

## THE DIMENSIONS OF CORPORATE ENTREPRENEURSHIP AND THE PERFORMANCE OF ESTABLISHED ORGANIZATION

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***Abstract.** Recently, the issues of corporate entrepreneurship have evoked interest not only from academics, but also from business practitioners and policy makers. This interest stems from the recognition of the advantage that can be gained from corporate entrepreneurship activities. This paper analyses the effect of corporate entrepreneurship (intrapreneurship) dimensions on the financial performance of intrapreneurship companies of established Malaysian state government-linked corporation namely, Jcorp Group, a Johor state government-linked corporation. In this paper, there are four dimensions of corporate entrepreneurship being studied; (1) pro-activeness, (2) risk-taking, (3) innovations and (4) self-renewal. In addition, this paper also explores the moderating effects of resource availability, supportive organizational structure, and rewards on the relationship between corporate entrepreneurship dimensions and company performance. The findings of this study show that pro-activeness has a positive and significant impact on financial performance of the company, and resource availability, supportive organizational structure and rewards do moderate the relationship between pro-activeness and financial performance. In contrast, we also found that risk-taking does not have a direct effect on financial performance of the company. However, resource availability, supportive organizational structure and rewards are shown to moderate the relationship between risk-taking and financial performance. Meanwhile, for innovation and self-renewal, we found that both are negatively related to financial performance. Further analysis shows that although all moderating factors were positively related with these two corporate entrepreneurship dimensions, but they are not significant.*

***Keywords:** Corporate Entrepreneurship, Dimensions, Performance, Established Organizations, Malaysi*

### Introduction

Corporate entrepreneurship (CE) is crucially important to the survival, profitability and growth of a company. This is due to the fact that CE activities tend to stimulate creativity and innovation as well as to encourage a culture of calculated risk-taking throughout organizational operations which may reinforce the company's position in

existing markets by entering new and lucrative growth fields (Zahra et al., 2009). The corporate entrepreneurship elements in the established firms comprise the activities such as innovation, pro-activeness and risk-taking (Zahra, 1993). Empirically, several studies have been conducted on this issue especially in the case of developed countries. Focus of these studies was on the correlation between corporate entrepreneurship dimensions in different analysis scenarios. These include comparisons between countries (Antoncic and Scarlet, 2008), between younger and matured companies (George, 2005; Antoncic and Scarlet, 2008; Aktan and Bulut, 2008) and between manufacturing and non-manufacturing entities (Antoncic and Scarlet, 2008).

Despite numerous kinds of studies on the issues of corporate entrepreneurship, study on corporate entrepreneurship dimensions in emerging countries is still new and lacking (Aktan and Bulut, 2008; Entebang et al., 2006). Hence, this study intends to add to the literature of corporate entrepreneurship by examining the effects of corporate entrepreneurship on the financial performance of Malaysian state government-linked corporations, with special reference to Johor Corporation Group of Companies (JCorp). JCorp is a Johor state government-linked corporation, comprises of 280 companies with a combined total workforce of more than 65,000 employees (<http://www.jcorp.com.my>). The group is among the Malaysian government-linked companies that practice corporate entrepreneurship in its organization. The JCorp Group's core activities encompass the following types of business activities in various countries: (1) Palm Oils (more than 120,000 hectares is planted in Malaysia, Papua New Guinea and Solomon Islands); (2) Oleo-chemicals and Bio-fuel (Renewable Energy); (3) Healthcare (21 Specialist Hospitals in Malaysia and Indonesia); (4) Food and Restaurants (more than 900 Kentucky Fried Chicken, Pizza Hut and Rasamas outlets in Malaysia, Singapore, Brunei, Cambodia and India); (5) Poultry and poultry products (under Ayamas Brand); (6) Hotels, Industrial and Commercial Property; (7) Intrapreneur Venture and (8) Shipping and Logistics.

JCorp affiliated companies consist of public listed companies and non-public listed companies, with six companies currently being listed in the Malaysian Stock Exchange, one in Port Moresby (Papua New Guinea) and another in the London Stock Exchange. In 2010, the total turnover of JCorp Group has exceeded RM7.5 billion while profit before tax was RM962 million. As of June 2010, the total market capitalization of the above eight (8) public listed companies was RM11.8 billion, of which 53.48% were held by JCorp Group (<http://www.jcorp.com.my>). According to JCorp Group, its current successful growth is fundamentally attributed to the existence of intrapreneurs (or corporate entrepreneurs) throughout the organization.

This study aims to analyze the corporate entrepreneurial activities of the JCorp Group of Companies. It is envisaged that recommendations made under this study will eventually be proposed to the beneficiaries of this study such as policy makers / authorities in Malaysia, other interested business practitioners and academics for further promotion of corporate entrepreneurship at the workplace. Based on the above general aim, the main research objective is to study the effects of corporate entrepreneurship dimensions on the financial performance of Johor Corporation Group of Companies. In the process, this study attempts to achieve specific objectives as follows:

Objective 1: to identify and confirm the corporate entrepreneurship dimensions that influences the financial performance of Johor Corporation Group of Companies.

Objective 2: to ascertain the growth of sales of Johor Corporation Group of Companies in the corporate entrepreneurship – financial performance relationship.

Objective 3: to examine the effects of the moderating variables on the relationship between corporate entrepreneurship and financial performance.

There are several considerations that have led to the focus of this study. Firstly, issues of corporate entrepreneurship have, of late, evoked increased interest not only from academics, but also from business practitioners to policy makers. While the literature on corporate entrepreneurship suggest that CE activities may have a significant and lasting effect on a company's growth (Zahra et al., 2009), there is lack of understanding on how these activities shape performance as well as the internal organizational factors that may influence the relationship between CE and financial performance. With this particular focus, this study is expected to benefit not only JCorp Group of Companies but also other established state/national linked-corporations and established companies in Malaysia that intend to practice corporate entrepreneurship. Secondly, the study is appropriate and timely, since innovation, one of the CE dimensions, has also been heavily advocated by the Malaysian Prime Minister, Dato' Seri Najib Tun Razak, as a means for transforming the economy from a knowledge-based to an innovation-based economy. The three main features required of an innovation-based economy are highlighted as creativity, innovation value and high skills. Corporate entrepreneurship thus can be seen as crucial in ensuring innovation is at the highest levels.

