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The effect of entrepreneurship orientation and learning orientation on SMEs' performance: an SEM-PLS approach

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Abstract: This study attempts to investigate the effects of entrepreneurial orientation and learning orientation on SMEs' performance. A total of 200 SMEs from the electronic and electrical sector, and 250 SMEs from food and beverage industries were chosen randomly. The results of this study show that entrepreneurial orientation dimensions (innovativeness, proactiveness, and risk taking) and learning orientation have a significant relationship with SMEs' performance. In this context, entrepreneurial orientation makes a significant contribution to SMEs' performance when learning orientation is considered as an investment and a key factor for SMEs' survival.

Keywords: proactiveness; innovativeness; risk taking; learning orientation; performance; small medium enterprises; SMEs; Malaysia.

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1 Introduction

Research has shown that SMEs face numerous challenges and barriers in order to compete in the global market. For example, Saleh and Ndubisi (2006) explained that in a globalised environment, SMEs face challenges due to the lack of financing, low productivity, lack of managerial capabilities, and lack of access to management and technology. Furthermore, there is a lack of contribution from SMEs to the total value added due to the limitation of technology adoption, skilled labour employability, production capacity increase, and market expansion. Meanwhile, the high failure rate of small firms is largely attributed to the weakness in financial management and marketing (McCartan-Quinn and Carson, 2003; Salleh and Ibrahim, 2013). These complications are bigger for SMEs as their economies of scale and resources are fewer than those of big organisations. Consequently, MacGregor (2004) explained that SME characteristics are unique and significantly different from big firms, in that the organisations have a flat structure, with few management layers, and are flexible and informal (Wiklund, 1999). In addition, the owner/manager of a SME needs to be fully involved in the daily operations due to the lack of management expertise compared with large organisations (Salleh and Ibrahim, 2013). The lack of resources is critical and has a fundamental impact on SMEs' performance. Although SMEs may be distinct from larger organisations in terms of how they integrate various elements, such as knowledge, information, and innovation into a unique strategic orientation, a key factor to compete with them could depend on their capacity to develop a distinguishing strategy. Therefore, SMEs need to emphasise on productivity, product quality, and radically innovative offerings in order to compete successfully and gain competitive advantages in the global market. Prominent entrepreneurship scholars argued that innovation, proactiveness, and risk taking are a constitutive element of entrepreneurship (Lumpkin and Dess, 1996). Some studies have found that firms that demonstrate more entrepreneurial strategic orientation will perform better (Rauch et al., 2009; Wang, 2008; Wiklund, 1999; Zahra and Covin, 1995), or may even lead to poor performance under certain conditions (Slater and Narver, 2000). In this context, entrepreneurial orientation (EO) has been viewed as a multidimensional construct, and should have a significant effect on firm performance. Although the effect of EO on firm performance is influenced by firm size and national culture (Rauch et al., 2009), the learning orientation also plays a significant role in enhancing firm performance (Wang, 2008). Therefore, this study attempts to investigate the effects of the EO dimensions (innovativeness, proactiveness, and risk taking) and learning orientation on SMEs' performance using structural equation modelling (SEM) – smart partial least squares (PLS) approach.

2 Literature review and hypotheses development

2.1 *EO and SMEs' performance*

EO was first defined by Miller (1983) and Miller and Friesen (1983), and subsequently many researchers have used and further developed these definitions across industries, countries, and cultures. For example, Lumpkin and Dess (1996) defined EO as a process, practice, and decision-making activity that leads to a new entry. It emerges from a strategic-choice perspective that new entry opportunities will be successfully

implemented by purposeful enactment ([Van de Ven and Poole, 1995](#)). In contrast, a successful new entry may also be achieved when only some of these factors are operating ([Lumpkin and Dess, 1996](#)). By expanding the number of dimensions to measure EO, [Lumpkin and Dess \(1996\)](#) identified five dimensions of EO: autonomy, innovativeness, risk taking, proactiveness, and competitive aggressiveness that independently and collectively define the domain of EO ([Covin and Wales, 2012](#)). Meanwhile, [Knight \(1997\)](#) defines EO as the firm's propensity to engage in innovative, proactive, and risk-seeking behaviour in order to achieve strategic and performance objectives.

