010	10.201	0.001
e49	0.111	0.011	10.291	0.001
e48	0.109	0.011	10.177	0.001
e26	0.544	0.054	10.152	0.001
e27	0.490	0.049	9.962	0.001
e28	0.518	0.051	10.088	0.001
e29	0.561	0.055	10.285	0.001
e52	0.116	0.011	10.394	0.001

In Table 6.4, the variance estimate for the error and disturbance terms associated with each observed variable and latent variables, respectively, are also statistically significant at the 0.01 level of significance, except *Distrube4* which is statistically

[14] See chapter 5 of this thesis for details.

significant at the 0.05 level. Thus, it can be inferred that the latent variable constructs have the requisite validity which helps to confirm the results from the empirical test in chapter 5 of this thesis, and results from other existing literature presented in chapter 4 of this thesis.

Reported in Table 6.5 are the maximum likelihood estimates of the structural model parameters of the final SEM model in Figure 6.2. The value of path coefficients for the influence of strength of ties (*Tie*) on network embeddedness (*NE*) is equal to 0.844 and is statistically significant at the 0.01 level of significance. In other words, a 1 point increase in the strength of ties variable predicts a 0.844 point increase in the network embeddedness variable, when others variables are controlled. Thus, hypothesis 3 is strongly supported by these results.

Table 6.5: Parameter estimates of the structure model.

Path analysis			**Estimate**	**S.E.**	**C.R.**	**P**
Network Embeddedness	<---	Strength of ties	0.844	0.061	13.927	0.001
General Environment Uncertainties	<---	Strength of ties	-1.085	0.080	-13.610	0.001
Industry Uncertainties	<---	Strength of ties	-1.231	0.084	-14.643	0.001
Individual Firm Uncertainties	<---	Strength of ties	-1.157	0.085	-13.569	0.001
Business Performance	<---	Network Embeddedness	0.770	0.186	4.138	0.001
Business Performance	<---	General Environment Uncertainties	-0.254	0.053	-4.784	0.001
Business Performance	<---	Industry Uncertainties	-0.190	0.098	-1.937	0.053
Business Performance	<---	Individual Firm Uncertainties	-0.127	0.055	-2.291	0.022

For hypotheses 4.1-4.3 the path coefficients for the influences of strength of ties (*Tie*) on general environment uncertainties (*Gener*), industry uncertainties (*Industry*), and individual firm uncertainties (*Individual*) are -1.085, -1.231, and -1.157, respectively. The t-values for these coefficients exceed the critical value of -2.58 for two-tailed statistical significance at the 0.01 level of significance. These values suggest that a 1 point increase in the strength of ties variable predicts a 1.085, 1.231, and 1.157 point decrease of general environment uncertainties, industry uncertainties, and

individual firm uncertainties, respectively. Thus the hypotheses 4.1-4.3 are also strongly supported by these results.

For hypotheses 5.1-5.3 the path coefficients for the influences of general environment uncertainties (*Gener*), industry uncertainties (*Industry*), and individual firm uncertainties (*Individual*) on business performance (*Business*) are -0.254, -0.19, and -0.127, respectively. These values are statistically significantly at the 0.01, 0.10, and 0.05 levels of significance, respectively. Thus, hypotheses 5.1 and 5.3 are strongly supported by the results while hypothesis 5.2 is only marginally supported by the data.

For the path coefficient for the influence of network embeddedness (NE) on business performance (*Business*) the coefficient value is equal to 0.77. This coefficient is statistically significant at the 0.01 level of significance. This suggests that a 1 point increase of the network embeddedness variable predicts a 0.77-point increase of the business performance variable, when others variables are controlled. Thus, hypothesis 6 is strongly supported by these results.

In addition, Table 6.6 presents parameter estimates of the covariance between the error terms in the final model. These parameters are also statistically significant at the 0.01 level of significance.

Table 6.6: Parameter estimate of covariance

Covariance			Estimate	S.E.	C.R.	P
e38	<-->	e41	0.195	0.035	5.55	0.001
e39	<-->	e45	0.271	0.036	7.467	0.001
e45	<-->	e41	-0.149	0.031	-4.884	0.001
e37	<-->	e41	0.155	0.039	3.988	0.001

6.3.4 Indirect effects

In addition to the results presented above, indirect effects or effect of mediators of the final SEM model in Figure 6.2 are also estimated. For example, the indirect effect of strength of ties on business performance via network embeddedness is estimated as the product of coefficients for the paths *Tie* → *NE* → *Business*, or .844(.77) = 0.65. The rationale for this derivation is as follows: strength of ties has a direct effect on network embeddedness (0.844), but only part of this effect is transmitted to business performance. In other words, business performance is expected to increase by about 0.65 points for every 1 point increase on strength of ties via its prior effect on network

embeddedness. Other indirect effects of strength of ties to business performance can be calculated and interpreted similar to the example.

Table 6.7: Indirect effect of strength of ties to business performance

		Mediator			Indirect effect
Business Performance	<---	Network Embeddedness	<---	Strength of ties	(0.844)*(0.77) = **0.65**
Business Performance	<---	General Environment Uncertainties	<---	Strength of ties	(-1.085)*(-0.254) = **0.276**
Business Performance	<---	Industry Uncertainties	<---	Strength of ties	(-1.231)*(-0.19) = **0.234**
Business Performance	<---	Individual Firm Uncertainties	<---	Strength of ties	(-1.157)*(-0.127) = **0.147**

Table 6.7 presents results of the indirect effect of strength of ties on business performance. From this table network embeddedness (*NE*) is the mediator that provides the highest indirect effect (0.65), followed by general environment uncertainties (*Gener*) 0.276, industry uncertainties (*Industry*) 0.234, and individual firm uncertainties (*Individual*) 0.147, respectively. These results are not surprising since (*NE*) is the variable that provides the highest direct effect (0.77 from Table 6.5) in absolute terms, from mediator variables to business performance (*Business*). Thus, under the single group SEM, results of the final model (Figure 6.2) suggest network embeddedness is the most important factor that helps to improve business performance as a result of an increase in the strength of ties in the network.

6.3.5 Model fit results

The overall fit of the final model of SEM (Figure 6.2) is assessed using a number of model fit indices or goodness-of-fit tests, including eight that were presented in section 6.4.2 of this chapter. Table 6.8 summarises the results of these tests. Unlike traditional hypothesis testing the goal of SEM analysis is to produce a non-significant chi-square result (Arbuckle and Wothke 1999). The final model provides a chi-square of 377.29 with 240 degrees of freedom and is statistically significant at the 0.01 level of significance, thereby suggesting that the fit of the data to the final model is not entirely adequate. However, both the sensitivity of the likelihood ratio test to sample size and its basis the central chi-square distribution, which assumes that the model fits perfectly in

the population, have led to problems of fit that are now widely known (Byrne, 2001), because the chi-square tends to be substantial when the sample size is large (Joreskog and Sorbom, 1993). Byrne (2001) argues that finding well-fitting hypothesised models, where the chi-square value approximates the degrees of freedom, have proven to be unrealistic in most SEM empirical research. Thus, the result related to this final model is expected. For others indices of fit they are at acceptable levels as cited in the literature[15]

Table 6.8: Goodness of fit indices for final model of SEM

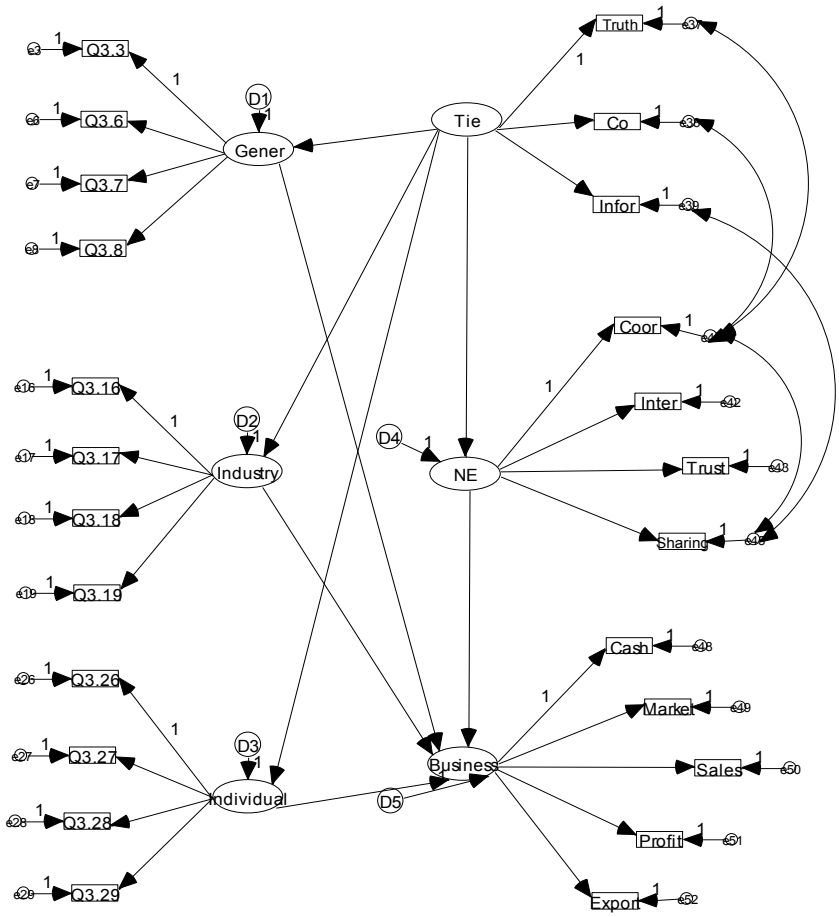
Model fit criterion	**Acceptable level**	**Model fit result**
Chi-square	Tabled Chi-square value	377.29 with *df* 240 ($p<0.01$)
Goodness-of-fit (GFI)	Value equal to or greater than 0.90	0.906
Root-mean-square (RMR)	close to 0 is good	0.042
Norm-fit-index (NFI)	Value equal to or greater than 0.90	0.96
Comparative fit index (CFI)	Value equal to or greater than 0.90	0.985
Incremental fit index (IFI)	Value equal to or greater than 0.90	0.985
Root mean square error of approximation (RMSEA)	<0.05	0.044
Parsimonious norm fit index (PNFI)	0 (perfect fit) to negative value (poor fit)	0.834

6.4 INVARIANCE MULTIGROUP

Up to this point the SEM has been analysed based on a single group. This section, however, focuses on SEM involving three groups of the guanxi network where the central concern is whether or not the components of the measurement model and/or the structural model are invariant (equivalent) across these three groups. The pattern of parameter estimations for each variable is tested for its equivalence across the groups. Once it is known which measures are group-invariant, these parameters are constrained to be equal while subsequent tests of the structural parameters are conducted. As each new set of parameter is tested, those known to be group-invariant are constrained to be equal. Thus, the process of determining non-equivalence of measurement and structural parameters across groups involves the testing of a series of increasingly restrictive hypotheses. This section contains 3 parts that relate to the invariance of multigroups. The first part explains the general procedure and the first step in testing for invariance-

[15] See section 6.2.4 of this chapter for details.

Figure 6.3: Baseline model



across groups. The second part emphasises the second step or the testing for invariance when the specification of equality constraints are included in the model. Finally, part

three examines invariance for two group models, which are family group vs. friend group, family group vs. stranger group, and friend group vs. stranger group.

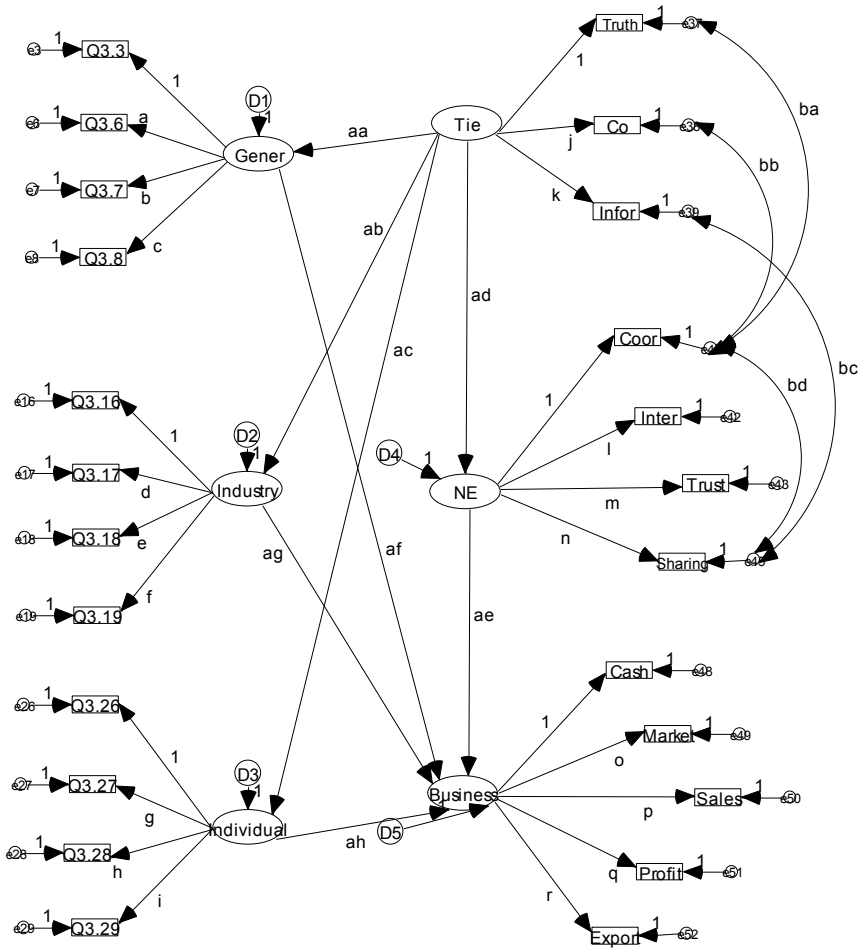
6.4.1 The General Procedure

In this section the final model (Figure 6.2) of this chapter is considered as a baseline model that is estimated for each group separately. More appropriately Figure 6.2 can be adapted to Figure 6.3, which is called the baseline model. It is important to note that just because the baseline model is similarly specified for family, friend, and stranger groups, this is no way guarantees the equivalence of item measurements and the underlying theoretical structure across these three guanxi groups. These hypotheses of invariance between each group must be tested statistically. For example, despite an identically specified parameter estimate it is possible that with the imposition of equality constraints across groups the tenability of invariance does not hold. That is the link between the item and its target parameter differs across groups (Byrne, 2001). Such postulated equivalencies must be tested statistically.

