An Empirical Study of Small- and Medium-Sized Firms in Taiwan: Entrepreneurship, Core Competency and Market Performance

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ABSTRACT

The average life of small- and medium-sized enterprises (SMEs) in Taiwan has gradually increased from 13 to 20 years, and more than 97% of companies are SMEs. SMEs have been the main structure in the Taiwanese economy and, for this reason, entrepreneurship is very important. Since the 1990s, the trend of globalization has prompted rapid changes and increased competition in the industrial environment. One of the major concerns of SME owners is how to combine entrepreneurship with core competency to improve business performance.

This study aims to explore the relationship among entrepreneurship, core competency and market performance. For this purpose, 1,207 questionnaires were mailed to SME owners in Taiwan, of which 155 were returned. It was found that the owners of SMEs place a high emphasis on entrepreneurship to improve profitability and revenue growth, while enhancing their core competences to improve market performance.

Keywords: SMEs, entrepreneurship, core competency, market performance

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Introduction

From 1982 to date, SMEs have been maintained at more than 97% of all enterprises, and they play a key role in Taiwan’s industrial achievement. How to identify entrepreneurial opportunities and enhance core competency are the main factors affecting their performance. The average life of SMEs has gradually increased from 13 to 20 years, and the number operating for more than 20 years has risen from 8.84% in 1995 to 19.59% (White Paper on Small and Medium Enterprises in Taiwan, 2008), increasing their stability.

Despite the rapid changes and intensifying competition in the manufacturing industry, the resource-constrained SMEs have had the drive and determination, a strong entrepreneurial mindset, high adaptability and a capacity for change and innovation. Thus, they have been able to play a crucial role in stabilizing the economy, even under unfavourable circumstances. Taiwan’s SMEs were praised for their adaptability during the Asian financial crisis in 1997, with entrepreneurship in particular definitely being an important factor (Chen, 2003).

Taiwan’s industrial environment has experienced significant changes in recent years, with wages increasing, labour shortages and rising house prices, which affect the operating costs of SMEs. Also, the new industrialized countries in Southeast Asia and in China, which have cheaper labour and abundant natural resources, have become new rivals for Taiwan’s foreign trade (Guo & Huang, 1995). In 2007, Taiwan’s trade performance with the major countries or territories continued the growth trend of the previous years, with the growth rate of exports to China being higher than the overall export growth.

SMEs in Taiwan are limited by their size and resources and their long-term reliance on a large number of standardized production factories, which clearly limits their scope for innovation and investment in research and development. In this era of knowledge integration, SMEs must make the best use of technology in order to create a new situation for their enterprises. At the same time, increased technical innovation and R & D are needed in order to create a market under intense competitive pressure (Barringer & Bluedorn, 1999). Entrepreneurship — which is an interactive development process (Tsai, Li & Lin, 2008) — focuses on the pursuit of market opportunities. It has become a phenomenon that cannot be ignored in management practices, and entrepreneurial issues have become the focus of attention of many management scholars. In the complex and turbulent environment, companies must
adopt a more entrepreneurial approach in order to maintain a high performance in their enterprises’ output (Hayton, 2005). When entrepreneurs have a higher level of achievement motivation, risk-taking and innovation, they can be more successful and improve their performance (Stewart, Watson, Carland & Carland, 1999).

The resource-based view emphasizes that when enterprises have key core competency, they will be able to take advantage of this ability to enhance corporate performance. Core competency, which is accumulated by an organization from the learning effects of past and present knowledge (Phahalad & Hamel, 1994), is the ability of an enterprise to coordinate resources, usually by a combination of organizational procedures, in order to produce the desired result (Amit & Schoemaker, 1993).

In Taiwan, SME owners are the key people who make decisions on the main directions of development. SME are usually dominated by a handful of family members who perform various duties on behalf of the executives of enterprises (Fang, Chang & Lin, 2008). High entrepreneurship can produce investment in new business, taking risks and constantly updating organizational strategy to improve market performance (ibid.). Through the long-term profits, innovation comes from product innovation, market innovation, and scientific and technological innovation (Robert, 1999); and, for this reason, SMEs owners need special core competency which can bring long-term benefits for their companies.

