Entrepreneurial Orientation, Innovation and SME Performance: A Study of SMEs in Malaysia using PLS-SEM

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ABSTRACT

Objective - Despite extensive research on Entrepreneurial Orientation (EO) and innovation and performance, there are still limited resources on how these areas benefit Small and Medium Enterprises (SMEs). There are various financial aids and support services that are provided to SMEs. Despite this, SMEs still tend to perform quite low. This paper aims to identify the link between EO and SME performance using innovation as a mediator.

Methodology/Technique – To achieve this objective, a quantitative approach is used. Questionnaires are collected from 285 SMEs in Peninsular Malaysia. Structural Equation Modelling (SEM) analysis is applied to test the hypotheses on the direct and indirect relationships between EO and SME performance through innovation.

Finding - The findings of this study show that only two aspects of EO (innovativeness and proactiveness) have significant relationships with SME performance. Interestingly, all dimensions of EO have a direct impact on innovation. Further, innovation has a direct effect on SME performance and is a significant mediator between EO and SME performance.

Novelty - These findings indicate that EO is a strong predictor of Innovation and SME performance. The discussion provided in this paper strengthens the body of knowledge on Entrepreneurship and acts as a benchmark for future studies on EO, Innovation and SME Performance.

Type of Paper: Empirical.

JEL Classification: M13, M19, L25.

Keywords: Malaysia; Entrepreneurial Orientation; Innovation; SME Performance.


1. Introduction

SMEs make up approximately 98.5% of all businesses in Malaysia (907,065 firms) (SMEInfo, 2019). The GDP growth of SMEs has consistently outpaced the total economic growth of Malaysia since at least 2004.
Malaysian SMEs also contribute around 70% and 17.3% of overall exports (Kamarudin, 2019; SMECorp. Malaysia, 2019). Despite the positive performance of SMEs in recent years, the contribution of Malaysia’s SMEs to its overall economy remains relatively small compared to other advanced and developing countries. Thus, in continuing to strengthen the SME sector, more research is encouraged to focus on the relevant factors of SME performance, particularly among SMEs in Malaysia.

Previous studies have extensively studied EO as a predictor of SME Performance (see; Amin, 2015; Semrau, Ambos, & Kraus, 2016; Alvarez-Torres, Lopez-Torres, Schiuma, 2019). Arshad, Rasli, Arshad, and Zain (2014) examine EO and SME performance in technology-based Malaysian SMEs and conclude that EO is significantly related to SME performance, with innovativeness as the strongest predictor. Accordingly, innovation is defined as the firm’s ability to develop new products/services and act as a platform for productivity, improvement in sales growth and firm competitiveness (Gunawan, Jacob, & Duysters, 2016; Aljanabi, 2018; Makhdoom, Li, & Asim, 2019). These new products and services are seen as indicators of innovation because they reflect the firm’s ability to adapt to market changes. In the same way, Amin (2015) discovered that EO contributes to better Firm Performance because EO encourages SME owners to be aware of the business environment in which they operate and enables them to more readily adapt to market or business changes. This paper aims to examine the impact of EO on SME performance and to determine how innovation acts as a mediator between these two variables.

2. Literature Review

2.1 Entrepreneurial Orientation (EO)

According to Miller (1983) and Covin and Slevin (1989), the original conceptualization of EO refers to the firm-level component that exists in terms of innovativeness, proactiveness, and risk-taking as features of a strategic business approach (Semrau et. al., 2016). Wiklund and Shepherd (2005) note that innovativeness refers to the behaviors which contribute to innovation such as experimentation, new ideas, concepts, and creative procedures. Proactiveness refers to the firm’s ability to move forward and be ahead of their competitors to forecast future business changes (Gunawan et. al., 2016; Alvarez-Torres et. al., 2019). Risk-taking is defined as the act or willingness to accept and embark on risky decisions such as business investments (Rauch, Wiklund, Lumpkin, & Frese, 2009). Muchiri and McMurray (2015) investigate the link of EO and performance and conclude that leadership is a significant contributor to performance however the explanation beyond this relationship has not yet been explored. The authors later propose a framework outlining the importance of organizational and environmental factors with moderation effects towards the relationship between EO and Performance.