However, there has been some debate in the literature concerning the dimensionality of EO. Researchers have argued that EO is a unidimensional construct ([Covin and Slevin, 1989](#); [Covin and Wales, 2012](#); [Knight, 2000](#)). Another argument explained that EO is a multidimensional construct in which risk taking, innovativeness, proactiveness, competitive aggressiveness, and autonomy are treated as independent behavioural dimensions ([Lumpkin and Dess, 1996](#)). The unidimensional and multidimensional views of EO represent distinct constructs rather than competing perspectives on the same construct ([Covin and Miller, 2014](#); [Covin and Wales, 2012](#)). Although, all EO dimensions are interrelated, the dimension of EO may vary independently ([George and Marino, 2011](#); [Larsen and Korneliussen, 2012](#); [Wang, 2008](#)), depending on the environmental, organisational, and cultural context when a firm engages in new entry ([Knight, 1997](#); [Rauch et al., 2009](#); [Zhao et al., 2011](#)). For example, [Kemelgor \(2002\)](#) concludes that EO is characterised by cultural differences, and that there are significant differences in the intensity of EO between firms in the US and the Netherlands. Additionally, numerous scholars have measured EO for innovativeness, risk-taking, and proactiveness ([George and Marino, 2011](#); [Kreiser et al., 2013, 2010](#); [Li et al., 2008](#); [Wiklund and Shepherd, 2005](#)). In line with these definitions, EO refers to the willingness of a firm to be innovative in order to rejuvenate market offerings, take risks to try out new and uncertain products, services, and markets, and be more proactive than competitors toward new marketplace opportunities ([Lumpkin and Dess, 1996](#); [Wiklund and Shepherd, 2005](#); [Zahra and Covin, 1995](#)). Therefore, EO is classified as a critical organisational process that helps a firm to survive and improve its organisational performance ([Khalili et al., 2013](#); [Miller, 1983](#); [Tajeddini et al., 2006](#)).

2.2 *Innovativeness*

Innovativeness refers to the degree to which a firm engages in and embraces new ideas, novelty, experimentation and creativity that may lead to new products, services or processes ([Lumpkin and Dess, 1996](#); [Wang, 2008](#)). Similarly, [Covin and Slevin \(1991\)](#) define innovativeness as a firm's propensity to experiment with new ideas in order to activate a process that results in new products, services, or technological development ([González-Benito et al., 2009](#)). In this context, innovativeness includes fostering a spirit of creativity, supporting R&D and experimentation, developing new processes, introducing new products/services, and technological leadership ([Lumpkin and Dess, 1996, 2001](#)). In addition, [Lin et al. \(2008\)](#) suggest that innovativeness plays an important role in research, product development, technical expertise and knowledge transfer for future development. Consequently, a high level of technological and/or product market innovation reflects an important indicator for SMEs to pursue new business opportunities ([Avlonitis and Salavou, 2007](#); [Chen et al., 2012](#); [Keh et al., 2007](#)).