This research analyses the concept of the integration of entrepreneurship, core competences and market performance, and explores the resource-constrained and limited ability of small- and medium-sized enterprises.
Theoretical Background and Development of Hypotheses

**Entrepreneurship**

The initial research centred on the individual level (Casson & Giusta, 2007; Cope, Jack & Rose, 2007), referring mainly to the psychological characteristics of the individual, the characterization of social status, a collection of social roles or similar sexual behaviour and social processes. Miller and Friesen (1982) state that entrepreneurship involves creating new features, risk-taking, and trying to succeed in venture investment; while Miller (1983) divided entrepreneurship into three kinds — innovation, risk-taking and proactive behaviour. Entrepreneurship is constructed via the business owners’ personal level of ability to guide the direction of development of SMEs. In SMEs, business owners grasp the corporate decision-making and, when they have a culture of innovation and the relevant skills, they will be able to develop corporate entrepreneurship (Rutherford & Holt, 2007). Entrepreneurship involves the integration of unique resources, and seeking opportunities to create value (ibid.).

The resource-based view (RBV) suggests that, to achieve superior performance in an international market, an entrepreneurial firm needs to develop competitive advantages that create value through unique products or services that satisfy foreign customers (Dhanaraj & Beamish, 2003; Li & Ogunmokun, 2001; Lu & Beamish, 2001; Peng, 2001). Numerous studies indicate that, because of their small size and limited financial and managerial personnel resources, entrepreneurial firms actively seek resources from the external environment and inter-firm networks (Bruton, Dess & Janney, 2007; Chetty & Agndal, 2007; Elango & Pattnaik, 2007). Research also shows that entrepreneurial firms can take advantage of institutional capital and managerial ties to obtain the resources necessary for exploring opportunities in foreign markets (Liesch & Knight, 1999; Peng, 2001; Peng, Wang & Jiang, 2008; Yli-Renko, Autio & Tontti, 2002; Zhou, Wu & Luo, 2007).

This study combine the resource-based view (RBV) of firms and the capacity-building perspective of rent creation to shed light on the crucial role of firm-specific capabilities that transform key resources into performance outcomes. This adaptive capability is a firm’s ability to coordinate, recombine, and allocate resources to meet the different requirements of foreign markets. While possession of resources is important, the RBV suggests that capabilities are a source of inimitable and sustainable competitive advantages to firms, because they transform resources into products or services superior to those of competitors (Amit & Schoemaker, 1993; Barney, 1991; Grant, 1991; Makadok, 2001).
However, despite the documented relationship between resources and international performance, little is known about how entrepreneurial firms can capitalize on those resources that relate to distinctive capabilities to achieve superior international performance. To address this research gap, we combine the RBV with the capability-building perspective of rent creation (Amit & Schoemaker, 1993; Ethiraj, Kale, Krishnan & Singh, 2005; Makadok, 2001; Teece, Pisano & Shuen, 1997) to examine the firm-specific capabilities that transform the resources of institutional capital and managerial ties into successful internationalization.

The RBV literature presents divergent views on resources and capabilities (Priem & Butler, 2001). Some researchers tend to view these two terms as synonymous (Newbert, 2008). This combining of the two concepts is based in part on Barney’s (1991) definition of resources, which lists together firm assets, capabilities, processes, attributes, information, and knowledge. Based on this view, a firm can develop and sustain its competitive advantage only if it can create an idiosyncratic pool of resources. The resource-based view of the firm and the capability-building perspective of rent created shed light on the crucial role of firm-specific capabilities that transform key resource into performance outcomes. This adaptive capability is the firm’s ability to coordinate, recombine, and allocate resources to meet the different requirements of foreign markets. In recent years, in measuring entrepreneurship, innovative risk has been proposed to describe the dimensions of the proactive entrepreneurial spirit (Caruana, Morris & Anthony, 1998; Covin & Slevin, 1989; Naman & Slevin, 1993; Rutherford & Holt, 2007; Venkatraman, 1989; Wiklund, 1999).

