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內部資源、外部資源、環境與公司績效－台灣中小企業的研究

Internal Resources, External Resources and Environment, and Firm Performance: A Study on Taiwanese Small and Medium Sized Firms

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摘要：本研究解釋公司的內部資源、外部資源與環境，如何影響公司績效。我們的研究模型檢驗公司的內部資源如何受社會資本及環境波動所調節，進而影響公司績效。我們搜集到 140 家台灣紡織與禮品產業中小企業廠商的問卷調查結果，實證結果支持我們的模型預測：公司的內部資源對公司績效有正面助益，並且同時受到社會資本及環境波動強弱不定的調節作用。本研究對決定台灣成熟產業中小企業的成功因素提供理論與實務上的見解與貢獻。
關鍵詞：策略資源；社會資本；公司績效；台灣中小企業

Abstract：This paper explains how a firm's internal resources, external resources, and external environment affect firm performance. Our research model examines

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how a firm's internal strategic resources are moderated by social capital and environmental turbulence to affect performance. Findings of an empirical survey of 140 Taiwanese small and medium sized enterprises (SMEs) specifically in the textile and giftware industries significantly support predictions of the positive effects of internal strategic resources on firm performance. Meanwhile, mixed results exist for the moderating effects of social capital and environmental turbulence. Our study makes contributions to both academia and industry by advancing knowledge of the determinants and implications of firm success in the context of Taiwanese SMEs operating in mature industries.

Keywords: Strategic resources; Social capital; Firm performance; Taiwanese small and medium sized firms

1. Introduction

How do a firm's internal and external resources affect its performance? Organization studies have found that strategic resources possessed by a firm determine its competitive advantages (e.g., Barney, 1991; Wernerfelt, 1984; Hitt, Bierman, Shimizu and Kochhar, 2001). But is a firm's performance only dominantly determined by its internal strategic resources? Network studies have found that a firm's external network resources are important to its survival (Gulati, 1999; Uzzi, 1999) and SMEs in regional networks are beneficial (Porter, 2000, 2003; Reid, Smith and Carroll, 2008; Wenting, Atzema, and Frenken, 2011). Additionally, external environment cannot be neglected. For example, when the 2008 American banking crisis happened, the whole banking and business system sharply approached the crash, which resulted in a large number of bankrupted firms as a chain effect. According to the statistics from the Taiwanese Ministry of Economic Affairs (MOEA), there were more than 23,000 companies shut down during the worldwide financial crisis period between 2008 and mid-2009, and a majority of them were small capital SMEs. So, how do a firm's external resources and its surrounding environment interplay with internal resources to lead to its performance outcome?

In this paper, we examine how a firm's performance is commonly affected by its internal strategic resources as well as its external network resources and business environment. SMEs in particular are even more dependent on external network resources (1991; Cooke and Wills, 1999; Dyer and Singh, 1998), as well as more vulnerable to external environment (Haleblian and Finkelstein, 1993), than large companies.

Strategic resources are the key source of a firm's competitive advantage. These valuable resources are firm-specific with non-imitable, non-tradable and non-substitutable features preserved within a firm (Barney, 1991; Chi, 1994; Dierickx and Cool, 1989; Peteraf, 1993). Meanwhile, the resource-based view (RBV) of the firm (Barney, 1986, 1991; Wernerfelt, 1984) has emerged as an influential framework for companies to analyze the kinds of strategic resources as well as dynamic responsiveness they need in order to succeed in a highly turbulent environment (Chen, Su and Tsai, 2007).

During the early 1980s, strategy analysis was based on firms' choices of product markets and positioning within them. In other words, the focus of strategy analysis then was to evaluate how firms select industry and segment, and how firms manipulate the market structure to create market power in order to gain monopoly rent (Porter, 1980). Nevertheless, because external market structures have become more and more turbulent, the effectiveness of the structure-positioning strategy analysis has become more and more limited. Obviously, it is more difficult for firms to proact and react to a turbulent external environment (Chen, and MacMillan, 1992), so the evaluation of firms' internal resources and capabilities has become a more stable and relevant basis for strategy analysis.

RBV provides an important perspective for firms to examine their "supply side" rather than the "demand side" of strategy (Grant, 1996). Previous literature has identified various kinds of firm-specific resources determining firms' performance (*e.g.,* Carmeli and Tishler, 2004; Wei and Morgan, 2004). However, most of these studies' emphasis has been put on the large or multinational firms in non-traditional business sectors. However, studies found SMEs behave differently from large firms (Chen and Hambrick, 1995; Fiegenbaum and Karnani, 1991;

Smith, Guthrie and Chen, 1989) and performance determinants (Jennings and Beaver, 1997). SMEs usually must make greater efforts than large or multinational firms to gain access to and acquire strategic resources. Especially in mature industries, SMEs are more restricted in their access to outside resources such as banking loans and governmental supports when compared with enterprises in newly emergent industries. So, it is critical to assess how SMEs in mature industries can create internal strategic resources and gain access to external network resources in order to achieve business success in a turbulent environment.

Among SMEs, we are particularly interested in identifying strategic resources necessary for firms' superior performance. In addition to RBV studies, much research on SMEs applies a social capital model to explain firm performance (Batjargal, 2003; Bosma, van Praag, Thurik, and de Wit, 2004; Florin, Lubatkin and Schulze, 2003; Lee, Lee, and Johannes, 2001). Evidence has been found that social capital directly and positively influences the performance of SMEs. However, Florin *et al.* (2003) suggested that there are not only direct but also indirect effects of social capital on business performance. Based on the embeddedness argument of social relationship (Barber, 1995; Granovetter, 1985, 1992), economic actions and outcomes are affected by actors' dyadic relations and by the structure of the overall social network of relations. Social capital embedded in social relationships is in fact an ongoing contextualization of economic exchanges in social structures (Dacin, Ventresca and Beal, 1999). Thus, we argue that social capital serves as a moderator on the determinants of SMEs performance, rather than treating social capital as a direct explanatory variable.