Previous studies suggest that innovative firms will create extraordinary performance, economic growth, and apply creativity in the business environment (Kraus et al., 2012; Laukkanen et al., 2013; Lee and Lim, 2009; Li et al., 2008; Lin et al., 2008; Matsuno et al., 2002; Palacios-Marques et al., 2013). For example, [Keh et al. \(2007\)](#) conducted a survey on SMEs in Singapore and found that, ultimately, actively innovative SMEs with a tendency to take advantage of new opportunities will improve their performance. Similarly, [Avlonitis and Salavou \(2007\)](#) highlight that more innovative SMEs in Greece have a significantly better performance. However, limited allocation of resources for innovative activities has been identified as the greatest barrier to innovation within organisations ([Franco and Haase, 2013](#); [Jaakson et al., 2011](#)). Many studies suggest that innovativeness has been considered as one of the most critical strategic orientations of SMEs to achieve long-term success ([Khalili et al., 2013](#); [Nasution et al., 2011](#)) and better performance (Baron and Tang, 2011; Brettel and Rottenberger, 2013; Grinstein, 2008; Gronum et al., 2012; Hult et al., 2004; Sciascia et al., 2014). Therefore, the following hypothesis is offered for testing:

H1 The relationship between innovativeness and SMEs' performance is significant.

2.3 *Proactiveness*

Lumpkin and Dess (1996) found that firm proactiveness was related to market opportunities in the process of new entry, seizing of initiative and acting opportunistically in order to shape the environment (Knight, 2000; Knight and Cavusgil, 2004). Similarly, [Engelen et al. \(2014\)](#) characterised proactiveness with a high level of opportunity-seeking firms that, ideally, are ahead of their competitors and successfully anticipate future customer demands. Meanwhile, [Covin and Miller \(2014\)](#) suggest that firms must have the strategic reactivity and responsiveness for new circumstances that often occur in uncertain entrepreneurial contexts. Consequently, [Lieberman and Montgomery \(1988\)](#) suggest that for market oriented small firms, their resources for competition in the established market are far more limited than large ones. Thus, the competitive advantage of these firms often depends on the speed with which they enter the market and meet the customers ([Li et al., 2008](#)). In this sense, small-sized firms attempt to lead, rather than follow the competition; and compete aggressively and resolutely against industry rivals ([Avlonitis and Salavou, 2007](#); [Franco and Haase, 2013](#)).

Previous studies have found that proactive firms can achieve their targets in premium segments, move faster to maintain advantage, capitalise a market opportunity for higher returns, and be a leader in performance (Brettel and Rottenberger, 2013; Cardoza and Fornes, 2011; Chen et al., 2012; Gaur et al., 2011). For example, [Saeed et al. \(2014\)](#) conclude that medium-sized firms based in Italy confirmed that reactivity and responsiveness to the entry market affected firm performance. Consequently, Morgan et al. (2009) posit that proactive firms achieve better performance because they have a greater understanding of customer needs and wants, and a broader market environment than their competitors (Hult et al., 2004; Jaworski and Kohli, 1993; Khalili et al., 2013; Knight and Cavusgil, 2004; Kraus et al., 2012; Kreiser et al., 2013; Lin et al., 2008). Thus, the following hypothesis is offered for testing:

H2 The relationship between proactiveness and SMEs' performance is significant.

2.4 Risk taking

Risk taking refers to bold moves into unknown business areas and/or the commitment of significant resources to business activities under conditions of uncertainty (Chang and Chen, 1998; Lumpkin and Dess, 1996). Franco and Haase (2013) describe risk-taking as an important dimension of EO. It embraces risk acceptance in terms of investment and strategic decisions, even if the outcomes of these actions are uncertain (Das and Joshi, 2007). Additionally, Aragón-Sánchez and Sánchez-Marín (2005) suggest that if small firms invest heavily in high-risk projects, they may not be able to sustain these risky projects long enough to see the fruition of their investment, and their performance may decline (Li et al., 2008; Wiklund and Shepherd, 2005). In addition, Khalili et al. (2013) explain that for entrepreneurs, risk is a crucial element in the decision-making process that will accompany those who are trying to start a new business, find a new market, or introduce a new product (Forlani and Mullins, 2000). In this regard, it is important for entrepreneurs to have reasonable and balanced risks.