**Market performance**

Compared to large enterprises, SMEs have high flexibility and low formalization (Lindmark, 1997); and the lower the degree of formalization of a company, the greater its entrepreneurship and, hence, the better its performance (Covin & Slevin, 1989). Audretsch (2004) points out the link between entrepreneurship, innovation and growth, and states that the entrepreneurial spirit improves the economic performance. Matsuno, Mentzer and Ozsomer (2002) found that the market share, the percentage of sales of new products and the return on investment rate showed a positive direct impact. The entrepreneurial spirit of a company can be created or new products and technologies introduced to generate superior economic performance; and a proactive company, by forecasting the demand for new markets, new products and services, can gain the advantages of proactive targeting of markets and adding segments early ahead of other companies.
Naman & Slevin (1993) point out that measuring a company’s performance is a complex and controversial issue. Using the return on assets (ROA) and return on equity (ROE) ratios, entrepreneurship can achieve higher corporate performance. The sales rate of return is a commonly used measure to assess the performance of businesses and sales growth. For the study sample of SMEs, corporate performance algorithms vary with the start and end of the year, while SMEs are most concerned about the performance part of the most direct profitability and revenue growth — therefore, these two indicators are used in this research as a measure of market performance variables. Many studies have been carried out on business performance, most of which take the overall performance, market performance or new product performance as the focus. Therefore, drawing on a growing body of literature that distinguishes between a firm’s product and its resource and capabilities (Barney, 1991; Henderson & Cockburn, 1994; Hitt & Ireland, 1985; Markides & Williamson, 1996; Snow & Hrebiak, 1980), this study proposes the following hypothesis.

**H1: Entrepreneurship contributes positively to core competency.**

**Core competency**

From the point of view of resource-based theory, using an enterprise resource perspective to analyse businesses makes sense as a company must have direct or indirect competitors in order to gain the ability or resources to build competitive advantage. In a further interpretation of competitive advantage for businesses, Barney (1991) argues that it consists mainly of strategic resources that are valuable, rare, inimitable and irreplaceable; and competitors are unable to follow similar value-creating activities. SMEs, with all the various resources they can obtain, may not be comparable to the big corporations. However, with their organizational flexibility that acts in accordance with the globalization trend, the SMEs can grasp the key resources, which in turn leads to the formation of core competences, and so they are able to build competitive advantage and long-term successful performance.

Despite having a close relationship, there is a research gap between what the resource-based view advocates — such as the source of sustainable competitive advantage, heterogeneous resource and core competences — and what the service management view emphasizes, such as customers’ perceived quality, customer satisfaction and customer value (Wang & Lo, 2003). By bridging the gap and integrating these views, this study seeks to identify and recognize the closely intertwined competency-building and leveraging process, which consists of organizational learning, strategic flexibility and core competency. This determines customer-focused performance and further sustainable competitive advantages in a
turbulent environment, and also assists in realizing superior performance.

Bogner and Thomas (1994) define core competences as firm-specific skills and cognitive traits directed towards the attainment of the highest possible levels of customer satisfaction, vis-à-vis competitors. Therefore, core competences are skill that allow a firm to deliver fundamental customer benefits (Hamel & Heene, 1994) by enabling it to establish, enhance, upgrade and utilize proprietary access to those resources that lead to a stream of sustainable competitive advances. However, core competences are the least definable kinds of productive resource, and consist of a complex composition of constituent skills and technologies, collective learning, and both tacit and explicit knowledge, contributing to competitiveness through organizational processes that ensure superior coordination of functional activities (Prahalad & Hamel, 1994). These have often been referred to in the contexts of functional areas (Snow & Hrebiniaik, 1980), abilities, technologies (Prahalad & Hamel, 1994), or simply skills and resource (Reed & DeFillippi, 1990). They provide the conceptual glue that gives shared meaning to all the separate functional activities and programmes, and serve to coordinate competitive actions driven by the unique strategic positioning of a firm.

