The impact of organizational innovativeness on the performance of the university: an analysis among selected Malaysian private universities

Prof. Dr. Raja Suzana Raja Kasim
Global Entrepreneurship Research & Innovation Center, UMK, Malaysia
Center of Applied Management, IBE, UiTM
rajasuzana@umk.edu.my

Ismayaza Noh
Faculty of Hospitality and Tourism Management, UiTM, Malaysia
isma_yaza@yahoo.com

Fatimah Selama
Faculty of Business Management, UiTM
Malaysia
fatimah951@salam.uitm.edu.my

Yah Awg Nik
Universiti Malaysia Kelantan (UMK)
yah@umk.edu.my

Abstract—***This paper argues that organizational innovativeness may have some influence on university performance. The sampling frame used is extracted from the directory of academic and management staffs of selected private universities in Malaysia. The primary motivations of this paper is to focus on the impact of creativity, openness to new ideas, intention to innovate, willingness for risk taking, and capacity to innovate on the private university performance. In this paper the researchers integrate few innovation models to develop a suitable framework and model for organizational innovativeness research; develop relevant organizational innovativeness construct and empirically tested within the local perspectives. In particular, the influenced of organizational innovativeness as key important variable which have been neglected in Malaysian institution of higher learning previous studies are examined. The theoretical model is empirically tested using data from private institutions of higher learning in Malaysia. Several prepositions are highlighted and developed.***

Keywords— organizational innovativeness, internationalization, organizational performance, institutions of higher learning, Malaysia

I. INTRODUCTION

In Malaysia, the education business is growing rapidly, with the total of twenty five (25) private universities competing among themselves in order to show their capabilities to the market [1]. [1, 2] contended that creating an innovative 'world class' university is the explicit objective of the ministry officials and representatives of the business community who actively promoted the merger. The universities are further forced to compete globally in seeking the attention of financiers, academics, students, and employers. The demand for external accountability materializes in a number of ways; the ideas and practices of corporate management are adopted and adapted [3]. Further, [2] argued in order to find synergies and secure efficient operations; and to provide opportunities to better meet the demands for innovativeness and academic entrepreneurialism, the impact of these activities on the performance of private universities in the country remain debatable.

The issues of the organizational innovativeness are divided into 5(five) dimensions [4] based on the arguments from the researchers. The five dimensions have emerged from the foregoing discussion, namely; creativity, openness to new ideas, intention to innovate, willingness for risk-taking and technological capacity to innovate. The objective of this paper is to investigate the extent of organizational innovativeness activities and the impact of organizational innovativeness on the performance of the selected private universities in Malaysia.

II. LITERATURE REVIEW

A. Enterpreneurship Activities and Innovation

The link of entrepreneur activities to organizational innovativeness may benefit the private university in terms of its performance outcomes. Private university having its entity as profit oriented business had to compete for their survival. In order to survive, private university must strategize for continuous improvement and innovativeness to strengthen the company advantage.

According to [5], the innovativeness appears to be an important determinant of business performance. This implies that innovative activities are generally important to the success of the business.

Reference [6] supports [5] that organizational innovation is recognized to play a central role in creating value and sustaining competitive advantage. According to [7] organizational innovativeness is examined in many disciplines, such as management and strategy, entrepreneurship, political science and marketing. The innovation activities also can be characterized by unpredictability, multidiscipline, and variability in the process, and firms can take advantage of multiple viewpoints through the development of interaction networks among members [8]. Innovation represents the core renewal process in any organization. Unless it change what it offers the world and way in which it creates and delivers those offerings it risks its survival and growth prospects [6].

A number of authors have emphasized that entrepreneurship appears to be the primary act underpinning innovation and further claimed that entrepreneurship as the primary catalyst of organizational innovativeness [9, 10]. In addition, scholars advocated that innovation as a process that provides added value and a degree of novelty to the organization, its suppliers and customers through the development of new procedures, solutions, products and services as well as new method of commercialization [9].

Organizational innovativeness provides important means for changing an organization, whether as a response to changes that occurs in its internal and external environment. According to [5] when the environment evolve, organization must adopt innovations over time and the most important innovations are those that allow the firms to achieve some sort of competitive advantage and contributing to its performance. Meanwhile [11] contended that an organization can assess organization performance according to the efficiency and effectiveness of goal achievement.