## Literature Review

Corporate entrepreneurship has been defined by researchers from several perspectives. Sharma and Chrisman (1999) for instance, defined corporate entrepreneurship as “a process whereby an individual or group of individuals in an established company attempts to create a new organization or to instigate renewal or innovation within the current organizational structure.” Morris and Kuratko (2002), on the other hand, defined corporate entrepreneurship as “a term used to describe the entrepreneurial behaviour inside an established organization.” In some circumstances, the term has also been referred as corporate venturing or intrapreneurship (Zahra, 1991; Hornsby et al., 2002). Additionally, the literature of corporate entrepreneurship has been seriously discussed in theoretical (Aktan and Bulut, 2008) and field studies, in exploring its multidimensional structure such as risk-taking, innovativeness, pro-activeness and competitive aggressiveness (Lumpkin and Dess, 1996; 2001; Sharma and Chrisman, 1999). Crucially, Lassen (2007) posits that in order to survive, firms are required to continuously manage change and maintain flexibility, thus both fields of strategic management and entrepreneurship are envisaged to become increasingly intertwined. . Although it is widely researched, corporate entrepreneurship in relation to corporate performance as a dependent variable of the study has not been sufficiently investigated (Zahra, 1991; Aktan and Bulut, 2008), especially in a state government-linked corporation as a unit of analysis (Entebang, et al., 2006). While prior research have emphasized and analyzed the correlation between the dimensions of corporate entrepreneurship, the relationship between corporate entrepreneurship and financial performance remains unclear, specifically in state government-linked corporations.

The literature on the financial performance and dimensions of corporate entrepreneurship has shown that corporate entrepreneurship dimensions such as pro-activeness, risk-taking, innovations and competitive aggressiveness etc. significantly and positively influences the financial performance of the companies being investigated. Zahra (1993), for instance, uses clustering analysis to examine the relationship between a firm's external environment, corporate entrepreneurship and financial performance (mainly manufacturing). The study clusters firms into four environment settings i.e., dynamic growth, hostile and rivalries but technologically rich, hospitable, product-driven growth, and static and impoverished. MANOVA, ANOVA and Scheffe tests were then run to test for the significance of corporate entrepreneurship variables such as return on sales, growth in sales (over a three-year period) against corporate growth and profitability. The regression results (that is consistent with Pearson's correlations) found corporate entrepreneurship activities (i.e. new business creation and innovation, business venturing and renewal activities) to be significantly and positively associated with company financial performance (in their respective environmental clusters).

Similarly, Lassen (2007) investigated seven established high-tech firms that evolved to radical technological innovation. The radical innovation project, as suggested in the study, entails at least one of the following: (1) new to the world performance features; (2) significant improvement in known features (5X-10X); (3) significant reduction in cost (30%-50%). However, in order to obtain desired balance between entrepreneurial and strategic forces, incorporation of strategic considerations at several different levels of organization was found to be crucial. Subsequently, the study proposes a strategic entrepreneur model to be adopted by the firms. For data analysis, it looked at financial performance of the firms as a primary dependent variable against the level of entrepreneurship of the firm such as the effectiveness combination of autonomy, innovativeness, risk-taking, pro-activeness and competitive aggressiveness. The study emphasizes the importance of the commercialization of products and technologies for enabling the firm to capture more value in the market.

Aktan and Bulut (2008) also examined the effects of four sub-dimensions of corporate entrepreneurship (i.e. pro-activeness, risk-taking, innovation, and competitive aggressiveness) against the financial performance of 312 firms. The study uses return on investment (ROI), return on equity (ROE), growth of sales and market based measurement (i.e. economic value added, market value added) and concludes that all the correlation coefficients across the corporate entrepreneurship dimensions and the financial performance components are positive and significant. The findings demonstrate that all the four dimensions of corporate entrepreneurship examined impacts positively and significantly on financial performance.

The work of Antoncic and Zorn (2004) indicates that variables of corporate entrepreneurship (i.e. new firm formation, product/service and process innovation) are a potent mediator in the organizational support-performance relationship. Additionally, the study illustrates that two out of three corporate entrepreneurship activities and performance elements were positively and significantly related. In fact, the organizational support – profitability relationship was also found to be positive. The variables of performance used as the dependent variables were measured in terms of absolute growth and profitability. Growth was assessed via two items (the average annual employment growth over the last three years and the average annual sales growth over the last three years) while profitability was assessed via three items (average annual return on sales, average annual return on assets, and average annual return on equity in the last three years). Antoncic and Scarlet (2008) also predicted a

positive relationship between corporate entrepreneurship and performance for both Slovenian and Romanian firms. While the majority of correlations between corporate entrepreneurship and growth items as well as corporate entrepreneurship and profitability items were positive and significant, their study indicated mixed results. The Slovenian firms, for instance, illustrated the significance of the majority of correlations between corporate entrepreneurship and growth items (86%) and corporate entrepreneurship and profitability items (71%). The Romanian firms, on the other hand, indicated that two items of corporate entrepreneurship were important for absolute profitability (i.e. broadening business lines in current industries, the percentage of company revenue generated from newer products). Also, another two items, i.e. broadening business lines in current industries, marketing of many new lines of products or services, are shown to have strong correlations with relative profitability.

