The core competence of successful owner-managed SMEs

Introduction

Despite being relatively small in size and made up of highly fragmented and heterogeneous industries, small- and medium-sized enterprises (SMEs) are epitomised as the 'engines of growth' by economists and the ‘key source of dynamism, innovation and flexibility’ in developed and developing economies (The Economist, 2010; Ng, 2016; OECD, 2010). SMEs account for a large share of total enterprises and make significant contributions to real GDP growth, new job creation, and poverty reduction. In fact, most of the large corporations like Apple and Microsoft initially began as an SME and later evolved into a corporate titan. In Malaysia, SMEs account for 97.3% of all enterprises and contributed 36.3% to the GDP (2005: 30.0%), 65.5% to employment (2005: 56.8%) and 17.6% to exports (2010: 16.4%) in 2015 (SME Corporation Malaysia, 2016). There are two definitions commonly referred to in classifying industrial sectors. For the manufacturing sector, SMEs are defined as firms with a sales turnover not exceeding RM50 million or a number of full-time employees not exceeding 200. For the services and other sectors, SMEs are defined as firms with a sales turnover not exceeding RM20 million or a number of full-time employees not exceeding 75 (SME Corporation Malaysia, 2016). Most SMEs are family-owned and owner-managed businesses where the owners are also the managers holding both management and operational roles.

However, SMEs have not achieved the desired trajectory of success, despite being positioned at the centre of attention by the governments with massive support. During the formative years, SMEs have to grapple with the risk of failure, survive downturns and thrive in an environment characterised by market uncertainty and unpredictability (Hotho and Champion,

2011). SMEs have to struggle and compete with larger enterprises in a different and niche arena through product innovativeness and competitiveness (Wagner and Hansen, 2005).

The literature review shows that previous studies dealing with the key factors of successful businesses have predominantly focused on large enterprises and multi-national corporations (MNCs) rather than SMEs, and empirical studies on owner-managed SMEs in the context of developing countries largely remain scarce and limited (Keskin, 2006; Oke, Burke and Myers, 2007). This warrants further investigation into how transformational, competent and innovative SMEs can reinvent themselves and sustain their successes in today's rapidly changing technological realm and highly competitive business environment. With the prevailing economic performance and market conditions, it is argued that SMEs need a 'helicopter view' to organise themselves and find a *modus vivendi* with a sense of congruence and trustworthiness to lead people with an entrepreneurial drive to grow their businesses into large organisations (Bass and Riggio, 2006, Chandler and Jansen, 1992, Prasad and Junni, 2016; Wang and Ahmed, 2004). Building on resource-based view, dynamic capabilities perspective and the insights into the literature (Barney, 1991; Teece, 2012), this study intends to focus on and examine transformational leadership, entrepreneurial competence, and technical competence and their impact on firm performance en route to innovativeness for owner-managed SMEs.

Preliminary Site Survey

Before embarking on this study, a preliminary survey was conducted to confirm what factors are relevant to the success of SMEs in Malaysia. Respondents were randomly approached during the SME Annual Showcase (SMIDEX) at KLCC, Kuala Lumpur, and the Star's SOBA Workshop at Penang to rate their perceived degree of importance on the factors in a

semi-structured survey form (Appendix A). The results, tabulated in Table 1, indicate that leadership is rated the most important, followed by innovation, which is measured by degree of innovativeness. This is then followed by marketing, competitiveness, strategy, competence, human resource, reputation, organisational culture and networking. Competence, which is measured by technical expertise and entrepreneurship, was chosen as a third variable because it is more closely related to SME growth and development (Ng, 2016).

Literature Review

The literature on transformational leadership, entrepreneurial competence and technical competence and innovativeness suggests that the relationships among these variables contribute to firm performance.

Transformational Leadership and Innovativeness

Yukl, Gordon and Taber (2002) stressed that applicability of appropriate leadership style depends on the right combination of task behaviour, relations behaviour, change behaviour, and external behaviours that are relevant to their situations. Although there are many types of leadership styles (Wang and Poutziouris, 2010), Bass (1985) and Howell and Higgins (1990) insisted that transformational leadership is the ideal style for promoting innovation. Transformational leadership is defined as a leadership style that stimulates and inspires followers to achieve extraordinary outcomes and, in the process, develop their own leadership capacity. Transformational leadership is measured in five dimensions, namely, idealised influence (attributes) (IA); idealised influence (behaviour) (IB); inspirational motivation (IM); intellectual stimulation (IS); and individualised consideration (IC) (Bass and Avolio, 1995). Innovativeness refers to an organisation's overall innovative capability to produce new products for the market, or open up new markets, through combining strategic orientation

with innovative behaviour and process (Wang & Ahmed, 2004). Transformational leadership places more emphasis on intrinsic motivation and leadership-followership development to optimise their performance beyond expectations by aligning the followers' values with the values of the organisation and uniting employees and encouraging them to make the organisation's vision a reality (Bass and Avolio, 1995; Jaskyte, 2004). The transformational leader deploys charisma, individualised consideration, inspiration, and intellectual stimulation to engender creativity and enhance employees' propensity to innovate. Comparatively, transformational leadership affects innovativeness through environmental uncertainty perception, in contrast to 'carrots and sticks' transactional leadership of management-by-exception and contingent reward or laissez-faire non-leadership (Aslan, Diken and Şendoğdu, 2011). This means the leadership mettle of SME owner-managers is put to the test in times of tumultuous market, technological innovation, and technical changes. As CEOs' transformational leadership behaviours positively influence organisational innovation, transformational leadership is considered an important mechanism of leading with integrity and introducing organisational changes in a dynamic environment (Prasad and Junni, 2016; Khalili, 2016).

