RESEARCH ARTICLE

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Networking and Innovation Performance in Micro-Enterprise in Malaysia

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Using the quantitative approach, this study applied the cross-sectional design with micro-enterprise as the unit of analysis. The study employed the two-factor analysis techniques for the constructs of the model, namely exploratory factor analysis (EFA) and confirmation factor analysis (CFA). Furthermore, the structural equation modeling (SEM) was carried out using AMOS version 21.0 to test the direct relationship of the proposed hypotheses. This study contributed to the theoretical and practical knowledge by providing new strategies that led to the development of innovations and positively improved firm performance, specifically for micro-enterprises. In addition, the findings will help the SMEs Masterplan towards achieving a high nation income by 2020 in line with The New Economic Model.

Keywords: Networking, Innovation, Performance, Micro-Enterprises.

1. INTRODUCTION

Innovation is one of the most important strategies of competition. Innovation is vital for these SMEs (including micro-enterprise) which need to find a competitive edge to gain entry into the international market.[1] In order to guarantee sustainability, the SMEs industry needs to be accompanied by the development of SMEs activities, particularly in the area of innovation.[2] However, innovation processes are becoming more complex. The complexity of innovation process leads to a tremendous growth in the use of external networks by SMEs. Not much has been studied to prove the links between the external networking and innovation performance, particularly in micro-enterprise.

Hence, by applying the Resource-Based View (RBV) theory, this study tried to fulfill the research gap by investigating how networking with customers, suppliers, and government agencies may affect the innovation, thus enhance the performance of micro-enterprise, specifically in Malaysia.

2. LITERATURE REVIEW

2.1. Micro-Enterprise in Malaysia

In Malaysia, a micro-enterprise is typically a small business with less than five full-time employees.[3] In terms of sales, the turnover of micro-enterprises either in manufacturing, services, and other sectors would be less than RM300,000 a year.[3] They involve in very small-scale businesses, for example as food and burger stall operators, night market vendors, and grocery store operators as well as construction and small-scale service contractors.[4]

2.2. External Networking and Innovation Performance

The resource-based view (RBV) argues that firms have substantial resources. Thus, the firm's ability to survive in the marketplace depends on its internal resources that are difficult to be imitated and substituted by others.[5] Nowadays, competition in the marketplace is getting more intense causing the company's ability to innovate becoming more crucial. SMEs play an important role in a country's economy growth[4,6–9] through their ability of innovation which leads to an enhancement in a country's competitive position.[10] Recently, however, micro-enterprises have been increasingly challenged to maintain their competitiveness in the market particularly in the area of innovation. They need to engage in networking to access external sources of information to build their innovative capability and reach their market.[11] Indeed, there is an increased push to develop innovation as a source of competitive advantage. Many types of research have been performed on the impact of external networking on the SMEs competitive advantage in Malaysia.[12–15] However, little is known about the impact of external networking on innovation performance in micro-enterprises. Therefore, this study attempted to close the gap by examining the influence of external networking on innovation performance in micro-enterprises, particularly in the Malaysian context.

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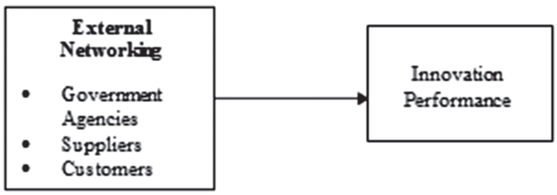

Fig. 1. Research model.

Undeniably, external networking may lead to enhance interaction between different actors like customers, competitors, suppliers, and government agencies. Interaction among networks results in the higher potential for new innovations.[16, 17] Reported that firm networking is seen to benefit process innovation and especially product innovation. According to Ref. [18], cooperation with suppliers and customers plays an important role in the innovation process. The generation of product and service innovations increases when cooperation between micro-enterprises and suppliers exists.[19] In addition, a good relationship between micro-enterprises and customers may ensure continuous demand which creates customer loyalty and provides continuous feedback from customers related to the quality of their products.[13] Furthermore, various relevant government agencies may also help in developing sustainable micro-enterprises. These agencies provide a wide range of services for different target groups.[13] Since the empirical research statistically proved that the links between the external networking and innovation performance are still lacking, particularly in micro-enterprises, this study aimed to fulfill the research gap.