A study by Zahra (1991) using mailed questionnaires (to Chief Executive Officers) and secondary financial sources of 450 companies listed on the Fortune 500 list of the United States industrial corporations shows that 50 of the 60 possible correlations between corporate entrepreneurship and performance measures (83.3%) were significant at  $p < 0.05$ . We can thus conclude that corporate entrepreneurship was positively associated with accounting performance measures of the study. Short-term improvements in financial performance through corporate entrepreneurship were expected to be incremental due to the magnitude of correlations of the study that was found to be stable within the contemporaneous and lagged analyses. Zahra and Covin (1995) argue that corporate entrepreneurship is also a particularly effective practice among companies operating in hostile environments. The study holds three principal implications for practicing managers. Firstly, the study documents the general financial viability of engaging in corporate entrepreneurship. They argue that entrepreneurial behaviour, on the whole (i.e. across firms and industries), is associated with superior financial performance. Secondly, the study suggests analysis of long-term time horizons in order to adequately assess the financial consequences of corporate entrepreneurship. Shorter evaluation periods may not allow sufficient time for entrepreneurial action to have full market and corresponding financial impact. Finally, the study examines the context-specific character of effective entrepreneurial practice. Clearly, CE is found to be a particularly effective strategic practice among firms operating in hostile business settings. The study collected data from three different samples over a seven-year period to analyze the longitudinal impact of corporate entrepreneurship on firm performance. These samples comprise 24 medium-sized manufacturing firms selected to represent 14 industry segments, 39 chemical companies, and 45 Fortune 500 industrial firms representing five industry segments. Regression analysis was used to analyze the primary and secondary data and the results suggest that corporate entrepreneurship has a positive impact on financial measures of company performance, suggesting that the effect on performance tends to be modest over the first few years and increases over time. The regression analysis results based on the combined sample of 108 firms shows that there is a positive and significant association between CE and firm performance. Hence, the study suggests corporate entrepreneurship to be a significantly better predictor of financial performance among firms in hostile environments, as compared to firms in benign environments and that the impact of hostility on the corporate entrepreneurship-performance relationship grew modestly over time. Corporate entrepreneurship may indeed play a large role in improving long-term financial performance.

Lekmat and Selvarajah (2008) examined the corporate entrepreneurship activity of senior managers in 400 auto-parts manufacturing companies randomly chosen from the Thailand Automotive Industry directory 2006-2007. The study measures the relationship between corporate entrepreneurship and firm performance in terms of the growth and profitability of the sample firms. A 23-item corporate entrepreneurship Likert-type scale comprising new business venturing (4 items), self-renewal (11 items), pro-activeness (3 items), innovativeness (5 items) and financial performance (4 items) was used. Financial performance was measured against the sample on areas related to profitability, cash flow, sales growth and market share. The study suggests that corporate entrepreneurship has significant influence on firm performance in terms of financial aspects. Innovativeness, for instance, has the strongest effect on superior firm performance; and this is consistent with the preceding argument that innovation is the most important component of corporate entrepreneurship as well as the dominant predictor of performance (Zahra, 1991; Antoncic and Hisrich, 2004). Self-renewal and organizational support were also found to be positively and significantly related to firm performance.

Goosen et al., (2002) uses a three-factor key intrapreneurship model to study the significance of the financial outcomes towards company performance involving a sample of companies listed in the industrial sector of the Johannesburg Stock Exchange, South Africa. The results of the study support the hypothesis that corporate entrepreneurship dimensions such as innovativeness, pro-activeness and management's internal influence significantly contributes to financial performance. To add, there was a positive relationship between the intrapreneurship factors, specifically the management's influence and financial performance. The study found a moderate correlation of  $r = 0.39$  ( $p < 0,001$ ) between entrepreneurial posture and a financial performance scale. Among the measurements of financial performance used include return on average assets, return on average equity, total asset growth and share return. This study confirms and emphasizes the importance that positive organizational outcomes are associated with higher levels of leadership. Similarly, Covin and Slevin (1988) uses dimensions of corporate entrepreneurship such as entrepreneurial style and organizational structure to analyze its relationship with organizational performance. Questionnaires were mailed to the most senior executives in 507 non-diversified, single-industry firms (manufacturing and service) and corporate subsidiaries located throughout the United States, encompassing forty (40) different industries. The study analyzed the effect of organizational structure on the relationship between top management's entrepreneurial orientation and financial performance of 80 business organizations. The findings revealed that there is a positive effect of entrepreneurial top management style on the performance of organically-structured firms and a negative effect on the performance of mechanistically-structured firms. The organically-structured firms, characterized by flexibility in administrative relations, informality and authority vested in situational expertise, appear to facilitate innovation. Conversely, mechanistically-structured firms, characterized by rigidity in administrative relations, formality and strict adherence to bureaucratic values and principles, were said to impede innovation. The measurement of financial performance, on the other hand, includes operating profits, profit to sales ratio, cash flow from operations, and return on investment. Organizational performance appears to be jointly determined by the interaction of entrepreneurial style and organicity where the interaction term has a positive regression coefficient. To add, an entrepreneurial top management style makes a

greater contribution to performance in organically structured firms than in mechanistically structured firms.

The literature review thus far focuses on various corporate entrepreneurship dimensions such as pro-activeness, risk taking, innovations and competitive aggressiveness etc, to suggest that they have a significant correlation with financial performance. However, not all the relevant literatures produce the same result as the latter. Kolakovic et al., (2008), for instance, reveal the absence of a strong link between a company's entrepreneurial intensity (comprised of company's degree of entrepreneurship and company's frequency of entrepreneurship) and financial performance. The financial performance of the Croatian companies as measured by a value added indicator indicates a mild or weak linear dependency due to risk adverse characterized by the Croatian companies.

Lekmat and Selvarajah (2008) assert that not all the dimensions of corporate entrepreneurship examined are positively correlated to the financial performance of the sample firms, except for innovativeness, self-renewal and organizational support. Other dimensions, i.e. new business ventures and pro-activeness were found to be negatively correlated to firm performance. This stems from the fact that some corporate entrepreneurship ventures are in infancy stages, hence requiring several years for the firms to pay off. Further, the impact of corporate entrepreneurship activities on profitability is limited due to short-term profitability suffering, whether internal or external. Entrepreneurial ventures stimulate long-term growth, leading to the willingness of the companies to accept this reality. Thus, as suggested, the potential trade-off between short-term profitability and long-term growth should be examined by using multiple indicators of both profitability and growth as an outcome of corporate entrepreneurship. Similar literatures showing both positive and negative effects between the dimensions of corporate entrepreneurship and financial performance includes Antoncic and Scarlet (2008) comparison of corporate entrepreneurship performance between Slovenia and Romania. Slovenian firms displayed no significant relationship between new, totally independent firms against profitability. As for Romanian firms, predominantly, there were no significant correlations between corporate entrepreneurship and growth items, and the correlations between corporate entrepreneurship and profitability items were also insignificant.

