International Journal of Business and Economic Affairs (IJBEA)
3(1), 33-39 (2018)
DOI: 10.24088/IJBEA-2018-31004
ISSN: 2519-9986

The Relationship Between Corporate Entrepreneurship and Innovation in Manufacturing Companies in Perak

WU JINGNAN [1*], NEK KAMAL YEOP YUNUS [2]

[1, 2] Faculty of Management and Economy, Sultan Idris Education University, Tanjung Malim, Malaysia

Abstract: Recently, the research interest in the field of corporate entrepreneurship is growing. But much is focus on developing and refining an instrument, and finding the relationship between corporate entrepreneurship and strategic management. A research on the internal organizational entrepreneurial environment and its relationship with innovation is scarce. Therefore, this study explores the relationship between the two. Using analytical survey design in a cross-sectional time, 150 middle managers were selected in large and middle-sized manufacturing companies in Perak. The descriptive analysis showed that all the corporate entrepreneurial variables are above average on a Five Point Likert scale measure. The results of the correlation matrix also indicated that there is a positive correlation between the corporate entrepreneurial variables and innovation. About 58.8% of the variance in innovation can be explained by the regression model and that model was statistically significant. The results of this study are important for middle managers to find out how organizational variables could be modified to promote innovation.

Keywords: Corporate entrepreneurship, Perak, Innovation, Manufacturing company

Received: 31 January 2018 / Accepted: 9 February 2018 / Published: 20 February 2018

INTRODUCTION

Background

In Malaysia, concerns about manufacturing sector are on the rise. Under the (Department of Statistical Malaysia, 2015), the manufacturing sector recorded a gross output value of RM1,142.0 billion in 2015 compared to RM836.5 billion in 2010.

An organization is facing tough times to continue to compete with their product on the open market. Shrinking customers, limited, resources and high competition, management of organization should think how to deal with today's challenges with new strategies. Organizations innovation is a process that can increase organizations capacity to thrive in challenging times.

In the Global Innovation Index 2017, Malaysia ranks 37 out of 127 countries (Global Innovation Index, 2017), which is still in a good position. Nevertheless, an effort to increase the innovation needs to be improved in an organization the that a ranking will be increased in the future. While, in Malaysia through the National Innovation Agency, Malaysia is mandated by the government to execute the National Corporate Innovation Index (NCII) to stimulate innovation among organizations.

Research problems

Innovation in the organization is very important in ensuring the survival of a business in the long term especially for manufacturing sector. The present scenario indicates that Malaysian products are difficult to penetrate the local and international market to compete with branded products from abroad. This situation occurs due to the local product being less competitive, not having the characteristics and uniqueness to attract consumers (Global Innovation Index, 2017). Therefore, to cope with a business

*Corresponding author: Wu Jingnan
†Email: 1281260604@qq.com

environment that is rapidly changing and hyper-competitive, it is important for local manufacturing companies to take risks, by adopting innovative and creative approaches that require the internal reform as an overall solution to handle a dynamic business environment (Kassa, 2014; Pahayahay, Asejo, Pangan, Dasig Jr., & Panganiban Jr., 2017).

One organization needs encouraging and supportive environment to ensure the appropriate position of a proper corporate entrepreneurial environment. The corporate entrepreneurial environment of manufacturing company comprises two different levels, internal environment and external environment, the former includes the special variables in company and the latter includes the variables that are external to company. Even though conducting an analysis on external environment for the corporate success is necessary, unless it is supported by one comprehensive analysis on internal environment within an organization, it is not enough. Otherwise, the internal environment is possible and much easier for employees to measure and control compared to the external environment.

There are few investigations about the internal environment for the corporate entrepreneurship and the relationship between internal environment and innovation. Thus, this study investigates the functional relationship between the variables of corporate entrepreneurship and the innovation within an organization. Moreover, this study analyzes the contribution of internal environment for corporate entrepreneurship towards innovation in Perak manufacturing company.

Research questions are:

1. Is there any relationship between management support for corporate entrepreneurship and innovation in a manufacturing company?
2. Is there any relationship between work discretion for corporate entrepreneurship and innovation in a manufacturing company?
3. Is there any relationship between time availability for corporate entrepreneurship and innovation in a manufacturing company?
4. To what extent does internal environment for corporate entrepreneurship contribute to innovation in a manufacturing company?