In this study, we aim to answer the following three questions from the theoretical perspectives of RBV, social capital, and environmental turbulence: Firstly, what are the main internal strategic resources necessary for SMEs to achieve superior performance? Secondly, how does SMEs' social capital contribute to the effectiveness of their internal strategic resources on performances? Finally, how does environmental turbulence interact with the effect of SME's internal strategic resources on performances?

The rest of the paper is organized as follows: First, we use the RBV of the

firm as the theoretical lens to build an integrated framework. Second, based on the theories, we develop hypotheses to examine the antecedents and moderators of SMEs performance. Third, we provide our methodological analyses, results, and discussion. Finally, our conclusion and implications are presented.

2. Theories and Hypotheses

2.1. Internal Strategic Resources

RBV research suggests that a firm's internal strategic resources create superior performance (Barney, 1991; Conner, 1991; Teece, Pisano and Shuen, 1997). Grant (1996) has stressed the importance of focusing on a firm's internal resources in today's ever-changing market.

RBV argues that internal strategic resources are critical to a firm's ability to sustain its own competitive advantages (Barney, Wright and Ketchen, 2001). Barney (1991) identified that valuable, rare, imperfectly imitable, and non-substitutable resources and capabilities are among the major internal strategic resources. In addition, internal strategic resources and capabilities, such as physical capital resources, human capital resources, and organizational capital resources, are not just physical assets.

Superior firm performance relies on a firm's competitive advantages. Barney (1991) made a distinction between competitive advantage and sustained competitive advantage. Sustained competitive advantage does not depend on the period of calendar time during which a firm enjoys a competitive advantage; instead, it depends on whether the competitive advantage can be duplicated or not. Moreover, Fiol (2001) argued that in a competitive and rapidly-changing environment, internal strategic resources and the ways that firms utilize their resources should constantly change in order to create continuous temporary advantages in parallel with long-term sustained competitive advantages.

As Wernerfelt (1984) stated, "for the firm, resources and products are two sides of the same coin" (p. 171). So, a firm's ability to gain and defend resources that are important to production and distribution can determine a firm's ability to

attain and keep profitable market positions (Conner, 1991). RBV for strategic management focuses on costly-to-copy resources and capabilities of the firm as sources of economic rents and as fundamental drivers of performance and competitive advantage (Barney, 1986). The innovation capabilities are embedded in the foundation of firm's strategic resources (Simanis and Hart, 2009).

Because intangible assets are "public goods that can be applied in new markets with proportionally smaller increments in costs" (Delios and Beamish, 2001, p. 1028), they have become the foundation of a firm's ability to generate advantages in the home market that can also be exploited in the host countries (Delios and Beamish, 2001; Dunning, 1993). Delios and Beamish (2001) examined the influences that a firm's intangible assets and its experience have on foreign subsidiary survival and profitability. They found that in order to be competitive in a new market context, firms must not only develop new capabilities to overcome liabilities of foreignness but also adapt existing intangible assets.

A firm's core competence is also a critical strategic resource for sustained competitive advantages (Prahalad and Hamel, 1990). Competency is about being able to do things (Bradley, 1991). Because companies are operating in an increasingly challenging environment, ensuring that managers are in place to deal with these challenges is also increasingly recognized as a critical factor for a firm's success (Hefferman and Flood, 2000; Leopold, Lynette and Watson, 1999). For example, Hefferman and Flood (2000) investigated 114 companies and found organizations with managerial competencies are superior performers. Thus,

H1: Internal resources are positively associated with firm performance.

2.2. External Resources and Environment

2.2.1. Social Capital

Social capital is an important outcome of external network resources for a firm that enables a firm to successfully survive (Larson, 1992; Uzzi, 1999). People are bound by socialization. In particular, social networks provide important sources for SMEs to access external resources and minimize business

risks (Florin *et al.*, 2003).

Social capital is a long-lived external asset that is both appropriable and convertible to other firm resources. Coleman (1988) argued that social capital, acting as resources for organizations and individuals, exists in the structure of relations between and among actors. Major forms of social capital such as obligations, expectations and trustworthiness of structures, information channels, norms and effective sanctions are facilitated by the close-form boundary of social networks and appropriable social organizations.

Burt (1992) emphasized the value of agent spanning in the structural holes when taking advantage of various networks to gain access to more information and opportunities. In parallel with making the argument of weak ties, Burt explained why people in the positions of structural holes, occupying nodes of non-redundant sources of information, are capable of creating the competitive advantages of information and control benefits from the different circulations of information flows (Granovetter, 1973).

Social capital offers SMEs with frequent business exchanges a mode of interaction beyond the contracts. The relationships between or among partners (either an officially cooperative partnership or a long-term friendship) are flexible but reciprocal. As one of the SME founders told us, "small firms own relatively less resources and compete more difficulty than large firms. So for a group of partners or friends in the industry, we help one another when necessary. Major helps vary from business consultation, financial aid, order fulfillment, product delivery, to partner introduction." Another SME owner shared with us a similar opinion and further emphasized, "Once we got other people's help, we will give our hands in return if one day they face the difficulty." The reciprocity they described is the complementary social capital of trust and norms (Lorenzoni and Baden-Fuller, 1995).

The embeddedness of SMEs in social networks is a kind of relationship connected with and influenced by the exogenous surroundings. We argue that social capital operates as a moderator to facilitate the deployment of internal strategic resources in order to enhance firm performance. Thus,

H2: The positive effects of internal resources on performance become stronger as social capital increases.

On the other hand, firms must invest internal resources in order to maintain the value of their social capital (Adler and Kwon, 2002). Social networks are just like communities with their own identities so that the public-goods problem of social capital is resolved within the network boundary. Also, within the boundary, social capital requires members' efforts on both investment and maintenance regardless of its transferability and appropriability.