Similarly, Arshad et. al. (2014) examines the impact of EO on business performance among SMEs in Malaysia. The findings from their study conclude that, of the 5 dimensions of EO, 4 dimensions significantly influence business performance (innovativeness, proactiveness, risk-taking, and competitive aggressiveness). Despite some scholars that found the potential connection between EO and Performance, there are still studies that fail to offer adequate evidence to support the direct link (Naldi, Nordqvist, Sjoberg, & Wiklund, 2007; Zahra, 2008; Rezaei & Ortt, 2018). The literature in that regard has sought to investigate the impact of mediatory or moderating variables (Arham, 2014; Zehir, Can, & Karaboga, 2015) to shed some light on the link between EO and Performance. In conclusion, it is justifiable to set EO as independent variable towards SME Performance and to what extent innovation mediates such relationship. Hence, the following hypotheses are proposed:

H1: Innovativeness has a significant and positive impact on SME Performance.
H2: Proactiveness has a significant and positive impact on SME Performance.
H3: Risk-taking has a significant and positive impact on SME Performance.
H4: Innovativeness has a significant and positive impact on innovation.
H5: Proactiveness has a significant and positive impact on innovation.
H6: Risk-taking has a significant and positive impact on innovation.

2.2 Innovation

Calisir, Gumussoy, and Guzelsoy (2013) assert that innovation among Turkey SMEs is an important mediator between business practices and performance. Similarly, Avlonitis and Salavou (2007) state that EO is also reported to be a significant determinant to innovation. The authors note that EO practices in Greek businesses can be embodied through new product development which signify uniqueness, proactive business operations and market leadership, a higher level of innovation, and a willingness to undertake business risks.

Hami, Muhamad and Ebrahim (2015) contribute confirm that innovation is verified as a good mediator to improve business performance in Malaysian manufacturing firms. Nonetheless, the direct relationship between innovation and performance had demonstrated mixed results and produced uncertainty as some studies have found that there is no relationship between the two variables (Tajasom, Hung, Nikbin, & Hyun, 2015; Lee, Hallack, & Sardeshmukh, 2016; Aljanabi, 2018; Makhdoom et al., 2019). In considering the significance of a mediator and its effects (which are more profound than a moderator) on the relationship between EO and Performance, this paper introduces innovation as the third mediating variable. Therefore, from the prior discussions, innovation is considered as a potential mediator towards SME Performance.

H7: Innovation has a significant and positive impact on SME Performance.
H8: Innovation mediates the impact of EO on SME Performance.

2.3 SME Performance

Many indicators can be used to measure SME Performance (Rezaei & Ortt, 2018; Alvarez-Torres et al., 2019). Most of the research operationalized the term of business performance in diverse ways such as using sales, profitability, market size and non-financial indicators. Even though the term used ARE different, they all refer to the same concept. For instance, Lin, Peng and Kao (2008) define SME Performance as the accomplishment of business targets related to the sales growth, markets share, and profitability. Lisboa, Skarmeas, and Saridakis (2016) measure performance as new product differentiation, sales, and speed to market. Speed to market refers to the time efficiency of the product once introduced into the market. In the same way, Emoke-Szidonia (2015) conducted a study on EO-Performance and measured Firm Performance using sales and profitability.

Some other studies emphasize how non-financial performance as a key to measuring performance. Extracting measurement from Valdiserri and Wilson (2010), the authors evaluate performance using 2 dimensions: profitability and success. Both are measured using non-financial measures which indicate profitability based on employee effectiveness and the firm’s success derived from employee satisfaction. Most of the time, the term ‘firm performance’ is used as a more specific measurement to assess the firm’s financial capability (Arham, 2014; Amin, 2015; Rezaei & Ortt, 2018) as well as non-financial determinants in terms of market effectiveness and customer satisfaction (Engelen, Kube, Schmidt, & Flatten, 2014; Albloshi & Nawar, 2015). Thus, this paper employs 2 important indicators of SME Performance which include financial and non-financial measurements for a comprehensive review of SME performance (Rezaei & Ortt, 2018; Alvarez-Torres et al., 2019).

3. Research Methodology

This study is conducted in Penang, due to the density of the business’s establishment since 2010 to 2019. 285 samples were collected among SMEs in Penang and the sampling frame was created based on a list of
active businesses from PERDA, MARA, and SMECorp. Descriptions of the samples are shown in Table 1. The measurements were adapted from previous studies in the area of EO, Innovation, and SME Performance. EO was measured using 15 items (Covin & Slevin, 1989), while innovation was measured using 9 items adapted from Alegre, Lapiedra, and Chiva (2006) and 12 items are used to measure SME Performance (Wolff, Pett, & Ring, 2015). PLS-SEM was used to explain and predict structural relationships among the independent variables, the mediator, and the dependent variables simultaneously (Ringle, Wende, & Becker, 2015).