Core competences represent both the underlying knowledge base and the set of skills required to compete successfully. What is more, a firm’s current core competences serve as platforms for ongoing development and applications of the new competences needed to sustain competitive advantages in the future, which evolve through an iteration of repeated doing and learning, with each sequence expanding knowledge and enriching the core competences. This may explain why firms are being increasingly seen as portfolios of core competences, which admit a proactive construction of competency, seeing competency as spanning multiple businesses, and viewing competition as being over the acquisition and development of competences.

Furthermore, superior competences also give firms the capability to generate and act on knowledge about competitors’ actions and reactions, which helps them to develop the basis for competitive advantages (Narvel & Slater, 1990; Tuominen, Moller & Rajala, 1997; Woodruff, 1997). Today, there are many different ways to view core competences, with different emphases. For example, Hanel and Heene (1994) distinguish market-access competences, integrity-related competences and functionality competences. In general, technological competences determines which products or services can be provided technically at any one time; marketing competences determine which products are demanded by targeted customers; and integrative competences reflect the degree of fit between the above two competences
and the effectiveness and efficiency of delivering offerings with superior customer value. This study uses Wang & Lo’s (2004) proposed technical ability — the ability to integrate and market capacity as core competency metrics.

**Technological competences** refer to the ability to develop and design new products and combine knowledge about the physical world in unique ways, transforming this knowledge into designs and instructions for the creation of desired outcomes.

**Market competences** are defined as the processes designed to apply the collective knowledge, skills and resources of a firm to the market-related needs of a business, which adds value to its goods and services so as to meet the competitive demands of customers.

**Integrative competency** helps to achieve a positive interaction among elements of the dynamic competency-building and leveraging process that enhances the strategic alignments and strategic positioning, and finally determines the ultimate results of competition.

This study proposes the following hypothesis.

**H2: Core competency contributes positively to market performance.**

**Entrepreneurship and market performance**

According to Wang and Lo’s (2004) definition, core competency comprises technical, integrative and marketing capabilities. The source of SMEs’ competitive advantage is not only the pricing, but also non-price factors such as unique designs and customization, which are of particular importance in the current, rapidly changing industry (Prajogo & Ahmed, 2006). These factors are also essential to the enhancement of market performance.

From a resource-based perspective, core competency comprises characteristics of heterogeneity, value, ductility, inimitability, path dependence, and dynamics. SMEs possess their own special composition of capabilities and resources, and each company focuses on the research and development of its specific products. These special operating skills and tricks of the trade cannot be easily described in words — hence the dynamic quality of SMEs’ core competency. As each individual enterprise has different resources and capabilities, each would have a different performance through the dynamic process (Mahoney & Pandian, 1992).

When an enterprise possesses its own unique core competency, which increases the product’s added value and offers a final product that is most beneficial to customers
(Tampoe, 1994), its market performance can then be continually maintained. As SME performance is calculated in different ways, it is not possible to obtain objective performance indicators. Therefore, this study uses the SMEs’ own self-assessment of profitability and revenue growth over the last three years, compared to other companies in the same industry, as a measure of market performance.

In this research, based on the above literature, the following hypothesis is proposed:

**H3 : Entrepreneurship has a positive impact on market performance**

**Entrepreneurship, core competency and market performance**

Corporate entrepreneurship is the embodiment of innovativeness, risk retention and pro-activeness. With innovativeness, new products can be developed and produced; risk retention is the initiative and willingness of an enterprise to assume risks; and pro-activeness is the constant search for new markets or the adoption of appropriate plans. Entrepreneurship allows the thoughts and ideas of enterprise owners to be imported into a new product and the development of new technology (Knight, 2000). The company’s core capabilities are turned into a long-term competitive advantage, to enhance the value of the product and create customer interest (Khalid, Yan-Bing & Malak, 2002). On the other hand, core competency is an assembly of experience, knowledge and method, which plays the role of a catalyst in accumulating and creating new strategic assets (Duysters & Hagedoom, 2000). The knowledge and experience of enterprise owners can be integrated into SMEs and transformed into clearer strategic measures, thus creating economic benefits for the enterprise. Kash and Rycroft (2002) comment that core competency plays a crucial role in innovative leadership. When SME owners have innovative ideas, this can be transformed into technical capabilities to improve the products, re-model new marketing capabilities, and integrate the core capabilities of the enterprise, thereby generating returns for the company. As noted earlier, Prajogo and Ahmed (2006) point out that the source of competitive advantage not only involves attractive prices but also, more important, the need to contain some non-price factors, including the design and customization, and the design of new products in a rapidly changing industrial environment.