B. Organizational effectiveness

The early definitions of organizational innovativeness define innovativeness as a form of social process which leads organizations to go through series of major changes [12]. Recent literature points out a general consensus in the literature that innovativeness is the precursor to the innovation and represents a firm's ability to innovate [5]. The organizational innovativeness can be viewed as multi-dimensional by including the five dimensions: creativity, risk-tasking, openness to change, future orientation, and pro-activeness [7].

As stated by [4], the organizational innovativeness also can be defined as a five key dimension have emerged from foregoing discussion, namely, creativity, openness to new ideas, intention to innovate, willingness to risk taking and technological capacity to innovate. The five (5) keys dimension of organizational innovativeness:

i. Creativity

According to [13] creativity are defined as "a product or response ... that is (a) both a novel and appropriate, useful, correct or valuable response to the task at hand, and (b) the task is heuristic rather than algorithmic in nature." "It must somehow influence the way business gets done – by improving a product, for instance, or by opening up a new way to approach a process."

ii. Openness to New ideas

The personality trait 'openness' or 'open-mindedness' is used to refer to an innovative organization which is more receptive and tolerant to new ideas and open to new experiences more on to take risk and adopt an innovation to the organization [4].

iii. Intention to Innovate

According to [4] the intention to innovate are defined as the organizations commitment or devotion to the innovation process and intention to be innovative.

iv. Willingness for Risk-Taking

The willingness for risk-taking is defined as the notion of risk in light of the level of difficulty, uncertainty, and ambiguity associated with innovation [4].

v. Capacity to Innovate

Reference [4] defines innovativeness as the capacity of an organization to improve the existing products and processes the capacity to utilize the creativity resources of the organization to the full.

C. Innovation Activity

A thorough review of the literature supports varied definition of innovation [4, 5, 7, 12]. The examination of the innovation literature confirms that there is enormous diversity in views and approaches to what actually constitutes innovative activity, and also highlights some of the confusion that exists within discipline itself [10]. A number of process models have been developed in the literature suggesting that innovation consist a variety different phases: idea generation, research design and development, prototype production, manufacturing, marketing and sales [10, 13].

More recently a number of integrative models have been proposed all of which identify a number of different types of innovation, for example [6] discuss several types of innovation: product (including radical and incremental), service, and process (including administrative, service and production), it also discuss position, process, product and paradigm innovation [6].

On linking innovation and knowledge creation, [15] emphasize that different strategies of knowledge creation and learning processes are relevant source of firm's heterogeneity and had strong association with their innovation behaviors. This further implies that the innovations are not merely derived from the product or

services but also based on the behavior of the organization.

The importance of organizational innovativeness is also received and viewed attention among scholars based on the survey by [15] they used the Innobarometer survey to investigate the importance of organizational innovation. Their major finding revealed that with well-established patterns of innovation based on product innovation and process innovation, a third relevant organizational-cooperation mode of innovation emerges. This mode of innovation results particularly relevant amongst service sector firms.

On the other aspects of organizational innovativeness, the approach by [16] appears to be beneficial to explore. According to [16] there appears to be two types of organizational innovativeness approach that is:

i. Exploratory Innovation

The term of the exploratory innovation is more on the offering and creating new products and services. A firm's that exploratory innovations offer new designs, create new market segments, develop new channel distribution, and supply the services for emerging customers [16]. The scholars further emphasize the exploratory innovations tend to gain and create completely new knowledge and depart from existing knowledge.

ii. Exploitative Innovation

Exploitative innovation is concern on improving quality of the innovation based on the existing activity performed. A firm's exploitative innovations improve established designs, broaden existing knowledge and skills, extend and enhance the available product lines, increase the efficiency of existing distribution channels, and supply better services for existing customers [18].

In defining organizational innovativeness, the the researchers is on the view that the different innovation processes may result in different output, thus some result in tangible products or changes to those products, while others result in changes to service or in the way the organization tasks. Therefore, if the organizations want to survive they need to invest in different types of innovation, since different types of innovation influence organization in different ways and achieve different outcomes and impact [6].

D. Private Universities and Organizational Performance

The private university performance is defined as the perceptions of the private university in benchmarking their standing with competitors as well as their internal views on performance of the university itself, [17]. As a literature goes, the organizational performance is an indicator which measures how well an organization achieves their objective and can assesses organizational performance according to the efficiency and effectiveness of goal achievement [7]. To some organizations, superior organizational performance reflects the firm's sustainable competitive advantage, where organizations must build strategies to sustain competitive advantage by leveraging their knowledge resources and intellectual assets for optimum performance, [17].