As transformational leadership can potentially foster innovation, they have to motivate and influence employee creativity and innovative inclination (Gumusluoglu and Ilsev, 2009; Lee, 2007; Mittal and Dhar, 2015). Hult, Hurley and Knight (2004) asserted that transformational leaders play a key role in influencing the degree of organisational innovativeness. Matzler, Schwarz, Deutinger and Harms (2008) stated that the transformational leadership style of top management has an impact on product innovativeness which, in turn, impacts firm performance in terms of growth and profit margin. Chen, Tang, Jin, Xie, and Li (2014) also supported the relationship between transformational leadership and product innovativeness

performance under the mediating role of corporate entrepreneurship. Nevertheless, Jaskyte (2004) insisted that although leadership has been held out as one of the most important predictors of innovation, transformational leadership is not correlated with organisational innovativeness. Overstreet, Hanna, Byrd, Cegielski and Hazen (2013) found that innovativeness mediates the direct link between transformational leadership and firm performance. Given the above, this study posits the following hypotheses:

H1: Transformational leadership is positively related to product innovativeness.

H2: Transformational leadership is positively related to process innovativeness.

H3: Transformational leadership is positively related to behavioural innovativeness.

Entrepreneurial Competence and Innovativeness

There is a relationship between entrepreneurial competence and innovativeness. The relevance of innovativeness has been increasing exponentially over the last decades in entrepreneurship literature. Chandler & Jansen (1992) define entrepreneurial competence as the knowledge, skill and ability to envision, recognise and take advantage of opportunity (i.e. identify unmet customer needs and wants and bring beneficial products and services to customers) and drive to see firm creation through fruition which requires strategy formulation and the willingness and capacity to generate intense effort for long, hard hours. SME owner-managers have a knack for perfectly timed investments when spotting opportunities brought about by new technologies and new products, while others see problems and confusions (Kuratko, 2007). Cooper and Park (2008) maintain that past and present experience, as well as the professional and social environment, play a key part in enhancing their owner-managers' ability to engage effectively in opportunity recognition and evaluation. Man, Lau, and Snape (2008) stressed that entrepreneurial competence, a construct represented by strategic, conceptual, opportunity, relationship, and technical skills, enhances organisational

capabilities that cover innovative capability in new products, services or processes. Abdul Mohsin, Halim, Ahmad, and Farhana (2017) stressed that strategic and conceptual competencies lead to innovation behaviour. Pretorius, Millard and Kruger (2005) stressed that opportunity can lead to creativity and innovation since SMEs must possess imagination and the analytical skills to release the ideas. In an era of ever-shrinking product life cycles, high-growth SMEs not only have to enhance product design skills but also learn to replicate entrepreneurial innovativeness for company's ongoing vitality (Dickson, Schneider, Lawrence, and Hytry,1995). SMEs owner-managers possess strong entrepreneurial zest and agility for innovativeness. Besides, entrepreneurial competencies also contribute to the proliferation of entrepreneurial business success (Rahman, Amran, Ahmad and Taghizadeh, 2015). Lefebvre and Lefebvre (1993) noted that entrepreneurial drive or intensity has a direct relationship with firm innovativeness but the organisational status of the CEO moderates the relationship. In fact, Letonja, Jeraj and Marič (2016) stressed that the entrepreneurial competences of the founders positively correlate with the innovativeness of their successors, leading to greater competitiveness of family SMEs. Therefore, it works well for SME owner-managers to acquire entrepreneurial competencies towards improving firm innovativeness and impacting positively on firm performance. In view of the above, this study posits the following hypotheses:

H4: Entrepreneurial competence is positively related to product innovativeness.

H5: Entrepreneurial competence is positively related to process innovativeness.

H6: Entrepreneurial competence is positively related to behavioural innovativeness.

Technical Competence and Innovativeness

Technical competence plays an essential role in generating innovativeness in product, process and behaviour. Chandler & Jansen (1992) define technical competence as knowledge and

skills about and proficiency in a specific work area or activity and the abilities to use the appropriate tools, techniques and procedures to analytically tackle technical and functional issues in specific industries. Drawing from a semi-structured repertoire of core technical skills and prior work experience, SMEs can develop technical competence to enhance their degree of innovativeness in line with the market trends where the technology is rapidly changing and developing (Bennett, Robson, and Bratton, 2001; Camuffo, Gerli, and Gubitta, 2012). Supported by a technically competent workforce, SME owner-managers are not only more receptive to innovation but play a central role in R&D networks of contacts with external sources of scientific and technological expertise and advice (Hoffman, Parejo, Bessant, and Perren, 1998). Industrial R&D is touted as one of the first business practices associated with innovation. Numerous studies provided strong statistical evidence of the positive relationship between R&D activities and adoption of innovation. However, resource-constraint SMEs seek to tap local talent for innovation and leverage on external collaboration and training with established firms, research-based universities, technology transfer centres for technical know-how and skills for innovativeness in product, process and behaviour (Innogrow, 2008). Gallego, Rubalcaba and Hipp (2012) stressed that in-house R&D activities, together with applications of external knowledge, have become crucial in generating product and process innovation. Ritter and Gemünden (2003) revealed that network competence has a strong positive influence on the extent of inter-organisational technological collaborations as intra-industry networking has on a firm's product and process innovation success. In view of the above, this study posits the following hypotheses:

H7: Technical competence is positively related to product innovativeness.

H8: Technical competence is positively related to process innovativeness.

H9: Technical competence is positively related to behavioural innovativeness.

Innovativeness and Firm Performance

Numerous researchers, including Rhee, Park and Lee (2010), Calantone, Cavusgil and Zhao (2002), Lee and Tsai (2005), Qian and Li (2003) and Verhees and Meulenberg (2004) firmly support the strong link between innovativeness and enterprise success in terms of financial performance, as innovativeness is a source of sustainable competitive advantage (Hosseini, 2014). Research on SME performance literature also ascribes tremendous importance to innovativeness, a multi-dimensional concept reflecting the capacity to introduce new processes, products, or behaviours within an organisation (Hurley and Hult, 1998; Keskin, 2006). García-Morales, Lloréns-Montes, and Verdú-Jover (2007) and Avlonitis and Salavou (2007) stressed that organisational innovation positively influences firm performance. Oke, Burke and Myers (2007) asserted that SMEs tend to focus more on incremental rather than radical innovations and that incremental innovation is related to the growth in sales turnover. More specifically, product innovation and process innovation have a strong association with firm performance (Ar and Baki, 2011; Matzler, Schwarz, Deutinger, & Harms, 2008). SMEs must, on the one hand, innovate and add values to their products and services with the appropriate degree of product innovativeness for firm performance and, on the other hand, they need to collaborate and focus on core competences for efficiency matters (Pullen, de Weerd-Nederhof, Groen, and Fisscher, 2012). Covin and Slevin (1989) argue that innovativeness, together with risk-taking and proactiveness, all of which are considered as the entrepreneurial strategic postures, are positively associated with firm performance in a hostile environment. Varis and Littunen (2010) stated that the introduction of the novel product, process, and market innovations is positively associated with firm growth only and, surprisingly, is not linked to firm profitability. Rosenbusch, Brinckmann and Bausch (2011) also argued that from the meta-analysis, the innovation-performance relationship in SMEs shows controversial results because such a relationship is context-dependent on factors like