LITERATURE REVIEW

Corporate entrepreneurship

According to Hornsby, Kuratko, and Zahra (2002), five variables are used to explain the internal environment of corporate entrepreneurship namely management support, work discretion, time availability, reward as well as organizational boundaries. In this study, the first three of them are considered.

Management support

According to De Jong and Wennekers (2008), leadership is a factor that can influence employees corporate entrepreneurship behavior. For this reason, leadership means the management support to encourage and promote innovative thoughts ideas and new methods to do things within an organization. Management support is managers‘ willingness to promote and facilitate the entrepreneurial activity within an organization (Hisrich & Peters, 1986; Musa, 2016). The theorists think the support can be present in many forms, such as offering basic resources, championing ideas, and institutionalizing entrepreneurial activity in the processes and systems of the firm.

Work discretion

Work discretion can be seen as the freedom to work. It allows employees to have work autonomy, in other words, the power or right to act in own judgment. Work discretion can positively influence corporate entrepreneurship (Morris, 2008; Mohamed & Arafa, 2016). Morris (2008) also suggests that by encouraging more participation in management, empowering and rewarding for champion, more autonomy, more broadly defined works and more decision-making pushed down to the bottom, it is hopeful for bottom up innovation in decentralized organizational structures.

Time availability

Time Availability refers to the evaluation of workload to make sure there is enough time for both individuals and groups to seek innovation and their work is structured in the ways of supporting efforts to accomplish short-term and long-term organization objectives (Kuratko, Ireland, Covin, & Hornsby, 2005; Piyachat, 2017).

Morris (2008) also stated that time is an important factor and obstacle for corporate entrepreneurship behavior. They stated that employees have various sorts of daily chores to finish, and some of them are simply busy because there is a need to explain the daily information load. Therefore, employees have less time to try something new. Freeing up employees time is very important to promote corporate entrepreneurship behavior.

Innovation in organization

Innovation refers to the process of changing some things that are established by introducing something new that adds value to consumers and will help organizations growth in terms of organizations financial performance, knowledge, human experience, efficiency and quality (Dooley & O'Sullivan, 2008).

Innovation has focused on three (3) main types namely product innovation, process innovation and services innovation. The product innovation is to bring favorable changes to the physical products, the process innovation is to bring favorable changes to the process of producing products and services, and the service innovation is to bring favorable changes to the services used by consumers (Dooley & O'Sullivan, 2008).

Young (2012) stated that innovative behaviour can be promoted in organizational climate through perceived organizational support. In his study we also identified that organizational justice only influenced innovative behavior by psychological mechanism of perceived organizational support rather than directly (Young, 2012). Therefore, to cultivate a culture of innovation in organization, the management must support any effort towards innovative behavior in an organization.

Conceptual framework

Conceptual framework of this research is shown in Figure 1.

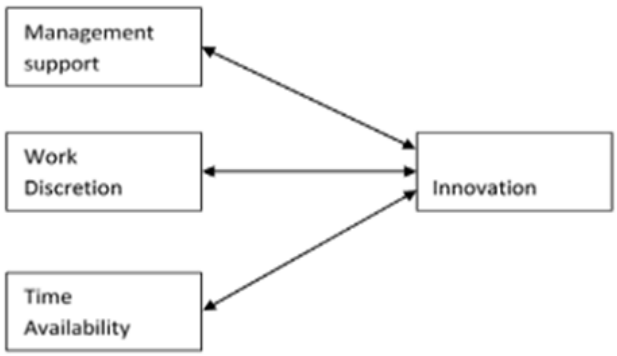

Figure 1. Conceptual framework

Hypothesis

Based on the research problems and conceptual framework above therefore the hypotheses of this research are as follows:

- Management support has a significant positive effect on innovation.
- Work discretion has a significant positive effect on innovation.
- Time availability has a significant positive effect on innovation.
- Internal environment for corporate entrepreneurship will significantly contribute to the deviation on innovation.

RESEARCH METHOD

The definition of population is "the complete set of group members" (Saunders, 2012). For this study is about medium and large sized manufacturing companies in Perak, relevant population was the middle managers in manufacturing companies in Perak.