Table 1. Demographic Data

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>124</td>
<td>43.5</td>
</tr>
<tr>
<td>Female</td>
<td>161</td>
<td>56.5</td>
</tr>
<tr>
<td>Age:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 25</td>
<td>58</td>
<td>20.4</td>
</tr>
<tr>
<td>26 - 30</td>
<td>44</td>
<td>15.4</td>
</tr>
<tr>
<td>31 - 40</td>
<td>74</td>
<td>26.0</td>
</tr>
<tr>
<td>41 - 50</td>
<td>84</td>
<td>29.4</td>
</tr>
<tr>
<td>51 and above</td>
<td>25</td>
<td>8.80</td>
</tr>
<tr>
<td>Business Assistance:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PERDA</td>
<td>141</td>
<td>49.5</td>
</tr>
<tr>
<td>MARA</td>
<td>105</td>
<td>36.8</td>
</tr>
<tr>
<td>SMECorp. Malaysia</td>
<td>31</td>
<td>10.9</td>
</tr>
<tr>
<td>Others</td>
<td>8</td>
<td>2.80</td>
</tr>
<tr>
<td>Business Online:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>177</td>
<td>62.1</td>
</tr>
<tr>
<td>No</td>
<td>108</td>
<td>37.9</td>
</tr>
</tbody>
</table>

4. Results

A PLS Algorithm was performed to evaluate the Measurement model of the reflective constructs based on Composite Reliability (CR), Average Variance Extracted (AVE) and Discriminant Validity. In addition, Convergent Validity (CV), Collinearity (VIF), Statistical Significance and the relevance of the indicator weights are examined for formative constructs (Hair, Hult, Ringle, & Sarstedt, 2014). EO and innovation are measured using reflective indicators while SME Performance is measured using formative indicators. The Measurement Model results are illustrated in Table 2.

Table 2. Results of Measurement Model

<table>
<thead>
<tr>
<th>Reflective Construct</th>
<th>CR</th>
<th>AVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Innovativeness</td>
<td>0.902</td>
<td>0.698</td>
</tr>
<tr>
<td>Proactiveness</td>
<td>0.931</td>
<td>0.771</td>
</tr>
<tr>
<td>Risk-Taking</td>
<td>0.933</td>
<td>0.739</td>
</tr>
<tr>
<td>Innovation (mediator)</td>
<td>0.942</td>
<td>0.647</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Formative Construct</th>
<th>CV</th>
<th>VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>SME Performance</td>
<td>β = 0.997</td>
<td>All items have &lt; 5</td>
</tr>
</tbody>
</table>

Two items were removed due to low loadings (EO3 and EO6), hence, the CR and AVE of the model were improved. From the formative construct, statistical significance and relevance were tested using Bootstrapping, and the results show that all t-values are significant. Hence, the Measurement Model of the
formative construct is validated. Next, the outer loadings of the correlated constructs were higher than all of the loadings on the other constructs, thus, the discriminant validity is verified (refer to Table 3).

### Table 3. Results of Discriminant Validity

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>EO-Innovativeness</td>
<td>0.835</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EO-Proactiveness</td>
<td>0.663</td>
<td>0.878</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EO-Risk-taking</td>
<td>0.611</td>
<td>0.872</td>
<td>0.900</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Innovation</td>
<td>0.650</td>
<td>0.838</td>
<td>0.824</td>
<td>0.851</td>
<td></td>
</tr>
<tr>
<td>SME Performance</td>
<td>0.254</td>
<td>0.816</td>
<td>0.804</td>
<td>0.833</td>
<td>Formative</td>
</tr>
</tbody>
</table>

Bootstrapping was performed to examine the Structural Model which confirmed the relationship between EO and SME Performance with innovation as a mediator. The R2 value was 0.960 which suggests that EO can explain 96% of the variance in SME Performance. Further, the R2 of innovation is 75.1% which means that EO can explain 75.1% of the variance in innovation.