the age of the firm, the type of innovation, and the cultural context. Lin and Chen (2007) asserted that since technological and marketing innovations have weak links with company sales, SMEs should focus on organisational innovation, which is closely related to business sales, and form strategic alliances to strengthen their innovation. Innovativeness is conceived to play the role of mediating through the interplay of transformational leadership, entrepreneurial competence and technical competence for long-term firm performance (Freel, 2005). Given the above, this study posits the following hypotheses:

H10: Product innovativeness is positively related to financial performance.

H11: Product innovativeness is positively related to nonfinancial performance.

H12: Process innovativeness is positively related to financial performance.

H13: Process innovativeness is positively related to nonfinancial performance.

H14: Behavioural innovativeness is positively related to financial performance.

H15: Behavioural innovativeness is positively related to nonfinancial performance.

Research Model

This study attempts to uncover the underexplored areas by developing a research model which integrates all the hypotheses, as depicted in Figure 1.

Methods

This is a quantitative study using a self-administered, mailed questionnaire for data collection. In this study, SMEs are defined as a) individuals who are owners-cum-managers, b) small enterprises with 5 to 74 full-time employees in the manufacturing sector or small enterprises with 5 to 29 full-time employees in the services and other sectors. On the basis of this definition, 2009 firms were identified and selected from the databases obtained from SME Corporation. The data for this study were gathered from the survey.

Sample Demographics

Of the respondents, 66.9% were male, and 33.1% were female. More than three-quarters of them were Chinese (78.1%), followed by Malay (16.9%) and Indian (5.1%). About one-third of the respondents held a Bachelor's degree (30.9%), followed by high school certificate (26.4%), diploma (20.8%) and Ph.D. (2.8%). One-third of the respondents were from 36-45 years old (35.4%), followed by 46-55 years old (25.3%), more than 55 years old (15.2%) and less than 25 years old (4.5%). More than half of the respondents stated their position as Managing Director/CEO (58.4%), followed by Director (19.1%), General Manager (10.1%), and Manager (6.7%). There are two main cohorts: a) 32.6% of SME owner-managers have 6-10 years of working experience prior to beginning their start-ups, and b) 30.2% of SME owner-managers have 1-5 years of working experience prior to beginning their start-ups. About 93.3% of the respondents' companies have a workforce of between 5 and 29 full-time employees, and the rest have a workforce of between 30 and 74 full-time employees (6.7%). As for the number of years of operation, most of the SMEs have been in operation for 6-10 years (29.8%), followed by 11-15 years (21.3%), more than 20 years (21.3%), 16-20 years (15.2%) and less than five years (12.4%). Over half of the businesses are non-family businesses (61.2%), while family businesses account for 38.8%.

Measures

The self-administered questionnaire adopted in this study contained six sections with a total number of 75 questions. In section A, 20 items were adopted from the Multifactor Leadership Questionnaire (Bass and Avolio, 1995) and measured on a 5-point Likert-type scale ranging from "*Strongly disagree"* to *"Strongly agree"* to measure the perception of transformational leadership style among the respondents. In section B, 14 items were adopted from Chandler

and Jansen (1992) and measured on a 5-point Likert-type scale ranging from *"Strongly disagree"* to *"Strongly agree"* to measure the perception of entrepreneurial competence and technical competence of SME owner-managers. In section C, 12 items were adopted from Wang and Ahmed (2004) and measured on a 5-point Likert-type scale ranging from *"Strongly disagree"* to *"Strongly agree"* to gauge the perception of product, process and behaviour innovativeness of SME owner-managers. In Section D, 12 items were adopted from Ahmad, Wilson and Kummerow (2011) and measured on a 5-point Likert-type scale ranging from *"Not satisfied at all"* to *"Very satisfied"* to assess the perception of financial performance and nonfinancial performance. In Section E, seven items were deployed to gather information on respondent demographics. Finally, in Section F, ten items were deployed to collect the information on the company profile. This is a cross-language questionnaire with Bahasa Malaysia and Mandarin translated through blind back translation to overcome language barriers, enhance better understanding and improve the response rate.

Results

Before the data were analysed, they were screened and cleaned for missing data and outliers using SPSS. Of the 199 filled questionnaires, 178 questionnaires were returned completed, and the remaining 21 were found to be unusable. Eighteen cases were removed due to incomplete data entry and also failure to fulfil the two filtering criteria. Three cases were withdrawn due to the respondents who marked similar answers for a high proportion of the questions, which showed a lack of variability (measured by standard deviation). This data cleaning resulted in a response rate of 8.8% and a final data set of 178 participants. Item PRD04 was re-coded since it is a negatively constructed question.

Goodness of Measurement Model

For SEM analysis, a two-step SEM modelling approach is adopted to determine the goodness of model fit. The first step is to assess the measurement model for validity and reliability. The second step is to test the structural model for path coefficient significance and hypothesis testing (Hair, Black, Babin, and Anderson, 2010). To assess the measurement model, reflective item loadings, AVE, CR and discriminate validity are deployed for reflective items. Figure 1 shows the measurement model.

Construct Validity and Reliability

While construct validity is the extent to which a set of measured variables represent the latent constructs that they are designed to measure, reliability is a measure of the degree to which a set of indicators of a latent construct is internally consistent, it is related to measurement error. Construct validity can be represented by convergent and discriminant validity, and reliability by composite reliability.