On the basis of the literature above, the following hypothesis is proposed:

**H4: Core competences in entrepreneurship and market performance have a mediating effect**
Method

Sample and data collection
A stratified sampling method was used first, and then a random sampling technique was applied to identify potential respondents based on a name list of high-tech SME firms, as a result of which 1,207 firms were identified. The sample was selected from the population of four databases in Taiwan:

- manufacturing companies from the Honorary Instructor Database from the Small and Medium Enterprise Administration, the Ministry of Economic Affairs
- companies which won the National Outstanding Small and Medium Enterprises Award over the last three years
- companies which won Innovation Research Awards in the last three years from the Small and Medium Enterprise Administration, Ministry of Economic Affairs
- companies which won Small Business Innovation Research awards, again over the last three years, from the Small and Medium Enterprise Administration, Ministry of Economic Affairs

The numbers selected from these databases were 479, 30, 119 and 861 respectively. However, to improve the reliability and validity of this approach, several measures were taken to delete repeated samples from the databases, resulting in a total of 1,207 companies.

The questionnaires were mailed to these 1,207 companies and also both formal and informal contacts with them were made to help raise the response rate. After discounting invalid and incomplete responses from the 211 returns, there were 155 usable questionnaires, which were used for analysis. The data analysis in this study follows a two-step procedure: first, using confirmatory factor analysis (CFA) to assess measurement models; and, second, assessing path relationships using structural equation modelling (SEM) (Anderson & Gerbing, 1988).

Variables and measures

Dependent variable
We used perceptual measures of market performance by modifying the items from Delaney and Huselid (1996). A five-point Likert scale was adopted (1=very
dissatisfied; 5=very satisfied) to capture the participants’ perceptions of the market performance of their firms. The survey asked respondents how satisfied they were with: (1) growth in the markets (growth performance) and (2) profitability from markets expansion (profitability performance).

**Mediating variables**

The core competency concept contained technology competences, integrative competences and market-driven competences (Wang & Lo, 2003). Core competency — the most important factor that determines an SME’s performance — was assessed using the following items: (1) more advanced than major competitors in technological advantages; (2) the main strategy of the company, which accounted for a very important part of the functional integration; and (3) information and analysis of the products or services of the company.

**Independent variables**

Miller’s (1983) innovation, pro-activeness and risk-taking concepts were the independent variables. Five-point Likert scale items (1=very dissatisfied; 5=very satisfied) were used to find out the perceptions of the entrepreneurship scales. We asked entrepreneurs or human resource managers how far their firms: (1) emphasized research and development on new products, innovation, and technology leadership; (2) introduced new products or services over the last five years, compared with the main competitors; (3) made important decisions involving uncertainty, and tended to take a more bold and positive attitude to grasp potential opportunities over the past five years; and (4) strategically exited mature or recessionary causes.

**CMV**

Data were measured on a five-point scale, providing a psychological frame which countered common method bias (Podsakoff, Mackenzie, Lee, & Padsakeoff, 2003). Also, many previous studies have provided substantial evidence to support the reliability and validity of self-reported measures by key informants (Brush & Vanderwerf, 1992; Dess & Robinson, 1984; Spanos & Lioukas, 2001; Venkatraman & Ramanujam, 1986). Besides, some effective steps were taken to avoid any distorted self-reports and socially desirable answers, as suggested by Podsakoff and Organ (1986), and Harman’s (1967) one-factor test was used and a five-factor solution emerged, explaining 80.4% of the variance with no single factor explaining more than 20%. The total variance explained was 67.323% and a single factor explained 37.525% — and so common method variance was not a significant problem.
Data Analysis and Structural Equation Modelling