Although previous research findings support that risk taking will lead to high firm performance variation, some projects may still fail and others succeed (McGrath, 2001), creating a lack of consensus for the relationship between risk taking and firm performance (Kreiser et al., 2013; Kreiser et al., 2010; Naldi et al., 2007; Sciascia et al., 2014; Teng et al., 2011). In a study conducted by Kollmann and Stöckmann (2012) on firm performance, risk taking was found to significantly diminish firm performance. In addition, Rauch et al. (2009) support a positive relationship between risk taking and firm performance. In this sense, Kraus et al. (2012) suggest that innovative SMEs should minimise the level of risk and take action to avoid projects that are too risky to achieve better performance. Therefore, the following hypothesis is offered for testing:

H3 The relationship between risk taking and SMEs' performance is significant.

2.5 Learning orientation

Entrepreneurial and learning orientations have attracted the interest of scholars over the decades (Brettel and Rottenberger, 2013; Hakala, 2011). Learning orientation is conceptualised as a basic attitude towards learning, i.e., the organisational and managerial characteristics that facilitate the organisational learning process (Real et al., 2012). In this context, learning orientation is viewed as a firm's values that influence the firm's tendency to create and use knowledge (Wang, 2008; Zhao et al., 2011), and management commitment to support a culture that fosters learning orientation as one of its main values (Baker and Sinkula, 1999; Real et al., 2012). Similarly, Hurley and Hult (1998) viewed learning orientation as a precursor to build a culture that is receptive to innovation. In this sense, Dodgson (1993) explained that learning orientation can enable the firm to respond effectively to external changes, such as customer preferences, and technology products. As a firm becomes larger, commitment to learning plays an important role in developing its assets and capabilities concerning its key activities (Wang, 2008). If a firm is small and is less learning-oriented than its competitors, it may have less innovativeness (Pesämaa et al., 2013; Zhao et al., 2011) and substantial difficulty in terms of survival (Rhee et al., 2010).

Previous studies have found that learning orientation has a significant impact on SMEs' performance (Real et al., 2012; Wang, 2008). For example, Maes and Sels (2014)

consider that learning is a principal component of any effort to improve competitive advantage and organisational performance. In addition, [Rhee et al. \(2010\)](#) conducted a study on SMEs' performance, which implies that managers with EO and market orientation should place more emphasis on learning orientation in order to boost innovativeness, and, ultimately, achieve better performance. In this regard, SMEs with high levels of learning orientation are associated with greater innovation and generally outperform their rivals with superior performance ([Avlonitis and Salavou, 2007](#); [Baron et al., 2012](#); [Brettel and Rottenberger, 2013](#); [Grinstein, 2008](#); [Hung et al., 2011](#); [Lin et al., 2008](#); [Nasution et al., 2011](#); [Pesämaa et al., 2013](#); [Real et al., 2012](#); [Wincent et al., 2014](#)). Therefore, the following hypothesis is offered for testing:

H4 The relationship between learning orientation and SMEs' performance is significant.

3 Methodology

3.1 Questionnaire development

A seven-point Likert scale was used to measure EO dimensions and SMEs' performance. Innovativeness, proactiveness, and risk taking were measured by adapting indicators suggested by [Knight \(1997\)](#), and [Lumpkin and Dess \(1996\)](#). Four items were adopted from [Pesämaa et al. \(2013\)](#) to measure learning orientation. Meanwhile, SMEs' performance indicators were adapted from [Li et al. \(2008\)](#), [Knight \(1997\)](#), and [Wiklund and Shepherd \(2005\)](#).

3.2 Research design and sampling

The directory of the Malaysian Federation of Manufacturing Companies (FMM) and the Malaysian SME listed business directory handbook were used as the sampling frame for this study. A total of 200 SMEs from the electronic and electrical sector, and 250 SMEs from the food and beverage industries were randomly chosen. The SMEs involved in this study have annual sales between RM10 million to RM25 million, and between 51 to 150 full-time employees. A total of 450 SMEs were successfully contacted by mail and follow up telephone call requesting them to participate in this study from August 2011 to January 2012, yielding a response rate of 15.6% (170 SMEs). The questionnaires were mailed along with a cover letter introducing and explaining the purpose of the study, stressing the confidentiality of responses and enlisting the response of the participant; as well as a smaller envelop for their reply. The majority of manufacturing companies are located in the central parts of Malaysia and around the major industrial regions (Kuala Lumpur, Selangor, and Melaka).