Convergent Validity

According to Bagozzi and Yi (1988) and Fornell and Larcker (1981), the value for outer loadings should be more than 0.7. If it is between 0.4 and 0.7, items can be retained or removed as long as average variance extracted (AVE) achieves a 0.5 threshold or cut-off values. If it is less than 0.4, the reflective items should be deleted. This is to ensure adequate measurement for convergent validity. The AVEs reported for all constructs in the study are above 0.5 except for ENC, NFP, and PRD. According to Hair, Black, Babin, and Anderson (2010), the value for item loadings can range from 0.4 to 0.7 as long as their AVE is above 0.5. From the Quality Criteria Report, although ENC02 has an item loading of 0.512, it was removed so that the new AVE for ENC is above 0.5 (in this case, the AVE was updated from 0.470 to 0.510). Likewise, for NFP, although NFP02 and NFP03 have item loadings of 0.692

and 0.599, respectively, they were removed so that the new AVE for NFP is above 0.5 (in this study, the AVE was revised from 0.450 to 0.528). Finally, for PRD, item PRD04 was removed because it has an item loading of 0.073, which is way below 0.4, and the new AVE was increased from 0.522 to 0.696. In this research, all AVEs for all the seven constructs after deletion were shown in Table 2. There is no issue with the measurement model.

Reliability Analysis

Composite reliability (CR) is employed to evaluate internal consistency reliability for PLS-SEM analysis. CR should be 0.7 or higher to be considered as acceptable to indicate internal consistency (Gefen, Straub and Boudreau, 2000). Comparatively, CR is seen as a more suitable criterion of reliability than the traditional Cronbach's alpha because the latter assumes all indicators are equally reliable and can be inflated by just increasing the number of items, even with the same degree of inter-correlations (Gerbing and Anderson, 1988). In this research, the CR values are above the cut-off values of 0.7, demonstrating that all six reflective constructs have high levels of internal consistency reliability, as shown in Table 2.

Formative Construct Assessment

In this research, transformational leadership is operationalised as a formative construct with the Type 2 design where the 20 items are reflective and the arrows of IA, IB, IM, IS and IC point to transformational leadership (Podsakoff, Mackenzie, Podsakoff, and Lee, 2003). For the formative construct, TFM, t-values, VIF and correlations are used as shown in Table 3. Bivariate correlations (loadings) between the indicators and the construct can be used to determine the absolute contribution (Cenfetelli and Bassellier, 2009). The result of this research revealed that the VIF values were below the threshold of 5 which means multicollinearity is not an issue, as shown in Table 3 (Hair, Hult, Ringle, and Sarstedt, 2014).

Discriminant Validity

Discriminant validity is established when two distinctly different concepts are not correlated to each other (Sekaran and Bougie, 2011). For PLS analysis, discriminant validity can be measured by the cross-loadings and the Fornell-Larcker criterion. To determine discriminant validity, the PLS algorithm procedure is conducted to generate item loadings and cross-loadings. Discriminant validity is established when the loading of a latent construct is higher than all remaining constructs. According to Fornell-Larcker's (1981) criterion, the squared root of each construct AVEs should be greater than the correlation between the latent constructs. In Table 4, the results of the Fornell-Larcker criterion show the squared roots of AVE for each construct are higher than the correlation for each construct. Thus, there is an adequate discriminant validity of the different constructs. Another test of discriminant validity can be executed through cross-loadings. The cut-off value for loadings is 0.5 as a significant value (Hair, Black, Babin, and Anderson, 2010). If any item has a loading of greater than 0.5 on two or more factors, they are deemed to have significant cross-loadings. In this case, there is no issue of cross-loading.

Assessment of Structural Model and Hypothesis Testing

According to Duarte and Raposo (2010), to evaluate the structural model the two criteria used are a) the explanatory power of the model (R^2, coefficient of determination, which measures the proportion of an endogenous construct's variance that is explained by its predictor constructs), and b) the value and significance of the path coefficients, which are the estimated path relationships corresponding to the standardised betas (which are the strengths of the

relationships between latent constructs) in a regression analysis. For the first step, the R^2 value for product innovativeness is 0.232, suggesting that 23.2% of the variance in product innovativeness can be explained by TFM, ENC, and TEC as shown in Figure 1. The R^2 value for process innovativeness is 0.247, suggesting that 24.7% of the variance in process innovativeness can be explained by TFM, ENC, and TEC. The R^2 value for behavioural innovativeness is 0.263, suggesting that 26.3% of the variance in behavioural innovativeness can be explained by TFM, ENC and TEC. For the first, financial performance is 0.366, suggesting that 36.6% of the variance in financial performance can be explained by TFM, ENC, and TEC, PRD, PRC and BHV. For the second non-financial performance, it is 0.341, suggesting that 34.1% of the variance in financial performance can be explained by TFM, ENC, and TEC, PRD, PRC and BHV. The higher the R^2 values, the better the construct is explained by the exogenous latent variable in the structural model. High R^2 values also indicate that the values of the constructs can be well-predicted via the PLS path model. According to Cohen, Cohen, West, and Aiken (2003), R^2 is considered small if R^2 ranges between 0.02 and 0.13, medium between 0.13 and 0.25, and large 0.26 and above. From the research findings, all R^2 are more than 0.26, thus indicating substantial support for the structural model. The next step is to determine if the sizes of the path coefficients are statistically significant. As a rule of thumb, path coefficients with standardised betas of a) above 0.2 are most probably significant, b) below 0.1 are insignificant, and c) between 0.1 and 0.2 require significance testing. Consequently, based on path coefficients and their significance, it is possible to determine if the theoretical hypotheses are substantiated empirically. According to Chin (1998), the path coefficients, β, should have a range of between 0.20 and 0.30 along with measures that explain 50% or more variance to be acceptable. The bootstrap resample makes up the number of samples drawn in the bootstrapping procedure that must be higher than the number of bootstrap cases (178 cases).