The first step in testing for invariance across groups is to test for the validity of the baseline model (Figure 6.3) for the three groups of guanxi relationship simultaneously. According to Byrne (2001) there are two important reasons for doing this. First, testing for the validity of SEM in this instance is conducted across the three groups simultaneously. In other words, parameters will be estimated for all three groups at the same time. Second, in testing for invariance the fit of this simultaneously estimated model provides the baseline value against which all subsequently specified models are compared. In contrast to single-group analysis, however, this multigroup analysis yields only one set of fit statistics for overall fit[16]. According to Byrne (2001, p.182) the key indexes of this process are the Chi-square, CFI, and RMSEA values. The Model-fit-index of the multiplegroup analysis in Figure 6.3 yields a Chi-square value of 1065.27, with 720 degree of freedom, which provides the baseline value against which all subsequent tests for invariance will be compared. In addition, the CFI and RMSEA values of 0.955 and 0.040, respectively, are indicating that the baseline model (Figure 6.3) is well-fitting across the three panels of guanxi relationships.

[16] Given that Chi-square statistics are summative, the overall Chi-square value for the multiplegroup model should equal the sum of the Chi-square values obtained when the baseline model is tested separately for each group.

Figure 6.4: Baseline model with equality constraints specified



6.4.2 Testing for Invariance: The Specification of Equality Constraints

As mentioned earlier, testing for the invariance of parameters across groups in SEM is accomplished by placing constraints on particular parameters. In other words, each parameter is specified as being invariant across groups. Parameters that are

unlabeled will be freely estimated thereby taking on different values across groups[17]. Figure 6.4 presents the baseline model with equality constraints specified. Thus, the second step in testing for invariance across groups is to test the baseline model, with equality constraints specified for all parameter estimates, variance, and covariances, for three groups of the guanxi relationship simultaneously. The result of this test provides a Chi-square value of 1203.96 (780 *df*). This result is compared with the Chi-square value ($1065.27_{(720)}$) of the initial baseline model (Figure 6.3) in which no equality constraints are imposed. The comparison yields a Chi-square difference value of 138.69 with 60 degrees of freedom, which is statistically significant at the 0.01 level of significance. This information shows that some equality constraints do not hold across the three guanxi relationship groups. Thus, the next step is testing invariance between the two group models.

Similar to the three group model the values of Chi-square between the baseline model in which no equality constraints are imposed (Figure 6.3) are compared with the SEM with equality constraints imposed (Figure 6.4). Table 6.9 presents results of the Chi-square comparisons between family vs. friend groups, family vs. stranger groups, and friend vs. stranger groups. Results of this comparison in this table show a Chi-square difference value, between the models in Figure 6.3 and Figure 6.4, of $56.04_{(30)}$, $95.326_{(30)}$, and $58.653_{(30)}$, for family vs. friend groups, family vs. stranger groups, and friend vs. stranger groups, respectively. These values are all significant at the 0.01 level of significance. In other words, there is some noninvariance across the two group model of guanxi relationships. The next task is to pinpoint the location of such noninvariance in the two group model.

Table 6.9: Chi-square comparison between the two group model

Two group model	**Testing for invariance with no equality constraints**	**Testing for invariance with equality constraints**	**Chi-square difference**
Family VS. Friend	722.948 (df 480)	778.99 (df 510)	56.04 (df 30)
Family VS. Stranger	722.614 (df 480)	817.94 (df 510)	95.326 (df 30)
Friend VS. Stranger	684.847 (df 480)	743.50 (df 510)	58.653(df 30)

[17] The process of selected parameters is purely arbitrary.

6.4.3 Invariance for the Two Group Model

Having established the noninvariance between each group of the guanxi relationship, the next step in this process involves testing for the equivalence of parameter estimates across three groups of the guanxi relationship. According to Byrne (2001) the process of testing multigroup invariance can be explained as follows.

The first step is testing for the invariance of factor loading related to all latent variables. One approach to the specification of this step is to remove all constrained parameters in Figure 6.4, except those associated with factor loadings. Proceeding in this manner will result in the labelled model displayed in Figure 6.5, where all unlabeled parameters will be freely estimated for each of the two groups (Family VS. Friend, Family VS. Stranger, and Friend VS. Stranger).

Consider the Family VS. Friend groups as the example. The result of the model displayed in Figure 6.5 yields a Chi-square value of 733.34 with 498 degrees of freedom. Comparison with the Chi-square value of the baseline model in Figure 6.3 yields a Chi-square difference value of 10.392 with 18 degrees of freedom[18], which is not statistically significant at the 0.05 level of significance. Thus, there is evidence of invariance of factor loadings between the family and friend groups[19].

Having established the equivalence of factor loadings related to all latent variables, these constraints are held in place while proceeding next to test for the invariance of the parameter estimates for the structural model, which are paths *aa-ah* in Figure 6.4.

The first task in this step is to add constrained parameters (*aa*) to the path from *Tie* → *Gener* and then to test for invariance between family and friend groups (Figure 6.6). The result of the model displayed in Figure 6.6 yields a Chi-square value of 738.928 with 499 degrees of freedom. Comparison with the Chi-square value of the baseline model in Figure 6.3 yields a Chi-square difference value of 15.98 with 19 degrees of freedom[20], which is not statistically significant at the 0.05 level of significance. Thus, there is an invariance of the parameter from *Tie* → *Gener* between -

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[18] (733.34-722.948 = 10.392 and 498-480 = 18)

[19] In a situation where there is evidence of non invariance at this level, however, the next process is to test for the invariance of all factor loadings comprising each latent variable, separately. After this, if there is evidence of noninvariance at the subscale level, the next step is testing for the invariance of each observed variable (related to the latent variable in question).

[20] 738.928-722.948 = 15.98 and 499-480 = 19

Figure 6.5: Baseline model with equality constraints specified for all factor loadings

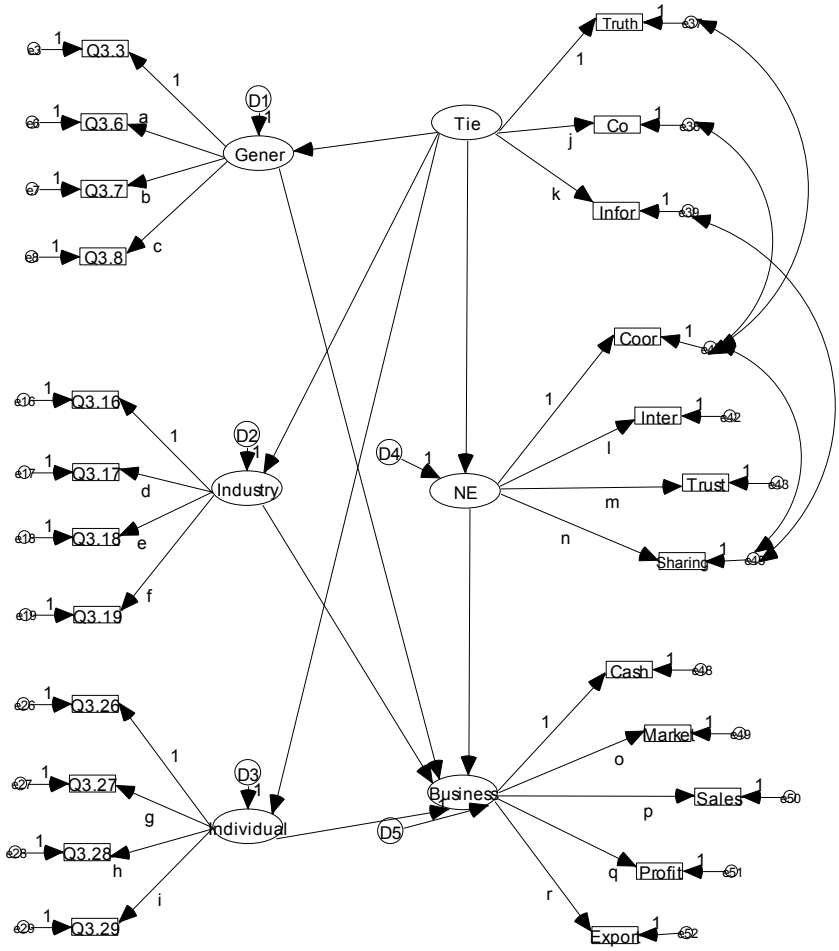
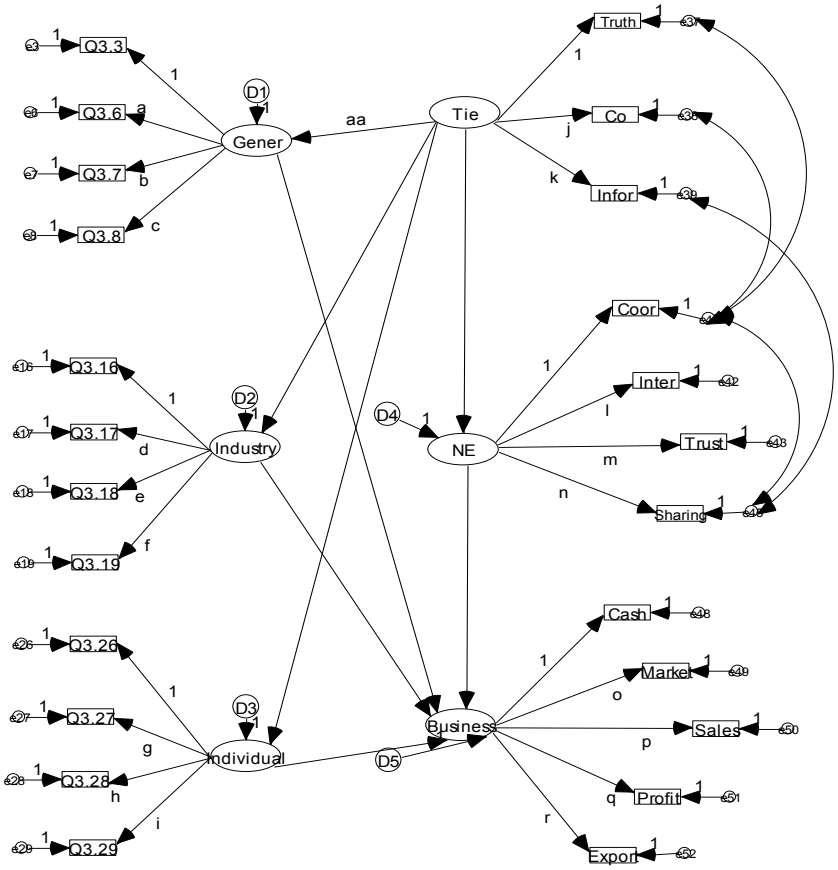


Figure 6.6: Baseline model with equality constraints specified for all factor loadings and *Tie → Gener*



family and friend groups and the constraint *aa* is held in place for further analysis. The next step is adding the constraint *ab* to the path from *Tie → Industry* and testing for the invariance. Repeating these processes for all parameter estimates for the structural model and parameter estimates of covariance will provide final results of the invariance

testing for family vs. friend groups. Testing for invariance for friend vs. stranger and family vs. stranger can be achieved with the same process.

Table 6.10: Noninvariance parameter for two group model

Family VS Friend Model	**Parameter noninvariance**	**Parameter estimates for family group**	**Parameter estimates for friend group**
	e38 <-> e41	0.023	0.236
	e39 <-> e45	0.094	0.344
Family VS Stranger Model	**Parameter noninvariance**	**Parameter Estimates for family group**	**Parameter Estimates for Stranger group**
	Sharing	1.175	0.687
	NE --> Business	1.132	N
	Gener --> Business	N	-0.512
	Individual --> Business	N	-0.25
	e37<->e41	N	0.223
	e38<->e41	0.023	0.339
	e39<->e45	0.094	0.243
	e41<->e45	N	-0.235
Friend VS Stranger Model	**Parameter noninvariance**	**Parameter Estimates for friend group**	**Parameter Estimates for Stranger group**
	Tie --> Individual	-1.09	-1.958
	Tie --> NE	0.838	0.732
	NE --> Business	2.272	N
	Industry --> Business	N	-0.361
	e41<->e45	-0.081	-0.235

All coefficients presented in this table have a *P*-value <0.05

Following these steps Table 6.10 presents the noninvariance parameters of the two group model of family vs. friend, family vs. stranger and friend vs. stranger groups. This table presents only the parameter estimates of the noninvariance parameters that are statistically significant at the 0.05 level of significance. From this table *e38<-> e41*[21], and *e39<->e45* are only two parameters which are noninvariant for the family vs. friend model. For the family vs. stranger model *Sharing, NE→Business, Gener→Business, Individual→Business, e37<->e41, e38<->e41, e39<->e45* and *e41<->e45* are parameters which are noninvariant. In this model parameter estimates of the family group for *Individual→Business,* covariances between *e37<->e41,* and *e4<-> e45* and of the stranger group for *NE→Business*, however, are not significant at the 0.05

[21] <-> represents covariance between two variables. For example, <-> in this case represents the covariance between *e38* and *e41*.

level of significance. For the friend vs. stranger model *Tie→Individual, Tie→NE, NE→Business, Industry→Business and e41<->e45* are parameters which are noninvariant. In this model parameter estimates of the friend group for *Industry→Business* and of the stranger group for *NE→Business*, however, are not significant at the 0.05 level of significance.