Empirical evidence on the dimensions of corporate entrepreneurship in emerging countries is still limited and lacking (Entebang et al., 2006; Antoncic and Scarlet, 2008; Aktan and Bulut, 2008; Lekmat and, Selvarajah, 2008). From the Malaysian perspective, previous studies of intrapreneurship have focused largely on the non-Government Linked Companies (GLCs), neglecting the state owned enterprises. Entebang et al., (2006), for instance, was among the few that attempted to analyze the level of entrepreneurial orientation in Malaysian companies, in this case the government linked-companies (GLCs) of which the Malaysian Government has a direct controlling stake. The study employed four dimensions of corporate entrepreneurship that is innovation, risk taking, pro-activeness and aggressive competitiveness in analyzing the correlation among the corporate entrepreneurial dimensions. It focused on four states of Malaysia namely, Sarawak, Pulau Pinang, Selangor, and Sabah, (including Kuala Lumpur) as the target population where 26 out of 128 CEOs responded to the questionnaires which, as highlighted by the study, may influence the generalizability of the results. The study illustrates that GLCs show positive entrepreneurial behaviour in innovation, pro-activeness and competitive aggressiveness, but are low in their rating for risk taking. As for Pearson's correlation

coefficients for the innovativeness, pro-activeness, risk-taking and competitive aggressiveness factors, the study found that all corporate entrepreneurship dimensions employed are significantly correlated.

From the literature review it is obvious that a research to study the correlation between financial performance and dimensions of corporate entrepreneurship in state government linked-companies (GLCs) in Malaysia is expected to add enormously to the literature of the emerging economies / countries.

## **Methodology**

This case study employed both quantitative and qualitative techniques which are the two dominant methodologies in social science research. Quantitative methods are advantageous as they are associated with higher reliability and validity. The objective of conducting quantitative research is to test if a hypothesis holds true for the sample population. In this study, the quantitative research entailed the design of a structured questionnaire, copies of which were then circulated to a sample group of respondents from JCorp intrapreneur companies. The findings obtained from this group may later be generalized to a wider population.

In the development and design of questionnaire, there were two stages involved: Firstly, a pre-test was conducted with the purpose of measuring the reliability and accuracy of the questionnaire being developed, and secondly, based on the results of the pre-test, the questionnaire was subsequently rectified and implemented for actual survey. This case study adopted multi-scales from previous research (Zahra et al., 2009) as a method of measuring corporate entrepreneurship and competition. A 5-point Likert scale ranging from 1 = strongly disagree and 5 = strongly agree was used in measuring the respondent's attitudes. The structure of the questionnaire is as follows:

Section 1 relates to the independent variables of the study (i.e. the dimensions of corporate entrepreneurship such as innovation, risk-taking, pro-activeness and self-renewal) as well as moderating factors of this study. The respondents were asked to indicate their response on a 5-point Likert-type scale which ranged from 1, representing 'strongly disagree' to 5, representing 'strongly agree' (Bhardwaj and Momaya, 2007).

Section 2 relates to the dependent variables of the study (i.e. the financial performance measurement). The unit of analysis was asked to indicate the last 3 years' financial performance of his / her respective company based on growth of sales, return on assets and return on equity. The respondent was asked to indicate on a range of 1- 5, with 1 representing 'poor performance' to 5 representing 'excellent performance'. The dependent variables of the study and the scale used were selected from prior research done in this area. Lekmat and Selvarajah (2008) in their study, used sales growth as one of its financial performance measurement. Covin and Slevin (1988) in their study used adapted version of an instrument that developed by Gupta and Govindarajan (1982) for measuring performance in their study. Firstly, using a 5-point Likert-type scale, ranging from 'not at all satisfactory' to 'outstanding', the respondents were asked to indicate how their business units' top managers rate the performance of their businesses over the past 3 years based on the



following financial performance criteria: operating profits, profit to sales ratio, cash flow from operations, and return on investment. Subsequently, utilizing another 5-point Likert-type scale, ranging from 'of little importance' to 'extremely important', the respondents were asked to indicate the degree of importance their business units' top managers place on each of the same performance criteria.

The questionnaire was designed and organized into the following sections: *Demographic profile of intrapreneurs and characteristics* of the company (16 items), *Dimensions of corporate entrepreneurship* consist of: Innovativeness (6 items), Risk-taking (7 items), Pro-activeness (4 items), Self-renewal (4 items), *Moderating factors* consist of Resource availability (6 items), Supportive organizational structure (7 items), Rewards (5 items), *Financial performance* factor consist the measurement of the performance of intrapreneur companies under study (5 items). The final sample of the questionnaire contains of 56 items which out of this 40 items were adopted and adapted from the work of previous researchers such as Aktan and Bulut (2008) (innovation, risk taking and pro-activeness), Lekmat and Selvarajah (2008) (self-renewal) and Honsby et al., (2002) (resource availability, supportive organizational structure and rewards), while the remaining 16 items were self-constructed.

Prior to the actual distribution of questionnaires, a pre-test was conducted on 10 respondents to analyze the reliability and validity of the proposed questionnaire. This was conducted between the periods of 1<sup>st</sup> April 2010 to 7<sup>th</sup> April 2010. Based on the comments and feedback of the pre-test, amendments were made to the questionnaires for improvement.

## Data Collection

Questionnaires were sent via courier to the respective units of analysis. Besides the questionnaire, a pre-addressed stamped envelope and a cover letter, addressed to the unit of analysis, which explained the research and guaranteed confidentiality (Covin and Slevin, 1988) were also attached. As of 30<sup>th</sup> June 2010 the number of questionnaire booklets returned was 24.5% and various efforts were done by the researcher to increase the response rate. The collection rate subsequently increased to 45% by year end 2010. Since the targeted response rate as set by the researchers was 60%, the researchers adjourned the final date of receiving the questionnaire booklets to 15<sup>th</sup> May 2011. The final total questionnaire booklets collected was recorded at 90.2%.