Accordingly, 5000 re-samples are recommended for the bootstrapping procedure to generate R^2 and test the significance of the regression coefficient. In bootstrapping, critical t-values can be generated to test the statistical significance of the path coefficient at *p<0.10 (t-value=1.282), **p<0.05 (t-value=1.645), and ***p<0.01 (t-value=2.326) confidence levels. Table 5 indicates the results of the direct effect hypothesised in this research. It was found that TFM is positively linked to PRD (beta=0.014, p<0.1) and to BHV (beta=0.336, p<0.05). Therefore, hypothesis H1 and H3 are supported. ENC is positively linked to PRD (beta=0.289, p<0.01), to PRC (beta=0.285, p<0.01), and to BHV (beta 0.122, p<0.05). Hypotheses H4, H5, and H6, therefore, are supported. TEC is positively linked to PRD (beta=0.216, p<0.01), to PRC (beta=0.268, p<0.01), and to BHV (beta=0.229, p<0.01), supporting Hypotheses H7, H8 and H9. PRD is positively linked to FPR (beta=0.216, p<0.01) and NFP (beta 0.178, p<0.01). PRC is positively linked to FPR (beta=0.206, p<0.05) and NFP (beta=0.315, p<0.01). BHV is positively linked to FPR (beta=0.328, p<0.01) and NFP (beta=0.225, p<0.01). Thus Hypotheses H10, H11, H12, H13, H14, and H15 are supported. H2, however, is not supported.

Discussion

The following discussion has centred on the four relationships – transformational leadership and innovativeness, entrepreneurial competence and innovativeness, technical competence, and finally innovativeness and innovativeness and firm performance.

Transformational Leadership and Innovativeness

These findings show some similarities with the studies of Gumusluoglu and Ilsev (2009), Hult, Hurley and Knight (2004), and Matzler, Schwarz, Deutinger and Harms (2008), who supported the relationship between transformational leadership and product innovativeness in

SMEs because transformational leadership is more courageous, passionate and visionary towards firm innovativeness. Chen, Tang, Jin, Xie, and Li (2014) also supported the relationship between transformational leadership and product innovativeness performance under the mediating role of corporate entrepreneurship. SMEs operate in the current business atmosphere characterised by globalised markets, competition, technology, and innovation, all of which require effective transformational leaders who are evaluated in terms of the results achieved rather than the efforts they put in (Yukl, 2012). It requires SME owner-managers to be more proactive, innovative and risk-taking under this environment that is hostile rather than benign for innovation performance (Covin and Slevin, 1989). Although transformational leadership has two major flaws, namely, over-attribution and romanticization of traditional leadership behaviours, transformational leaders manifest leadership qualities and management abilities in charisma, inspiration, intellectual stimulation and individual consideration (Northouse, 2007). In the context of small business, there is a tendency of SME owner-managers to adopt varying degrees of transformational leadership styles which are also influenced by leadership values and personality as well as traits like intelligence, self-efficacy, determination, integrity and sociability (Felfe and Schyns, 2010; Northouse, 2007). However, contrary to expectations, the direct relationship between transformational leadership and process innovativeness was surprisingly found to be insignificant for SMEs. The likely explanation for this result is that SME owner-managers are likely to involve product innovation rather than process innovation (Matzler, Schwarz, Deutinger and Harms, 2008; Verhees & Meulenberg, 2004). In addition, the presence of situational factors like industry, market dynamics, and an enterprising environment encourages risk-taking and innovative culture that may affect these relationships (García-Morales, Matías-Reche and Hurtado-Torres, 2008; Oke, Munshi and Walumbwa, 2009).

Entrepreneurial Competence and Innovativeness

The findings concurred with the earlier study conducted by Ndubisi and Iftikhar (2012), who indicated that entrepreneurial competence is positively related to innovativeness. Lefebvre and Lefebvre (1993) noted that there is a positive relationship between entrepreneurial intensity and firm innovativeness and that this is moderated by the organisational status of the CEO. Pretorius, Millard and Kruger (2005) stressed that entrepreneurial skills depend on creativity and innovativeness, as they distinguish between the entrepreneur and the small venture owner, but the implementation of an innovation blueprint remains a management challenge (Hotho and Champion, 2011). This is similar to the findings of Atuahene-Gima and Ko (2001), who asserted the positive effect of entrepreneurship orientations on product innovation under the perceived environmental hostility and intensity. In a similar vein, Avlonitis and Salavou (2007) asserted that active entrepreneurs adopt a more aggressive orientation characterised by a willingness to take high risks before their competitors for product innovativeness.

Technical Competence and Innovativeness

The results of this research uphold the findings of some of the earlier and growing studies that found significant positive relationships between technical competence and innovativeness (Stanko and Bonner, 2013). Santos-Vijande and Álvarez-González (2007) stressed the need for technical competence for stimulating innovativeness in the manufacturing of creative products. Ritter and Gemünden (2003) also indicated a positive relationship between network competence and product and process innovation success. Griese, Pick, and Kleinaltenkamp (2012) supported the applications of technical knowledge-based competence to generate firm innovativeness. Singh, Garg and Deshmukh (2008) argued that it is crucial to have technical capabilities to introduce product innovativeness. It is

noticed that the increased uptake of technology has necessitated the introduction of knowledge, industry-specific skills, and abilities in handling technical product issues at hand and improving service quality. As technological innovation is fundamental to firm innovativeness, in-house R&D activities should be aligned to industry demand. SMEs have to act to resolve customer technical complaints to be competitive. SMEs should apply industry-led skills in technicalities and functionalities, besides the human and conceptual skills, to tackle substantial technical challenges with innovative solutions in products and services. More specifically, Stanko and Bonner (2013) highlighted the need to have projective customer competence to understand the future needs of clients. SME owner-managers need to nurture organisational learning and development through self-regulatory competencies (gain skills in using self-monitoring, self-efficiency appraisal, personal goal setting, and self-motivating incentives) to maintain relevant capabilities (Luthans, Luthans, Hodgetts and Luthans, 2001).