From Table 6.10 a number of interesting issues can be raised. First, covariances between *e38* <-> *e41* and *e39* <-> *e45* are the only two noninvariance parameters of the family vs. friend model. This result suggests both the measurement model and the structural model of the family and friend groups are not much different. Even though the degree of embeddedness of family ties is higher than friends, however, benefits that these groups can provide to their linkages in the network are not much different. Furthermore, the result also confirms the argument from Ruef (2002) that family and friends should be considered together as strong ties.

Second, the level of information sharing (*sharing*) of the family relationship is higher than the stranger relationship. This result is also consistent with the results from the Kruskal-Wallis test from section 5.3.3 of this thesis. Under the guanxi Chinese network, principles of interaction and ways of social treatment between these groups are totally different. The family relationship is characterised as being relatively permanent, stable and contain expressive relationships in which the welfare of the other is part of one's duty. The general rule of exchange is that one must do his or her best to attend to the other's needs with no or little expectation of return in the future (Tsui and Farh, 1997, p.60). A loyalty (and related favouritism) to family is an obligation, and is rendered largely without an anticipation of reciprocity (Yang, 1993). These factors create an invisible bond between parties, which in turn create a very strong relationship. For the stranger relationship the principle of interaction is utilitarian exchange focusing on personal gain and loss, favouritism, discretion, and caution. If utilitarian exchange is no longer applied the link between parties can be easily disconnected (Tsui and Farh, 1997, p.60). Since the major concern of the relationship is personal gain and loss, not interpersonal relationship, the strength of relationship between parties under this group is weak. In some certain situations, however, this can vary depending upon the extent of the gain or loss. The differences in principle of interactions between these two groups are key factors that make the level of information sharing in family ties higher than stranger ties.

Third, the positive effect of strength of ties to network embeddedness of the friendship relationship is stronger than the stranger relationship. The statistical evidence presented in sections 5.3.1 and 5.3.2 of this thesis can be used to explain this result. The results of multiple regression analysis in section 5.3.2 show that the strength of ties in the network has a positive effect on network embeddedness. Since the friendship relationship has a stronger strength of tie than the stranger relationship, as shown in section 5.3.1, it is not surprising that the effect of strength of ties to network embeddedness of the friend group is also stronger than the stranger group.

Fourth, the negative effect of the strength of ties to individual firm uncertainties of the stranger group is stronger than the friend group. This result suggests individuals can use their ties in the network to reduce individual firm uncertainties, however the stranger relationship is more effective than the friendship relationship. According to Granovetter (1973), Ruef (2002) and Wong and Ellis (2002) the stranger relationship is considered as weak ties in the network. These weak ties are more often important in spreading information or resources because they tend to serve as a bridge between otherwise disconnected social groups. In certain situations such information and resources are of importance in helping firms to reduce business uncertainty. Thus, in the case of Sino-Thai SMEs the stranger ties in the network are more effective than the friend group in terms of reducing individual firm uncertainties.

6.5 SUMMARY

Structural equation modeling (SEM) is a statistical methodology that takes a confirmatory approach to the analysis of a structural theory bearing on some phenomenon. The hypothesised model can then be tested statistically in a simultaneous analysis of the entire system of variables to determine the extent to which it is consistent with the data. There are two major types of variables in SEM. The first are latent variables, which are not directly observable. The second are observed variables that researchers use to define the latent variables. These two types of variables can be defined as either exogenous (independent variables) or endogenous (dependent variables). In this chapter there are three major types of SEM. The first is the measurement model or the confirmatory factor analysis model (CFA), which is a model that focuses solely on the link between factors and their measurement variables. The second is a Path model or a Path analysis which involves the estimation of presumed

causal relations among observed variables. The third is the full latent variable model which allows for the specification of regression structure among the latent variables. In order to measure the quality of SEM in this chapter, eight model fits were introduced. They are (1) Chi-square, (2) Goodness-of –fit index (GFI), (3) Root mean square residual (RMR), (4) The norm fit index (NFI), (5) The comparative fit index (CFI), (6) The incremental fit index (IFI), (7) Root mean square error of approximation (RMSEA), and (8) Parsimonious norm fit index (PNFI).

The final model of a single group SEM contains six latent constructs. These latent variables are strength of ties (*Tie*), business performance (*Business*), general environment uncertainties (*General*), industry uncertainties (*Industry*), individual firm uncertainties (*Industry*) and network embeddedness (*NE*). This final model yields a number of interesting results. First, the strength of ties in the network is positively associated with network embeddedness. Second, the strength of ties has a negative impact on general environment uncertainties, industry uncertainties, and individual firm uncertainties. Third, general environment uncertainties, industry uncertainties, and individual firm uncertainties have a negative impact on business performance. Finally, network embeddedness has a positive impact on business performance. Furthermore, the final model suggests that network embeddedness is the most important factor that helps to improve business performance as a result of an increase in the strength of ties in the network.

In addition, this chapter also analysed invariance across three groups of the guanxi relationship. The result of this analysis shows that there is some structural noninvariance across these three groups. For the family vs. friend model *e38 <-> e41* and *e39 <-> e45* are the only two noninvariance parameters. For the family vs. stranger model *Sharing, NE→Business, Gener→Business, Individual→Business, e37<->e41, e38<->e41, e39<->e45* and *e41<->e45* are parameters which are noninvariant. For the friend vs. stranger model *Tie→Individual, Tie→NE, NE→Business, Industry→Business and e41<->e45* are parameters which are noninvariant. Furthermore, results from this section also suggest some interesting issues. First, the measurement and structural models of the family and friend groups are not much different. This result suggests both the family and friend relationship can be grouped together as strong ties. Second, the level of information sharing (*sharing*) of the family relationship is higher than that for the stranger relationship. The result indicates that the differences in principle of interactions between these two groups are key factors that make the level of information

sharing in family ties higher than stranger ties. Third, the positive effect of strength of ties to network embeddedness of the friendship relationship is stronger than the stranger relationship. The higher degree of network embeddedness of the friendship relationship also implies larger opportunities in business which results in better business performance. Finally, the negative effect of the strength of ties to individual firm uncertainties of the stranger group is stronger than the friend group. This result suggests weak ties in the network are key factors that can be used to reduce individual firm uncertainties

From chapters 4-6 of this thesis a number of hypotheses that relate to the relationship between the guanxi network, strength of ties, network embeddedness, business performance, and business uncertainty have been established and analysed. From this analysis a number of policy implications relating to these relationships can be suggested. The next chapter of this thesis summarises the important issues that have been presented in this thesis and also suggests some policy implications. Furthermore, limitations of the study and future research possibilities will be presented in the next chapter as well.

CHAPTER 7

CONCLUSIONS AND POLICY RECOMMENDATIONS

7.1 INTRODUCTION

The main objective of this thesis has been to study the impact of social relationships on business networks and then to business performance, emphasising Thai SMEs in particular. For this purpose the thesis developed a theoretical framework and, using a number of statistical techniques, analysed hypotheses and assumptions relating to this framework. The remainder of this chapter proceeds as follows. Section 7.2 summarises the main findings from the empirical studies along with the theoretical background establishing the framework. Furthermore, section 7.3 suggests a number of policy implications relating to business networks, the guanxi Chinese network, and business uncertainty. The thesis concludes with section 7.4, which discusses the limitations of the study and proposes some areas of future research.

7.2 SUMMARY OF MAIN FINDINGS

One of the major contributions of this thesis has been the development of a comprehensive study of social relationships and business networks for Thai SMEs. More specifically, how social relationships affect business performance through business networks. For this purpose, the thesis reviewed the roles and importance of SMEs to the successful development of many developing countries. Much of the literature presented in this thesis shows that SMEs contribute to individual economies in terms of (1) numbers and output, (2) foundation of industrialisation, (3) job creation, (4) export promotion (5) sales, output, and value added, (6) contribution to growth, and (7) poverty alleviation. Since one of the major contributions of this thesis relates to Thai SMEs, this thesis also presented an overview of Thai SMEs. Thai SMEs account for more than 99 percent of all enterprises with around 30 percent of all SMEs being in the manufacturing sector. In terms of employment, SMEs account for more than 70 percent of total employment in the country. More than 30 percent of SMEs are located in Bangkok and its vicinities with the majority of them being in the services industry. Furthermore, about 40 percent of Thai GDP is attributable to Thai SMEs.

Although Thai SMEs provide significant benefits to the country, there are still some barriers that they face preventing them from growing. For example, many Thai

SME managers are deficient in basic skills such as those relating to computers, finance, marketing, accounting, market analysis and strategic planning (Brimble et al., 2002). Such deficiencies lead to difficulty in attaining a competitive advantage. In order to increase the competitive advantage of SMEs, enhancing their business networks can be one of the solutions. A review of the network literature (see section 3.3 of this thesis for details) shows that networking can provide opportunities for shared learning, transfer of technical knowledge, legitimacy, and resource exchange between firms. Most of the networking literature has been mainly concerned with the Western business context. A number of guanxi Chinese network literature (see section 3.2 of this thesis for details), however, shows that the guanxi network has been the dominant form of transactional governance in China since long before the concept was taken up by Western writers (Davies et al., 1995). Since large numbers of SMEs in Thailand are operated by Sino-Thais (Mackie, 1994) the concept of the guanxi network is appropriate as a means to study the importance of social relationship for Thai SMEs' business networks.

The guanxi network is a certain type of interpersonal relationship that binds two persons through exchange of favours. It could refer to one of three things: (a) the existence of a relationship between people who share a group status or are related to a common person, (b) actual connections with, and frequent contact between, people, and (c) a contact person with little direct interaction. In general it is a reciprocal obligation to respond to requests for assistance. What is special about the guanxi network is its instrument values. These values are unique characteristics that help to increase the benefits of networks in both social and business contexts. They are reciprocity, role obligation, and particularism. Reciprocity is the factor that motivates Chinese to do favours for people in their guanxi network, because of the strong binding power of the reciprocity norm. Parties in a guanxi can confidently expect the eventual repayment to what they have offered as a result of reciprocity being the norm. At the same time the reciprocity norm creates a binding power that leads people to consider the negative effect of reciprocal penalty if they fail to honour such a norm, and assures them of the right to isolate the offenders against it. Role obligation refers to the responsibilities arising from one's particular role in a certain context. The role of obligation is not limited to family and kinship but also extends to non-kin ties. In the guanxi network, if a person denies his/her obligations that particular person might pay the price of losing his/her kinship connections, which can be considered to be fatal in Chinese culture. Particularism is special treatment for in-group members. The favours of guanxi are

normally granted to the parties in the network. In-group members are treated as part of the family, privy to confidences, and not subject to formalities like distant people.

In this thesis interpersonal relationships under the concept of the guanxi network are categorised into three groups: *chia-jen* (family members), *shou-jen* (familiar persons such as relatives outside the family, neighbours or people in the same village, friends, colleagues, or classmates), and *sheng-jen* (mere acquaintances or strangers). The main reason these three taxonomies are chosen is because they are easily identified and are governed by very clear cut and different sets of social and interpersonal rules.

In addition to the guanxi network, theories that relate to organisational networks in a Western context are also used to explain the relationship between the social relationship and business network of Thai SMEs. Organisation networks enhance competitive advantage by providing access to the resources of other network members. Based on organisation network theories such as resource dependency, transaction cost economics, and social capital, networks can increase efficiency and the advantage of businesses because they encourage information sharing, trust, repeat transactions, and good relationships with government offices and financial institutions. These factors not only affect the outcomes of business activities as in the Western network concept but also play an important role in building and maintaining strong guanxi network relationships. Thus, both concepts of the guanxi network and organisation networks are used as complimentary to establish the theoretical framework and explain the results of the empirical analysis in this thesis.

The theoretical framework (Figure 4.1) in chapter 4 established links between guanxi relationships, strength of ties in a network, network embeddedness, business performance and business uncertainty. Most of the existing literature relating to strength of ties (see section 4.2 of this thesis for details) analyses the impact of the strength of ties to entrepreneurs' performance in terms of weak and strong ties. In general, strong ties in a network are identified as families and close friends, while weak ties are strangers or mere acquaintances. Since these categories of relationship are similar to relationships under the guanxi network, it can be assumed that differences in the guanxi relationship will have a significant impact on the level and strength of ties. In order to test this first assumption of this thesis a multidimensional measurement of the strength of network ties based on Granovetter (1973) is required. According to the multidimensional approach there are four dimensions of a network tie strength (1) amount of time, (2) emotional intensity, (3) intimacy (mutual confiding), and (4)

reciprocity within a tie. Results from the Kruskal-Wallis Test showed that strength of ties in the network for the family relationship is stronger than the friend and stranger relationship, while the strength of ties in the network for friend relationship is stronger than the stranger relationship. Thus, it is clear from these results that for Thai SMEs the family relationship is stronger than the friend and the stranger relationships, while friendship is stronger than the stranger relationship.