## Data Analysis

To test the correlation between corporate entrepreneurship dimensions and financial performance of JCorp Group, the following variables are employed:

- (a) Independent variables (i.e. the dimensions of corporate entrepreneurship) – innovation, risk-taking, pro-activeness and self-renewal;
- (b) Moderating variables (i.e. the internal organizational factors of corporate entrepreneurship) - resource availability, supportive organization structure and rewards;

(c) Dependant variables (i.e. indicator of the financial performance of the intrapreneur companies) – growth of sales

In assessing the goodness of fit of the models, many scholars suggested multiple criteria to be used, including CFA and structural model (Byrne, 2002; Curran et al., 1996; Hair et al., 2006; Kline, 2005). The fit indices for each measurement and structural model are presented below. These can be used to determine whether the models being tested should be accepted or rejected (Byrne, 2002; Curran et al., 1996; Hair et al., 2006; Hu et al., 1992; Kline, 2005; Shook et al., 2004). The summary of the goodness-of-fit indices used in this study is presented in Table 1. Hair et al., (2006) suggest that using three or four fit indices provides adequate evidence of model fit. However, at least one incremental fit index (i.e., CFI or TLI etc.), and one absolute fit index (e.g., GFI, RMSEA or SRMR etc.), in addition to the  $\chi^2$  value and the associated degrees of freedom (*df*), should be reported. Also, at least one of the indices should be a badness-of-fit index (e.g., RMSEA or SRMR etc.). As suggested by Hair et al. (2006), the  $\chi^2$  value and degrees of freedom, the GFI, CFI, RMSEA and SRMR were used in this study to evaluate a model. The analysis will be carried out by using Statistical Package for Social Sciences (SPSS) and AMOS version 1

Name and Abbreviation	Accepted Value	Remarks
Chi-Square ( $\chi^2$ )	$p > 0.05$	The estimated likelihood chi-square statistic is assessed to the statistical fit of the model. A non-significant value indicates an adequate representation of the data. The Bollen-Stine bootstrap $p$ value is calculated if the $\chi^2$ is significant.
Goodness-of-Fit (GFI)	GFI > 0.90	The GFI is used to measure the amount of variance and covariance in the observed correlation matrix that is predicted by the model-implied correlation matrix. Values between 0.90 and 1.0 are indicated acceptable fit.
Comparative Fit Index (CFI)	CFI > 0.90	This is based on the comparison of the hypothesized model with the independent model (i.e., a model in which all variables are uncorrelated and only error variances are estimated). Values of greater than 0.90 indicate an acceptable fit.
Standard Root Mean Square Residual (SRMR)	SRMR < 0.08	The SRMR is the average difference between the observed and hypothesized correlation matrices. Values of less than 0.10 are acceptable.
Root-Mean-Square Error of Approximation (RMSEA), with 90 percent confidence interval	RMSEA < 0.10	The RMSEA assesses how poorly the model fits the data by considering the error of approximation, which concerns the lack of fit of the researcher's model to the population covariance matrix. Values up to 0.08 indicate reasonable fit to the data. If the samples are large, values of less than 0.10 are also acceptable.

Table 1: Summary of the Goodness-of-Fit Indices used in the study

## Findings and Discussion

One-factor congeneric models were estimated for each of the constructs of interest used in this study. AMOS 19 was employed to perform these analyses. The one-factor congeneric model for the entrepreneurship dimensions and the moderating factors for entrepreneurship are presented in Table 2.

	$\chi^2$	GFI	CFI	RMSEA	SRMR
CE Dimensions					
<b>Innovation (<math>\alpha = 0.74</math>)</b>					
Initial Model (6)	35.480 (9), $p = 0.000$	0.878	0.765	0.180 (0.120, 0.244)	0.029
Final Model (4)	7.306 (2), $p = 0.026$	0.965	0.937	0.171 (0.051, 0.311)	0.016
<b>Risk-Taking (<math>\alpha = 0.74</math>)</b>					
Initial Model (7)	41.951 (14), $p = .000$	0.894	0.823	0.148 (0.098, 0.201)	0.029
Final Model (5)	6.289 (5), $p = 0.279$	0.975	0.989	0.053 (0.000, 0.162)	0.012
<b>Pro-activeness (<math>\alpha = 0.78</math>)</b>					
Initial Model (4)*	4.989 (2), $p = 0.083$	0.976	0.969	0.128 (0.000, 0.274)	0.016
<b>Self-Renewal (<math>\alpha = 0.71</math>)</b>					
Initial Model (4)*	24.044 (2), $p = 0.000$	0.895	0.714	0.348 (0.232, 0.479)	0.034
	$\chi^2$	GFI	CFI	RMSEA	SRMR
Moderating Variables					
<b>Resource Availability (<math>\alpha = 0.63</math>)</b>					
Initial Model(6)	66.620 (9), $p = 0.000$	0.802	0.405	0.265 (0.208, 0.327)	0.067
Final Model(4)	0.347 (1), $p = 0.556$	0.998	1.000	0.000 (0.000, 0.232)	0.006
<b>Supportive Organizational Structure (<math>\alpha = 0.75</math>)</b>					
Initial Model (6)	31.606 (9), $p = 0.000$	0.906	0.692	0.166 (0.106, 0.231)	0.033
Final Model (4)	2.963 (2), $p = 0.227$	0.984	0.990	0.073 (0.000, 0.233)	0.017
<b>Rewards (<math>\alpha = 0.71</math>)</b>					
Initial Model (5)	22.314 (5), $p = 0.000$	0.915	0.829	0.195 (0.117, 0.281)	0.028
Final Model (4)	0.435 (2), $p = 0.804$	0.984	0.998	0.000(0.000, 0.129)	0.005

Table 2: Summary of Analysis of One-Factor Congeneric Measurement Models. Note: \* Initial model was retained without modification

Upon completion of the measurement model, the next step is to develop a first-order CFA model to test the multidimensional constructs of interest: innovation, risk-taking, pro-activeness, and self-renewal. In this model-generating phase, a full independent cluster factor measurement model was specified and the goodness-of-fit for each model is shown in Table 3. The analysis of the first-order measurement models of the innovation, risk-taking, pro-activeness and self-renewal constructs is presented below.