Innovativeness and Enterprise Success

From the results above, product innovativeness, process innovativeness, and behavioural innovativeness have a significant influence on financial performance and non-financial performance, respectively. These findings are consistent with the results of Keskin (2006), Avlonitis and Salavou (2007) and Johannessen, Olsen and Lumpkin (2001), who noted that innovativeness had a significant impact on financial performance and non-financial performance. Rhee, Park and Lee (2010) emphasised the importance of innovativeness in creating sustained competitive advantage for long-time growth and renewal. Additionally, Verhees and Meulenberg (2004) found that the roles of product innovativeness, process innovativeness, and behavioural innovativeness had a significant impact on business performance. Correspondingly, Calantone, Cavusgil and Zhao (2002), Lee and Tsai (2005),

and Qian and Li (2003) found that the role of innovativeness had a significant impact on business performance. Indeed, high-growth SMEs, so-called 'Gazelles', are involved in innovation activities to convert a new idea with unconventional approaches into a successful innovativeness in new product, process and behaviour, which is explicit in Schumpeter's description of the successful entrepreneur (Hurst and Pugsley, 2011). In today's high-competition environment, where there is seemingly no margin for error, innovativeness is commonly touted as a viable strategy for gaining the first-mover advantage and the entrepreneurial edge for SMEs (Hult, Hurley and Knight, 2004). SMEs now seem to be locked in a David and Goliath-style battle of competition with larger firms and MNCs, using innovativeness to defy the odds and expectations and finally prevail. And it is the owner-managers' innovativeness and personality that play a key role in the adoption of innovativeness which positively affects firm performance. Indeed, transformational SMEs are strongly influenced by entrepreneurial personality, innovativeness, and prior managerial experience of the owner-managers and its employees (Felfe and Schyns, 2006; Gumusluoglu and Ilsev, 2009; Herrmann and Felfe, 2014).

Conclusion

The results of this study largely support the research framework that SMEs are more successful if they are under the dedicated and resourceful leadership of owner-managers who possess the entrepreneurial and technical competence to heighten firm innovativeness. Taken together, these findings suggest that SME owner-managers should embrace the four core metrics, transformational leadership, entrepreneurial competence, technical competence, and innovativeness, as their robust management core for the future. Although they may not be the panacea for SME ills, they offer the best chance for triumphing against the challenges of scarcity and aspiration. SME owners-managers need to manage their transformations within

the constraints of tight budgets and resources and to sharpen their core competence while still holding on to the values of old-fashioned hard work, ruggedness and robust character to push sales and go the extra mile for the emergence, survival and growth of SMEs which is a *sine quo non* to all countries, large or small , developed or developing.

Implications

There are two policy-making and managerial implications. Firstly, these findings can be used as a policy tool to build a vibrant SME ecosystem where resourceful and innovative SMEs can get 'punch well above their weight' in competitions with local and foreign organisations. A government-funded education and training programmes to train a new breed of SME entrepreneurs should focus on developing transformational leadership as well as technical, entrepreneurial and innovative skills (Chandler and Jansen, 1992; De Charon, 2003; Rahman, Amran, Ahmad, and Taghizadeh, 2015). SMEs tend to undertake *ad hoc* or project-driven innovative activities, as they are skeptical about cost versus return on investment (Hoffman, Parejo, Bessant, and Perren, 1998). Cash-strapped SMEs may be reluctant to direct efforts to embrace innovativeness rather than imitativeness of products and services for risk-aversion and short-term profits. Hence, the government needs to provide development grants to growth-oriented SMEs, both traditional and high-tech, to upgrade new capabilities and develop the competencies. This will defray the costs of investing in innovation and productivity solutions (Zeng, Xie and Tam, 2010). The findings imply that SME owner-managers with burning entrepreneurial zeal should place much emphasis on training and development in order to boost innovativeness and ultimately achieve firm performance. Owner-managed SMEs are characterised by the centrality of the founder and owner, high flexibility and agility in the decision-making process, and a closely-knit family culture of

perseverance and hard work (Smith, 2003; Wang & Poutziouris, 2010). Strong leadership and competence of SME owner-managers can lead to higher success and hence prevent premature failures (Haswell & Holmes, 1989). This has necessitated a rethinking of innovative ways of managing things and re-tuning their business model. The owner-managers need to deal with people management issues and inspire individuals to develop their competencies as their organization evolves and expands. As SMEs expand, mature and evolve structurally, they have to gear up to the challenge of self-renewal and reinvention. It requires SMEs to be transformational, competent and innovative learning organisations in order to survive and thrive against all odds in today's highly innovative market, which sees disruptive technologies introducing both new challenges and opportunities.

Limitations and future research direction

The self-report questionnaires that were administered to owner-managers of SMEs constitute a limitation for this research as they may not always produce reliable and valid responses due to a single key informant response rather than multiple responses from firms and industries. This means the data for both independent and dependent variables were collected at the same time from the same source. As a result, this presents the potential problem of common method variance, a variance that is attributable to the measurement method rather than to the constructs the measures represent. In addition, the measures of key constructs are perceptual rather than objective and comparable, consequently relying on correlations for partial representation (Dess & Robinson, 1984). Future research should employ a longitudinal research to assess the development of the key constructs.

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Appendix A: Preliminary Site Survey Form

Survey on Key Success Factors for Business Success for SMEs

Name: _____ Company: _____

Dear Sir/ Madam,

In your opinion, what are the key success factors that can influence the business success of SMEs in Malaysia? Please tick the scale of from 1 to 5 based on the degree of importance.

Key Success Factor	Not Important 1	Slightly Important 2	Moderately Important 3	Important 4	Very Important 5
1. Leadership					
2. Innovation					
3. Competence					
4. Reputation					
5. Organisational Culture					
6. Human Resources					
7. Marketing					
8. Competitiveness (Quality, Cost, Flexibility, Dependability)					
9. Strategy					
10. Networking					
11. Pls specify					
12. Pls specify					
13. Pls specify					
14. Pls specify					
15. Pls specify					
16. Pls specify					

Rest assured that your response is only for academic purposes and kept confidentially.