4 Data analysis and results

4.1 Measurement model

To empirically examine the theoretical framework identified in Figure 1, SEM was employed using PLS to assess the measurement and structural models for reflective and

formative constructs. The partial least squares structural equation modelling (PLS-SEM) technique was used to analyse the data by applying SmartPLS software (Ringle et al., 2005) to handle the statistical analysis for formative and reflective indicators.

Table 1 Construct validity for reflective and formative scales

| <i>Construct</i> | <i>Item</i> | <i>Scale</i> | <i>Outer loading</i> | <i>AVE</i> | <i>Composite</i> | <i>Cronbach's</i> |
|----------------------|-------------|--------------|----------------------|------------|-----------------------------|-------------------|
| | | | | | <i>Reliability</i> | <i>Alpha</i> |
| Innovativeness | IN1 | Reflective | 0.942 | 0.856 | 0.947 | 0.916 |
| | IN2 | Reflective | 0.924 | | | |
| | IN3 | Reflective | 0.911 | | | |
| Proactiveness | PA1 | Reflective | 0.866 | 0.76 | 0.905 | 0.843 |
| | PA2 | Reflective | 0.918 | | | |
| | PA3 | Reflective | 0.828 | | | |
| Risk taking | RT1 | Reflective | 0.776 | 0.711 | 0.93 | 0.806 |
| | RT2 | Reflective | 0.905 | | | |
| Learning orientation | LO1 | Reflective | 0.844 | 0.584 | 0.846 | 0.757 |
| | LO2 | Reflective | 0.883 | | | |
| | LO3 | Reflective | 0.681 | | | |
| | LO4 | Reflective | 0.616 | | | |
| | <i>Item</i> | <i>Scale</i> | <i>Weight</i> | <i>VIF</i> | <i>t-value</i> ^a | <i>Decision</i> |
| SMEs' performance | Perf1 | Formative | 0.988 | 3.211 | 13.282* | Supported |
| | Perf2 | Formative | 0.859 | 2.543 | 4.287* | Supported |
| | Perf3 | Formative | 0.851 | 4.255 | 2.788* | Supported |

Notes: ^a*t-value 2.58 (sig. level = 1%)

To evaluate the reflective measured models' outer loadings, composite reliabilities, average variance extracted (AVE = convergent validity), and discriminant validity were assessed. Table 1 shows that all the reflective constructs had high levels of internal reliability and consistency, as demonstrated by the above composite reliability values. To test the reliability of innovativeness, proactiveness, risk taking, and learning orientation instruments, the Cronbach's alpha coefficient was computed. The coefficient alphas obtained for innovativeness, proactiveness, risk taking, and learning orientation were 0.916, 0.843, 0.806, and 0.757, respectively, which exceeded the minimum acceptable values and proved good internal consistency for each latent construct (Burton et al., 1998). To assess the convergent validity for each construct, the standardised factor loadings were used to determine the validity of the four constructs (Anderson and Gerbing, 1988; Yang and Jolly, 2008). The findings indicated that each factor loading of the reflective indicators ranged from 0.616 to 0.942 and exceeded the recommended level of 0.50. As each factor loading on each construct was more than 0.50, the convergent validity for each construct (innovativeness, proactiveness, risk taking, and learning orientation) was established, thereby providing evidence of construct validity for all the constructs in this study (Anderson and Gerbing, 1988; Hair et al., 1998). In addition, the AVE was calculated to assess the discriminant validity for the four constructs (Hair et al., 1998), for which the AVE ranged from 0.584 to 0.856. Table 2 shows the discriminant validity of the construct. Since the square root of the AVE between each pair of factors is

higher than the correlation estimated between factors, it ratifies its discriminate validity (Bagozzi and Yi, 1988; Hair et al., 1998). The comparison of cross-loadings in Table 2 shows that an indicator's loadings are higher than other loadings for its own construct in the same column and same row. Additionally, the results indicate that there is discriminant validity between all the constructs based on the loadings and cross-loadings criterion depicted in Table 3.