H1: There is a significant influence of networking on innovation performance.

H2: There is a significant difference between the influences of networking with government agencies on innovation performance.

H3: There is a significant difference between the influences of networking with suppliers on innovation performance.

H4: There is a significant difference between the influences of networking with customers on innovation performance.

3. RESEARCH FRAMEWORK

The conceptual framework suggests a model with the aim to investigate the influence of external networking on innovation performance.

This study proposed the link between external networking and innovation performance and analyze the ability of Malaysian micro-enterprises regarding networking with government agencies, suppliers and customers. This framework was then used to analyze how these three variables may impact innovation performance. Relying on the literature review, this study proposed that external networking may improve innovation performance among micro-enterprises in Malaysia.

4. RESEARCH DESIGN AND DATA COLLECTION

This study used the correlational design which is a quantitative approach. The mailing survey approach was used as the method of data collection. A set of questionnaires used in this study was constructed in Malay as it is the native language of most entrepreneurs in Malaysia. The questionnaire consists of three parts; Part A seeks information on the background of the entrepreneurs and micro-enterprises such as age, gender, the level of education, length of experience in the industry, and business location. Part B deals with entrepreneurs' views on their quality of networking with external parties. Part C investigates individuals' views on their firm performance related to innovation. The respondents were asked to indicate their views in Parts B and C using the five-point Likert scale ranging from 1 for "strongly disagree" to 5 for "strongly agree" with the given statements.

The study employed a two-factor analysis technique for the constructs of the model, namely exploratory factor analysis (EFA) and confirmation factor analysis (CFA). Furthermore, the structural equation modeling (SEM) was carried out using AMOS version 21.0 to test the direct relationship between networking and innovation performance.

5. RESPONDENT PROFILE

The population of interest of this study is micro-enterprises entrepreneurs in Malaysia. The total of the SMEs population in Malaysia is 17,164 in 2010.[20] Thus, to achieve the research objectives a sample of 330 was randomly selected among the target population of SMEs in Malaysia. Since the list of micro-enterprises and the contact information can be retrieved from the SME Corp official website, which is www.smecorp.gov.my, then the samples were selected using random sampling technique. This study is a cross-sectional design which has examined SMEs as a single unit of analysis. Micro-enterprises owners or managers were considered as the main source of information because they have specific knowledge about their firm performance.

6. RESULTS

For the purpose of analysis and interpretation, exploratory and confirmatory factor analysis have been used. To determine the reliability of the data, a Cronbach's Alpha coefficient was generated which produce alpha values that ranging from 0.860 to 0.906 indicating strong internal consistency. The values of Cronbach's Alpha indicated that all 24 items were reliable and valid to measure networking and innovation performance.

6.1. Exploratory Factor Analysis

EFA was performed to find out minimum number of factors that have maximum variance in the data obtained from this study. KMO and the Bartlett's test has been conducted to classify 12 items into the appropriate constructs. The result is shown in Table II as follows.

It is clear from Table I that the KMO value is 0.949 which was greater than 0.50 as recommended by Ref. [21]. Whereas, the value of Bartlett's Test of Sphericity shows that these items

Table I. KMO and bartlett's test.