Thank you very much

Table 1: Preliminary Site Survey Results

Factor / Respondent	F1 Leadership	F2 Innovation	F3 Competence	F4 Reputation	F5 Organisational Culture	F6 Human Resource	F7 Marketing	F8 Competitiveness	F9 Strategy	F10 Networking
1	5	5	4	4	4	5	5	5	4	4
2	3	4	3	3	3	3	3	3	3	4
3	3	4	4	2	3	3	4	2	4	4
4	5	5	4	5	5	4	5	5	5	5
5	5	4	5	3	4	5	3	4	3	4
6	4	4	4	3	3	4	5	4	4	3
7	5	4	4	5	4	4	4	5	5	5
8	5	5	4	4	4	5	5	5	4	-
9	5	5	5	4	3	4	5	5	5	5
10	5	5	4	5	5	4	5	5	5	5
11	5	4	4	3	5	4	4	4	4	-
12	5	4	5	4	5	4	4	4	5	4
13	5	5	5	5	4	5	4	4	4	4
14	4	4	3	4	3	4	4	3	4	3
15	5	5	5	5	4	4	5	5	4	5
16	5	4	4	4	4	4	5	5	4	3
17	5	4	4	4	5	3	3	4	4	4
18	3	5	4	4	3	4	5	5	5	5
Total Score	**82**	**80**	**75**	**71**	**71**	**73**	**78**	**77**	**76**	**67**

Keys:
The Likert-type scale of degree of importance: 1) Not important; 2) Slightly important; 3) Moderately important; 4) Important; and 5) Very important.

Table 2: Results of Measurement Model

Construct	Type	No of items	Items deleted	Symbol	Loadings	AVE	CR
Behavioural Innovativeness	Reflective	4	0	BHV01	0.821	0.640	0.875
				BHV02	0.662		
				BHV03	0.832		
				BHV04	0.869		
Entrepreneurial Competence	Reflective	8	1	ENC01	0.732	0.510	0.879
				ENC03	0.645		
				ENC04	0.721		
				ENC05	0.773		
				ENC06	0.769		
				ENC07	0.670		
				ENC08	0.680		
Financial Performance	Reflective	6	0	FPR01	0.763	0.542	0.875
				FPR02	0.796		
				FPR03	0.796		
				FPR04	0.766		
				FPR05	0.669		
				FPR06	0.606		
Nonfinancial Performance	Reflective	6	2	NFP01	0.581	0.528	0.816
				NFP04	0.772		
				NFP05	0.768		
				NFP06	0.768		
Process Innovativeness	Reflective	4	0	PRC01	0.681	0.534	0.820
				PRC02	0.722		
				PRC03	0.813		
				PRC04	0.701		
Product Innovativeness	Reflective	4	1	PRD01	0.857	0.696	0.873
				PRD02	0.866		
				PRD03	0.777		
Technical Competence	Reflective	6	0	TEC01	0.778	0.589	0.895
				TEC02	0.719		
				TEC03	0.629		
				TEC04	0.817		
				TEC05	0.759		
				TEC06	0.880		

Table 2: Results of Measurement Model (cont)

Construct	Type	No of items	Items deleted	Symbol	Loadings	AVE	CR
Idealised Attributes (IA)	Reflective	4	0	IA1	0.790	0.544	0.825
				IA2	0.609		
				IA3	0.819		
				IA4	0.715		
Idealised Behaviours (IB)	Reflective	4	0	IB1	0.844	0.677	0.893
				IB2	0.824		
				IB3	0.816		
				IB4	0.807		
Individualised Consideration (IC)	Reflective	4	0	IC1	0.514	0.626	0.866
				IC2	0.879		
				IC3	0.906		
				IC4	0.804		
Inspirational Motivation (IM)	Reflective	4	0	IM1	0.772	0.635	0.874
				IM2	0.786		
				IM3	0.813		
				IM4	0.814		
Intellectual Simulation (IS)	Reflective	4	0	IS1	0.849	0.618	0.865
				IS2	0.807		
				IS3	0.838		
				IS4	0.630		

Construct	Type	No of items	Items deleted	Symbol	Weight	VIF	Correlations
Transformational Leadership	Formative	4	0	IA_Mean	0.190	3.065	0.875**
		4	0	IB_Mean	0.247	3.557	0.902**
		4	0	IC_Mean	0.222	3.132	0.872**
		4	0	IM_Mean	0.232	3.470	0.906**
		4	0	IS_Mean	0.237	2.722	0.848**

*** significant at p<0.01, ** significant at p<0.05, * significant at p<0.10

Note:

a) AVE=(summation of the square of the factor loadings)/ [(summation of the square of the factor loadings)+(summation of the error variance)]; CR=(square of the summation of factor loadings)/ [(square of the summation of the factor loadings) + (square of the summation of the error variances)].

b) Item ENC02, NFP02, NFP03 and PRD04 were deleted because their loadings are below 0.7 to achieve AVE of 0.5.

Table 3: Measurement Properties of Formative Construct.

#	Construct	Item Weight	t-value	VIF
1	IA	0.190	16.375	3.065
2	IB	0.247	25.523	3.557
3	IC	0.222	16.795	3.132
4	IM	0.232	18.834	3.470
5	IS	0.237	21.084	2.722

Table 4: Discriminant Validity of Constructs

Construct	BHV	ENC	FPR	NFP	PRC	PRD	TEC	TFM
BHV	**0.800**							
ENC	0.344	**0.714**						
FPR	0.443	0.406	**0.736**					
NFP	0.403	0.415	0.591	**0.727**				
PRC	0.475	0.451	0.509	0.505	**0.731**			
PRD	0.268	0.416	0.483	0.438	0.464	**0.834**		
TEC	0.365	0.590	0.418	0.422	0.441	0.396	**0.768**	
TFM	0.407	0.260	0.257	0.134	0.128	0.224	0.201	**Formative**