Therefore, social capital is not "all-positive." Past studies on various research questions have demonstrated conflicting results on the effect of social capital (*e.g.*, Uzzi, 1996, 1999). For example, Coleman (1988) discussed how network cohesiveness, on the one hand, can provide qualitative relationships, but, on the other hand, also constrains members to a certain degree because of their obligations and commitments. Also, the information provided by structural holes can offer redundant opportunities to the members within or across social networks. We argue that the moderating effect of social capital on the strategic resources-performance link could be alternatively negative. Thus,

H2 (alt): The positive effects of internal resources on performance become weaker as social capital increases.

2.2.2. Environmental Turbulence

Environmental turbulence falls into two separate categories: technology turbulence and market turbulence. Jaworski and Kohli (1993) defined technology turbulence as the rate of new product technology change and market turbulence as the rate of customer composition change, customer preference change, and competitor strategy change. SMEs are particularly sensitive about responding to environmental turbulence because of their reduced power to control costs and drive demands. Thus, the contribution of a SME's strategic resources to its performance is contingent on the level of turbulence in the environment.

Turbulence can have a moderating impact on the strategic resources-performance relationship because it takes owners or managers time to

learn and then adjust to changes in the environment. The dynamic capabilities to adapt, integrate, and re-configuring internal resources to the turbulent environment might require additional organizational resources to put themselves into the learning process (Teece and Pisano, 1994; Winter, 2003; Zollo and Winter, 2002). Because SMEs own relatively limited resources than large firms, they can not benefit from such organizational slack in preparing and responding to the environmental changes (Cheng and Kesner, 1997; Sharfman, Wolf, Chase and Tansik, 1988; Tan and Peng, 2003). In other words, identifying customer needs and translating them into performance is complicated in turbulent markets. Even firms with all four kinds of strategic resources must re-adjust their advantages in response to new product technology, customer composition, customer preference, and competitor strategy change (Ozsomer and Gencturk, 2002). The more turbulent the environment, the more vulnerable the SMEs might suffer from responding by adjustment. Thus,

H3: The positive effects of internal resources on performance become weaker as environmental turbulence increases.

3. Methods

3.1. Research Context

In this study, we investigated the determinants of performance of SMEs based in Taiwan. Small firms in Taiwan are globally well known for their specialized division of labor, widespread entrepreneurship, and flexible adjustment to changing conditions. They account for 98% of the firms and 87% of the private non-farm workforce in Taiwan's economy. In addition, small firms contribute to 32% of total firm sales (Taiwan Small and Medium Enterprise Administration, http://www.moeasmea.gov.tw/).

Textile and giftware industries are among Taiwan's major traditional industries. Historically, they were considered as labor-intensive, export-oriented, and low-cost networked productions. Although nowadays most of them stay as SMEs associated with owner-managed or family-run operations, they

evolutionarily upgrade their production technologies and value-added services to maintain global competitiveness against low-cost productions in China and Southeast Asia. Quite a few of Taiwan's small firms have also shifted their major production sites to those low-cost countries, while keeping their innovations designs or high-end manufacturing techniques in Taiwan. But these two industries are still representative for the active export sector with intensive SMEs. In 2004, textile industry contributed 7.2%, and giftware industry contributed 5.9% of total exporting volume, as the few sustainable growing industries for Taiwanese export sector (Department of Statistics, Ministry of Economic Affairs).

3.2. Instruments

The items of the survey were either based on theoretical concepts derived from the literature or adopted and adapted from empirical studies. Internal strategic resource items were based on the theoretical concepts of Barney (1991), Dierickx and Cool (1989), and Peteraf (1993). Social capital items were mainly adapted from theoretical concepts (Burt, 1992; Coleman, 1988). Environmental turbulence items were adopted directly from Jaworski and Kohli (1993). Performance items were taken directly from previous studies (*e.g.*, Appiah-Adu, 1997; Atuahene-Gima, 1995; Bhuian, 1997; Day and Wensley, 1988; Diamantopoulos and Hart, 1993; Han, Kim and Srivastava, 1998).

The questionnaire requested the respondents to focus on their companies' operations for a period of up to the last three years. The questionnaire asked respondents with start-up companies for their experiences in the past year only. Respondents were reminded to answer the questionnaire with reference to their actual experiences and company facts. Except questions on firm performance figures and general information, all other items followed a seven-point Likert-type scale.

3.3. Respondents

We performed face-to-face on-site surveys at the 2004 Taipei International Textile and Apparel Show and the 2004 Taipei International Giftwares and Stationery Autumn Show. There were 421 companies (including large and

non-small firms) participating in the exhibitions. These two trade shows are held every year in the Taipei World Trade Center. They are very important gateways for firms inside the industries to access both domestic and international customers. According to the trade show organizers (Taiwan Textile Federation and Taiwan External Trade Development Council, respectively), most of the small-sized firms based in Taiwan participate in these shows every year. During the two trade shows, we invited 215 entrepreneurs or their relatives to participate in our survey. We were able to use 140 of the 157 returned questionnaires in our analysis.

3.4. Model and Measures

Our research model displays four internal strategic resources affecting SMEs' performance: barriers to imitation and uniqueness; intangible assets and managerial competences; market knowledge and access; and tradability, transferability, and mobility. In addition, we propose that the relationship between a small firm's internal strategic resources and its performance is dependent on the level of social capital: trust and reciprocity, norms, and reliable information. Besides, it also depends on the level of environmental turbulence: market turbulence and technology turbulence.

The independent and moderating variables in the framework were measured by multiple items in the questionnaire. All of these measures were assessed by a seven-point Likert-type scale, ranging from "strongly disagree" to "strongly agree" in Chinese. For the performance indicators, we asked about both self-assessed performance evaluation and financial performance in the questionnaire. However, since many of the respondents were very conservative and not willing to provide real financial figures, we ending up only using the self-assessed performance measures in a seven-point Likert-type scale. Figure 1 presents our model. The literature sources of measurement items are listed in Table 1.