By offering a table which makes sure of a good decision model, Krejcie and Morgan (1970) greatly simplified the size decision, due to their model, the number of population is approximately 250, and the sample size is 152.

This study is a quantitative study. It's data collection methods rely on random sampling and structured data collection tools that put different experiences into pre-determined response categories. And data can be collected by giving of questionnaires. Questionnaires are given to the respondents face to face and there is a request that they should return them after completion. In this research, SPSS was utilized as a statistical toll for analyzing the collected data. The internal consistency reliability test is applied to test whether the data have acceptable reliability. The correlation coefficient is applied to study the relationship between variables. A sequential multiple regression analysis (Pallant, 2005) was utilized for accessing the relationship between internal environment of corporate entrepreneurship and innovation.

RESEARCH RESULTS

In order to evaluate the internal consistency of the items in the research instrument, a calculation of Cronbach's Alpha coefficients was made. The Cronbach Alpha coefficient should be no less than 0.7 for an acceptable reliability (Cronbach, 1951).

Table 1 is the detail of the Cronbachs alpha values for CEAI assessment and innovation elements. It was observed that management support (0.750), work discretion (0.722), time availability (0.837) and innovation (0.806) all exceeded the requirement of 0.7. A conclusion can be made that CEAI assessment and innovation elements were proved reliable in the data collection for required dimensions.

Table 1: Output SPSS for cronbach's alpha for reliability test

	N of items	Required α	Obtained α
Management support	19	0.7	0.750
Work discretion	9	0.7	0.722
Time availability	6	0.7	0.837
Innovation	17	0.7	0.806

In order to evaluate the relationship between independent variables and dependent variable, a correlation matrix was generated. A correlation analysis needs to be done before the regression analysis was performed. Table 2 below shows the results that were obtained from this study.

Table 2: Output SPSS for correlations

		Management Support	Work Discretion	Time Availability
Innovation	Pearson correlation	0.554**	0.496**	0.462**
	Sig. (two-tailed)	.000	.000	.000
	N	150	150	150

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

Based on Table 2 we can find that the correlation between innovation and management support was large (.554). The correlation between innovation and work discretion was also large (.496). Another correlation is between time availability and innovation which was smaller (.462) than the above. Thus, the first three hypotheses are fully accepted.

Table 3: Output SPSS for multiple regression coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	β	Std.Error	β		
1 (constant)	.143	.048		2.979	.003
Management support	.590	.047	.596	12.581	.000
Work discretion	.269	.051	.312	5.244	.000
Time availability	.076	.025	.098	3.075	.003

Dependent Variable: Innovation

From Table 3, the regression coefficients indicate that all the independent variables, namely, management support, time availability and work discretion make a positive and significant contribution to the deviation on dependent variable, i.e., innovation. Analysis of Beta value shows that management support as well as work discretion contributes the most to the variation in dependent variable with the beta values of 0.60 and 0.31 respectively. Time availability possesses a beta value of 0.10.

Table 4: Output of SPSS for regressions for model summary

R	R Square	Adjusted R Square	Std Error of the Estimate
.799[a]	.588	.544	.24409

a. Predictors: (Constant), Support, Time, Discretion

According to the analysis on coefficient of determination of regression model shown in Table 4, the r^2 was 0.588, which indicates that 58.8% of total variation observed in dependent variable (innovation) will be explained by regression equation, and the overall model was statistically significant ($p < 0.001$).

Therefore, on the basis of the results of regression analysis on forth hypothesis, internal environment for corporate entrepreneurship will make a significant contribution to deviation on innovation; is fully supported and therefore proven to be true.

COMPREHENSIVE DISCUSSION

On the basis of the study of Hornsby et al. (2002), three out of five CEAI elements were examined for internal consistency. It was found that Cronbachs alpha (α) rating of each of the three elements was moderate to high, which can be observed from Table 5. To make sure of data reliability in this study, an alpha (α) of 0.7 (DeVellis, 2016) was required for the data for further analysis. Table 5 displays the required alpha (α), comparative alpha (α) and actually obtained alpha (α).