Dimension Constructs	$\chi^2$	GFI	CFI	RMSEA	SRMR
<b>Corporate Entrepreneurship</b>					
<b>Initial Model</b>	251.418 (113), $p = 0.00$	0.777	0.734	0.116 (0.097, 0.135)	0.034
<b>Final Model</b>	163.239 (84), $p = 0.00$	0.817	0.809	0.102 (0.078, 0.125)	0.032

Table 3: Analysis of First-Order Models

The hypothesized four-factor measurement model of corporate entrepreneurship was specified and evaluated. As indicated by the statistics in Table 3, the data did not fit the model well,  $\chi^2 (113) = 251.418, p = 0.00$ . An inspection of the standardized residual covariance matrix and the modification indices suggested that the removal of QC3 (“bold and aggressive posture top management”) and QE1 (“always revising the business concept”) would result in a more parsimonious and more reliable construct,  $\chi^2 (84) = 163.239$ , Bollen-Stine bootstrap  $p = 0.00$ , SRMR = 0.032, RMSEA = 0.102 (0.078, 0.125), GFI = 0.817 and CFI = 0.809. Table 4 shows that the factor loadings were all significant at  $p < 0.01$  and ranged from a low of 0.37 to a high of 0.86, indicating convergent validity. The correlation between factors were varied, from low-negative relationship between innovation and self-renewal (-0.17) to positive-moderate to correlation between risk-taking and pro-activeness (0.54). The correlations were below 0.85; thus discriminant validity of the four hypothesized constructs of ‘innovation’, ‘risk-taking’, ‘pro-activeness’ and ‘self-renewal’ was obtained.

	INNOVATION	RISK-TAKING	PRO-ACTIVENESS	SELF-RENEWAL
<b>INNOVATION (<math>\alpha = 0.74</math>)</b>	1.000			
<b>RISK-TAKING (<math>\alpha = 0.74</math>)</b>	0.064	1.000		
<b>PRO-ACTIVENESS (<math>\alpha = 0.78</math>)</b>	0.385	0.544	1.000	
<b>SELF-RENEWAL (<math>\alpha = 0.71</math>)</b>	-0.174	0.251	0.316	1.000
frequently tries out new ideas (QB1)	0.389			
emphasis on developing new products (QB4)	0.865			
spends money on product development activities (QB5)	0.712			
developing intellectual property rights (QB6)	0.574			

	<b>INNOVATION</b>	<b>RISK-TAKING</b>	<b>PRO-ACTIVENESS</b>	<b>SELF-RENEWAL</b>
higher propensity to take risks (QC1)		0.708		
great deal of tolerance (QC2)		0.817		
supports small and experimental projects (QC5)		0.491		
employees encouraged to take calculated risks with new ideas (QC7)		0.543		
initiates actions (QD1)			0.779	
strong tendency to be ahead of competitors (QD2)			0.731	
first to introduce new products/services using new technologies (QD3)			0.643	
shapes the business environment by introducing new products, new technologies or new administrative techniques (QD4)			0.584	
reorganizing units/divisions to increase innovation (QE2)				0.374
coordinating activities to enhance innovation (QE3)				0.739
adopting flexible organizational structures to increase innovation (QE4)				0.899

Table 4: Structure Coefficients for Corporate Entrepreneurship Construct

Notes: 15 items were retained and 2 items were removed during confirmatory factor analysis

The full structural model was tested in the first instance. A model was proposed in which innovation factors, risk-taking factors, pro-activeness factors and self-renewal factors as well as all the moderating factors (resource availability, supportive organizational structure, and rewards) were hypothesized to influence corporate entrepreneurship which, in turn, influences company performance. The model reasonably fits the data,  $\chi^2(101) = 210.866$ ,  $p = 0.00$ ,  $CMIN/DF = 2.088$ ,  $RMSEA = 0.109$  (0.089, 0.130), and  $CFI = 0.745$ . The  $\chi^2$  value, RMSEA and CFI were less satisfactory fit but reasonably permissible to consider as fit.

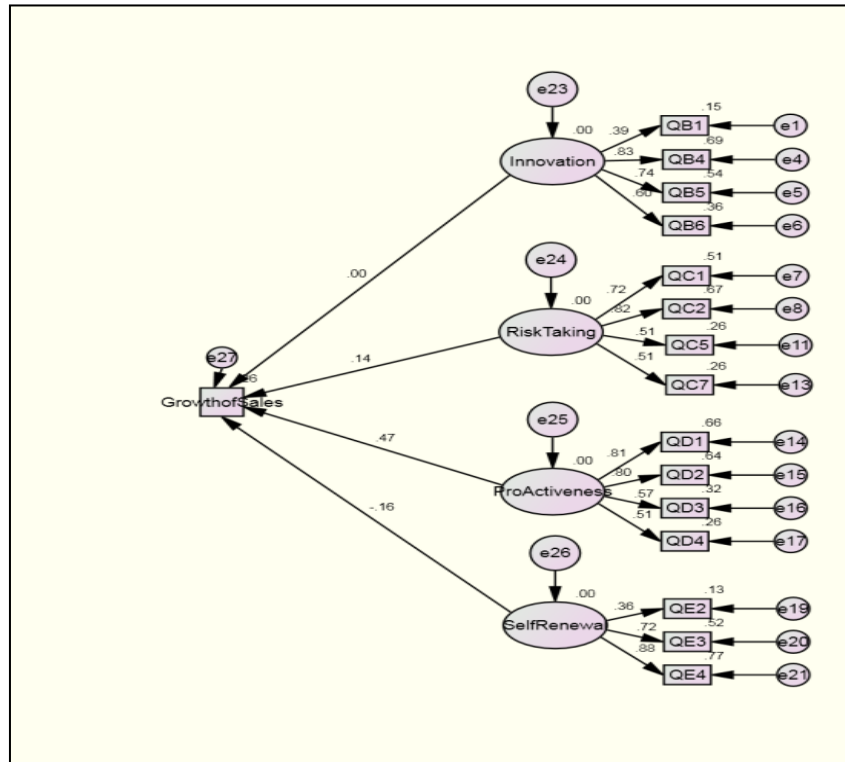


Figure 1: Final Structural Model of Corporate Entrepreneurship (Dimensions and Effects)

## Hypotheses Testing

After examining the findings of the survey using structural equation modelling (SEM) to test the theoretical model of the relationships between corporate entrepreneurship and its moderating factors and financial performance in Johor Corporation's intrapreneur companies, the next step is to further analyze and interpret the final model for hypothesis testing in order to achieve the objective of the study. The four main hypotheses of the study are as follows.

