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The Impact of Entrepreneurial Orientation on Business Performance: A Study of Technology-based SMEs in Malaysia

Azlin Shafinaz Arshad^{a,*}, Amran Rasli^b, Afiza Azura Arshad^c, Zahariah Mohd Zain^c

^aMalaysian Academy of SME & Entrepreneurship Development (MASMED), Universiti Teknologi MARA, Malaysia.

^bFaculty of Management and Human Resource Department, Universiti Teknologi Malaysia, Malaysia.

^cFaculty of Business Management, Universiti Teknologi MARA, Malaysia.

Abstract

The purpose of this study is to determine the impact of entrepreneurial orientation (EO) which is represented by five dimensions and business performance. A simple random sampling technique was adopted in which only hundred technology-based SMEs in Malaysia responded to the survey questionnaire and a total of eighty eight responses deemed to be usable. Descriptive statistical tool was used to analyze the data specifically Pearson product moment correlation and regression analysis.

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1. Introduction

With today's complexity in conducting business transactions, entrepreneurial orientation (EO) can be regarded as a crucial factor to ensure the success of a business. At the same time, firms are forced to be involved in seeking out new opportunities. EO reflects the behavior of the entrepreneurs like innovation, proactive and risk taking (Muenjohn and Armstrong, 2008). In this manner, firms have to be innovative involving innovations of products, services and processes, have to be more proactive compared to competitors in all aspect and be risk-oriented. The current study will adopt the five dimensions of EO which was developed by Lumpkin and Dess (1996). These dimensions has been studied by various researchers (Hughes and Morgan, 2006; Lee, Lim and Pathak, 2011;

* Corresponding author. Tel.: +06-019-3551476; fax: +603-55225430.

E-mail address: azlin@salam.uitm.edu.my

Nonyane-Mathebula, 2010) and Li, Huang and Tsai, 2009). As indicated by Chen, Du and Chen (2011), EO is important to the growth of a company and also to the growth of the economy of a country. In fact, few scholars agreed that EO is a significant contributor to a firm's success and contribute to a healthier business performance (Mahmood and Hanafi, 2013; Zainol and Ayadurai, 2011). Walter, Auer and Ritter (2006) pointed out EO is much needed especially in hostile and technologically sophisticated environments. Many studies have acknowledged the importance of EO to the firm's performance (Schindehutte, Morris and Kocak, 2008; Tajeddini, 2010; Hoq and Chauhan, 2011; Fauzul, Takenouchi and Yukiko, 2010; Wang, 2008). As has been agreed by Rodrigues and Raposo (2011) and Rodrigues (2005), firms that have a high EO have a superior performance where the market share showed improvements and the number of new products, services and processes has shown some growth. Firms need to be entrepreneurial in order to survive and successfully compete, especially within fast-changing industries (Teece, 2007). As mentioned by Lindelof & Lofsten (2006), rapid technological progress strengthens competitive pressure and creates a rich pool of technological opportunities that encourage entrepreneurial behavior of firms. In this article, the relationship between EO and business performance will be discussed and tested accordingly within the technology-based SMEs in Malaysia. Technology-based SMEs are firms that integrate, acquire or create new technology to develop new products, processes and services as the basis of their business competitiveness (PMSEIC, 2004). As defined by Ranniko (2012), technology-based SMEs are firms that embrace technology in their day-to-day activities and based their business on developing, commercializing or manufacturing technology. This is in line with Maine, Shapiro and Vining (2010) definition where technology-based SMEs are firms that operate in R&D intensive sectors. For the purpose of this study, technology-based SMEs are referred to firms that are involved with commercialisation activities of local inventions or acquisition of foreign technologies. The organization of this study is presented accordingly where the next section presents a review of relevant literature followed by the methodology section. The results and discussion section presents statistical analysis of the data in which conclusion will be made in the last section.

2. Literature Review

2.1. Entrepreneurial orientation

Entrepreneurial orientation is described as the involvement of a firm to enter a new market (Lumpkin and Dess (1996; Lee and Peterson, 2000). Avlonitis and Salavou (2007) posited EO constitutes an organizational phenomenon that reflects a managerial capability by which firms embark on proactive and aggressive initiatives to alter the competitive scene to their advantage. Lumpkin and Dess (1996) developed five dimensions that characterize the EO of a firm: innovativeness, proactiveness, risk taking, competitive aggressiveness and autonomy. Innovativeness reflects the tendency to engage in and support new ideas, novelty, experimentation and creative processes resulting in newness. Proactiveness reflects firm's actions in exploiting and anticipating emerging opportunities by develop and introduce as well as making improvement towards a product (Lumpkin and Dess, 1996). Risk-taking represents the willingness to commit resources to undergo activities and projects which resulted in uncertainty of the outcomes (Lumpkin and Dess, 1996). Risk-taking is defined as the extent to which a firm is willing to make large and risky commitments (Covin and Slevin, 1991). Competitive aggressiveness is the intensity of the firm's to improve their position to outdo and overtake their competitors in the market (Lumpkin and Dess, 1996). It is characterized by a strong offensive posture directed at overcoming competitors and may be quite reactive as when a firm aggressively enters a market that a rival has identified (Lumpkin and Dess, 1997). Autonomy refers to an independent action of individual or teams in ensuring ideas and concepts are being carried out till completion (Lumpkin and Dess, 1996). Autonomy gives employees the chance to perform effectively by being independent, self-directed, and creative.