Table 5: CEAI internal consistency and reliability

CEAI Element	Hornsby et al. (2002) α	Required α	Actual α
Management	0.63	0.7	0.750
Support Work Discretion	0.89	0.7	0.722
Time Availability	0.75	0.7	0.837

It could be seen that the alpha values obtained from research survey were worthy of comparison with the study described by (Hornsby et al., 2002) study described. It was seen that all three variables have major deviation (more than 5%): management support and time availability but since both were larger, it did not impact the data reliability; work discretion since it was higher than 0.7, it was also accepted to process to further analysis.

Based on the findings, a conclusion can be made that CEAI assessment was proved reliable in the data collection for required dimensions. A sequential multiple regression analysis was utilized for testing whether the three elements of CEAI assessment and Innovation measurement are significantly related.

To conduct a test on this hypothesis, finding instruments which can offer a quantifiable measurement method applied to individual level analysis were needed. The innovation instrument as proposed by (Hughes & Morgan, 2007) with the initial propose was to measure the organizational innovation but

after adaption was found to measure the effectiveness of the innovation at individual level. Since the CEAI instrument (Hornsby et al., 2002) was at individual level, there is no need to adapt.

The Innovation measure was considered as a dependent variable and three CEAI elements were considered as independent variables. In SPSS, the analysis was done and the result obtained in the last part. After doing the comprehensive statistical analysis. The result showed that there exists a relationship between three CEAI elements (time availability, work discretion, management support) and innovation measure, and was consistent with the findings of (Kassa, 2014). In addition, the established relationships provide direction as to focus more carefully during adjustment on which elements are reorganized to make sure to get the most effective result.

Determination coefficient (R^2) of the model was found to be .588, thus showing 58.8% of the total variation in innovation, comparing with R^2 value of .48 in Kassa (2014) study, dependent variable is explained by factors that are described in CEAI instrument and the model was significant as a whole.

For this reason, the results of the discussion help to learn more about two of the important concepts of corporate entrepreneurship in the Perak manufacturing company context. However, limited research existing in this area has been proposed. Overall, the researchers find the method adopted in this study did provide answer for the research questions. The survey response rate in this study is 75%; 58.7% of the respondents were male; most respondents (40.7%) range in age from 31-40; 50.7% of the respondents worked for 3-8 years; the majority of the respondents (33.3%) have an undergrad degree. All variables Cronbach Alpha coefficients are above the critical value 0.7 for a good internal consistency reliability. As descriptive analysis, all mean acquired was higher than the neutral mean, it means middle managers in private colleges believe three corporate entrepreneurship IVs of internal environment and DV (innovation) supports the entrepreneurial activity. Correlation analysis shows that correlation between DV (innovation) and IVs (management support, work discretion, time availability) was large. In regression analysis, 58.8% of total variation observed in DV will be explained by regression equation and the overall model (Innovation = 0.143 + 0.590 Management Support + 0.269 Work Discretion + 0.076 Time Availability) was statistically significant ($p < 0.001$).

CONCLUSION AND RECOMMENDATIONS

Significant support was found for the first hypothesis of chapter one, which came to the conclusion that middle managers in the Perak manufacturing companies perceive their management support for corporate entrepreneurship to be positively supportive of innovation activities.

The second hypothesis test results concluded that middle managers in the Perak manufacturing companies perceive their work discretion for corporate entrepreneurship to be positively supportive of innovation activities. The third hypothesis test results concluded that middle managers in the Perak manufacturing companies perceive their time availability for corporate entrepreneurship to be positively supportive for innovation activities. It is equally important to note that this result has lower scores compared to the former two. It was found that the fourth hypothesis had important support in all proposed aspects. This hypothesis found that the regression analysis was able to be used for determining that the internal environment of corporate entrepreneurship including management support, time availability and work discretion had a significant relationship with the innovation measure.

Therefore, the evaluation of both correlation and regression coefficients was made. The results showed that there was a positive correlation between independent variables and dependent variable, whereas the highest contribution to innovation can be attributed to the management support and work discretion. About 58.8% of total variation observed in innovation is able to be explained by regression equation and the model was statistically significant as a whole.

Based on those conclusions, recommendations of this research are,

• Further research on the CEAI and innovation instruments should not gather data in one state when used to evaluate an industry and should sample more companies. Increasing sample size is also recommended in order to make important conclusions for every participating company.

• A more comprehensive structure to measure innovation is suggested, so as to include the impact of the frequency of business activities.