Table 2 Discriminant validity of reflective constructs

| <i>Construct</i> | <i>Innovativeness</i> | <i>Learning orientation</i> | <i>Proactiveness</i> | <i>SMEs' performance</i> | <i>Risk taking</i> |
|----------------------|-----------------------|-----------------------------|----------------------|--------------------------|--------------------|
| Innovativeness | <i>0.856</i> | | | | |
| Learning orientation | 0.337 | <i>0.584</i> | | | |
| Proactiveness | 0.515 | 0.283 | <i>0.76</i> | | |
| SMEs' performance | 0.596 | 0.309 | 0.305 | <i>NA</i> | |
| Risk Taking | 0.47 | 0.266 | 0.465 | 0.51 | <i>0.711</i> |

Notes: *Diagonals (italicised values) represent the AVE while the other entries represent the squared correlations. The off-diagonal values in the above matrix are the correlations between the latent constructs.

Table 3 Loadings and cross-loadings for reflective constructs

| <i>Research construct</i> | <i>Item</i> | <i>Innovativeness</i> | <i>Learning orientation</i> | <i>Proactiveness</i> | <i>SMEs' performance</i> | <i>Risk taking</i> |
|---------------------------|-------------|-----------------------|-----------------------------|----------------------|--------------------------|--------------------|
| | IN1 | <i>0.942*</i> | 0.560 | 0.457 | 0.607 | 0.479 |
| | IN2 | <i>0.924</i> | 0.587 | 0.454 | 0.653 | 0.542 |
| | IN3 | <i>0.911</i> | 0.617 | 0.515 | 0.669 | 0.557 |
| | LO1 | <i>0.577</i> | <i>0.844</i> | 0.636 | 0.784 | 0.663 |
| | LO2 | 0.647 | <i>0.883</i> | 0.630 | 0.848 | 0.663 |
| | LO3 | 0.298 | <i>0.681</i> | 0.760 | 0.583 | 0.500 |
| | LO4 | 0.345 | <i>0.616</i> | 0.359 | 0.496 | 0.492 |
| | PA1 | 0.365 | 0.660 | <i>0.866</i> | 0.62 | 0.525 |
| | PA2 | 0.386 | 0.645 | <i>0.918</i> | 0.671 | 0.555 |
| | PA3 | 0.565 | 0.726 | <i>0.828</i> | 0.786 | 0.638 |
| | Perf1 | 0.695 | 0.402 | 0.790 | <i>0.988</i> | 0.692 |
| | Perf2 | 0.563 | 0.768 | 0.721 | <i>0.859</i> | 0.525 |
| | Perf3 | 0.606 | 0.773 | 0.670 | <i>0.851</i> | 0.693 |
| | RT1 | 0.326 | 0.547 | 0.421 | 0.537 | <i>0.776</i> |
| | RT2 | 0.594 | 0.725 | 0.666 | 0.795 | <i>0.801</i> |

Notes: Italicised values are loadings for items that are above the recommended value of 0.5.