- (H1) - Corporate Entrepreneurship dimensions will have an impact on JCorp's intrapreneur companies' performance.
- (H2) - Resource availability factor moderates the relationship between CE dimensions and financial performance,
- (H3) - Supportive organizational structure factor moderates the relationship between CE dimensions and financial performance.
- (H4) - Rewards factor moderates the relationship between CE dimensions and financial performance.

The above hypotheses are based on the four main dimensions of corporate entrepreneurship, moderating factors and effects identified for study, namely innovation, risk-taking, pro-activeness, self-renewal, resource availability, supportive organizational structure, rewards and growth of sales of the companies. After the full structural model was accepted, hypothesis testing of all the paths in the conceptual model was used to determine whether the relationships were statistically significant. Corporate entrepreneurship is critical to explaining financial performance, as in this case the growth of sales. This financial performance measures represent the consequence of corporate entrepreneurship. Corporate entrepreneurship also depends

upon three moderating factors: namely resource availability, supportive organizational structure, and rewards factors. Thus, a model was proposed in which resource availability factor, supportive organizational structure factor, and rewards factor were hypothesized to influence corporate entrepreneurship which, in turn, influences firm performance.

The results of the hypothesis testing in terms of standardized coefficients and levels of significance (*p*-value) for the relationships between the constructs are summarized in each section below. Based on these results, only certain moderating factors are found to be significant predictors of corporate entrepreneurship, and the corporate entrepreneurship dimensions are significant predictors of firm performance. As illustrated in Table 5, the study found that pro-activeness and risk taking have a positive and significant impact on financial performance of JCorp intrapreneur companies. Pro-activeness has a significant effect on financial performance. Thus H1a was supported, as there was a direct and positive relationship between pro-activeness and financial performance. Even with the indirect effect of moderating factors (resource availability, supportive organizational structure and rewards), all the hypotheses linked to pro-activeness were supported. This means that resource availability, supportive organizational structure and rewards do moderate the relationship between pro-activeness and financial performance.

Model Hypotheses	Hypotheses Results
<b>CE Dimensions on Financial Performance</b>	
<b>H1a</b> : The pro-activeness dimension of corporate entrepreneurship (CE) has a direct and positive relationship with the financial performance of the company	H1a was supported
<b>H1b</b> : The innovation dimension of CE has a direct and positive relationship with the financial performance of the company	H1b was not supported
<b>H1c</b> : The risk-taking dimension of CE has a direct and positive relationship with the financial performance of the company	H1c was not supported
<b>H1d</b> : The self-renewal dimension of CE has a direct and positive relationship with the financial performance of the company	H1d was not supported
<b>Resource Availability Moderates the Relationship between CE Dimensions and Financial Performance</b>	
<b>H2a</b> : The resource availability factor moderates the relationship between pro-activeness and financial performance	H2a was supported
<b>H2b</b> : The resource availability factor moderates the relationship between innovation and financial performance	H2b was not supported
<b>H2c</b> : The resource availability factor moderates the relationship between risk-taking and financial performance	H2c was supported
<b>H2d</b> : The resource availability moderates the relationship between self-renewal and financial performance	H2d was not supported
<b>Supportive Organizational Structure Moderates the Relationship between CE Dimensions and Financial Performance</b>	

<b>Model Hypotheses</b>	<b>Hypotheses Results</b>
<b>H3a</b> :The supportive organization structure factor moderates the relationship between pro-activeness and financial performance	H3a was supported
<b>H3b</b> :The supportive organization structure factor moderates the relationship between innovation and financial performance	H3b was not supported
<b>H3c</b> :The supportive organization structure factor moderates the relationship between risk-taking and financial performance	H3c was supported
<b>H3d</b> :The supportive organization structure factor moderates the relationship between self-renewal and financial performance	H3d was not supported
<b>Rewards Moderates the Relationship between CE Dimensions and Financial Performance</b>	
<b>H4a</b> :The rewards factor moderates the relationship between pro-activeness and financial performance	H4a was supported
<b>H4b</b> :The rewards factor moderates the relationship between innovation and financial performance	H4b was not supported
<b>H4c</b> :The rewards factor moderates the relationship between risk-taking and financial performance	H4c was supported
<b>H4d</b> :The rewards factor moderates the relationship between self-renewal and financial performance	H4d was not supported

Table 5: Summary of Hypothesis Testing

The risk taking dimension does not have a direct effect on the financial performance of JCorp intrapreneur companies. But, with the indirect effect of moderating factors, risk-taking has shown a significant effect on financial performance. Thus, H2c, H3c and H4c were supported, as resource availability, supportive organizational structure and rewards do moderate the relationship between CE dimension and financial performance of JCorp intrapreneur companies. Based on the hypotheses results, it can be concluded that pro-activeness and risk taking were found to be significant predictors of corporate entrepreneurship and financial performance.

## Conclusion and Recommendation

This study empirically tested a model of corporate entrepreneurship (CE) dimensions and the effects of entrepreneurship dimensions; innovation, risk-taking, pro-activeness and self-renewal, on financial performance as well as the moderating effect of the internal factors on the relationship between CE dimensions and financial performance. The main objective of this study was to investigate the effects of CE dimensions on financial performance of JCorp intrapreneur companies. In this paper, four main variables of CE dimensions and three moderating factors were investigated: innovation, risk-taking, pro-activeness, self-renewal, resource availability, supportive organizational structure and rewards. These variables and their effects (on financial performance) in JCorp group of companies were examined with regard to existing corporate entrepreneurship theory. This is important as it will help particularly JCorp companies to determine the extent to which the existing corporate entrepreneurship theory is applicable to these companies.