In order to examine the mediating role of innovation between EO and SME Performance, the direct effects between EO and SME Performance are assessed. Out of 3 dimensions of EO, 2 dimensions have significant direct effects namely, innovativeness and proactiveness (β = 0.178, p < 0.10; β = 0.232, p < 0.05). H1 and H2 are therefore supported. However, the relationship between risk-taking and SME Performance was not supported (H3). Moving to the relationship between EO and innovation, all hypotheses were supported (H4 - H6). Additionally, H7 was supported as the direct relationship between innovation and SME Performance is significant (β = 0.402, p < 0.01). The indirect effect of innovation as a mediator was calculated: innovativeness (β = 2.010, p = 0.055), proactiveness (β = 6.210, p = 0.024), and risk-taking (β = 2.439, p = 0.011). Thus, H8 is supported.

Based on Figure 1, by comparing the impact of EO on innovation: proactiveness has the highest impact (β = 5.085), followed by risk-taking (β = 4.244), and innovativeness (β = 1.705). In looking at the impact of EO...
on SME Performance, innovativeness has the highest impact ($\beta = 3.298$), followed by risk-taking ($\beta = 3.002$), and proactiveness ($\beta = 1.669$). Next, the effect size ($f^2$) was calculated to measure the impact of EO and innovation on SME Performance. This study applies the formula proposed by Hair et. al. (2014) which is $f^2 = (R^2 \text{ included} – R^2 \text{ excluded}) / (1 – R^2 \text{ included})$. The result is 0.925 which reflects a strong effect size. The model predictive relevance which is the $Q^2$ was also measured. In particular, this structural model has large predictive relevancy for innovation ($Q^2 = 0.446$) and medium predictive relevancy for SME Performance ($Q^2 = 0.256$).

5. Discussion

The findings reveal the importance of EO and innovation practices by SMEs which play an important role in improving SME Performance. These findings add value to the existing literature on entrepreneurship or SME studies by emphasizing the importance of EO and innovation on SME Performance. In addition, the results shed lights on how innovation positively mediates this relationship.

Based on the hypotheses-testing results, proactiveness has the highest impact on innovation. This is possibly because proactive entrepreneurs are more likely to adopt new business initiatives to look for possible opportunities, are more responsive to market challenges, are ahead of their competitors, and become a pioneer in introducing new products/services (Nasution, Mavondo, Matanda, & Ndubisi, 2011; Amin, 2015; Rezaei & Ortt, 2018; Alvarez-Torres et. al., 2019). Moreover, Shan, Song and Ju (2016) state that SMEs in China practice proactiveness attributes better than other dimensions of EO. The authors note that higher levels of proactiveness is related to increased innovation which contributes to long-term growth.

The highest impacts on SME Performance are innovation and innovativeness. These two constructs reveal the resonance of innovation in business to improve performance (Rezaei & Ortt, 2018). Madanoglu, Altinay, and Wang (2016) state that innovation demonstrated by SMEs is to continually strive for creative solutions to business problems and the need to lead for transformational change. Thus, SME owners are continuously looking for tools to improve business sales such as through social media or other internet platforms. Hence, the SMEs in this study have demonstrated that they adopt innovation in their businesses.

6. Conclusion

Future SME studies are required to further improve the model of EO and innovation to make sure the potentials of all variables are fully utilized. Indeed, policymakers should take into consideration the findings from this study, particularly on proactiveness and risk-taking behavior, since these two constructs have tremendous impact on SME Performance. Indeed, with the challenging economy and globalized market, SMEs are expected to think out-of-box to remain relevant and survive. EO is helpful to assist SMEs to be prepared with adequate skills and knowledge to be resilient in the industry. In addition, this study also complements previous SME studies by considering innovation as a mediator to strengthen the EO-Performance relationship. Thus, this study has confirmed the mediating effect of innovation on EO-Performance to improve SME Performance in Malaysia.

At the same time, this paper also has limitations. Since the present research employs a cross-sectional design, future studies might adopt a longitudinal study to examine whether the hypothesized relationships could be causal. Comparative SME studies across countries are advised to be carried out to explore further the constructs and dimensions applied in this research. In brief, this study concludes that EO is statistically related to SME Performance and the relationship is contingent upon the mediating role of innovation. It is recommended that SME owners be entrepreneurially equipped with the necessary skills and knowledge particularly on how to be proactive and bold in decision-making to improve SME Performance.
References