To measure formative construct (SMEs' performance), Hair et al. (2013) suggest that indicators theoretically represent the constructs independently and are not highly correlated. For the formative measures, the previous recommendations for examining the AVE and correlations, composite reliability, and loadings versus cross-loadings do not apply since formative items are viewed as multidimensional and are not similar measures

(in a convergent validity sense) reflecting the same underlying construct (Chin, 2010). The measurement model in PLS is assessed in terms of inter-construct correlations, item-to-construct correlations, Cronbach's alpha, composite reliabilities, and the AVE for each construct; while in the case of formative measures, instead of examining the factor loadings, one examines the factor weights (Ruiz et al., 2010). Hence, the convergent validity by using redundancy analysis for the formative construct (SMEs' performance) is examined. In addition, Hair et al. (2013) suggest that the redundancy analysis can be achieved by correlating each formative construct with a global measure for that construct in which the construct is modelled as the independent variable and the global measure is the dependent variable. In this study, all three formative items contributed to SMEs' performance. Table 3 shows the formative measurements and that the indicator tolerance (VIF) is below 5, and that the t-values for all items are significant and weigh above 0.7, which empirically supports that performance is a formative construct. Thus, multicollinearity is not an issue (Molina-Castillo et al., 2013).

4.2 Structural equation modelling

SmartPLS 2.0 was used to test the structural model and hypotheses (Ringle et al., 2005). To evaluate the predictive power of the structural model, R^2 was calculated. R^2 indicates the amount of variance explained by the exogenous variables (Barclay et al., 1995). Using a bootstrapping technique with a re-sampling of 500, the path estimates and t-statistics were calculated for the hypothesised relationships. Table 4 shows the structural model analysis. The results showed that innovativeness ($\beta = 0.163$, $p < 0.01$), proactiveness ($\beta = 0.200$, $p < 0.01$), risk taking ($\beta = 0.213$, $p < 0.01$), and learning orientation ($\beta = 0.485$, $p < 0.01$) were positively related to SMEs' performance. Thus, H1, H2, H3, and H4 were supported.

5 Conclusions and implications

The objective of this study is to investigate the effect of EO and learning orientation on SMEs' performance. The findings of this study reveal that EO dimensions (innovativeness, proactiveness, and risk taking) and learning orientation have a significant effect on SMEs' performance. These findings are consistent with previous studies in that the entrepreneurship orientation dimensions have a significant relationship with SMEs' performance (Baron and Tang, 2011; Chen et al., 2012; González-Benito et al., 2009; Kollmann and Stöckmann, 2012; Li et al., 2008; Lin et al., 2008; Lumpkin and Dess, 1996; Wang, 2008). For example, Rhee et al. (2010) found that innovativeness plays an important role in enhancing firm performance, and the innovative mindset of managers significantly impacts on SMEs' performance. In addition, the success of innovative SMEs has been associated with different aspects of performance, such as cash flows and profitability, and increasing the likelihood of survival (Boso et al., 2013; Engelen et al., 2014; Lumpkin and Dess, 1996). Consequently, Chen et al. (2012), and Franco and Haase (2013) reveal that a firm's innovative capacity and collective capability are likely to promote collaborative entrepreneurship and better performance. In this context, top managers of small firms are advised to pay full attention to improvements in innovativeness, with particular emphasis on the ongoing learning practice in order to achieve better performance of SMEs (Rhee et al., 2010).

Figure 1 Structural model (see online version for colours)