Kaiser-Meyer-Olkin	.949
Measure of sampling adequacy.	
Approx. chi-square	2342.143
Bartlett's test of sphericity	
df	66
Sig.	.000

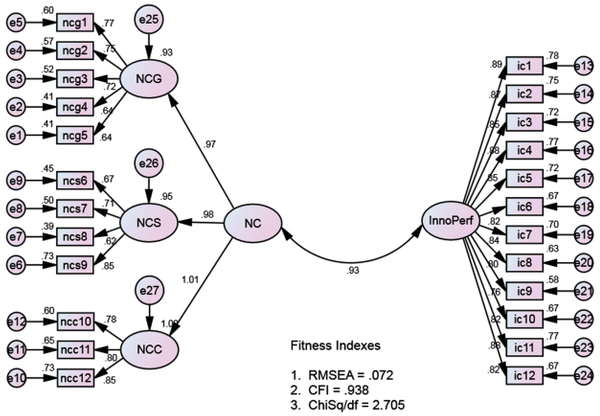

Fig. 2. The results CFA show the factor loading for items.

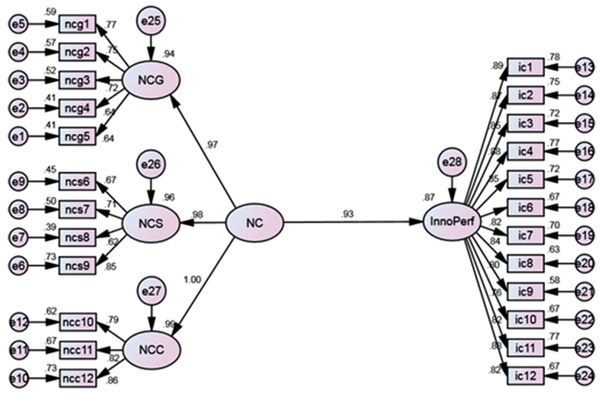

Fig. 3. The standardized path coefficients between constructs.

are correlated with p-value of < 0.001 (Chi-Square $= 2342.143$, df $= 66$). The results indicated that the data are appropriate for carrying out further analysis.

6.2. Confirmation Factor Analysis

Figure 2 and Table II presents the result of the factor analyses using SEM/AMOS.

For this confirmatory factor analysis (CFA), we found an adequate fit between our measurement model and our data with RMSEA < 0.0072, CFI > 0.938, and Chisq/df < 2.705. These results indicated that all the three fitness indexes that is absolute fit, incremental fit and parsimonious fit have been achieved the required level of RMSEA < 0.08, CFI > 0.90, and Chisq/df < 3.00.[22] Therefore, uni-dimensionality was achieved.

6.3. Path Analysis of the Model and Results: Structural Equation Modelling

Figure 3 shows the standardized path coefficients estimated by the structural equation modelling procedure. The coefficient of determination (R^2) is 0.87 (Fig. 3), which indicates that 87% of the innovation performance can be estimated by the exogenous construct namely networking. The next step is to perform regression analysis, and the results are as in Table III.

Table III shows that the regression weight for networking capability in the prediction of Innovation Performance is significantly different from zero at the 0.001 level (two-tailed) with standardized regression weight $\beta = 1.742$.

The result in Table IV shows that there is a significant influence of networking on innovation at $p < .001$. This indicates that the core influence of innovation on competitive advantage is significantly positive ($\beta = 1.742$) with R^2 value is 0.87 (Fig. 3). The finding supports hypothesis one which hypothesized that there is an effect of networking on innovation performance. The study moves further into the second objective, which is to test the first order constructs which are networking with government agencies, networking with suppliers and networking with customers.

Figure 4 and Table V reports the standardized regression weights, standard error, and critical ratio for each path. The hypothesized associations are strongly significant at $p < .001$. Networking with government agencies is the strongest predictor of innovation performance (standardized regression weight $\beta = 0.694$) followed by networking with customers ($\beta = 0.504$) and networking with suppliers ($\beta = 0.414$). The model explains 87 per cent of the variance in innovation performance can be estimated by networking (see Fig. 3).

Table VI shows that the summary of hypotheses testing for components. The results indicate that the effect of networking

Table II. Summary of goodness-of-fit indices.

	Acceptable value	Index value
Absolute fit (RMSEA)	<0.08	0.072
Incremental fit (CFI)	>0.90	0.938
Parsimonious fit (ChiSq/df)	<3.00	2.705

Table III. The regression path coefficients and its significance.