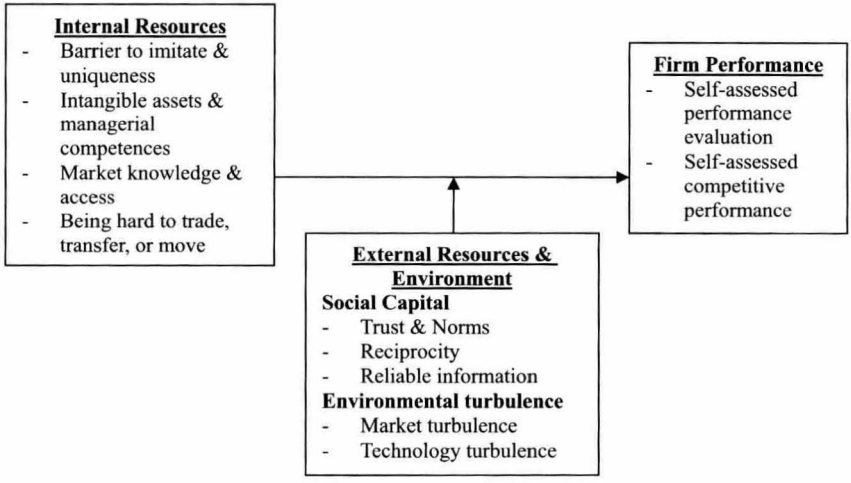
Table 1

Literature Sources of Questionnaire Measures

Questionnaire Items	Literature Sources (*: adapted)
Strategic Resources (RBV) items	
Uniqueness: nature of technology or product	Dhanaraj & Beamish (2003), Schilling & Steensma (2002)*
Uniqueness: technology leadership	
Uniqueness: technology advance	
Barrier to imitation: reverse engineering	Barney (1991)*, Schilling & Steensma (2002)
Barrier to imitation: learning	
Hard to trade: technology specificity	Dierickx & Cool (1989)*, Peteraf (1993)*
Transferability & mobility: team & expertise	
Transferability & mobility: key person	
Managerial competence: financial	Hitt *et al.* (2000)
Managerial competence: commitment	
Managerial competence: personnel	Hitt *et al.* (2000)*
Intangible assets: goodwill	
Intangible assets: trustworthy	
Market access	Hitt *et al.* (2000)
Market knowledge	
Social Capital (SC) items1	
Trust: business relationship	Uzzi (1996)*
Trust: anti-opportunism & promise keeping	
Norm: partner introduction	
Norm: partner selection	
Norm: business information exchange	Larson (1992)*
Reciprocity & trust: between frequent business partner	
Reciprocity: partner's mutual help	
Trade association: resource & information	Burt (1992)*, Coleman (1988)*, Koka & Prescott (2002), Uzzi (1996)*
Trade association: risk reduction or avoidance	Burt (1992)*, Coleman (1988)*, Uzzi (1996)*
Environmental Turbulence (ET) items	
Market turbulence: potential customer needs	Jaworski & Kohli (1993)
Market turbulence: customer preference change rate	
Market turbulence: frequency of existing customers looking for newness	
Market turbulence: the importance of price	
Market turbulence: the service to existing customers	
Market turbulence: the difference between existing & potential customer needs	
Market turbulence: difficulty in predicting technology change	

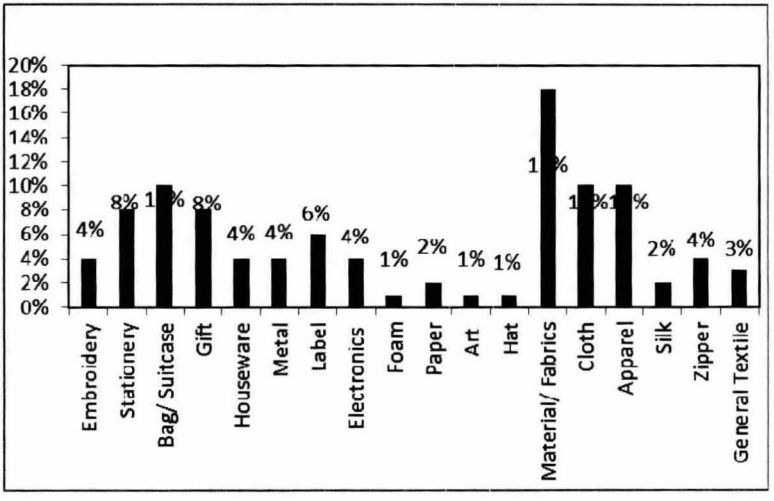
Questionnaire Items	Literature Sources (*: adapted)
Technology turbulence: new products through technology breakthrough	
Technology turbulence: business opportunities through technology change	
Technology turbulence: technology development-market development link	
Technology turbulence: technology change rate	
Performance items	
Achieving sales target	
Achieving profits target	
Achieving ROI target	Appiah-Adu (1997), Atuahene-Gima (1995), Bhuian (1997), Day & Wensley (1988), Diamantopoulos & Hart (1993), Han *et al.* (1998)
Competitive reputation	
Product competitiveness	
Competitive customer loyalty	
Competitive product development speed	
Competitive personnel retention	

Figure 1
Research
Model



In addition, four control variables potentially influence firm performance: company age, size, international foreign direct investment (FDI) experiences, and business categories. Company age is found to influence performance (Anderson and Reeb, 2003; Baum, Calabrese and Silverman, 2000). Company age was measured by the number of years since the start-up. Studies found that company size might influence performance (Terziovski and Samson, 2000; Wolff and Pett, 1993). Company size was the total amount of a firm's financial capital. We checked the accuracy of both items using the official database provided by MOEA. In addition, the multinationality-performance relationships of overseas FDI experiences are theorizing and examined by a number of studies (e.g., Hennart, 2007; Thomas and Eden, 2004). International FDI experiences and business categories are self-reported dummies. The survey profile of business categories is shown in Figure 2.