According to [17] despite an organization's effort, many still do not perform well and studies on the survival of organizations found that the average age of an organization is about 18 years. He further contended that the short life span of organization is the result of complex, but essential dynamic processes within the organizations such as performance that has been ignored and unattended by management.

E. Mechanistic and Organic Organizations

In this section, relevant models and approaches will be further discussed to associate the organizational innovativeness and its approaches. According to [18] organizational innovativeness can be divided into several types according to the different view point which is:

- Product basis view
- Process basis view
- Product and process basis view
- Multiple view

The product basis view emphasized the organizational innovativeness aspect on new products which are produced or designed by the organizations. Meanwhile, for the process view the organizational innovativeness was regarded as a process of the organizations. Product and process basis view can be defined as the creation of new product or process in any organization. The multiple viewpoints suggested that the most of the people with a unitary viewpoint emphasize only the technical innovation of an organization, whilst administration innovation like management policies and practices were neglected.

Reference [18] contended that technical innovation was more beneficial to an organic organization than a mechanistic organization. The mechanistic organization has more rigid structure and is typically found where the environment is stable and predictable [18]. Based on [18], the characteristics can be categorized to:

i. Task required by organization are broke down into specialized, functionally differentiated duties in an abstract way.
ii. The precise definition of rights, obligation and technical methods and translated into the responsibilities on a functional position.
iii. Knowledge of the whole of organization is located exclusively at the top of hierarchy.
iv. A tendency for interaction between members of the organization to be vertical.

For the organic organization, [17] stated that more fluid set of arrangements and is an appropriate form to changing environmental conditions which require emergent and innovative responses. The characteristic are:

i. Individual contributes to the common task of the organization.
ii. The spread of commitment to the organization.
iii. Knowledge may be located anywhere in the network.

iv. Importance and prestige attach to affiliations and expertise.

Therefore, the researchers believed that organic organizations continuously innovated, mechanistic organizations did not, whereas an intermediate type was somewhere between these two extremes in terms of innovativeness.

F. Statement of problem

In this era of globalizations and as marketplace become more dynamics, organizations need to innovate in response to changing customer demands and lifestyle [6]. While it is generally agreed that innovation contributes to business performance, relatively little is known about the drivers of organizational innovativeness and how those drivers operate via innovativeness to collectively influence performance [5]. Hence, this study with a particular focus on selected private universities in Malaysia, aims to examine the five dimensions such as creativity, willingness risk taking, openness to new ideas, intention to innovate, and technological capacity to innovate [4] to the organizational innovativeness on the performance.

A greater emphasis on performance and existing approaches of the organizational innovativeness will continue to serve an organization as an important key for organizational innovativeness among private universities in Malaysia. Due to the competition among the private universities that existing in Malaysia, accurate identification in recognizing the activities of organizational innovativeness and its impact on the performance of these private universities is indeed vital to be explored. Furthermore, by practicing the innovation is crucial in sustaining the image of network of innovation as well as the success of organizational innovativeness and its associated impact on the private universities performance itself. Hence, with the study by measuring the level of extent in organizational innovativeness activities and performance will also lead towards the identifying organization success.

III. METHODOLOGY

Quantitative research is used to employ theories pertaining to natural phenomena. The population of interest for this study was among selected private universities within Klang Valley, Malaysia. In representing these universities, a selection of faculty members who had experienced and involved in innovation activities had been done. Therefore, a total of 14 faculties that is 10 faculties from Taylor's University, 10 faculties from Monash University, 4 faculties from Nottingham University and 4 faculties Sunway University was involved. In this study however, the purposive sampling technique was used.

IV. FINDINGS

Descriptive surveys were done and reliability and validity test of the item on the university performance is done through the Rasch Measurement. Likert scale questionnaire is adapted by [4, 17] to find out the impact of organizational innovativeness on the university performance.

A. Person and Item Reliability Coefficients

From Table 1, the reliability of person difficulty estimates is quite high (.96). The item separation index of 4.94 indicates that the items can be separated into 5 difficulty strata. As item reliability indicates the ability of the test to reproduce the hierarchy of items along the measured variable [18, 19], a reliability coefficient of .99 suggests that this order of item hierarchy will be replicated with a high degree of probability if the items were given to other comparable cohorts. With regard to item measures, the reliability coefficient is considerably higher at 0.86. Responses to the statements in the questionnaire showed greater consistency and this showed in a higher reliability coefficient for the data.