In addition to the relationship between the guanxi relationship and the strength of ties, the theoretical framework in this thesis also presented the relationship between the guanxi relationship, strength of ties and network embeddedness. According to the network embeddedness literature (see section 4.3 of this thesis for details), such as Gulati and Gargiulo (1999), Mohr and Spekman (1994), Naude and Buttle (2000), Powell (1990), and Uzzi (1996), relationship embedded ties are characterised by attributes of the partnership, good communication behaviour, and good conflict resolution technique. Taking these three key characteristics of embedded ties, an organisation is said to be strongly embedded if it has recurring ties with suppliers, customers and other organisations that are characterised by attributes of the partnership, good communication behaviour, and good conflict resolution technique. Conversely, an organisation is said to be weakly embedded if it has relatively few ties with these three characteristics. From the existing literature, strength of ties in a network can affect network outcomes such as information sharing, coordination, participation, and financial and emotional support. Since these outcomes are factors under network embeddedness, it can be assumed that the strength of ties in the network have a significant impact on the level of network embeddedness. Results from the multiple regression analysis showed that strength of ties in the network positively and strongly impact on the level of network embeddedness.

For the relationship between the guanxi relationship and network embeddedness, results from the Kruskal-Wallis Test showed that the degree of network embeddedness for the family relationship is stronger than the friend and stranger relationship, while the degree of network embeddedness for friend relationship is stronger than the stranger relationship. Thus, it is also clear that the family link of Sino-Thai SMEs provides higher network embeddedness than the friend and the stranger links, while the friend links provide higher network embeddedness than the stranger link. In addition to two Kruskal-Wallis tests, a multiple discriminant analysis was also used to find two other important results. First, for the relationship between the guanxi relationship and strength

of ties the results showed that individuals who perceive family relationships as the most important connection in the business network focus their emphasis on a willingness to solve problems, being truthful, and sharing information. For individuals who perceive the friendship relationship as being the most important connection in the business network focus their emphasis on the period during which both parties have known each other. For individuals who perceive the stranger relationship as the most important connection in the business network they focus their emphasis on the frequency of contacts between parties. Second, for the relationship between guanxi relationship and network embeddedness the results showed that individuals who perceive the family relationship as the most important connection in the business network focus their emphasis on interdependence and trust. Individuals who perceive the friend relationship as the most important connection in the business network focus their emphasis on information quality. Individuals who perceive the stranger relationship as the most important connection in the business network they focus their emphasis on coordination and conflict resolution.

Another relationship between variables that can be established from the framework was the relationship between network embeddedness and business performance. In this thesis business performance is measured by five subjective measurement items as used in other studies; (1) change in cash flow, (2) change in market share, (3) change in sales growth, (4) change in profit, and (5) change in exports. According to the network embeddedness literature presented in this thesis, network embeddedness is expected to have a positive effect on the business performance of enterprises. Results from a multiple regression analysis showed that network embeddedness positively and strongly impacted on business performance. Coordination, interdependence, trust, and information sharing, especially, are four factors of network embeddedness that are statistically significant for all five models of business networks.

The last set of variables in the framework relate to business uncertainty. Following the literature on business uncertainty thirty-one variables measuring business uncertainty are established. An explanatory factor analysis was used to reduce a large number of observed variables to fewer and more manageable unobserved variables. The results of the factor analysis showed that 31 explanatory variables can be grouped into three main factors. The first factor contains 11 variables that have high factor loading scores relating to *General Environmental Uncertainties*. For the second and the third factors, each contain 10 variables that have high factor loading scores to *Individual*

Firm Uncertainties and *Industry Uncertainties*, respectively. The results of a multiple regression analysis showed that these three factors of business uncertainty are negatively related to business performance. This is especially so for political and macroeconomic uncertainties for the *General Environmental Uncertainties* factor, access to financing for the *Individual Firm Uncertainties* factor, and competition uncertainties and international regulations uncertainties for the *Industry Uncertainties* factor, which strongly and negatively impact on five dependent variables of business performance. Furthermore, results of multiple regression analysis between strength of ties and three factors of business uncertainties in section 5.6.3 showed that the strength of ties in the network has a negative impact on business uncertainty. In other words, the strength of ties in the network can help to reduce the perception of business uncertainty of Sino-Thai SMEs.

In addition to hypothesis testing, this thesis also used structural equation modeling (SEM) to test relationships between variables in the theoretical framework simultaneously. This simultaneous testing allows the researcher to analyse all variable relationships in the framework at the same time. The final model of a single group of SEM showed some interesting results which also confirmed empirical findings from earlier chapters. 1) the strength of ties in a network are positively associated with network embeddedness. 2) the strength of ties has a negative impact on general environment uncertainties, industry uncertainties, and individual firm uncertainties. 3) general environment uncertainties, industry uncertainties, and individual firm uncertainties have a negative impact on business performance. 4) network embeddedness has a positive impact on business performance. Finally, 5) network embeddedness is the most important factor that helps to improve business performance as a result of an increase in the strength of ties in the network. Furthermore, this thesis also used SEM to analyse the invariance of variables in the theoretical framework across three groups of the guanxi relationship. Results from this analysis showed 1) the measurement and structural models of the family and friend groups are not much different. 2) the level of information sharing (*sharing*) of the family relationship is higher than the stranger relationship. 3) the positive effect of strength of ties to network embeddedness of the friendship relationship is stronger than the stranger relationship. Finally, 4) the negative effect of the strength of ties to individual firm uncertainties of the stranger group is stronger than the friend group.

The theoretical framework and empirical study presented in this thesis suggest a number of interesting results which can be summarised as follows:

1. The strength of relationship of the family relationship in the business network of Sino-Thai SMEs is stronger than the friend and the stranger relationships, while the friend relationship is stronger than the stranger relationship. Furthermore, a good relationship between partners in the network can also increase the degree of network embeddedness between them.

2. Family relationship in the business network of Sino-Thai SMEs provide higher network embeddedness than the friend and the stranger relationship, while the friend relationship also provides a higher level of network embeddedness than the stranger relationship. In addition, strong network embeddedness between parties in the network can help to increase their business performance due to factors such as information sharing, trust, and coordination.

3. The business performance of Sino-Thai SMEs is negatively affected by business uncertainties especially political and macroeconomic uncertainties, difficulty in gaining access to financing, competition uncertainty, and international regulations uncertainties. To a certain degree the negative effect of these uncertainties on business performance, can be reduced by a strong relationship and high level of network embeddedness between partners in the business network.

4. A willingness to solve problems, being truthful, sharing information, interdependence and trust are the major concerns of the family relationship in the business network. The period during which both parties have known each other, and information quality are major concerns of the friend relationship in the business network. The frequency of contacts between parties, coordination and conflict resolution are major concerns of the stranger relationship in the business network.

The main findings of this thesis indicate some interesting issues that can contribute to both the empirical and theoretical literature. Similar to other countries such as Singapore, Hong Kong, Taiwan, and Vietnam that have a Confucianism, Buddhism and Taoism background, Thailand has moved away from an agricultural tradition to industrialised society, where individual freedom has risen and collective responsibility has ebbed. The potential for interpersonal attraction in the stranger category has, therefore, become increasingly important. As suggested by Ruef (2002) a lower level of market failure can reduce the importance of social relationships between parties in a

society. Even though the efficiency of markets in Thailand is increasing, the importance of social structure and the culture of the guanxi network still exist, as suggested by the results presented in this thesis. Similar to other developing countries in the area, transactions costs in Thailand remain relatively high for firms to secure necessary inputs and legitimize their existence. As economic uncertainty increases from factors such as political, overseas competitors, change in demand and price of product, firms more eagerly turn to guanxi networks to lower external dependence for key resources and to improve their legitimacy. Thus a social network in Thailand and other developing countries helps a firm overcome the lack of resources to accommodate growth, while reducing bureaucratic costs that would result from internalising operations.

It is also clear from this thesis that strength of ties in the network positively and strongly impact on the level of network embeddedness and business performance. Furthermore, family relationship in the business network of Sino-Thai SMEs provides the highest network embeddedness. However, not all SMEs cultivate their family relationship. One of the key findings in this thesis suggest that guanxi utilisation depends on many factors that include: family, social, institutional, organisation and industry structures. The intensity and nature of the guanxi depends on each firm's idiosyncratic organisational and other institutional attributes. Owners and manages of SMEs seek out guanxi connections and cultivate personal relationships to meet specific needs for resources and legitimacy which otherwise would be unavailable. Given the lack of a regulatory environment in many developing countries, such connections are critical to both managers and organisations to facilitate impersonal business activities (Alston, 1989).

In particular, SMEs in Thailand receive different support and resource allocations from the government depending on the nature of their business and structure of business, such as type of business (i.e. single business owner, partnerships) and nature of industry (i.e. manufacturing, retailing). Thus, there is a great deal of variation across Thai SMEs in terms of their advantages and disadvantages. For instance the level of information sharing difference between SMEs based on the data analysis in chapter 5 of this thesis, suggests that firms are idiosyncratic in their ability to scan information, handle information uncertainties, and benefit from information exchanges. Therefore, they have different levels of need and different capacities to utilise and sustain their business and social network.

From a social capital perspective, social networks such as guanxi are embedded in intricate and informal personal relationships (Lin 1999). The discriminant analysis conducted in this thesis, however, suggests that business network interpartner complementarity in terms of strategic needs, organisational skills, and competitive strengths is still a necessary condition to cultivate and sustain the guanxi network. Network complementarity depends on the specific organisational traits of the members or organisations. As resources dependency theory suggests, firms are heterogeneous with respect to their resources and capability endowment. Thus, SMEs that are heterogeneous and have a lack of resources and capability perceive differential opportunities and needs from the guanxi network.

From the resources dependency perspective, results from this thesis also suggest that firms with a high level of fixed assets, have been established for a long period, have highly educated managers or owners, and are in advanced skills industries, are less dependent on the family and friend groups connection. The results are consistent with evidence from Park and Lue (2001) and Burt (1992) which suggest a lower level of strong ties dependence for firms with superior resources and capabilities. This implies that SMEs have fewer needs for strong guanxi networks as they become larger, employ highly educated employees, have a high level of backup assets, have been established for a long period, and operate in high technology industry.

From data of Sino-Thai SMEs obtained in this study, size of the company, level of fixed assets and the period of establishment tend to affect the level that firms need financial support from informal sources and also the market power of these firms. These factors allow firms to have a strong bargaining power with government agencies, financial institutions, customers and suppliers. Most of the SMEs that have these kinds of characteristics will require only support from their weak ties (stranger relationships). As suggested by the results from SEM in chapter 6 of this thesis, the most important benefit that the stranger relationships can provide to their linkages is information sharing. According to Granovetter (1973), Ruef (2002) and Wong and Ellis (2002) the stranger relationship is considered as weak ties in the network. These weak ties are more often important in spreading information or resources because they tend to serve as a bridge between otherwise disconnected social groups. In certain situations such information and resources are of importance in helping firms to reduce business uncertainty. Thus, firms that have strong bargaining power are likely to connect with stranger relationships in order to gain benefits from information sharing and to reduce

the cost of cultivating and maintaining guanxi. For SMEs that are small, have a low value of fixed assets, are recently established, and operate in a low technology industry, they require strong ties to overcome their competitive disadvantages by securing deals from suppliers, orders from buyers, financial support, and approvals from the government. The most important benefits that strong ties (family and friend relationships) provide to their linkages are a high level of trust and information quality.

Another theoretical contribution from this thesis relates to TCE and the guanxi network. The results from this thesis suggest that guanxi networks provide transaction cost advantages. To be more specific, transaction cost savings from guanxi partially result from suppressing opportunism. With guanxi practice, guanxi parties know each other's true characteristics very well. The strong form of opportunism, veiling true conditions and withholding crucial information, can be eliminated with a good guanxi. From the perspective of asset specification, transaction costs regarding asset specification remain high due to asymmetry of information and an underdeveloped market-based price mechanism in many developing countries (Child and Tse, 2001). The guanxi network with its characteristic of information sharing and reciprocity can help to reduce such transaction costs. For example, the results in chapter 5 of this thesis suggest that transactions costs incurred from general environmental uncertainties can be reduced by well-established guanxi networks. From the perspective of individual firm uncertainty, guanxi practices related to social norms can help to develop the judgement of potential business partners. The trustworthiness in certain guanxi and exchanges of information can also help to reduce transaction costs from negotiating and communication. In addition, results from the thesis also show that guanxi networks help to develop long-term business relationships through transactional reciprocity. By good guanxi practice, firms can build trust in business relationships and benefit from economies of scale and scope through long-term cooperation.

In addition, results from this thesis also contribute to the theoretical literature on social capital. Consistent with Lin (1995, 1999), Ahuja (2000), and Sabatini (2006), data of Sino Thai SMEs from this thesis suggests that the guanxi network is one form of social capital that can provide many benefits to organisations; First, guanxi helps to improve company organisation through easier access to markets, raw materials, public contracts, information, and tax reduction, as a result of social connectedness to important decision makers. Second, guanxi can also be used to overcome some disadvantages from the small size of SMEs. The positive use of guanxi as a social

network can influence local officials and reduce some economic uncertainties. Based on evidence from this thesis financial support including access to loans, sources of loans, and ability to replay loans is the most important way that the guanxi network can support its members. This evidence is also consistence with Chew and Yeung (2001) whose work suggests that financial support is the most important factor that is required by SMEs in many developing countries. Finally, strong ties (family and friend relationships) are very important to SMEs that have some disadvantages and require a lot of assistance such as financial support, bargaining power with suppliers and customers, and face severe competition from competitors. Family and friend relationships play an important role in acquiring capital for many SMEs (Wank, 1996). Since many SMEs, especially in the retailing sector, hardly have access to bank credits, members of the family and relatives represent an important source of credit. Furthermore, family relationships also relate to operation and management functions of companies. This refers to the employment and cooperation of members of the family or relative. Even though the costs of cultivating and maintaining these strong ties are relatively high compared to the stranger relationship, the high level of trust and reciprocity are key factors that encourage SMEs to establish links with their family and close friends.