Figure 2
Survey Profile of Business Categories



3.5. Analysis

To assess the relationships of variables in the model, we first used factor analysis to extract loadings and scores to be used in further regression analysis. To find the most consistent factors according to our theoretically- or empirically-sourced measures, we tried both the maximum likelihood method and the principal component method. Then, we used each factor score to run regressions with moderating effects to verify our model.

4. Results

4.1. Main Model

The results of our factor analysis, using the principal component method and varimax rotation, for strategic resources, social capital, environmental turbulence, and performance are shown in Table 2.

Internal strategic resources are classified into four major survey items: barriers to imitation and uniqueness (reliability α=0.855), intangible assets and managerial competences (reliability α=0.817), market knowledge and access (reliability α=0.831), and tradability, transferability, and mobility (reliability α=0.492). Social capital is identified as the following three constructs: trust and norms (reliability α=0.802), reciprocity (reliability α=0.63), and reliable information (reliability α=0.81). Environment turbulence includes technology turbulence (reliability α=0.803) and market turbulence (reliability α=0.648). Performance measurements are divided into self-assessed competitive performance (reliability α=0.79) and self-assessed performance evaluation (reliability α=0.943).

Table 3 reports descriptive statistics both original constructs and in factor scores. Table 4 shows Pearson correlations among all dependent, independent, moderating, and control variables, where dependent, independent, and moderating variables use individual factor scores as direct measures. There is no correlation above 0.6. Thus, the multicollinearity issue is not problematic.

Table 2

Factor Analysis: Varimax Rotation

Variable		Factor loadings	Communality
RBV Factor1: Barrier to imitation & uniqueness			
Barrier to imitation: reverse engineering		0.845	0.756
Barrier to imitation: learning		0.844	0.727
Uniqueness: nature of technology or product		0.794	0.697
Uniqueness: technology leadership		0.704	0.634
Hard to trade: specific technology		0.663	0.553
Uniqueness: technology advance		0.483	0.555
Reliability (alpha)	0.855		
Eigenvalue	3.571		
% Variance	22.317		
RBV Factor 2: Intangible assets & managerial competences			
Intangible assets: goodwill		0.833	0.741
Intangible assets: trustworthy		0.822	0.741
Managerial competence: financial		0.812	0.694
Managerial competence: commitment		0.582	0.567
Managerial competence: personnel		0.496	0.517
Reliability (alpha)	0.817		
Eigenvalue	3.241		
% Variance	20.258		
RBV Factor 3: Market knowledge & access			
Market access		0.778	0.696
Market knowledge		0.694	0.749
Reliability (alpha)	0.831		
Eigenvalue	1.997		
% Variance	12.478		
RBV Factor 4: Tradability, transferability or mobility			
Transferability & mobility: team & expertise		0.799	
Transferability & mobility: key person		0.732	
Hard to trade: technology specificity		0.454	
Reliability (alpha)	0.492		
Eigenvalue	1.643		
% Variance	10.269		
SC Factor1: Trust & norm			
Trust: business relationship		0.768	0.651
Norm: partner introduction		0.765	0.623
Trust: anti-opportunism & promise keeping		0.76	0.674
Norm: partner selection		0.753	0.578
Norm: business information exchange		0.478	0.438
Reliability (alpha)	0.802		
Eigenvalue	2.689		
% Variance	26.887		
SC Factor 2: Reciprocity			
Reciprocity & trust: frequent business partner		0.772	0.598

Variable		Factor loadings	Communality
Reciprocity: partner mutual help (1)		0.765	0.637
Reciprocity: partner mutual help (2)		0.684	0.533
Reliability (alpha)	0.63		
Eigenvalue	1.882		
% Variance	18.821		
SC Factor 3: Reliable information			
Trade Association: resource & information		0.894	0.827
Trade Association: risk reduction or avoidance		0.892	0.827
Reliability (alpha)	0.81		
Eigenvalue	1.815		
% Variance	18.152		
ET Factor1: Technology turbulence			
New products through technology breakthrough		0.829	0.693
Business opportunities through technology change		0.825	0.707
Technology development-market development link		0.775	0.618
Technology change rate		0.644	0.501
Reliability (alpha)	0.803		
Eigenvalue	2.682		
% Variance	24.384		
ET Factor 2: Market turbulence			
Potential customer needs		0.665	0.46
Customer preference change rate		0.655	0.435
Frequency of existing customers looking for newness		0.577	0.435
The importance of price		0.572	0.328
The service to existing customers		0.539	0.337
The difference between existing and potential customer needs		0.495	0.345
Difficulty in predicting technology change		0.297	0.113
Reliability (alpha)	0.648		
Eigenvalue	2.288		
% Variance	20.798		
Performance Factor1: Self-assessed competitive performance			
Competitive reputation		0.897	0.81
Product competitiveness		0.849	0.72
Competitive customer loyalty		0.744	0.627
Competitive product development speed		0.662	0.48
Competitive personnel retention		0.5	0.309
Reliability (alpha)	0.79		
Eigenvalue	2.872		
% Variance	35.894		
Performance Factor 2: Self-assessed performance evaluation			
Achieving sales target		0.948	0.921
Achieving profits target		0.934	0.9
Achieving ROI target		0.898	0.863
Reliability (alpha)	0.943		
Eigenvalue	2.757		
% Variance	34.469		

Table 3

Descriptive Statistics: Means and Standard Deviations (N=140)