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Factor</th>
<th>Eigenvalue</th>
<th>total variance explained (%)</th>
<th>Cronbach’s α</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entrepreneurship</td>
<td>innovation</td>
<td>3.862</td>
<td>38.622</td>
<td>0.8196</td>
</tr>
<tr>
<td></td>
<td>risk-taking</td>
<td>1.718</td>
<td>55.801</td>
<td>0.7264</td>
</tr>
<tr>
<td></td>
<td>pro-activeness</td>
<td>1.101</td>
<td>66.813</td>
<td>0.7134</td>
</tr>
<tr>
<td>Core competences</td>
<td>market-driven competences</td>
<td>5.635</td>
<td>46.962</td>
<td>0.831</td>
</tr>
<tr>
<td></td>
<td>technology competences</td>
<td>1.588</td>
<td>60.196</td>
<td>0.7473</td>
</tr>
<tr>
<td></td>
<td>integrative competences</td>
<td>0.993</td>
<td>68.469</td>
<td>0.87.2</td>
</tr>
<tr>
<td>Market performance</td>
<td></td>
<td>1.094</td>
<td>79.308</td>
<td>0.7391</td>
</tr>
</tbody>
</table>

The analysis used the SPSS statistical software package. First, reliability as a measure of internal consistency was calculated; next (as shown in Table 2), the descriptive statistics were calculated; and, finally, stepwise structural equation modelling was carried out to determine whether entrepreneurship and core competency were independent predictors of market performance. The results of item-to-total score correlations and the effects of deleting items on Cronbach’s α based on the study data showed that only the items in Table 1 should be finally retained (Nunnally, 1978). The respondents were asked to assess their market performance relative to those of their rivals in two items; and then ten items were adapted to measure entrepreneurship. For core competency, 12 items were retained. The findings from exploratory factor analysis, Cronbach’s α, the Eigen value and total variance are shown in Table 1.

Table 2 shows the mean, SD and correlations between the constructs in our model (Fornell & Cha, 1994; Fornell & Larcker, 1981). The largest correlation coefficient was that between integrative competences and technology competences, with a value of 0.56, which indicates strongly that all the constructs involved are both conceptually and empirically distinct from each other.
Hypothesis testing using structural equation modelling (SEM): To examine how core competences might act as mediators in the relationships between entrepreneurship and the market performance outcome of SMEs, the SEM approach outlined by Mackinnon and associates (Mackinnon, Lockwood, Hoffman, West & Sheets, 2002) was adopted. SEM is generally considered the preferred causal modelling method (James, Muliak & Brett, 2006; Schneider, Ehrhart, Mayer, Saltz & Niles-Jolly, 2005) because researchers can use it to control for measurement error, provide information on the degree of fit of the tested model, and test multiple mediators (Brown, 1997; MacKinnon, 2000). We estimated a baseline model as the full mediation model (see Figure 1).

Table 3 shows that all of the fit indices indicated a good fit — entrepreneurship(χ²=50.91, p<0.01, GFI=0.938, CFI=0.96, RMSEA=0.063, SRMR=0.059); core competency (χ²=70.295, p<0.001, GFI=0.920, CFI=0.962, SRMR=0.029).

To test hypotheses 1 to 3, the SEM model was used and the parameter estimates of the mediation model were as shown in Figure 3. This is the final model and best illustrates the results of the hypothesis testing. As shown in Figure 1, the data support entrepreneurship being related to core competency (β=0.72, p<0.01) and core competency being related to market performance (β=0.034, p<0.1). The mediation of

Table 2 Means, deviations and correlations

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>SD</th>
<th>innovation</th>
<th>risk-taking</th>
<th>pro-activeness</th>
<th>technology competences</th>
<th>integrative competences</th>
<th>market-driven competences</th>
</tr>
</thead>
<tbody>
<tr>
<td>innovation</td>
<td>3.76</td>
<td>0.74</td>
<td>—</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>risk-taking</td>
<td>2.91</td>
<td>0.84</td>
<td>0.32**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>pro-activeness</td>
<td>3.40</td>
<td>0.71</td>
<td>0.45**</td>
<td>0.38**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>technology competences</td>
<td>3.81</td>
<td>0.56</td>
<td>0.37**</td>
<td>0.36**</td>
<td>0.30**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>integrative competences</td>
<td>3.88</td>
<td>0.60</td>
<td>0.47**</td>
<td>0.16*</td>
<td>0.42**</td>
<td>0.56**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>market-driven competences</td>
<td>3.74</td>
<td>0.58</td>
<td>0.30**</td>
<td>0.092</td>
<td>0.29**</td>
<td>0.48**</td>
<td>0.55**</td>
<td></td>
</tr>
<tr>
<td>market performance</td>
<td>3.34</td>
<td>0.74</td>
<td>0.331**</td>
<td>0.074</td>
<td>0.40**</td>
<td>0.29**</td>
<td>0.22**</td>
<td>0.28**</td>
</tr>
</tbody>
</table>