7.3 POLICY IMPLICATIONS

As discussed in chapter 2 of this thesis, SMEs in Thailand have been looked upon as the solution to the development of the Thai economy and society after the economic crisis of 1997. A number of policies have been increasingly aimed at encouraging more new and established private SMEs. There are, however, many barriers preventing this desired policy outcome from being achieved. In order to justify government intervention in a market economy it is necessary to identify precisely where the market failure exists, and whether it is possible to rectify that market failure through intervention (Acs et al., 1997). Furthermore, the costs of the intervention have to be carefully assessed and the benefits estimated (Storey, 1994). According to Bridge et al., (2003) and Ferguson and Ferguson (1994) perfectly competitive markets are something of a myth, with neo-classical economic theory being an inappropriate basis for public policy prescriptions. In Thailand, market failures relating to imperfect and asymmetric information, externalities and incomplete property rights, imperfect market structure and poor regulation can constrain SME development (Wright et al., 2007). As a result,

some government intervention is required. From the empirical results of this thesis a number of policy implications relating to the guanxi network, business network, network embeddedness and business uncertainty can be established to assist policy-makers and owners or managers of Thai SMEs. These policies include implications relating to networking and business performance, the guanxi Chinese network, and business uncertainties.

7.3.1 Implications Relating to Networking and Business Performance

First, this thesis has confirmed the importance of informal networks in enhancing business outcomes. Similar to the existing literature such as Uzzi, (1996, 1997); Mohr and Spekman, (1994); Naude and Buttle, (2000), this thesis has shown that factors such as trust, level of participation, and coordination between parties in the network can affect business performance. Each group of the guanxi relationship, however, focuses their emphasis on different factors. As the evidence from section 5.4 showed information quality is the most important factor for individuals under the friendship relationship while coordination and the conflict resolution technique are most important factors emphasised by individuals under the stranger relationship. Thus, policy-makers, owners and managers of SMEs who want to build and maintain a strong network should understand and be able to respond to such differences. In addition, policy-makers should encourage SMEs to facilitate networking as an intermediary, which can be achieved by making them aware of the benefits of both formal and informal networks, how to establish a strong network embeddedness, and how each factor of network embeddedness can help increase their business performance. As suggested by the empirical evidence trust, willingness to coordinate activities, and a high level of commitment are key factors that help to create a strong network. Critical also to successful business transactions between parties in the network are communication strategies, quality of information transmitted and joint participation in planning and goal setting.

More specifically, one way to building a guanxi network between firms at the domestic and international levels is to use the concept of altercasting. Altercasting is the process of establishing guanxi between two individuals who have no ascribed commonality. The objective of altercasting is to rearrange the targeted person's social network in such a way as to involve the individual who wishes to be included in it. An effective way of attaining this goal is to use an intermediary who is a mutual friend of

both parties (Yeung and Tung, 1996). As presented before the intermediary can vouch for the behaviour and sincerity of either party. In some situations the right intermediaries are very difficult to be found. Especially, at the international level both government and private agencies, such as the Ministry of Commerce and Thai Chinese Chamber of Commerce; should play an intermediary role in order to reduce the transaction costs of cultivating guanxi. For example, a number of trade and industrial exhibitions have been established by Thai Chinese Chamber of Commerce in Singapore, China, and Taiwan in order to introduce and link Thai companies to these overseas markets.

For SMEs to maintain a guanxi relationship, three strategies can be used: tendering favours, nurturing long-term mutual benefits, and cultivating personal relationships and trust (Yeung and Tung, 1996; Leung, et al. 1996). First, gift giving, banquet hosting and favour tendering is the most popular method that can be used to maintain the guanxi. These activities can initiate flows of favours and maintain relationships in a guanxi network because, as the donor sacrificed material wealth and labour to present a favour, he or she can gain an important moral advantage over the recipient in return. In other words, the donor becomes the moral and symbolic superior of the recipient and could thus subject the latter to his/her will. Eventually, the effect of the gift or favour would materialise as the recipient repaid their debts by helping the donor to achieve his/her task, to compensate for the loss sustained in accepting the gift (Yang, 1994). Second, creating long-term relationships between parties in the network is another tactic that helps to prolong personal ties between parties in a guanxi. According to Yang (1994) in a guanxi relationship, a repayment of merely equivalent value tends to end an ongoing guanxi. Since the other person is no longer indebted to respond to a future request, further interaction may be unnecessary. Thus, if one wishes to continue a guanxi the repayment will take the form of a more valuable offer, thereby obtaining moral superiority and keeping the other person indebted. Finally, cultivating a good personal relationship and trust are the most important techniques that help to maintain the guanxi. As suggested by Yeung and Tung (1996) guanxi relations premised exclusively on material benefits can be fragile. Consequently, to maintain guanxi relationships, many feel that it is important to develop a personal relationship with the partner that cannot be readily imitated by others. Personal implies something specific to the two parties in the relationship, such as sharing inner feelings or personal secrets. To build an intimate relationship with the Chinese, most respondents indicated

that sincerity and frankness are absolutely essential (Alston, 1989). To do this, one must create trust between parties. Without trust, it is virtually impossible to build and maintain guanxi (Yeung and Tung, 1996).

In addition to the guanxi network, policy-makers should also encourage SMEs to consider other forms of networks as presenting a real opportunity to increase their social capital. According to the literature, such as Lin (1999), Barga (2004), and Sabatini (2006), social capital has an important role to play with regard to the competitiveness of firms in an economy. First, it creates a greater embeddedness of firms and greater propensity for innovation in the production system. Second, it facilitates information transfers which provide better information to government about entrepreneurial problems, enabling more appropriate policies to be designed and implemented. Third, it improves cooperation, provides greater competitiveness and makes for healthier competition. Fourth, it creates an environment of trust and cooperation among all actors, not only between firms, but also between firms and institutions. In addition, Woolcock and Narayan (2002) suggest that in countries where there is corruption, bureaucracy, lack of civic freedom, inequalities, and low levels of corporate governance, this contributes to barriers to economic development. Investment in social capital offers returns that can complement the orthodox investment in either government institutional strengthening or private sector capital accumulation. Furthermore, from the findings in this thesis regarding the importance of informal networks, it is reasonable to argue that a policy option to promote formal business networks can be found to be most meaningful only when informal networks are strong. In other words, maintaining strong informal networks can enhance the effectiveness of formal networking (Kim, 2002).

There are many different ways that government can help to expand informal networks. For example, linkage programs and cluster development initiatives could be important in underwriting some of the cost of building trust for the parties who want to join a network. As mentioned earlier in chapter 3 of this thesis, there are accumulated costs in building trust among network members and, because of these sunk costs, members find it easier to deal with each other than to incur the added costs of screening new business partners. Subsidising some of the costs of bringing firms together in various types of relationships or clusters may be beneficial in expanding the boundaries of networks. Effective implementation of such programs, however, will generally require more than just introducing firms to each other. Strengthening formal institutions

is also required to promote the network. More complex formal institutions must evolve to enforce property rights contracts, to reduce uncertainties and transaction costs, and to allow the productivity gains from increasing scale and improved technology to be realised. Many of these institutional structures are nonexistent, weak, poorly designed or poorly managed in Thailand.

7.3.2 Implications Relating to the Guanxi Network

An important feature of Sino-Thais, compared with the Chinese of other South-East Asian countries, is the extent of their assimilation. As suggested by the East Asia Analytical Unit (EAAU, 1995) and Mackie (2001), it is now almost impossible to draw a clear line of distinction between the indigenous Thai and modern Sino-Thai. Intermarriage and a high degree of social, political and cultural identification between ethnic Thai and Chinese have had the effect of blurring any such line. Even though Sino-Thais are different from other overseas Chinese in East Asia, they still share some common characteristics with those societies that are influenced by Confucianism. These characteristics are strong bonds on the basis of blood, ancestral village, and school ties; a clear demarcation between members of the in-versus out-groups; and a tendency to view matters from a long-term perspective (Yeung and Tung, 1996). Thus, it is not surprising that the empirical results presented in this thesis suggest the tendency of the guanxi relationship in Thailand to still exist.

Policy-makers can encourage and help Sino-Thai SMEs to use these common characteristics of guanxi to establish strong networks with other entrepreneurs in other countries such as Singapore, Malaysia, Hong Kong, and China. There are a number of factors that policy-makers, owners and managers of Sino-Thai SMEs have to consider in order to establish strong guanxi relationships. First, to establish a successful partnerships it is important to build strong relationships with the right individuals. Second, trust is essential to maintaining a long-term guanxi relationship. Third, in some situations third parties or intermediaries may be required to get a proper connection. Fourth, guanxi relationships are person-specific and cannot be transferred.

From the strategic management point of view the guanxi networks can also reduce the fear of SMEs from being threatened by a formal cooperation with larger enterprises in the network. As suggested by Wright et al. (2007) the development of informal cooperation, rather than a focus solely on the formation of formal links, may be a means of reducing perceptions that cooperation is in some way threatening. In

addition, policy-makers should educate Thai SMEs to understand that international cooperation is important for business survival and can be financially rewarding by creating opportunities that enhance growth and improve profitability. Many of the barriers to internationalisation facing SMEs can be circumvented by using existing multinationals as conduits for international expansion (Hewitt-Dundas et al., 2005). Informal links may not necessarily be bilateral but in the form of clusters of complementary firms.

However, in some situations a guanxi network can also be a source of market failure. From section 3.2.7 of this thesis, one way to build and maintain the guanxi network is through favour tendering such as gift giving or/and banquet hosting. In some situations, however, these activities appear to be associated with illicit payments, corruption, and the pursuit of self-interest. Thus, another potentially serious policy implication relates to the exchange of gifts and bribery. Although a clear distinction can be drawn between gift giving within guanxi, which is concerned with the building of relationships, and bribery, which is targeted at illicit transactions (Brand and Slater 2003, and Steidlmeier, 1999), in the real world situation, however, gift giving that is associated with corruption tends to occur regularly in business practice (Brand and Slater, 2003). As evidence from Millington et al. (2005) shows under-table dealings are still common practice in China, and many firms in China are well aware that under-table deals are going on but exposing and proving their existence is extremely difficult. Furthermore, results from face to face interviews of owners of Thai SMEs during the pilot study process of this thesis, revealed that gift-giving as an illicit transaction still exists in Thai society and some owners or managers of SMEs even consider it as a common practice for doing business. In order to solve this problem entrepreneurs, relevant authorities, government and related organisations have to understand that guanxi is a social rather than corporate construct, and guanxi relationships are both personal and may extend beyond the business context into the social structure (Tung and Worm, 2001). In a situation where the self satisfaction of an individual is a major focus rather than attaining corporate goals, long term relationships between business partners rather than the market may therefore pose particular problems for firms in the network. Such illicit transactions increase transaction costs for business, result in a longer period of communication, increased business costs, lower profit, less output, and lower employment growth. With the objective of reducing these transaction costs, according to Guthrie (1997, 1998), the government can help to reduce the level of illicit

transactions under the guanxi network by increasing the efficiency of the formal legal process and encourage an ethical norm in business and society.

7.3.3 Implications Relating to Business Uncertainty

Similar to the existing literature relating to economic uncertainty, such as Carree and Thurik, (1995), Werner et al. (1996), and Dijk and Thurik (1998), the empirical results in this thesis have shown that business uncertainty has a negative and significant impact on the business performance of SMEs. In particular, the business performance of Sino-Thai SMEs' are affected by (1) political uncertainties, (2) macroeconomic uncertainties such as exchange rate volatility, interest rate volatility, and inflation, (3) access to financing, (4) competition uncertainties such as from domestic competitors, overseas competitors, new entry competitors and (5) international regulations and international trade barriers. There are many methods that policy-makers, owners and managers of SMEs can use to reduce or prevent these uncertainties. In order to reduce some of the political uncertainty, basic law emphasises not only the need to create and support a better business climate for SMEs but also the importance of venture start-ups and other new business creation. These include but are not limited to 1). Supporting business creation and business innovation, 2) strengthening the education and training foundation for SME owners and managers, 3) supporting SME restructuring. This law implementation can help SMEs become more resistant to political uncertainties (OECD, 1997). In addition, a number of strategies can also be used to support Thai SMEs from financial uncertainties.

- Financial institutions should supply the long-term capital needs of SMEs to develop their business and offer them long-term, fixed-interest, and low-interest capital.
- Government agencies should offer primarily small, unsecured loans for various small enterprises.
- Establish a Credit Guarantee Association to act as a guarantor for SMEs without sufficient credit or collateral. This system can help to increase the chance that SMEs can get loans from financial institutions.
- For SMEs that have the potential to grow, a Small Business Investment Company should be established to engage in investing in and supporting SMEs to

promote the enhancement and development of SME's shareholder equity capital (OECD, 1997).

For uncertainty arising from competitors, technical development and innovation are important factors that can be used to reduce uncertainties from competitors. In order to support SMEs expanding their business to a new field, the government should offer support to research and development through direct subsidies, tax treatment and other incentives to SMEs. As suggested by Hayashi (2005), government can 1) designate R&D themes in line with economic and social requirements and subsequently offer support; 2) assign feasibility studies and R&D to the potential SMEs; 3) by assigning projects to SME consortiums, public technology institutions, universities and others within a given region, conduct feasibility studies and R&D that targets the technology's commercialisation. These strategies can help SMEs cope with change in demand in the market and competitors from overseas.