Variable	Mean	s.d.
Performance variables		
Self-assessed competitive performance	5.24	0.861
Self-assessed competitive performance (factor score)	-1.4E-16	1.000
Self-assessed performance evaluation	4.04	1.477
Self-assessed performance evaluation (factor score)	1.21E-16	1.000
Internal strategic resource variables		
Barrier & unique	4.73	1.169
Barrier & unique (factor score)	6.05E-17	1.000
Intangibles & competence	5.38	0.972
Intangibles & competence (factor score)	-4.9E-16	1.000
Market knowledge & access	5.26	1.144
Market knowledge & access (factor score)	1.84E-19	1.000
Trade, transfer, move	4.00	1.161
Trade, transfer, move (factor score)	-3.4E-17	1.000
Social capital variables		
Trust & norm	5.98	0.730
Trust & norm (factor score)	3.73E-16	1.000
Reciprocity	5.14	1.104
Reciprocity (factor score)	1.35E-16	1.000
Reliable information	5.14	1.229
Reliable information (factor score)	-3.6E-16	1.000
Environmental turbulence variables		
Technology turbulence	4.93	1.118
Technology turbulence (factor score)	1.06E-16	1.000
Market turbulence	5.16	0.716
Market turbulence (factor score)	-1.4E-16	1.000
Control variables		
Age	14.734	9.408
Size	1.1E+08	3.16E+08
Overseas FDI	0.311	0.465
Business categories	9.860	5.700

Table 4

Descriptive Statistics: Correlations for All Variables(Factor Scores)

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Performance variables														
1.S-A competitive performance														
2. S-A performance	0.000													
RBV variables														
3. Barriers & uniqueness	0.276**	0.172*												
4. Intangibles & competence	0.343**	0.171*	0.000											
5. Market	0.144	0.188*	0.000	0.000										
6. Trade, transfer, move	-0.095	-0.073	0.000	0.000	0.000									
SC variables														
7. Trust & norms	0.355**	0.024	0.108	0.570**	-0.027	0.069								
8. Reciprocity	0.176*	0.026	0.009	0.161*	0.122	0.122	0.000							
9. Reliable information	0.106	0.208**	0.202*	0.153	0.195*	0.070	0.000	0.000						
ET variables														
10. Technology turbulence	0.081	0.261**	0.402**	0.169*	0.107	0.256**	0.246**	0.041	0.304**					
11. Market turbulence	0.270**	-0.028	0.021	0.325**	0.133	0.280**	0.228**	0.273**	0.088	0.000				
Control variables														
12. Age	-0.015	0.036	0.002	-0.043	0.008	0.009	0.008	-0.177*	0.034	0.100	-0.174*			
13. Size	-0.023	0.146	0.087	0.067	-0.029	-0.050	-0.024	-0.132	0.068	0.075	-0.049	0.259**		
14. Overseas FDI	-0.027	-0.050	-0.039	-0.178*	0.079	0.117	-0.042	-0.023	0.047	-0.062	0.063	0.147	-0.111	
15. Business categories	-0.027	0.124	0.164*	-0.010	-0.001	-0.078	-0.008	-0.016	0.023	0.151	-0.100	-0.108	0.147	-0.130

Note : - The "0.000" in the table is not equal to zero, but a volume too little to show.
- Significant levels at 5% and 1% are marked with * and ** , respectively.

Table 5

Regression Results for SME Performances

Regressor	Parameter Estimates: Standardized (*t*-Statistics) Eqn 1: Self-Assessed Competitive Performance	Eqn 2: Self-Assessed Performance Evaluation
Constant	0.227 (0.937)	0.154 (0.636)
RBV1: Barrier & Unique	0.291 (3.332)***	0.198 (2.214)**
RBV2: Intangibles & Competence	0.307 (3.306)***	0.169 (1.775)*
RBV3: Market	0.198 (2.274)**	0.153 (1.718)*
RBV4: Trade, transfer, move	-0.083 (-0.905)	-0.042 (-0.448)
SC(Trust & Norm)*RBV1	-0.037 (-0.399)	-0.059 (-0.627)
SC(Trust & Norm)*RBV2	-0.054 (0.452)	-0.060 (-0.495)
SC(Trust & Norm)*RBV3	-0.193 (-2.018)**	0.181 (1.844)*
SC(Trust & Norm)*RBV4	-0.046 (-0.419)	-0.085 (-0.768)
SC(Reciprocity)*RBV1	0.000 (0.005)	0.064 (0.733)
SC(Reciprocity)*RBV2	0.067 (0.619)	-0.126 (-1.132)
SC(Reciprocity)*RBV3	-0.064 (-0.696)	0.171 (1.826)*
SC(Reciprocity)*RBV4	-0.021 (-0.229)	0.022 (0.239)
SC (Information)*RBV1	0.086 (0.949)	-0.263 (-2.847)**
SC (Information)*RBV2	0.116 (1.218)	-0.041 (-0.421)
SC (Information)*RBV3	-0.154 (-1.714)*	0.073 (0.789)
SC (Information)*RBV4	0.081 (0.806)	-0.189 (-1.832)*
ET (Technology)*RBV1	0.001 (0.009)	-0.034 (-0.360)
ET (Technology)*RBV2	0.055 (0.549)	0.190 (1.858)*
ET (Technology)*RBV3	0.196 (2.069)**	0.031 (0.323)
ET (Technology)*RBV4	-0.031 (-0.311)	0.166 (1.619)
ET (Market)*RBV1	0.020 (0.216)	-0.029 (-0.304)
ET (Market)*RBV2	-0.165 (-1.237)	-0.034 (-0.250)
ET (Market)*RBV3	0.104 (1.087)	-0.067 (-0.686)
ET (Market)*RBV4	-0.122 (-1.122)	0.114 (1.026)
Company age	-0.060 (-0.699)	-0.083 (-0.940)
Company size	-0.055 (-0.626)	0.139 (1.536)
Overseas FDI	0.030 (0.344)	-0.065 (-0.731)
Business category	-0.087 (-1.000)	0.032 (0.356)
Adjusted R-square	0.20	0.16
F-statistics (df) (p-value)	2.22 (28, 111) (0.002)	1.939 (28, 111) (0.008)

Note : Significant levels at 10%, 5% and 1% are marked with *, ** and ***, respectively.