Table 1. Person and Item Reliability Coefficients

SUMMARY OF 71 MEASURED Persons

	RAW SCORE	COUNT	MEASURE	MODEL ERROR	INFIT MNSQ	INFIT ZSTD	OUTFIT MNSQ	OUTFIT ZSTD
MEAN	146.7	53.0	.65	.23	1.00	-.5	1.02	-.5
S.D.	24.4	.0	1.33	.03	.63	3.0	.66	3.0
MAX.	206.0	53.0	4.85	.43	3.69	8.1	3.78	8.4
MIN.	63.0	53.0	-4.04	.21	.19	-6.3	.20	-6.2
REAL RMSE	.26 ADJ.SD	1.30	SEPARATION	4.94	Person RELIABILITY			.96
MODEL RMSE	.24 ADJ.SD	1.31	SEPARATION	5.52	Person RELIABILITY			.97
S.E. OF Person MEAN = .16								

Person RAW SCORE-TO-MEASURE CORRELATION = .99
CRONBACH ALPHA (KR-20) Person RAW SCORE RELIABILITY = .97

SUMMARY OF 53 MEASURED Items

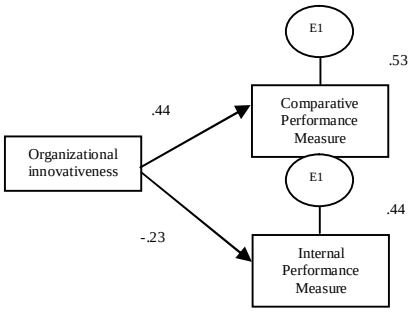
	RAW SCORE	COUNT	MEASURE	MODEL ERROR	INFIT MNSQ	INFIT ZSTD	OUTFIT MNSQ	OUTFIT ZSTD
MEAN	196.5	71.0	.00	.20	1.00	-.3	1.02	-.2
S.D.	14.3	.0	.58	.01	.45	2.5	.47	2.6
MAX.	228.0	71.0	.80	.21	2.43	6.2	2.44	6.2
MIN.	176.0	71.0	-1.32	.19	.43	-4.3	.43	-4.2
REAL RMSE	.22 ADJ.SD	.54	SEPARATION	2.47	Item RELIABILITY			.86
MODEL RMSE	.20 ADJ.SD	.54	SEPARATION	2.71	Item RELIABILITY			.88
S.E. OF Item MEAN = .08								

B. Path Analysis

The objective of the paper is to identify and determine the extent by which organizational innovativeness explains university performance. The path analysis was conducted using analysis of moment structure (AMOS) to acquire the answers for the research question. The path analysis was performed to simultaneously test the interdependent relationships among these particular variables. Path analysis was simply a method that employed simple bivariate correlations to estimate the relationship in a system of structural equation and according to them, the main objective of using path analysis was to enhance the ability of our understanding by examining a series of interdependent relationships simultaneously. The path analysis was employed and the results are as depicted in the figure below.

Figure 1: Standardized Path Coefficients of an organizational innovativeness and

university performance



All the standardized parameters estimates in the model have significant t-value ($t \geq 2.00$), which gives the statistical evidence that the contributions of organizational innovativeness on the university performance are significant. Figure 1 above presents the standardized path coefficients of the proposed research model and it also demonstrates the result of the research question posed in the paper.

In Figure 1, the result shows organizational innovativeness accounts for 53 percent variance in the comparative performance measure of organizational performance; with the standardized regression weight at 0.44 and -0.23 respectively and significant at 1% level (λ=-.23, .44, R^2=.53, p=0.001). The organizational innovativeness also accounts for .44 percent variance in the internal performance measure of organizational performance; with the standardized regression weight at 0.44 and -0.23 respectively and significant at 1% level (λ=-.23, .44, R^2=.44, p=0.001). It suggests that one standard deviation increase in the organizational innovativeness is followed by 0.53 standard deviation increase in comparative performance measures and by 0.44 standard deviation increase in internal performance measure.