In addition, Miller (1992) also suggests financial risk management and changes in firm strategy which are two approaches that can be used to reduce some of these uncertainties. For financial risk management, SMEs can hedge their exposures to foreign exchange or commodity price movements by purchasing insurance and/or buying and selling financial instruments such as forward contracts, futures contracts, swaps, and options. These financial hedging instruments are widely used by multinational enterprises to manage foreign exchange risk. Also SMEs can purchase insurance to protect against property loss, product liability suits, civil strife, war, and currency inconvertibility from private insurance, government-sponsored agencies, and multilateral organization such as the Multilateral Investment Guarantee Agency (Miller, 1992, pp. 321-322). In Thailand, however, only a few SMEs have been able to use these financial instruments due to lack of knowledge about these instruments and low availability of the instrument in the market. Thus, policy-makers in Thailand should play a role in raising awareness and increasing knowledge about hedging instruments to SMEs and also help to develop a variety of these instruments. In addition, policy makers should also encourage a stable macroeconomic policy which is one of the options that can help to reduce macroeconomic uncertainties and provide the foundation for a strong SME sector. A major concern for the policy-maker here is to ensure that short-term cyclical macroeconomic policy is implemented in ways that do not unnecessarily impede the longer-term development of SMEs. For example, short-term

cyclical policies designed to suppress inflation may have debilitating long-term effects on the international competitiveness of SMEs.

For strategic risk management a number of strategies can be used by SMEs. The first strategy is the flexibility in both product and geographic market diversification (Milliken 1987, Allaire and Firsirotu 1989, and Vernon 1983). This flexibility helps to increase internal responsiveness while leaving the predictability of external factors unchanged (Aaker and Mascarenhas, 1984). Diversification of suppliers creates options for input sourcing which increase the firm's capability to respond to the fluctuation in price and change in the quality of inputs (Aaker and Mascarenhas, 1984). In addition, flexibility can also be explained in terms of the speed of design, R&D, and volume changes in manufacturing operations (De Meyer et al., 1989). These activities enable companies to take advantage of the opportunities presented by short-term movement in prices of inputs and products which in turn reduce competition uncertainties. A second strategy is the utilisation of both formal and informal cooperation. SMEs can use a number of formal cooperative strategies to reduce uncertainties such as long-term contractual agreements with suppliers or buyers, voluntary restraint of competition, alliances or joint ventures and franchising agreements (Allaire and Firsirotu 1989, and Vernon 1983). For informal cooperative strategies the social network such as the guanxi network is one of the most effective ways to help reduce uncertainties for overseas Chinese. As presented in chapter 3 of this thesis, individuals can use their guanxi network to support and protect themselves from an unstable political and economic environment. In addition to these uncertainty reduction methods, policy-makers should seek to make SMEs aware that not all uncertainty exposures should be reduced, rather SMEs should attempt to establish an uncertainty exposure profile that optimises its returns from the risk assumed (Miller 1992). In other words, investment in any activity response to uncertainties should only take place up to the point where the marginal benefits to the company of reducing uncertainty are equal to the marginal costs. If the cost of reducing the uncertainty in a particular dimension exceeds the benefits of uncertainty reduction, no investment should be made.

7.4 LIMITATIONS OF THE STUDY AND FUTURE RESEARCH POSSIBILITIES

Like all studies of a similar nature this research has a number of limitations. The most obvious is the use of survey data in measuring the study's key variables. Despite the fact that the data supported the validity of the measures one cannot totally dismiss sources bias. Like other data collection techniques, mail surveys also have limitations that can affect the quality of the findings. These limitations include low response rates which make the sample less random, and they do not provide the option of someone to explain questions if needed. However, due to the fact that the questionnaire was fairly long (8 pages), the complication of questions, and low costs of conducting the survey, a mail survey is appropriate for this thesis. Although the sample size of 298 companies is sufficient to produce strong and significant results of the empirical analysis in chapter 5 of this thesis, due to the low response rate this sample size may be a little under representative of overall Sino-Thai SMEs. In addition, the results of SEM in chapter 6 of this thesis may also be improved by increasing the sample size, since the sample size is one of the crucial factors affecting the power and results of SEM as with any other statistical technique.

A further limitation is that although Thai is the official language of the country, the fact that the questionnaire was conducted in Thai among the Sino-Thai population under study may have been a source of some response errors, as some of these entrepreneurs may use Teochew as their mother tongue. Hence, they may not have fully comprehended the questions. Another limitation in this thesis arises from the instruction in section 4 of the questionnaire. This section asked respondents to answer questions corresponding to their most important business partner in the network. The perception of the most important business partner in the network is different for each entrepreneur and can be affected by many factors such as industry, size of firm, types of products or service of firms. The influence of these factors on the perception of entrepreneurs can affect the results of the questionnaire. Therefore, controlling for these factors might have improved the results.

The study is also limited to a sample of Sino-Thai SMEs within Bangkok and its vicinities. The results should therefore not be seen as representative of Overseas Chinese firms in other countries, since the social, cultural, and economic environment as well as the extent of guanxi, may differ from country to country. Thus, it would be interesting to extend the theoretical framework to study the role of guanxi in business

relationships, including how guanxi is cultivated, how it can be strengthened, and the evolving pattern of guanxi practice, between overseas Chinese in other countries such as Taiwan, Malaysia, Hong Kong and Singapore. While the literature on guanxi continues to evolve, research on other Asian networks such as the Japanese concept of wa, the Korean notion of inhwa as well as the concentric networks pervasive in India and Russia would also be interesting to analyse and compare. There is a need for further theoretical development to more clearly map out the interrelations between the various variables. It is highly likely that such research would contribute exponentially to the global/local or, in this case, regional/local study relating to social networks and entrepreneurship.

This thesis examined the personal relationship in the business network from the perspective of only one of the partners. To what extent perceptions would have converged is unknown. Future research might take a dyadic approach and examine both sides of the relationships. Furthermore, following Yang's (1993) work this thesis focused on three groups of the guanxi relationship (1. family members, 2. familiar persons and 3. mere acquaintances). However, other categories of relationship such as that between buyers and sellers, companies in the same industry, and companies in the same geographic location may provide other interesting results. Thus, one useful avenue for future research is to identify other relationship dimensions and to explore their implications.

Another limitation is the study's short time frame, which does not permit an analysis of causal relationships among the variables. In other words, this thesis has undertaken a cross-sectional approach to data collection, which makes it difficult to assess the causality and changes through time of the variables. Cross-sectional data make it impossible to study trend changes in firm behaviour through time. Specifically, given the cross-sectional data in this thesis, it will be difficult to control for the structural changes that are changing through time. For example, first, the Thai government has different policies for different industries, and these policies are changing every year and affect firm behaviour differently. Without focusing on a homogeneous sample, it will be difficult to control this environmental factor across industries. Second, knowing more about how network embeddedness such as trust, coordination, and participation develops over time and whether the process that fosters these factors are the same for the three groups of guanxi relationship can help to increase understanding of how business relationships change, grow, and decline. Third,

understand how the financial crisis of 1997-1998 affected the structure of business networks in Thailand and whether these networks become more or less important after this period can help to understand how networks can be used to reduce uncertainties. Further research using a longitudinal design could address these questions and provide for stronger inferences about the directions of causality posited here. In the longitudinal study there is also the need to consider the nature of the lag between change in strength of ties and change in network embeddedness and any improved firm performance. This additional research could provide evidence to guide policy with regard to resource allocation decisions and the targeting of groups for assistance. Identification of the time lags between an increase in social relationship and superior firm performance effects, in particular, has implications for the timing and duration of policy support.

The choice of research design could also limit the findings. A number of variables relating to strength of ties, business performance, business uncertainty and network embeddedness have been included in the theoretical framework in this thesis. From the existing literature and results from this thesis these variables have a high reliability score and represent each factor very well. However, other variables relating to these factors could have been omitted. The decision to include these variables in the framework can vary between countries of the study, since these variables are not only affected by the characteristic of the entrepreneur but also from social and economic conditions. For example, in Thailand, during the period of study, political uncertainties proved to have a statistically significant impact upon the business performance of Sino-Thai SMEs. In other countries that have a stable political condition, however, these measurements may not be necessary to include in the questionnaire, and can be substituted by other measurements such as the impact of unions upon business performance, which has been omitted in this thesis.

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Appendix1

No. Questionnaire…….

PLEASE ANSWER THE FOLLOWING QUESTIONS COMPLETELY

1. Information about Business

1.1 Business Registration (Please circle one number only)

(1) Single Business Owner (2) Partnership (3) Limited Liability Company

(4) Limited Partnership (5) Other…….

1.2 Type of Business (Please circle one number only)

(1) Manufacturing (2) Service (3) Wholesaling (4) Retailing

1.3 Year Established (Please circle one number only)

(1) Less than 1 year (2) 1-3 Years (3) 4-5 Years (4) 6-10 Year (5) more than 10 Years

1.4 Fixed Asset (Please circle one number only)

(1) Less than 30 Millions Baht (2) 30-50 Million Baht (3) 51-100 Million Baht

(4) 101-200 Million Baht (5) More than 200 Million Baht

1.5 Number of Employees (Please circle one number only)

(1) Less than 5 workers (2) 5-20 workers (3) 21-50 workers

(4) 51-100 workers (5) 101-200 workers (6) More than 200 workers

1.6 Please identify your position in the company…….

1.7 Education level of the owner/or the respondent of the business (Please circle one number only)

(1) Below high school (2) High school (3) Diploma

(4) Undergraduate degree (5) Post-graduate degree (Masters and/or Doctorate)

1.8 Gender of the owner of the business (1) Female (2) Male

1.9 Does the owner have Chinese ancestors (1) Yes (2) No

1.10 Does the owner speak Chinese (1) Yes (2) No

1.11 What is the age of the owner/or respondent of the business (Please circle one number only)

(1) < 21 years (2) 21 to 30 years (3) 31 to 40 years

(4) 41 to 50 years (5) 51 to 60 years (6) Older than 60 years

1.12 Does the firm export (1) Yes (2) No

If yes what proportion of product is exported……..

1.13 What were the reasons for starting the business (Can circle more than once)

(1) Inspired by parents who own other business

(2) Inspired by other successful role models (e.g. friends, successful entrepreneurs)

(3) Carry on family-owned business

(4) Retrenched

(5) Pursue an idea

(6) Seize an apparent market opportunity

(7) To be fully accountable and rewarded for performance

(8) Other, please specify……..

2. Information about Business Performance

2.1 Please identify the level of change in cash flow compared to previous years (Please circle one answer only)

1. Decreasing significantly
2. Decreasing moderately
3. Decreasing slightly
4. Holding its own
5. Increasing slightly
6. Increasing moderately
7. Increasing significantly

2.2 Please identify the level of change in market share compared to previous years (Please circle one answer only)

1. Decreasing significantly
2. Decreasing moderately
3. Decreasing slightly
4. Holding its own
5. Increasing slightly
6. Increasing moderately
7. Increasing significantly

2.3 Please identify the level of sales growth compared to previous year (Please circle one answer only)

1. Decreasing significantly
2. Decreasing moderately
3. Decreasing slightly
4. Holding its own
5. Increasing slightly
6. Increasing moderately
7. Increasing significantly

2.4 Please identify the level of change in profit compared to previous year (Please circle one answer only)

1. Decreasing significantly
2. Decreasing moderately
3. Decreasing slightly
4. Holding its own
5. Increasing slightly
6. Increasing moderately
7. Increasing significantly

2.5 Please identify the level of change in exports compared to previous year (Please circle one answer only)

1. Decreasing significantly
2. Decreasing moderately
3. Decreasing slightly
4. Holding its own
5. Increasing slightly
6. Increasing moderately
7. Increasing significantly

3. Business Uncertainties

In this section, please describe the business uncertainties under which your company operates. In the primary industry and country where you work, evaluate the aspects of your business uncertainties.