Table 6

Summary of Hypotheses Supported

Variable	Eqn 1: Self-Assessed Competitive Performance	Eqn 2: Self-Assessed Performance Evaluation
Main Effect		
R1: Barrier & Unique	H1: + ***	H1: + **
R2: Intangibles & Competence	H1: + ***	H1: + *
R3: Market	H1: + **	H1: + *
R4: Trade, transfer, move		
Moderating Effect		
SC(Trust & Norm)*R3	H2 (alt): - **	H2: +*
SC(Reciprocity)*R3		H2: + *
SC (Information)*R1		H2 (alt): - **
SC (Information)*R3	H2 (alt): - *	
SC (Information)*R4		H2 (alt): - *
ET (Technology)*R2		H3: + *
ET (Technology)*R3	H3: + **	

Note : H3 is negatively supported.

Table 5 shows the regression results using factor scores. Because the performance indicators are separated into two groups, we have two regression results according to the two different dependent variables of performance: self-assessed competitive performance and self-assessed performance evaluation.Our predictions on the positive effects of internal strategic resources (barriers to imitation and uniqueness, intangible assets and managerial competences, and market knowledge and access as strategic resources) on performance are supported. Thus, H1 is supported. One of the four internal strategic resource measures (tradability, transferability, and mobility) shows insignificance. In addition, none of the control variables appears to have a significant impact on the performance outcomes. Summary of hypotheses supported is demonstrated in Table 6.

4.2. Moderating Effects

4.2.1. Social capital

As we argued, social capital variables play a moderating role in the relationship between strategic resources and performance. Both H2 and H2 (alt) are supported by different measures of the social capital. The measures of trust and norms, reciprocity, support H2 by moderating the market knowledge and access internal resource effect on self-assessed performance evaluation. On the other hand, the measure of trust and norms also supports H2 (alt) by moderating the market knowledge and access internal resource effect on self-assessed competitive performance. Meanwhile, the measure of information supports H2 (alt) by moderating the effects of barriers to imitation and uniqueness, as well as the effects of tradability, transferability, and mobility, on self-assessed performance evaluation. Moreover, the information also negatively moderates the effect of market knowledge and access on self-assessed competitive performance, which still supports H2 (alt). Table 6 summarizes the results of hypotheses supported.

4.2.2. Environmental turbulence

We also argued that, besides social capital, environmental turbulence variables have a moderating impact on the relationship between internal strategic resources and SMEs' performances. However, H3 is negatively supported by the measure of technology turbulence. Technology turbulence positively moderates intangible assets and managerial competences on self-assessed performance evaluation. It also positively moderates market knowledge and access on self-assessed competitive performance. The measure of market turbulence does not show any moderating effect. The summary of Table 6 shows the result of H3 hypothesis negatively supported.

5. Discussion

Internal strategic resources are found as important determinants for enhancing firm performance. SMEs in mature industries specifically need to

incorporate external social capital resources, as well as to consider the challenging external conditions of environmental turbulences, so that they may develop and maintain the internal strategic resources necessary for sustained competitive advantage.

5.1. The Effect of Internal Strategic Resources on Firm Performance

RBV focuses on costly-to-copy internal resources and capabilities of the firm as sources of economic rents and as fundamental drivers of performance and competitive advantage (Barney, 1986). As expected, our result is consistent with the RBV theory and aligns with the past studies that strategic resources are the major determinants of firm performance (*e.g.*, Hitt, et. al, 2001; Richard, 2000; Robins and Wiersema, 1995). The internal strategic resource measures of barriers to imitation and uniqueness, intangible assets and managerial competences, and market knowledge and access show their direct effect on firm performance, including both of the performance measures.

However, the measure of tradability, transferability, and mobility does not show a significant influence. Although such kinds of internal strategic resources are typical of RBV descriptions, they are not important to the Taiwanese SMEs in the textile and giftware industries. It might imply that internal strategic resources for those surveyed firms are perceived more like managerial competence and organizational capabilities, including resources with barriers to imitation, intangible competence, and market knowledge and access. On the contrary, SMEs in the mature industries do not compete with some specific physical assets hard to trade, transfer, or move, like the roles of physical assets in high-technology industries (*e.g.*, Im and Workman Jr., 2004) or the car manufacturing industry (*e.g.*, Dyer, 1996).

Our findings provide the empirical base to encourage SMEs in mature industries to place more effort on enhancing their organizational capabilities and core competence rather than establishing or acquiring specific physical assets to achieve competitive advantages and superior firm performance. Internal strategic resources have different types of effects on firm performance. Which types of

internal strategic resources matter might be different when considering firms of different sizes or from different industries.

5.2. The Moderating Effect of External Social Capital

Consistent with social capital literature, trust, norms, reciprocity, and reliable information are the main forms of social capital (Burt, 1992; Coleman, 1988; Uzzi, 1996). Moreover, our study found evidence that social capital plays a moderating role, which is consistent with the embeddedness argument of seeing such social relationships (Barber, 1995; Granovetter, 1985, 1992) as an ongoing contextualization of economic exchanges in social structures (Dacin, *et. al.*, 1999).

Our results also align with the argument that social capital is both an asset and a liability (Adler and Kwon, 2002). In other words, social capital is not "all-positive." One of the contributions of this paper is the detailed evidence we found supporting our predictions that social capital plays a variety of moderating roles in the relationship between different kinds of internal strategic resources and different performance indicators.

Market knowledge and market access as strategic resources are moderated by all of the four types of social capital measures, but in various directions. Reciprocity can help SMEs access to a better level of market knowledge to outperform competitors. Based on the nature of reciprocity described by some of the respondents we interviewed, mutual help occurs frequently in order fulfillment, product delivery, and partner introduction, which usually enhances a firm's resources with regard to market knowledge and market access.