The CE dimensions and moderating factors was developed after an integrated framework that conceptualizes and operationalizes corporate entrepreneurship was constructed. Based on the constructed model, information relating to corporate entrepreneurship practices in JCorp was obtained. Fundamentally, the study proposed that four CE dimensions, being pro-activeness, innovation, risk-taking and self-renewal, have a direct and positive relationship with JCorp intrapreneur companies' financial performance. Of equal importance, the research proposed that internal organizational factors (resource availability, supportive organizational structure, rewards) act as moderating variables on the relationship between CE dimensions and financial performance (growth of sales) of these companies. The research methodology was subsequently designed to collect and analyze data in order to test these propositions.

The study found that pro-activeness has a positive and significant impact on the financial performance of JCorp intrapreneur companies. This is consistent with the finding by Aktan and Bulut (2008) that found pro-activeness has a positive and significant effect on firm's financial performance. Yet, another study by Lekmat and Selvarajah (2008) showed different results; illustrating that pro-activeness has a negative impact on firm performance. Even with the indirect effect of moderating factors (resource availability, supportive organizational structure and rewards) all the hypotheses linked to pro-activeness were supported. This means that resource availability, supportive organizational structure and rewards do moderate the relationship between pro-activeness and financial performance. These results extend the literature by showing the effect of moderating factors on the relationship between pro-activeness and financial performance.

The risk-taking dimension does not have a direct effect on the financial performance of JCorp companies. But, with the indirect effect of moderating factors, risk-taking showed a significant effect on financial performance. Thus, H2c, H3c and H4c were supported, as resource availability, supportive organizational structure and rewards do moderate the relationship between risk-taking and financial performance of JCorp companies. This is consistent with past research by Aktan and Bulut (2008) who concluded that risk-taking has a positive and significant effect on financial performance.

As for the innovation dimension, the results show that innovation was negatively related to financial performance, H1b was not supported as the effect of innovation on financial performance was not significant. With the moderating factors, the hypotheses, H2b, H3b and H4b were also not supported. Although all the moderating factors were positively related to innovation, it is not significant enough to support the hypotheses. As far as this study is concerned, the results are inconsistent with previous studies by Aktan and Bulut (2008), Lekmat and Selvarajah (2008), Antoncic and Scarlet (2008), and Zahra and Covin (1995) which assert that innovation is positively significant and has the strongest effect on firm's performance. In fact, Antoncic and Scarlet (2008) found that innovation was the most important dimension in relation to financial performance.

The final dimension is self-renewal. The study found that self-renewal was negatively related to financial performance and not significant, thus H1d was not supported. This is inconsistent with studies conducted by Lekmat and Selvarajah (2008). They found that self-renewal was positively related and significant to firm performance. With the moderating factors, all the hypotheses, H2d, H3d and H4d, were not supported. Although resource availability and supportive organizational structure were positively related to self-renewal while reward was negatively related,

yet they were not significant enough to support the hypotheses. In other words, the moderating factors do not moderate the relationship between self-renewal and financial performance.

Based on the findings of this study, several additional future directions can be suggested. Firstly, since this study only focused on the internal organizational factors of corporate entrepreneurship in JCorp companies, future research can be conducted by taking into consideration the other factors affecting corporate entrepreneurship, such as environmental, external and other organizational factors. While Covin and Slevin (1988) claimed that environmental and organizational factors affect corporate entrepreneurship, yet, they did not empirically test their assertion. Future research can be dedicated to exploring this. Morris et al. (2008) also claim that organizational strategy is effective for an entrepreneurial organization while Wheelen and Hunger (2008) suggest that the external environment has a strong effect on the level of entrepreneurship in an organization. Thus, future research can be conducted by including environmental and organizational factors. The call for future studies to extend this research is urgent considering management teams are often challenged to prioritize development of resources under different economic environments.

Secondly, most of the studies in the past have used financial performance as the indicator for the outcome of corporate entrepreneurship. However, future research can be conducted by using other than financial outcomes as an indicator for the outcome of corporate entrepreneurship (Zahra et al., 1999) especially in established Malaysian state government-linked corporations. These include, but are not limited to, customer satisfaction, social acceptance, and public image and reputation (Dess et al., 1999). The relationship between corporate entrepreneurship and these non-financial performance measures should be explored in future studies. Customer satisfaction is the central focus for overall success (Pearce and Robinson, 2009).

Thirdly, the survey research design that relies on a single respondent for each organization has reliability concerns. Thus, replication studies with the use of multiple respondents or more from each organization should be considered to enable researchers to address the bias effect of single respondent in order to achieve greater accuracy in the study. According to Lyon et al. (2000), top management members from different managerial levels and functions might have different views on each of the CE dimensions. Different views might lead to inconsistent findings, thus to eliminate the single-source bias and more accurate results, future research can opt to examine other sources of data such as industry reports, financial statements, and other data that is available online (Bierly and Daly, 2007). This is imperative as universally, the most common challenge faced by researchers is the ability to explain their research findings in a generalised manner.

Another new dimension that should be discussed in future research is the role of board of directors and absorptive capacity factor, as suggested by Zahra et al. (2009). Absorptive capacity is defined as the ability of the firm to identify, accumulate, process and use the new knowledge gained from external sources, such as, by joining alliances, hiring key personnel as well as investing in Research and Development (R&D). Furthermore, Phan et al. (2009) proposed the role of corporate governance (i.e. Board of Directors) as a system that incentivizes and monitors the management of the company to undertake appropriate actions in recognizing opportunities. The study highlights the significance of the Board of Director's composition, including the role of external directors in both new ventures and established firms in analyzing the level of corporate entrepreneurship of the companies.

Finally, future research might look more closely at the innovation, risk-taking and self-renewal dimensions since the results of this study contradict with some of the previous studies. Thus, future research is therefore needed to investigate the direct effect of these three CE dimensions on financial performance.

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