N=155, *P<0.05; **P<0.01
core competency between entrepreneurship and market performance was supported

![Diagram](image)

**Figure 1** Final model (Parameters are standardized parameters.)

* P < 0.05 (t = 1.96), **P < 0.01 (t = 2.58), *** P < 0.001 (t = 3.29)
Conclusion

In this study, an in-depth analysis of SME entrepreneurship found that the impact of core competences on the market performance was as follows:

**Entrepreneurship contribute positively to core competence**

This research shows that entrepreneurship does have an impact on market performance. The results indicate that business owners increased their willingness and ability for risk-taking, in order to open up new markets and innovatively predict, to help their businesses find new opportunities in a changing environment, and by an effective combination of various resources enhance corporate performance. How to enhance the entrepreneurial spirit of Taiwan’s SMEs is clearly a matter of importance and urgency; and, in this regard, the government should play a more active role in counselling on entrepreneurship and devote more resources to enterprise development and entrepreneurship.

**Core competency contributes positively to market performance**

This research found that SME entrepreneurship does affect the core competences. Ireland, Reutzel and Webb (2005) point out that entrepreneurship is mainly associated with the activities and behaviours of entrepreneurs and their individual characteristics; organizational growth; entrepreneurial residual or failure rate; and companies underwriting stock for their first performance. Company performance is seldom explored through the impact on core competences — the black box in the middle — to better reflect the shift in the core competences, which is more meaningful than the direct link to the output indicators.

Entrepreneurship changes through the strategic development of core competency also lead to changes in the company and its environment, and consequently changes the entire result. With the current increased competitive pressures on time, speed, price and functionality, rapidly changing technology and increasingly short product life cycles, the low-cost niche is already eroded. Therefore, in this era of knowledge integration, SMEs must integrate entrepreneurship for businesses, create new product capabilities and market capacity, and strengthen their ability to integrate, in order to open up the market.

**Entrepreneurship has a positive impact on market performance**

The theory that corporate entrepreneurship can effectively raise organizational performance has been confirmed by a number of scholars (Anderson, Park & Ieed,
2007; Lumpkin & Dess, 1996; Moon, 1999; Murphy, Trailer & Hill, 1996). At present, many regional economies are in continuous integration — with the world’s three largest regional economies being the European Union, the North America Free Trade Area and the Asia-Pacific Economic Community. Although similar integrated trade organizations are constantly emerging and creating greater opportunities, enterprises are subsequently faced with increased competition, greater risks, uncertainties and challenges. Therefore, the risks borne by entrepreneurs are relatively higher, and they must improve their market sensitivity and sales forecasting ability. Taiwan’s economy has always had a high dependence on trade, and thus it cannot avoid the changes and challenges brought by the trend of globalization. Entrepreneurs must be able to integrate these changes in order to achieve high performance in this high trade-dependent market.

**Core competences in entrepreneurship and market performance have a mediating effect**

The study found that the entrepreneurial spirit of small business owners affects the market performance through core competences — that is, the entrepreneurial spirit can import the ideas of the business owners in generating new products and new technology (Knight, 2000). A company’s core capabilities can be transformed into a long-term competitive advantage, and thus enhance the product value and create customer benefits (Khalid, Yan-Bing & Malak, 2002); and, in the future, can create long-term market advantage and maintain a persistent source of performance. Although SME owners clearly understand that their enterprises can have an impact on core competences through entrepreneurship and thus increase market performance, the resources, market and scale experiences that SMEs have in Taiwan are far weaker than those of big corporations.