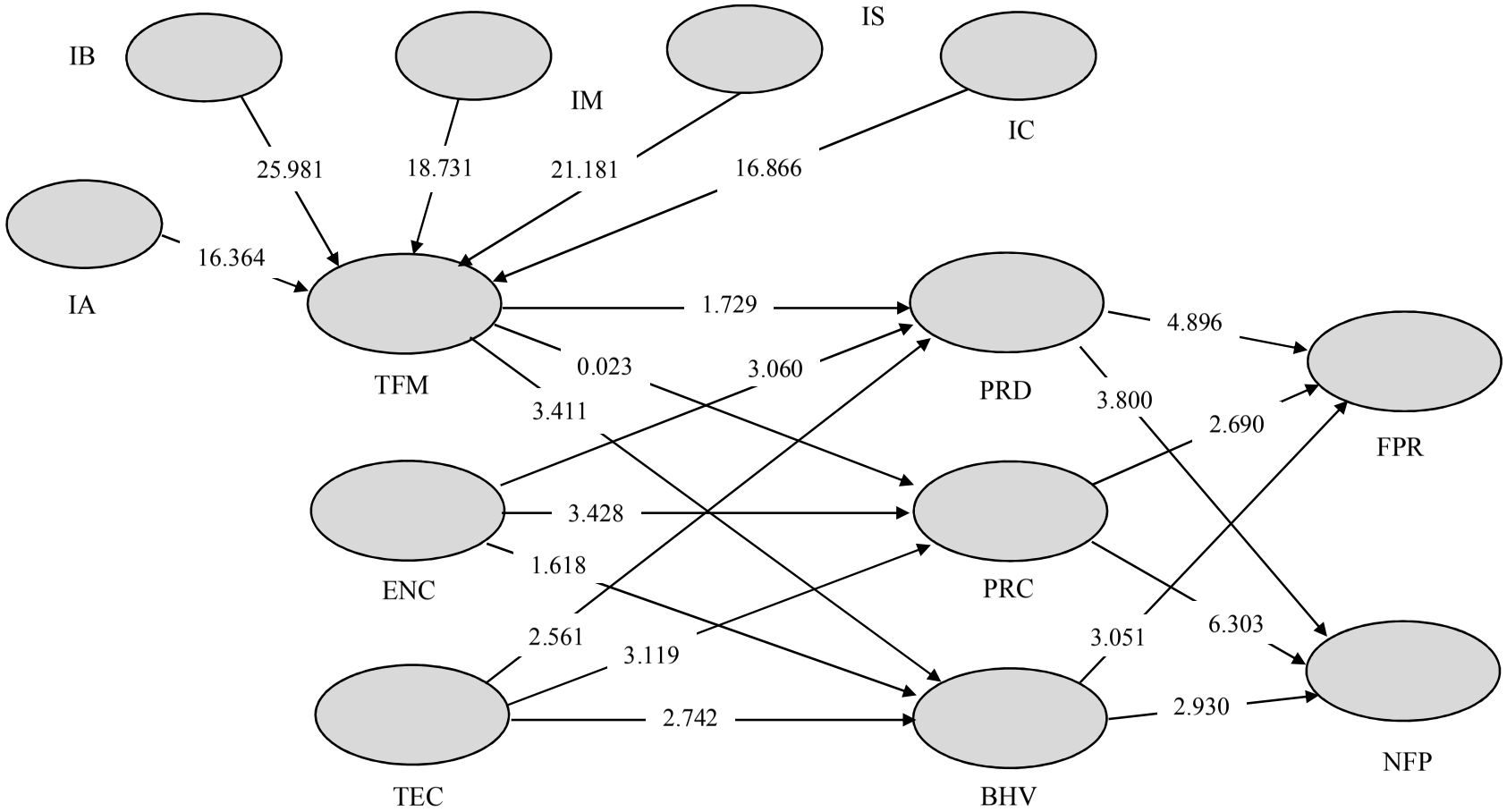
Notes (Diagonals in bold)) represents the square root of average variance extracted (AVE) while the other entries represent the correlations.
BHV=Behavioural Innovativeness, ENC=Entrepreneurial Competence, FPR=Financial Performance, IA=Idealised Attributes, IB=Idealised Behaviours, IC=Individualised Consideration, IM=Inspirational Motivation, IS=Intellectual Simulation, NFP=Nonfinancial Performance, PRC=Process Innovativeness, PRD=Product Innovativeness, TEC=Technical Competence, and TFM=Transformational Leadership.

Table 5: Path Coefficient and Hypothesis Testing

Hypothesis	Relationship	Std Beta	Std Error	t-value	Decision
H1	TFM -> PRD	0.113	0.066	1.717**	Supported
H2	TFM -> PRC	-0.002	0.067	0.024	Not Supported
H3	TFM -> BHV	0.330	0.095	3.476***	Supported
H4	ENC -> PRD	0.256	0.084	3.064***	Supported
H5	ENC -> PRC	0.292	0.085	3.456***	Supported
H6	ENC -> BHV	0.127	0.077	1.651**	Supported
H7	TEC -> PRD	0.222	0.086	2.592***	Supported
H8	TEC -> PRC	0.269	0.085	3.149***	Supported
H9	TEC -> BHV	0.224	0.082	2.737***	Supported
H10	PRD -> FPR	0.299	0.060	4.966***	Supported
H11	PRD -> NFP	0.248	0.067	3.673***	Supported
H12	PRC -> FPR	0.256	0.092	2.775***	Supported
H13	PRC -> NFP	0.297	0.056	5.345***	Supported
H14	BHV -> FPR	0.241	0.078	3.109***	Supported
H15	BHV -> NFP	0.195	0.066	2.968***	Supported

*p<0.10 (t-value=1.282), **P<0.05 (t-value=1.645), ***P<0.01 (t-value=2.326)

Figure 1 Research Model and Results of Path Analysis



*p<0.10 (t-value=1.282), **P<0.05 (t-value=1.645), ***P<0.01 (t-value=2.326), One –tailed Tests.
** Path TFM→PRD; ENC→BHV
*** Path TFM→BHV, ENC→PRD, ENC→PRC, TEC→PRD, TEC →PRC, TEC→BHV, PRD→FPR, PRD→NFP, PRC→FPR, PRC→NFP, BHV→FPR, BHV→NFP.