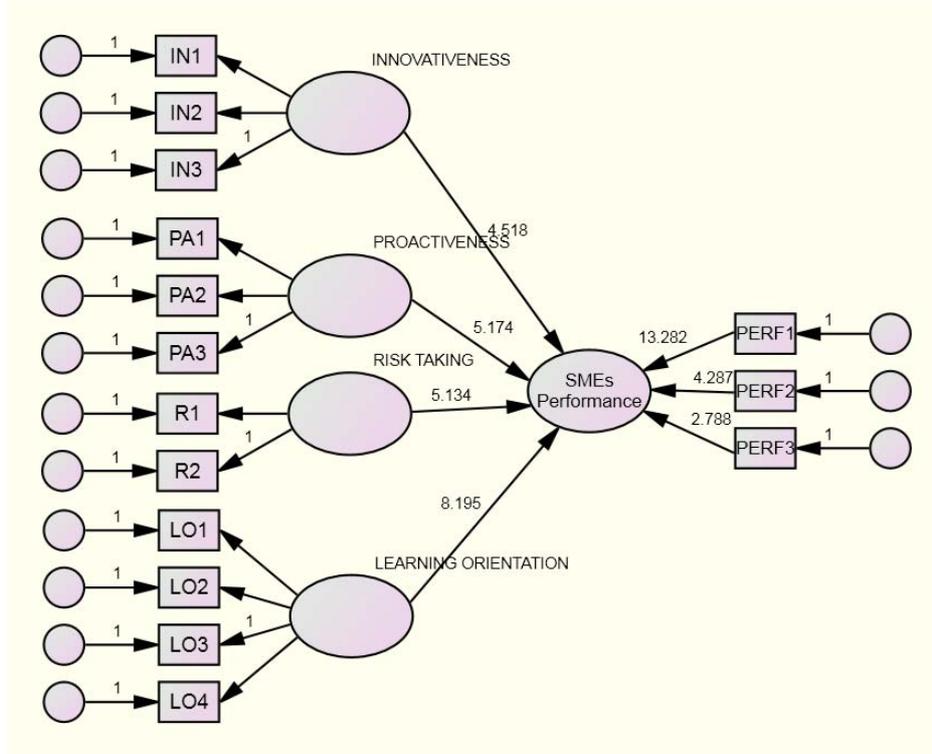


Table 4 Summary of hypotheses testing

| Hypothesis | Hypothesis | Path coefficient | Std. error | t-value | Decision |
|------------|---|------------------|------------|---------|-----------|
| H1 | Innovativeness -> SMEs' performance | 0.163 | 0.036 | 4.547* | Supported |
| H2 | Proactiveness -> SMEs' performance | 0.200 | 0.041 | 4.918* | Supported |
| H3 | Risk taking -> SMEs' performance | 0.213 | 0.043 | 4.904* | Supported |
| H4 | Learning orientation -> SMEs' performance | 0.485 | 0.061 | 7.956* | Supported |

Notes: *t-value 2.58 (sig. level = 1 %)

Meanwhile, there is a significant relationship between proactiveness and SMEs' performance. SMEs are encouraged to implement an entrepreneurial mindset and proactiveness in order to compete with their competitors. In addition, SMEs with a high degree of proactiveness can give these SMEs access to new knowledge and information about market opportunities (Engelen et al., 2014; Rothaermel and Alexandre, 2009), and greater understanding of customer needs and wants (Li, 2008). The link between risk taking and SMEs' performance is significant; therefore, risk taking is an important dimension of EO (Franco and Haase, 2013). In relation to SMEs' performance, successful SMEs depend on their willingness to engage in risky activities (Wales et al., 2011, 2013). SMEs are therefore advised to calculate risk, and, if possible, delay the high risk projects and services in order to gain better business performance (Kraus et al., 2011,

2012). The relationship between learning orientation and SMEs' performance is significant. This study is consistent with Rhee et al. (2010) who found that learning orientation significantly affects innovativeness, and, sequentially, innovativeness has a significant effect on performance. Similarly, Nasution et al. (2011) suggest that higher levels of learning orientation lead to more emphasis on entrepreneurship, which, subsequently, leads to higher levels of firm performance. Therefore, learning orientation should be considered as being effective in improving innovativeness to gain better performance (Pesämaa et al., 2013). In this sense, EO makes a significant contribution to SMEs' performance when learning orientation is considered as an investment and a key factor for SMEs' survival.

6 Limitations of study and directions for future research

Although the empirical findings of this study contribute to the existing literature, caution should be considered when generalising the implications. Future studies should adopt the proposed research model among large corporations to generalise the findings of the study across different organisations. Finally, the managerial level of SMEs should be considered as a control variable to develop the findings more precisely with the mediating role of learning orientation.

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