On the contrary, we found that reliable information negatively moderates the relationship between market knowledge and access and self-assessed competitive performance. The information can, on the one hand, provide more market opportunities and know-how, and, on the other hand, potentially provide a way for competitors to share the key to internal strategic market resources. Thus, reliable information shared within social networks needs to be properly managed.

Finally, we found that trust and norms facilitate the effectiveness between market knowledge on the self-assessed performance evaluation. But this measure

also shows a negative impact on the relationship between market knowledge and access and self-assessed competitive performance. Trust and norms can minimize the opportunism of business relationships, which, according to transaction cost theory (Williamson, 1979), can improve the efficiency of managerial processes. However, the obligations of trust and norms may also lead to a greater number of competitive situations among members inside the social network boundary (Coleman, 1988). Thus, nonlinear results can arise when considering the net effect of trust and norms on firm performance, a finding that has been presented in a number of social capital studies (*e.g.,* Tsai, 2001; Uzzi, 1996, 1999).

The relationship between tradable, transferable, and mobile resources and firm performance is negatively moderated by reliable information. In other words, being hard to trade, transfer, or move as a strategic resource is positively moderated by reliable information. On the other hand, barriers to imitation and uniqueness are negatively moderated by reliable information, whereas no moderating effects arise from trust, norms, and reciprocity. If the reliable information involved includes specific know-how or unique technology owned by the SME, it offers a valuable chance for other firms to eliminate barriers to imitation and dilutes uniqueness to a certain extent. Therefore, it creates a possibility to diminish firm performance. Again, it is hard to predict the direction of the net effect on firm performance of unique resources with non-imitable, non-tradable, non-transferable, and immobile features as moderated by the social capital effect.

Whatever the direction of the net moderating effect of social capital, our findings support our argument that the external resources of social capital facilitate or dilute the direct influences of internal resources on firm performance. Whether the net moderating effect depends on the size of the firm or on the industry in which the firm is located shall be worth exploring further in future studies.

5.3. The Moderating Effect of External Environmental Turbulence

Because, nowadays, Taiwanese SMEs in the textile and giftware industries

face fierce competition in both domestic and international markets, we anticipated that the contribution of these SMEs' internal resources to firm performance would be contingent on the level of turbulence in the environment (Jaworski and Kohli, 1993). We believed that the advantages for even firms with all four kinds of strategic resources would be offset as quickly as new product technology, customer composition, customer preference, and competitor strategy changed (Ozsomer and Gencturk, 2002).

Surprisingly, the results did not support our hypotheses that much: the only significant results we saw were technology turbulence's moderating influence on the "intangible assets and managerial competences"- and "market knowledge and access"- performance links. Our explanation is that the benefits of internal strategic resources are long term and environmental conditions exist for a relatively short period of time. Thus, in spite of the possible short-term moderating effects of environmental turbulence, companies with internal sustained competitive advantages can still outperform competitors without strong internal strategic resources (Slater and Narver, 1994).

5.4. Limitations

Our study should be viewed in light of its limitations. First, the survey was conducted during the trade shows and focused on two of the representative mature industries in Taiwan. The selection bias of trade show participants can not be avoided. Generalizing the results of this study to all other SMEs in mature industries should be done cautiously. Second, the difficulty in obtaining financial performance figures in the survey because of founders' hesitation to respond limits our analysis to self-assessed performance dimensions. Moreover, the performance goals of some of the very small sized firms are relatively "flexible." Thus, when SME founders answered the questionnaire, they tended to under-estimate their performance probably because they were thinking, "the more, the better." Consequently, the "ideal goal" is never achieved. We expect to overcome the difficulty of obtaining financial performance data in our future research.

5.5. Implications

Our study contributes to the importance of internal strategic resources as key determinants for performance in the Taiwanese traditional SME contexts. However, whether external resources like social capital will help the effectiveness of internal resources and performance might depend. For example, trust, norm, and reciprocity can help the effectiveness of internal resources towards self-assessed performance evaluation but trust and norm might hurt such effectiveness towards self-assessed competitive performance. Thus, it is important to spend the efforts carefully on selecting external resources as well as the purpose of competitiveness of company performance *per se*. The external resources are not always good but take efforts to build up and maintain. Meanwhile, the environment turbulence is in fact help the effectiveness of internal resources towards performance for SME traditional sector. Given SMEs probably lack of excess capacity of internal resources, or organizational slack, they are relatively flexible. Whether flexibility is beneficial for dynamic capabilities is another interesting subject, but environmental turbulence might provide opportunities than threats to SMEs for utilize internal resources for achieving performance.

6. Conclusion

Our study offers new insight into how internal resources interplay with external resources and environment to interactively shape firm performance outcomes. The empirical context of the Taiwanese SMEs in the textile and giftware industries provides evidence for our argument: the stronger the internal strategic resources, the better the firm performance. Meanwhile, the external resources of social capital moderate the main effects of internal resources. External resources sometimes play a positive role in facilitating the effect of internal resources on firm performance, but external resources sometimes become a cost that diminishes the effect. Therefore, SMEs in mature industries should be cautious when accessing outside network resources to make efforts to maintain

and utilize those resources. In addition, an external turbulent market environment does not matter for SMEs in mature industries. Instead, technology turbulence might provide an opportunity to trigger further optimization of internal strategic resources to outperform in the market. Our study contributes to both academia and industry by advancing knowledge and examining the implications of empirical evidence in the context of Taiwanese SMEs operating in mature industries. We also believe that the complicated relationships among internal and external resources, environmental contingencies, and firm performance outcomes have considerable potential for further research. There is a need for empirical tests and a more detailed examination of the relationships, operating scales, and industry features contained in our model. Our research provides a foundation for subsequent studies.

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