For each of the statement below, please indicate the extent of you agreement or disagreement by placing a tick the appropriate box.

where

1 = Strongly disagree
2 = Disagree
3 = Slightly disagree
4 = Neutral
5 = Slightly agree
6 = Agree
7 = Strongly agree

3.1 The company regularly has to cope with unexpected or unannounced changes in rules, laws or policies which affect your business.	1	2	3	4	5	6	7
3.2 Constitutional changes of government are usually accompanied by large change in rules and regulations that have an impact on the business.	1	2	3	4	5	6	7
3.3 The company constantly fears unconstitutional government changes that are accompanied by far-reaching policy surprise with significant impact on the business.	1	2	3	4	5	6	7
3.4 It is common for firms in this industry to have to pay some irregular additional payments to get things done.	1	2	3	4	5	6	7
3.5 A High level of inflation is a great threat to the firm.	1	2	3	4	5	6	7
3.6 The firm's revenues and profits are often affected by the exchange rate.	1	2	3	4	5	6	7
3.7 Interest rate volatility is a threat to the firm.	1	2	3	4	5	6	7
3.8 Changes in oil price present a major problem for my business operation.	1	2	3	4	5	6	7
3.9 Changing social concerns (such as belief, values and attitudes) are presently a major threat to the firm's activities.	1	2	3	4	5	6	7
3.10 Business operations are affected by social unrest and riots.	1	2	3	4	5	6	7
3.11 Business activities are frequently affected by natural disasters.	1	2	3	4	5	6	7
3.12 The quantities and/or price of inputs that are supplied in the market are difficult to forecast.	1	2	3	4	5	6	7
3.13 The firm cannot expect a good quality of inputs every time it buys them.	1	2	3	4	5	6	7
3.14 The rate of product and service obsolescence in the industry is very high.	1	2	3	4	5	6	7
3.15 There are a lot of substitute goods for the firm's products in the market.	1	2	3	4	5	6	7
3.16 Domestic competitors are a major threat to the firm.	1	2	3	4	5	6	7
3.17 Foreign competitors are a major threat to the firm.	1	2	3	4	5	6	7
3.18 Entry of potential new firms into the market is a major threat to the firm.	1	2	3	4	5	6	7
3.19 High level of price control and trade barriers are major threats in your business industry.	1	2	3	4	5	6	7
3.20 The firm is affected by changes in international regulations such as free trade agreement and WTO rules.	1	2	3	4	5	6	7
3.21 Changes in pattern of product or process due to innovations can be a major threat to the firm.	1	2	3	4	5	6	7
3.22 Raw material shortages and change in raw material quality can create problems for the firm's operation.	1	2	3	4	5	6	7
3.23 Skilled labour is very scarce and/or prohibitively expensive.	1	2	3	4	5	6	7
3.24 Capital equipment shortages and changes in equipment quality can create problems for the firm.	1	2	3	4	5	6	7

3.25 Technical and mechanical failure are significant problems	1	2	3	4	5	6	7
3.26 Obtaining finance is a major difficulty for the firm.	1	2	3	4	5	6	7
3.27 Personal relationships with bankers are important to the firm	1	2	3	4	5	6	7
3.28 The company has problems in servicing or repaying its loans.	1	2	3	4	5	6	7
3.29 The company has obtained loans from financial institutions less than the amount that the company requested.	1	2	3	4	5	6	7
3.30 Uncollectible bills that reduce the performance of the company are significant problems.	1	2	3	4	5	6	7
3.31 Product liabilities and external liabilities such as emissions of contaminants can be a major threat to the firm.							

4. Tie-strength and Degree of Network Embeddedness

- This part of the questionnaire is about the relationships with your business partners (these parties include but not limited to suppliers, distributors, bankers, customers, friends and relatives). In you response, please note that this study focuses only on 3 groups.

1. Business partners that have a family relationship (parents, brothers, sisters, uncles, aunts, cousins, family from marriage e.g. sister in law);
2. Business partners that have a friendship relationship (neighborus, classmate, co-worker, friend from social groups e.g. friend from sport clubs);
3. Business partners that have informal relationships (people met randomly, no formal relationship established)

- To answer these questions please choose only the most important business partner in the network, who are not part of your company.

I

4.1 What is the relationship between you and this business partner?	Family	Friend	Informal

4.2 How often do you contact the party (non physically i.e. phone, e-mail, letters, text sms)	Rarely	Quarterly	Monthly	Fortnightly	Weekly	2-4 days a week	5 or more days a week

4.3 How long have you known the party	Less than 1 year	1-2 years	3-5 years	6-10 years	11-15 years	15-20 years	More than 20 years

4.4 This party has been useful in helping you solve personal and business problems	Strongly disagree	Disagree	Slightly disagree	Neutral	Slight agree	Agree	Strongly agree

4.5 If this party requested, you are willing to help the party solve problems	Strongly disagree	Disagree	Slightly disagree	Neutral	Slight agree	Agree	Strongly agree

4.6 The party is generally honest and truthful with you	Strongly disagree	Disagree	Slightly disagree	Neutral	Slight agree	Agree	Strongly agree

4.7 You are generally honest and truthful with this party	Strongly disagree	Disagree	Slightly disagree	Neutral	Slight agree	Agree	Strongly agree

4.8 The activities between you and this party are well coordinated	Strongly disagree	Disagree	Slightly disagree	Neutral	Slight agree	Agree	Strongly agree

4.9 Exchange of information between you and this party takes place frequently	Strongly disagree	Disagree	Slightly disagree	Neutral	Slight agree	Agree	Strongly agree

4.10 This party is committed to making business transactions between your company and his or her success.	Strongly disagree	Disagree	Slightly disagree	Neutral	Slight agree	Agree	Strongly agree

4.11 The business activities between your company and this party are well coordinated.	Strongly disagree	Disagree	Slightly disagree	Neutral	Slight agree	Agree	Strongly agree

4.12 Your company usually repeat business transaction with this party	Strongly disagree	Disagree	Slightly disagree	Neutral	Slight agree	Agree	Strongly agree

4.13 Your company believe that business partners in the network that made transaction with your company never act opportunistically	Strongly disagree	Disagree	Slightly disagree	Neutral	Slight agree	Agree	Strongly agree

4.14 Information that your company receive this party is accuracy and credible	Strongly disagree	Disagree	Slightly disagree	Neutral	Slight agree	Agree	Strongly agree

4.15 Your company is willing to share business information with business partners in the network	Strongly disagree	Disagree	Slightly disagree	Neutral	Slight agree	Agree	Strongly agree

4.16 Your company is willing to participate in activities that make business transactions between your company and this party successful	Strongly disagree	Disagree	Slightly disagree	Neutral	Slight agree	Agree	Strongly agree

4.17 In conflict resolution process, a good long term relationship between your company and this party is a major concern	Strongly disagree	Disagree	Slightly disagree	Neutral	Slight agree	Agree	Strongly agree

Appexdix2

หมายเลขแบบสอบถาม…….

กรุณาตอบแบบสอบถามให้ครบทุกข้อ

1. ข้อมูลเกี่ยวกับธุรกิจ

1.1 ลักษณะของธุรกิจที่จดทะเบียน (กรุณาวงกลมที่หมายเลขของข้อที่ต้องการเลือกเพียงข้อเดียว)

(1) เจ้าของธุรกิจคนเดียว (2) ห้างหุ้นส่วน
(3) บริษัทจำกัด
(4) ห้างหุ้นส่วนจำกัด (5) อื่นๆ
(โปรดระบุ)……

1.2 ประเภทของธุรกิจ (กรุณาวงกลมที่หมายเลขของข้อที่ต้องการเลือกเพียงข้อเดียว)

(1) อุตสาหกรรม (2) การบริการ (3) การค้าส่ง (4) การค้าปลีก

1.3 ระยะเวลาในการดำเนินธุรกิจ (กรุณาวงกลมที่หมายเลขของข้อที่ต้องการเลือกเพียงข้อเดียว)

(1) น้อยกว่า 1ปี (2) 1-3 ปี (3) 4-5 ปี (4) 6-10 ปี (5) มากกว่า 10 ปี

1.4 ทรัพย์สินถาวร (กรุณาวงกลมที่หมายเลขของข้อที่ต้องการเลือกเพียงข้อเดียว)

(1) น้อยกว่า 30 ล้านบาท (2) 30-50 ล้านบาท
(3) 51-100 ล้านบาท (4) 101-200 ล้านบาท (5) มากกว่า 200 ล้านบาท

1.5 จำนวนของพนักงาน (กรุณาวงกลมที่หมายเลขของข้อที่ต้องการเลือกเพียงข้อเดียว)

(1) น้อยกว่า 5 คน (2) 5-20 คน
(3) 21-50 คน
(4) 51-100 คน (5) 101-200 คน
(6) มากกว่า 200 คน

1.6

โปรดระบุตำแหน่งหน้าที่ของท่านในบริษัท…… ……
…..

1.7 โปรดระบุระดับการศึกษาสูงสุดของท่าน (กรุณาวงกลมที่หมายเลขของข้อที่ต้องการเลือกเพียงข้อเดียว)

(1) ต่ำกว่ามัธยมศึกษาตอนปลาย (2) มัธยมศึกษาตอนปลาย
(3) อนุปริญญา
(4) ปริญญาตรี (5) สูงกว่าปริญญาตรี

1.8 โปรดระบุเพศของเจ้าของกิจการ (1) หญิง (2) ชาย

1.9 เจ้าของกิจการนั้นมีบรรพบุรุษมาจากประเทศจีนหรือไม่ (1) ใช้ (2) ไม่ใช้

1.10 เจ้าของธุรกิจสามารถพูดภาษาจีนได้หรือไม่ (1) ใช้ (2) ไม่ใช้

1.11 โปรดระบุอายุของเจ้าของกิจการ

(1) น้อยกว่า 21 ปี (2) 21-30 ปี (3) 31-40 ปี

(4) 41-50 ปี (5) 51-60 ปี (6)มากกว่า 60 ปี

1.12 บริษัทของท่านส่งสินค้าออกหรือไม่ (1) ใช้ (2) ไม่ใช้

ถ้าใช้โปรดระบุประเภทของสินค้า……..

1.13 โปรดระบุสาเหตุที่ทำให้ท่านมีกิจการเป็นของตัวเอง (สามารถเลือกตอบได้หลายข้อ)

(1) ได้แรงบันดาลใจจากผู้แม่ที่มีกิจการอยู่แล้ว
(2) ได้แรงบันดาลใจจากผู้อื่นที่นับถือเป็นแบบอย่าง
(3) สานต่อธุรกิจของครอบครัวเดิม
(4) ต้องการออมทรัพย์
(5) ทำตามที่ใจต้องการ
(6) เห็นโอกาสในตลาด
(7) ทำเพื่อให้รางวัลกับตนเอง
(8) อื่นๆ……

2. ข้อมูลเกี่ยวกับความสามารถทางธุรกิจ

2.1 ระดับการเปลี่ยนแปลงของเงินหมุนเวียนในบริษัทเมื่อเปรียบเทียบกับปีที่แล้ว

1. ลดลงอย่างมาก **2.** ลดลงปานกลาง
3. ลดลงเล็กน้อย
4. ไม่เปลี่ยนแปลง **5.** เพิ่มขึ้นเล็กน้อย
6. เพิ่มขึ้นปานกลาง
7. เพิ่มขึ้นอย่างมาก

2.2 ระดับการเปลี่ยนแปลงของส่วนแบ่งในตลาดเมื่อเทียบกับปีที่แล้ว

1. ลดลงอย่างมาก **2.** ลดลงปานกลาง
3. ลดลงเล็กน้อย
4. ไม่เปลี่ยนแปลง **5.** เพิ่มขึ้นเล็กน้อย
6. เพิ่มขึ้นปานกลาง
7. เพิ่มขึ้นอย่างมาก

2.3 ระดับการเปลี่ยนแปลงของยอดการขายเมื่อเทียบกับปีที่แล้ว

1. ลดลงอย่างมาก **2.** ลดลงปานกลาง
3. ลดลงเล็กน้อย
4. ไม่เปลี่ยนแปลง **5.** เพิ่มขึ้นเล็กน้อย
6. เพิ่มขึ้นปานกลาง
7. เพิ่มขึ้นอย่างมาก

2.4 ระดับการเปลี่ยนแปลงของผลกำไรเมื่อเทียบกับปีที่แล้ว

1. ลดลงอย่างมาก **2.** ลดลงปานกลาง
3. ลดลงเล็กน้อย
4. ไม่เปลี่ยนแปลง **5.** เพิ่มขึ้นเล็กน้อย
6. เพิ่มขึ้นปานกลาง
7. เพิ่มขึ้นอย่างมาก

2.5 ระดับการเปลี่ยนแปลงของการส่งออกเมื่อเปรียบเทียบกับปีที่แล้ว

1. ลดลงอย่างมาก **2.** ลดลงปานกลาง
3. ลดลงเล็กน้อย

4. ไม่เปลี่ยนแปลง **5.** เพิ่มขึ้นเล็กน้อย
6. เพิ่มขึ้นปานกลาง
7. เพิ่มขึ้นอย่างมาก

3. ปัจจัยความเสี่ยงที่มีผลต่อธุรกิจ

ในส่วนที่สามของแบบสอบถามนี้เป็นส่วนที่เกี่ยวข้องกับปัจจัยความเสี่ยงต่างที่มีผลต่อธุรกิจของท่าน

ในการตอบคำถามแต่ละข้อนั้นให้เลือกตัวเลขที่ตรงกับความคิดเห็นของท่านที่มีต่อข้อความในแต่ละข้อโดย

1 = ไม่เห็นด้วยอย่างยิ่ง 4 = ปานกลาง 5= เห็นด้วยเล็กน้อย
2 = ไม่เห็นด้วย 6= เห็นด้วย

3.1 บริษัทของท่านมักจะได้รับผลกระทบจากการเปลี่ยนแปลงของกฎ,ระเบียบและข้อบังคับอื่นๆที่ไม่ได้คาดคิดหรือแจ้งให้ทราบร่วงหน้า	1	2	3	4	5	6	7
3.2 บริษัทของท่านมักจะได้รับผลกระทบจากการเปลี่ยนแปลงของกฎ,ระเบียบและข้อบังคับที่มีผลมาจากการเปลี่ยนแปลงรัฐบาล	1	2	3	4	5	6	7
3.3 บริษัทของท่านอาจจะได้รับผลกระทบจากการเปลี่ยนแปลงของกฎ,ระเบียบและข้อบังคับที่มีผลมาจากการเปลี่ยนแปลงการปกครองซึ่งมิได้มาจากการเลือกตั้ง	1	2	3	4	5	6	7
3.4 การติดสินบนเจ้าหน้าที่ในธุรกิจประเภทเดียวกับท่านเป็นเรื่องธรรมดา	1	2	3	4	5	6	7
3.5 อัตราเงินเฟ้อที่สูงมีผลกระทบที่ไม่ดีต่อธุรกิจของท่าน	1	2	3	4	5	6	7
3.6 อัตราแลกเปลี่ยนนั้นมีผลกระทบต่อรายได้และผลกำไรของบริษัทของท่าน	1	2	3	4	5	6	7
3.7 การเปลี่ยนแปลงของอัตราดอกเบี้ยมีผลกระทบต่อบริษัทของท่าน	1	2	3	4	5	6	7
3.8 การเปลี่ยนแปลงของราคาน้ำมันดิบในตลาดโลกนั้นมีผลกระทบต่อธุรกิจของท่า	1	2	3	4	5	6	7