	Estimate	S.E	C.R	*P*	Result
InnoPerf ← NC	1.742	.141	12.389	***	Sig

Notes: ***$p < 0.001$, $N = 330$, InnoPerf = Innovation Performance, NC = Networking Capability.

Table IV. The summary of hypotheses testing and result.

		Estimates	Results
H1:	There is a positive effect of networking on innovations performance	1.742***	Supported

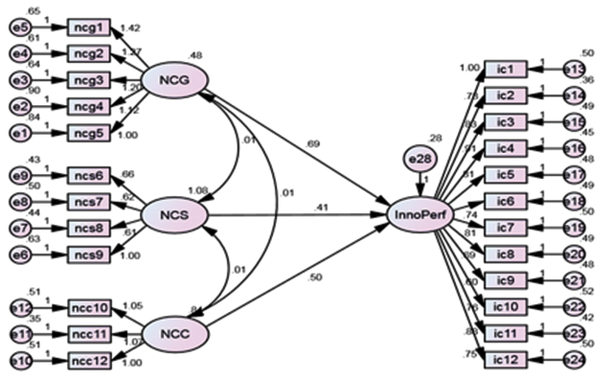

Fig. 4. The regression path coefficients of the model.

Table V. The regression path coefficients and its significance.

		Estimate	S.E	C.R	*P*	Results
H1:	InnoPerf ← NCG	.694	.084	8.266	***	Sig
H2:	InnoPerf ← NCS	.414	.047	8.854	***	Sig
H3:	InnoPerf ← NCC	.504	.053	9.593	***	Sig

Notes: ***$p < 0.001$, $N = 330$, InnoPerf = Innovation Performance, NCG = Networking with Government Agencies, NCS = Networking with Suppliers, NCC = Networking with Customers.

Table VI. The summary of hypotheses testing and result.

	Research hypothesis	Estimates	Results
H2:	There is a positive effect of networking with government agencies on innovations performance.	.694***	Supported
H3:	There is a positive effect of networking with suppliers on innovations performance.	.414***	Supported
H4:	There is a positive effect of networking with customers on innovations performance.	.504***	Supported

with government agencies, networking with suppliers, and networking with customers on innovation performance are all significantly positive ($\beta = 0.694$, $p < .001$, $\beta = 0.414$, $p < .001$ and $\beta = 0.504$, $p < .001$). Thus, all the hypotheses proposed (H2, H3 and H4) are supported.

7. CONCLUSION AND RECOMMENDATION

This paper analyzed the influence of external networking focusing on government agencies, suppliers, and customers on innovation performance in micro-enterprise, particularly in the Malaysian context. The outcomes showed that the effects of networking with government agencies, suppliers, and customers on innovation performance were all significantly positive, thus supporting all the hypotheses proposed. The results indicate that micro-enterprises are supported by the programs provided by the government specifically in areas such as financial accessibility, advisory services, marketing, technology, and ICT. In fact, initiatives and programs commenced by the government are directed towards enhancing capabilities of SMEs, particularly among micro-enterprises.

Furthermore, this study also revealed that the cooperation with the suppliers has a positive influence on innovation. Our findings support[23] (2014), who concluded that knowledge and expertise of suppliers help to create a knowledge sharing network that eventually can help developing new products and improving product design.

In addition, collaboration with customers is also an important way for a firm to improve its innovation performance. This study showed a positive relationship between customers and innovation performance in micro-enterprises. Feedbacks and inputs from customers will be beneficial for the companies in improving their competitiveness. Moreover, they will be able to identify market opportunities by learning customers' needs and expectations.

The results obtained from this study can have implications for the micro-enterprises. In order for them to benefit from networking on innovation performance; they need to establish long-term mutually beneficial relationships with external networking in order to boost innovation opportunities. The networking with the government, suppliers, and customers will help micro-enterprises in Malaysia to strengthen their performance by developing and improving new products in order to gain sustainable competitive advantage.

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