2.2. Business Performance

In measuring business performance, subjective and self-reported measures by the owners/ managers will be utilized which are consistent with the earlier studies (Covin and Slevin, 1989; Smart and Conant, 1994). As suggested by Knight (2000), majority of earlier studies have adopted self-reported measures to gather business performance data which have proven to be reliable. Moreover, Yang (2008) asserts that public information is

unreliable as most of the firms are privately held and they have no legal obligation to disclose information. According to Wiklund (1999), growth and financial performance is a common performance measurement. Thus, the researcher will adopt these performance measurements in this study.

2.3. *EO and Business Performance*

The relationship between EO and firm performance has become the main subject of interest in past literatures. According to Rauch, Wiklund, Lumpkin and Frese (2009), it is likely for firms adopting EO to perform better than companies that adopt conservative orientation. Initially, one could question the importance of EO for the success of enterprises. Thus, previous studies showed that EO could significantly improve business performance (Covin and Slevin, 1991; Lumpkin and Dess, 1996; Wiklund and Shepherd, 2005; Covin and Slevin 1989; Lumpkin and Dess, 2001). Many studies on EO and business performance have been associated to have positive results (Jantunen, Puimalainen, Saarenketo, and Kylaheiko, 2005; Chow, 2006; Coulthard, 2007; Wiklund, 1999; Wiklund and Shepherd, 2003, 2005; Zahra, 1991; Zahra and Covin, 1995; Madsen, 2007; Keh, Nguyen and Ng, 2007; Lee, Lee and Penning, 2001; Lumpkin and Dess, 1996). However, there is no doubt there are also studies that revealed that EO does not give positive results to business performance (Hart, 1992; Matsuno, Mentzer and Ozsomer, 2002; Morgan and Strong, 2003; Smart and Conant 1994; Naldi, Nordqvist, Sjöberg, and Wiklund, 2007). Thus, the researcher coincide with few studies that on different situation, EO will have a direct and indirect impact towards a firm's performance depending on different environments (Zahra, 2008; Kellermanns, Eddleston, Barnet and Pearson, 2008; Lumpkin and Dess, 1996). Hence, the study of EO especially on Lumpkin and Dess's (1996) dimensions are needed as many studies have proven there is a relationship between EO and business performance. Therefore, the researcher hypothesizes that:

- H1: Innovativeness is positively associated with business performance.
- H2: Proactiveness is positively associated with business performance.
- H3: Risk-taking is positively associated with business performance.
- H4: Competitive aggressiveness is positively associated with business performance.
- H5: Autonomy is positively associated with business performance.

3. **Research Methodology**

A quantitative method was adopted in this study using survey questionnaire. A list of technology-based firms was obtained from Malaysian Technology Development Centre (MTDC), an agency entrusted by the Malaysian government in overseeing the development of technology-based firms and at the same time provides financial assistance. The researchers then have narrow down the list by identifying manufacturing technology-based SMEs according to the definition of SME by SME Corp to ensure representativeness of the study. A total of 150 questionnaires were distributed to technology-based SMEs using a simple random sampling method. However, only 100 firms responded to the survey in which 88 were deemed to be usable resulting in a 58.6 percent response rate. According to Roscoe's (1975) rule of thumb, a sample size between 30 and 500 is sufficient. The respondents were the top management of the technology-based SMEs due to their knowledge and expertise in terms of operation and direction of the firm. Furthermore, they are the most informed individuals about the firms' overall operational activities (Yang, 2008).

The measuring instrument for data collection is in the form of survey questionnaires which consists of close-ended questions were divided into three sections. Section 1 and 2 consists of 27 items measuring the five dimensions of EO and business performance using a 5-point Likert scale. In this study, the independent variables (EO) are divided into five dimensions of EO represented by a) innovativeness, b) proactiveness, c) risk-taking, d) competitive aggressiveness and e) autonomy in which the top management has to indicate the extent to which the items represent their firm's strategy. For business performance, the measurement adopted were based on growth and profitability which were based from previous studies (Gibson and Birkinshaw, 2004; Wolff and Pett, 2006) and has been modified to suit the study settings. Four items will be used to measure growth and five items to measure profitability. Finally, the last section consists of business background of the firm. This study uses Statistical

Package for Social Science (SPSS) 17.0 to analyze the data obtained from the sample of population. The data analysis technique consists of frequency distribution, reliability, correlation and regression analysis.

4. Results

4.1. Descriptive Analysis

The profile of the technology-based SMEs participated in this study is illustrated in Table 1 which comprised of the sectors, size of the company, industry cluster and locality of the business. From the total surveyed, 84.09 percent are technology-based firms in manufacturing sector while 15.91 percent is in services sector. The respondents were heavily from small enterprises with 73.86 percent (N=65) followed by medium enterprises, 26.14 percent (N=23). Majority of the technology-based SMEs locality are in the central region with 60 percent, followed by northern, southern and eastern region.