น							
3.9 การเปลี่ยนแปลงทางสังคมเช่น ความเชื่อ, คุณค่าและลักษณะนิสัยของคนในสังคมนั้นมีผลกระทบต่อธุรกิจของท่าน	1	2	3	4	5	6	7
3.10 การจลาจลและความไม่เรียบร้อยในสังคมมีผลต่อธุรกิจของท่าน	1	2	3	4	5	6	7
3.11 ธุรกิจของท่านมักจะได้รับผลกระทบที่ไม่ดีจากภัยธรรมชาติ	1	2	3	4	5	6	7
3.12 การคาดเดาปริมาณและราคาของวัตถุดิบที่บริษัทของท่านต้องใช้ในการผลิตนั้นทำได้ยาก	1	2	3	4	5	6	7
3.13 บริษัทของท่านไม่สามารถคาดหวังว่าจะได้รับวัตถุดิบที่มีคุณภาพที่ดีในทุกครั้งที่สั่งซื้อ	1	2	3	4	5	6	7
3.14 ในธุรกิจของท่านความต้องการสินค้าและบริการมีอัตราความเปลี่ยนแปลงที่สูง	1	2	3	4	5	6	7
3.15 ปริมาณของสินค้าอื่นๆในตลาดที่สามารถใช้ทดแทนสินค้าจากบริษัทของท่านมีค่อนค้างสูง	1	2	3	4	5	6	7
3.16 คู่แข่งทางการค้าที่มาจากภายในประเทศนั้นถือว่าเป็นคู่แข็งที่สำคัญต่อบริษัทของท่าน	1	2	3	4	5	6	7
3.17 คู่แข่งทางการค้าที่มาจากต่างประเทศนั้นถือว่าเป็นคู่แข็งที่สำคัญต่อบริษัทของท่าน	1	2	3	4	5	6	7
3.18 บริษัทที่เพิ่งตั้งขึ้นมาใหม่นั้นเป็นคู่แข่งทางการค้าที่สำคัญต่อบริษัทของท่าน	1	2	3	4	5	6	7
3.19 การควบคุมราคาและการกีดขวางทางการค้านั้นเป็นอุปสรรคที่สำคัญต่อธุรกิจของท่าน	1	2	3	4	5	6	7
3.20 บริษัทของท่านได้รับผลกระทบจากการเปลี่ยนแปลงกฎระเบียบข้อบังคับในการทำการค้าระหว่างประเทศ เช่นการเปิดการค้าเสรี	1	2	3	4	5	6	7
3.21 บริษัทของท่านได้รับผลกระทบจากการเปลี่ยนแปลงรูปแบบของการผลิตและสินค้า	1	2	3	4	5	6	7
3.22 การขากแคลนวัตถุดิบและการเปลี่ยนแปลงคุณภาพของวัตถุดิบนั้นก่อให้เกิดปัญหาต่อการผลิต	1	2	3	4	5	6	7
3.23 แรงานที่มีฝีมือนั้นหาได้ยากและมีอัตราจ้างที่ราคาแพง	1	2	3	4	5	6	7
3.24 การขากแคลนเครื่องจักรและอุปกรณ์ที่ใช้ในการผลิตรวมถึงการเปลี่ยนแปลงรูปแบบของเครื่องจักรและอุปกรณ์นั้นก่อให้เกิดปัญหาต่อการผลิต	1	2	3	4	5	6	7
3.25 ความผิดพลาดจากเครื่องจักรและเทคโนโลยีนั้นสามารถสร้างปัญหาให้กับบริษัทของท่านได้	1	2	3	4	5	6	7
3.26 การหาแหล่งเงินทุนคือปัญหาหลักของบริษัท	1	2	3	4	5	6	7
3.27 บริษัทของท่านให้ความสำคัญกับความสัมพันธ์ส่วนตัวกับผู้จัดการธนาคาร	1	2	3	4	5	6	7
3.28 บริษัทของท่านเคยมีปัญหาในการชำระหนี้	1	2	3	4	5	6	7
3.29 บริษัทของท่านมักจะได้รับเงินกู้ต่ำกว่าที่บริษัทได้ตั้งใจไว้	1	2	3	4	5	6	7
3.30 บริษัทของท่านได้รับผลกระทบจากหนี้สินที่บริษัทไม่สามารถตามเก็บได้	1	2	3	4	5	6	7
3.31	1	2	3	4	5	6	7

หนี้สินที่เกิดจากผลิตภัณฑ์และหนี้สินอื่นๆเช่นค่ารักษาสิ่งแวดล้อมนั้นสร้างปัญหาให้กับบริษัทได้							

4. ความสนิทสนมและระดับของการรวมตัวกันในเครือข่ายทางธุรกิจ

ในส่วนที่สี่ของแบบสอบถามนี้เป็นส่วนที่เกี่ยวข้องกับความสัมพันธ์ทางธุรกิจระหว่างบริษัทของท่านและบริษัทคู่ค้า โดยความสัมพันธ์ระหว่างบริษัทนี้สารถแบ่งออกเป็นได้หลายประเภททั้งแบบทางการและไม่เป็นทางการและอาจจะเกิดขึ้นในขั้นตอนทางธุรกิจขั้นตอนใดขั้นตอนหนึ่งก็ได้ เช่น การผลิต การตลาด การกระจายสินค้า แต่ด้วยข้อจำกัดทางการศึกษาและการวิจัยความสัมพันธ์ระหว่างบริษัทจะถูกแบ่งออกเป็นสามประเภทดังต่อไปนี้

- บริษัทคู่ค้าที่มีความสัมพันธ์กับบริษัทของท่านแบบครอบครัว
  (พ่อ,แม่,พี่,น้อง,ลุง,ป้า,น้า,อา,ลูกพี่ลูกน้อง,ญาติจากการแต่งงาน)
- บริษัทคู่ค้าที่มีความสัมพันธ์กับบริษัทของท่านแบบเพื่อน
  (เพื่อนบ้าน,เพื่อนร่วมชั้นเรียน,เพื่อนร่วมงาน,เพื่อนจากการทำกิจกรรมทางสังคมอื่นๆ)
- **บริษัทคู่ค้าที่มีความสัมพันธ์กับบริษัทของท่านอย่างไม่เป็นทางการ** (**บุคคลแปลกหน้าทั่วไป**)

4.1 กรุณาระบุความสนิทสนมของท่านกับอีกฝ่ายหนึ่ง	ครอบครัว	เพื่อน	เพื่อนร่วมงาน

4.2 ท่านพบปะกับอีกฝ่ายหนึ่งบ่อยแค่ไหน (ไปพบด้วยตัวเอง)	ไม่ค่อยจะ	ทุกไตรมาส	ทุกเดือน	ทุกสองอาทิตย์	ทุกอาทิตย์	2-4ครั้งต่ออาทิตย์	วันละหลายๆ ครั้งต่ออาทิตย์

4.3 ท่านรู้จักกับอีกฝ่ายหนึ่งมานานแค่ไหน	น้อยกว่า 1 ปี	1-2ปี	3-5ปี	6-10ปี	11-15ปี	15-20ปี	มากกว่า 20 ปี

4.4 อีกฝ่ายหนึ่งนั้นได้ให้ความช่วยเหลือท่านในเรื่องงานและเรื่องส่วนตัว	เห็นด้วยอย่างยิ่ง	เห็นด้วยค่อนข้างมาก	เห็นด้วยค่อนข้างน้อย	ปานกลาง	ไม่เห็นด้วยค่อนข้างน้อย	ไม่เห็นด้วยค่อนข้างมาก	ไม่เห็นด้วยอย่างยิ่ง

4.5 ถ้าหากอีกฝ่ายหนึ่งต้องการความช่วยเหลือท่านก็ยินดีที่จะยื่นมือเข้าไปช่วย	เห็นด้วยอย่างยิ่ง	เห็นด้วยค่อนข้างมาก	เห็นด้วยค่อนข้างน้อย	ปานกลาง	ไม่เห็นด้วยค่อนข้างน้อย	ไม่เห็นด้วยค่อนข้างมาก	ไม่เห็นด้วยอย่างยิ่ง

4.6 อีกฝ่ายหนึ่งนั้นมีความซื่อสัตย์และจริงใจกับท่าน	เห็นด้วยอย่างยิ่ง	เห็นด้วยค่อนข้างมาก	เห็นด้วยค่อนข้างน้อย	ปานกลาง	ไม่เห็นด้วยค่อนข้างน้อย	ไม่เห็นด้วยค่อนข้างมาก	ไม่เห็นด้วยอย่างยิ่ง

4.7 ท่านมีความซื่อสัตย์และจริงใจกับอีกฝ่ายหนึ่ง	ไม่เห็นด้วยอย่างยิ่ง	ไม่เห็นด้วย	ไม่เห็นด้วยเล็กน้อย	ปานกลาง	เห็นด้วยเล็กน้อย	เห็นด้วย	เห็นด้วยอย่างยิ่ง

4.8 ธุรกิจและธุรการระหว่างท่านและอีกฝ่ายหนึ่งนั้นดำเนินไปได้ด้วยดี	ไม่เห็นด้วยอย่างยิ่ง	ไม่เห็นด้วย	ไม่เห็นด้วยเล็กน้อย	ปานกลาง	เห็นด้วยเล็กน้อย	เห็นด้วย	เห็นด้วยอย่างยิ่ง

4.9 ท่านได้ทำแลกเปลี่ยนข้อมูลกับอีกฝ่ายหนึ่งอยู่บ่อยๆ	ไม่เห็นด้วยอย่างยิ่ง	ไม่เห็นด้วย	ไม่เห็นด้วยเล็กน้อย	ปานกลาง	เห็นด้วยเล็กน้อย	เห็นด้วย	เห็นด้วยอย่างยิ่ง

4.10 บริษัทของท่านยินดีที่จะร่วมมือในกิจกรรมที่จะทำให้ธุรกิจระหว่างบริษัทของท่านกับบริษัทคู่ค้าประสบความสำเร็จ	ไม่เห็นด้วยอย่างยิ่ง	ไม่เห็นด้วย	ไม่เห็นด้วยเล็กน้อย	ปานกลาง	เห็นด้วยเล็กน้อย	เห็นด้วย	เห็นด้วยอย่างยิ่ง

4.11 ความร่วมมือทางธุรกิจของท่านกับอีกฝ่ายหนึ่งนั้นมีค่อนข้างสูง	ไม่เห็นด้วยอย่างยิ่ง	ไม่เห็นด้วย	ไม่เห็นด้วยเล็กน้อย	ปานกลาง	เห็นด้วยเล็กน้อย	เห็นด้วย	เห็นด้วยอย่างยิ่ง

4.12 บริษัทของท่านมักจะติดต่อและทำธุรกิจกับบริษัทคู่ค้าภายในเครือข่ายเสมอๆ	ไม่เห็นด้วยอย่างยิ่ง	ไม่เห็นด้วย	ไม่เห็นด้วยเล็กน้อย	ปานกลาง	เห็นด้วยเล็กน้อย	เห็นด้วย	เห็นด้วยอย่างยิ่ง

4.13 บริษัทคู่ค้าที่ทำธุรกิจกับบริษัทของท่านโดยทั่วไปแล้วซื่อสัตย์และสุจริต	ไม่เห็นด้วยอย่างยิ่ง	ไม่เห็นด้วย	ไม่เห็นด้วยเล็กน้อย	ปานกลาง	เห็นด้วยเล็กน้อย	เห็นด้วย	เห็นด้วยอย่างยิ่ง

4.14 บริษัทของท่านสามารถนำข้อมูลที่ได้รับจากบริษัทคู่ค้าในเครือข่ายธุรกิจมาใช้ประโยชน์ได้	ไม่เห็นด้วยอย่างยิ่ง	ไม่เห็นด้วย	ไม่เห็นด้วยน้อย	ปานกลาง	เห็นด้วยพอสมควร	เห็นด้วยอย่างยิ่ง
4.15 บริษัทของท่านยินดีที่จะแลกเปลี่ยนข้อมูลทางธุรกิจกับบริษัทคู่ค้าที่ทำธุรกิจกับบริษัทของท่าน	ไม่เห็นด้วยอย่างยิ่ง	ไม่เห็นด้วย	ไม่เห็นด้วยน้อย	ปานกลาง	เห็นด้วยพอสมควร	เห็นด้วยอย่างยิ่ง
4.16 บริษัทของท่านยินดีที่จะร่วมมือในกิจกรรมที่จะทำให้ธุรกิจระหว่างบริษัทของท่านกับบริษัทคู่ค้าประสบความสำเร็จ	ไม่เห็นด้วยอย่างยิ่ง	ไม่เห็นด้วย	ไม่เห็นด้วยน้อย	ปานกลาง	เห็นด้วยพอสมควร	เห็นด้วยอย่างยิ่ง
4.17 บริษัทของท่านมักจะแก้ไขปัญหาที่เกิดขึ้นจากการทำธุรกิจกับบริษัทคู่ค้าด้วยวิธีประนีประนอม เช่นการเจรจา ร่วมมือกันแก้ปัญหา	ไม่เห็นด้วยอย่างยิ่ง	ไม่เห็นด้วย	ไม่เห็นด้วยน้อย	ปานกลาง	เห็นด้วยพอสมควร	เห็นด้วยอย่างยิ่ง