The path analysis using analysis of moment structure (AMOS) was used to test the extent variances of innovativeness could predict the performance of selected private university in Malaysian higher education. The results of this study add to our understanding of the impact of innovativeness on performance among private HEI in Malaysia.

V. CONCLUSION

In this paper, quantitative data collections were conducted with members of the senior management team and academics of selected private universities in Malaysia; who are primarily responsible for teaching and research about the innovation and innovativeness in higher education sector. There appears to be a gap in literature for the involvement of private university, particularly for the population for this study of innovativeness in higher education. Thus, the results also have the potential to contribute theoretically to management strategy, innovation and higher education literature.

The data suggests the presence of the concept and a holistic knowledge and insight of emphasizing innovation discipline in higher education. HEI can even now transform them into a highly pro-active innovation discipline where they can largely have their own control over those activities and transform their knowledge into commercial values. In pursuit of this activity, HEI should by now start thinking of developing policies and planning on how to implement innovative behavior on its learning programs in their institutions. Although there is a number of evidence from the literature, they had been studied in isolation. Hence, this finding appears to be contributing to a new paradigm on the emergence of higher education as an innovative entity. The key finding of this study suggests that activities of the organizational innovativeness had given a high impact on the university performance. In the context of HEIs, the innovation activities appear to be a source of competitive advantage and serves as a path to higher levels of success. Consequently, an innovation activity is an important path that the university can take to make it possible for the academic members and graduates to engage in innovative behavior.

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REFERENCES

[1] Ministry of Higher Education, MOHE Malaysia, 2011.
[2] A. Hann and J. Tienari., *Becoming World Class? Reputation – Building in a University Merger,* Journal on Critical Perspectives on International Business, 7 (1), 2011, pp. 7-29.
[3] L. Engwall, *The University: A Multinational Corporation?*, Journal on The University Market, 2008, 9-21.
[4] P. Lynch, M. Walsh, and D. Harington, *Defining and Dimensionalizing Organizational Innovativeness*, International CHRIE Conference Refereed Talk, 2010.
[5] M.G.T. Hult, F. Hurley and A.G. Knight. *Innovativeness: Its Antecedents and Impact on Business Performance,* Industrial Marketing Management, 33, 2003, pp. 429-438.
[6] J. Rowley, A. Baregheh and S. Sambrook, *Towards an Innovation Type Mapping Tool,* Journal on Management Decision, 49(1), 2011, pp.73-86.
[7] L. An Ho, *Meditation, Learning, organizational innovation and Performance*, Journal on Industrial management and Data System, 111 (1), 2011, pp. 113-131.
[8] H. Wen and Y.H. Li, *The Mediating Effect of Knowledge Management on Social Interaction and Innovation Performance,* Journal on International of Manpower, 30(3), 2009, pp. 285-301.
[9] E. McFadzean, A. O'Loughlin and E. Shaw, *Corporate Entrepreneurship and Innovation Part 1: The Missing Link*, European Journal of Innovation Management, 8(3), 2005, pp. 350-372.
[10] S.P. Robbins and M. Coulter, *Management*, Prantice Hall, Upper Saddle River, New Jersey, 2002.
[11]
[12] Caroll, J (1995), *Rearticulating Identify Exploring Corporate Image, Employee Identification*, Journal on Management Learning, 26 (4), 463-482.
[13] Knoxx., S (2002), *The Boardroom Agenda: Developing the Innovative Organization: Corporate Governance*, 2(1), 27-39.
[14] Bessant, J, Francis., D (2005*), Targeting Innovation and Implication for Capability Development*, 25 (3), 171-183.
[15] A. Filippeti, Innovation Modes and Design as a Source of Innovation: A Firm Leve Analysis, Journal of Innovation Management 14 (1), 2011, 5-26.

[16] Y. Li, N. Zhou and S. Si, *Exploratory Innovation, Exploitative Innovation and Performance*, Journal on Nankai Business Review International, 1(3), 2010, pp. 297-316.
[17] R.S.R. Kasim, *Moderating Effects of Knowledge Management Practices in the Relationship between Corporate Strategies and Organizational Performance*, PhD Thesis, Universiti Putra Malaysia, 2008.
[18] J. M. Linacre, Sample size and item calibration stability. *Rasch Measurement Transactions, 7*(4), 1994, pp. 328.
[19] T. G. Bond, and C. M. Fox, *Applying the Rasch Model* (2nd ed.). New Jersey: Lawrence Erlbaum, 2007.