Therefore, SMEs can achieve synergy through clustering, and overcome the threats due to their smallness of scale, insufficient information, and difficulty in the paradigm shift in network and communications technology. At the same time, this can strengthen SMEs in handling the discrepancies in standardization of new technologies, building powerful integration mechanisms according to the distinctiveness of the region, and increasing the competitiveness of their products and services. These will be important directions to take in the midst of the harsh economic challenges. As the scale of SMEs in Taiwan varies, the formation of economic agglomerations would be more difficult. It is believed that governmental promotion and provision of environment-shaping can lay the foundation for the advancement of SME innovation in Taiwan.


**Recommendations**

So far, Taiwan’s 1.24 million SMEs, with 794 million people in employment, can be said to be the cornerstone of Taiwan’s economy, and play an important role in stabilizing social employment. They are faced with a wide range of challenges: internationalization; globalization; industrial division strategy; regional trade and economic integration; the rise of emerging economies and low-cost competition; rising international oil prices and raw material; environmental consciousness; the development of international economic circumstances — and, at the same time, technological innovation and the impact of Internet business on the industrial management style and employment. Enabling SMEs to obtain funds is not easy; and strengthening core competences and marketing capacity have their difficulties. Therefore, it is recommended that, in future, Taiwan’s SMEs can develop into local enterprises, with small business owners combining local capacity to form unique core competences. In addition to fostering long-term resources and human sources, this will also promote local employment, strengthen local capabilities, and improve product quality standards to help stabilize the SMEs and enhance long-term profitability and revenue growth.

In addition, in order to encourage SMEs to enhance their research and development capabilities, the Ministry of Economic Affairs should introduce programmes to help enterprises reduce their development costs and risks, and provide innovative R & D advice and funding, including small business development programmes, industrial development plans, innovative technology applications service plans, and technology development programmes to assist traditional industries to promote positive innovation, transformation and upgrading.

**Limitations of the Study and Suggestions for Future Research**

In this research, the SME owner was the object of study. Using a self-report inventory, the more sensitive research tools or ambiguous statements were amended before the tests in order to reduce the participants’ concern and subjectivity. However, due to budget and time constraints, the tests were conducted simultaneously and used the same methods, which might indicate a problem of common variance. Nevertheless, the enterprise owners must personally complete the questionnaires as entrepreneurship and core competency constructs are considered psychological assessments. Furthermore, in terms of market performance, SMEs have varying methods for performance measurement, and different fiscal year periods and industry types. Therefore, in order to strengthen the rigour of the research, participants were
carefully selected during random sampling to reduce bias in the study. Due to the difficulty in obtaining performance data, the method of self-assessment was used to increase the empirical evidence related to SME performance, thereby enhancing the contribution to this study.

Secondly, due to time constraints, a cross-sectional study was used for the collection of data. However, as data related to the process of entrepreneurship’s impact on core competency cannot be collected through questionnaires, it is recommended that future studies be supplemented with interviews with the entrepreneurs. Also, there may be time discrepancies in the impact of core competency on market performance and, therefore, information cannot be entirely collected through cross-sectional studies. Future research may focus on the causal relationship resulting from the effects of time, with information being collected at different points in time, to enhance the process of the impact of core competency on market performance.

In addition, the subjects in this study were mainly SMEs in the manufacturing, financial service and high-tech industries. However, SMEs in Taiwan also include agricultural, industrial (manufacturing and construction) and service (wholesale and retail; accommodation and catering) industries. Future research can focus on the different industries and their characteristics, and explore the effects of SMEs entrepreneurship on core competency and market performance.

Finally, this study used only SMEs in the Taiwan region as its research sample but, due to the increasingly frequent cross-strait exchanges, the establishment of manufacturing facilities by Taiwanese businesses in mainland China is becoming increasingly common, with many having subsidiary companies there. Their source of performance and income also come largely from the mainland market. It is therefore recommended that research can also consider samples from mainland China, and explore how Taiwan’s SMEs can form unique core competences through entrepreneurship, and achieve market performance in the mainland.
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