REFERENCES

Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika*, *16*(3), 297-334. doi:https://doi.org/10.1007/bf02310555

De Jong, J., & Wennekers, S. (2008). *Entrapreneurship: Conceptualizing entrepreneurial employee behavior, scales research reports h200802, EIM business and policy research.* Retrieved from https://goo.gl/Gey4U3 (accessed on 13 April 2010)

Department of Statistical Malaysia. (2015). *Report on survey of manufacturing industries 2015.* Retrieved from https://goo.gl/bu85Cw (accessed on 15 June 2016)

DeVellis, R. F. (2016). *Scale development: Theory and applications* (Vol. 26). New York, NY: Sage Publications.

Dooley, L., & O'Sullivan, D. (2008). *Applying innovation.* Thousand Oaks, CA: Sage Publications.

Global Innovation Index. (2017). *Global innovation.* Retrieved from https://goo.gl/NfWBgv (accessed on 23 July 2017)

Hisrich, R. D., & Peters, M. P. (1986). Establishing a new business venture unit within a firm. *Journal of Business Venturing*, *1*(3), 307-322. doi:https://doi.org/10.1016/0883-9026(86)90007-8

Hornsby, J. S., Kuratko, D. F., & Zahra, S. A. (2002). Middle managers' perception of the internal environment for corporate entrepreneurship: Assessing a measurement scale. *Journal of business Venturing*, *17*(3), 253-273. Retrieved from https://doi.org/10.1016/s0883-9026(00)00059-8

Hughes, M., & Morgan, R. E. (2007). Deconstructing the relationship between entrepreneurial orientation and business performance at the embryonic stage of firm growth. *Industrial Marketing Management*, *36*(5), 651-661. doi:https://doi.org/10.1016/j.indmarman.2006.04.003

Kassa, R. S., A. G. & Raju. (2014). Corporate entrepreneurship and innovation. *European Journal of Busines and Management*, *6*(31), 50-67.

Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educational and Psychological Measurement*, *30*(3), 607-610. doi:https://doi.org/10.1177/001316447003000308

Kuratko, D. F., Ireland, R. D., Covin, J. G., & Hornsby, J. S. (2005). A model of middle level managers entrepreneurial behavior. *Entrepreneurship Theory and Practice*, *29*(6), 699-716. doi:https://doi.org/10.1111/j.1540-6520.2005.00103.x

Mohamed, W. S., & Arafa, I. M. (2016). Investigating corporate social responsibility disclosure by banks from institutional theory perspective. *Journal of Administrative and Business Studies*, *2*(6), 280-293. doi:https://doi.org/10.20474/jabs-2.6.3

Morris, K. D. . C. J., M. (2008). *Corporate entrepreneurship and innovation.* Mason, OH: Thomson-Southwestern Publishing Co.

Musa, G. (2016). The role of accounting education towards the development of small and medium enterprises in Jigawa State. *International Journal of Business and Administrative Studies*, *2*(4), 96-102. doi:https://doi.org/10.20469/ijbas.2.10002-4

Pahayahay, A. B., Asejo, N. R., Pangan, S. M., Dasig Jr., D. D., & Panganiban Jr., A. S. (2017). A concurrent exploratory study on sectoral engagement model of an altruistic corporate social responsibility in bureau of jail management and penology. *International Journal of Business and Economic Affairs*, *2*(2), 98-105. doi:https://doi.org/10.24088/ijbea-2017-22003

Pallant, J. (2005). *Spss survival manual: A step by step guide to data analysis using spss for windows.* Sydney, Australia: Allen&Unwin.

Piyachat, B. (2017). The relationships among resources commitment reverse logistics innovation reverse logistics performance and reverse logistics cost savings: Manufacturing vs service industry. *Journal of Administrative and Business Studies*, *3*(3), 122-135. doi:https://doi.org/10.20474/jabs-3.3.2

Saunders, . L. P., M. (2012). *Doing research in business and management: An essential guide to planning your project.* Essex, EX: Financial Times Practice Hall.

Young, L. D. (2012). How to promote innovative behavior at work? the role of justice and support within organizations. *The Journal of creative behavior*, *46*(3), 220-243. doi:https://doi.org/10.1002/jocb.15