Table 1. Business Background.

		Frequency	%
Sectors	Manufacturing	74	84.09
	Services	14	15.91
Company Size	Small	65	73.86
	Medium	23	26.14
Industry (can have more than one)	Bio-technology	31	35.23
	Industrial Product	13	14.77
	Electronics & Electrical	14	15.91
	Advance Materials	1	1.14
	Others	29	32.95
Business location (region)	Northern	12	13.63
	Central	60	68.18
	Southern	9	10.22
	Eastern	7	7.95

4.2. Reliability Test

The results of the reliability test which was conducted to determine the internal consistency of the measures is shown in Table 2. It was found that the dimensions of EO has a Cronbach Alpha values of more than 0.6 which is higher than that recommended by Hair, Money, Page and Samouel (2007). Thus this indicates that the variables were internally consistent and the scales deemed reliable for further analyses.

Table 2. Results of reliability test

Measure	Item	Cronbach Alpha
Business Performance	9	.929
Innovativeness	4	.649
Proactiveness	3	.630
Risk-taking	4	.665
Competitive Aggressiveness	3	.645
Autonomy	4	.639

4.3. Correlation

Table 3 depicts the correlation analysis between the five dimensions of EO and business performance. It is evidenced that the Pearson correlation between business performance and pro-activeness is significant at 0.458 followed by innovativeness at 0.437, risk-taking at 0.343 and competitive aggressiveness at 0.242. However, no correlation was found between autonomy and business performance.

Table 3. Correlation analysis between five dimension of EO and business performance

	Business Performance
Innovativeness	.437**
Proactiveness	.458**
Risk-taking	.343**
Competitive Aggressiveness	.242*
Autonomy	.052

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

4.4. Regression Analysis

A multiple regression analysis was done to investigate the relationships between the EO and business performance. The results of multiple regression analysis on the five dimensions of EO with business performance are shown in Table 4. The R square value is 0.454 which means that 45.4% of variance in business performance of technology-based SMEs has been significantly explained by all five EO dimensions.

Table 4. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
EO	.651 ^a	.454	.261	5.891

a. Predictors: (Constant), AUTO, PROACT, CA, INNOV, RT

Table 5 depicts the results regarding the strength of individual component on EO against business performance of technology-based SMEs. The coefficients show which among the five independent variables influences most the variance in business performance. The column Beta under Standardized Coefficients shows that the highest number in the beta is 0.278 for innovativeness which is significant at the 0.000. Proactiveness was ranked second with beta 0.273 at the significant 0.022 followed by competitive aggressiveness with beta 0.156 at the significant 0.011 and risk-taking with beta 0.064 and significant at the level 0.05. All four dimensions are the only predictors which affect business performance of technology-based SMEs. Hence, Hypothesis 1, 2, 3 and 4 are supported. Autonomy (B = -0.044, p = 0.648) showed no significance with business performance. Therefore, H5 are rejected.

Table 5. Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients		t	Sig.
	B	Std. Error	Beta			
Innovativeness	.867	.331	.278		2.616	.000
Proactiveness	1.269	.537	.273		0.362	.022
Risk-taking	.227	.404	.064		2.562	.005
Competitive Aggressiveness	.582	.354	.156		1.646	.011
Autonomy	-.159	.347	-.044		-.458	.648

a. Dependent Variable: Business Performance of Technology-based SMEs

5. Discussions & Conclusion

The findings for this study are based on survey questionnaires from technology-based SMEs from both manufacturing and services sector. The small businesses represented the large portion of respondents with biotechnology as the main industry confined in technology-based SMEs. This is true where the Malaysian biotechnology sector is dominated by SMEs (Biotechnology Information Centre, Malaysia, 2001). As the main objective of this study was to determine the impact of entrepreneurial orientation (EO) which is represented by five dimensions and business performance, few analysis were conducted. From the correlation analysis, the findings showed there was a medium to small correlation between variables. This study has also revealed that only four dimensions of Lumpkin and Dess's (1996) EO has influence towards business performance; innovativeness, proactiveness, risk-taking and competitive aggressiveness while no correlation were found on autonomy in the context of technology-based SMEs in Malaysia. Given that studies on technology-based SMEs is often neglected by many researchers, the present study tried to approach this sector of economy as it also contributes to the growth of the Malaysian economy. Besides, this study only looks at the business performance from the perceptions of top management of technology-based SMEs in Malaysia during a specific time, the study's findings may be limited. The top management's perceptions may differ based on the nature of operation of technology-based SMEs. Therefore, caution should be exercised in interpreting the results. Furthermore, the relatively small sample size and the exploratory nature of the study may bias the results. Future studies should use larger samples to validate these results. Besides, this study is limited to the Malaysian context only. Hence, it is recommended that similar studies being conducted in other developing countries as well. Due to the important role of technology-based SMEs to create a holistic economy, a comprehensive research can also be conducted in the future using other dimensions such as leadership styles.

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