

Pertanika J. Soc. Sci. & Hum. 26 (3): 1905 - 1923 (2018)



SOCIAL SCIENCES & HUMANITIES

Journal homepage: http://www.pertanika.upm.edu.my/

The Influence of SMEs Employees' Intention towards Innovative Behaviour

Rosmelisa Yusof^{1,2*}, Ng Siew Imm³, Ho Jo Ann³ and Azmawani Abd Rahman³

¹School of Management, Universiti Sains Malaysia (USM), 11800 Penang, Malaysia
²Putra Business School, Universiti Putra Malaysia (UPM), 43400 Serdang, Selangor, Malaysia
³Faculty of Economic and Management, Universiti Putra Malaysia (UPM), 43400 Serdang, Selangor, Malaysia

ABSTRACT

Small and Medium-Sized Entrepreneurs (SMEs) need to be prepared for external challenges that are mostly beyond their control. SMEs need to improve their internal strength in terms of improving work processes. This, however, can only be effective if employees are innovatively improving their work. This study aims to look at the role of the employee's intention to engage in innovative behaviour based on the Theory of Planned Behaviour (TPB). The research employs the predictors of attitude, subjective norm and perceived behavioural control to affect employee's intention to engage in innovative behaviour. This study also investigates the relationship between intention and engagement in innovative behaviour. A sample of 201 SME employees working in Electrical and Electronic (E & E) SMEs in Malaysia took part in the survey assessment. The results indicate that the three antecedents of attitude, subjective norm and perceived behavioural control affect employee's intention and innovative behaviour. This study provides an understanding of employee intention and innovative behavior that serves as guidance for managers of SMEs and researchers to enhance and capitalise on the capacity of innovative employees.

Keywords: Entrepreneurs, innovative behaviour, intention, SMEs, Theory of Planned Behaviour

ARTICLE INFO

Article history:
Received: 19 April 2017
Accepted: 26 June 2018
Published: 28 September 2018

E-mail addresses:
melis_elis84@yahoo.com (Rosmelisa Yusof)
imm_ns@upm.edu.my (Ng Siew Imm)
ann_hj@upm.edu.my (Ho Jo Ann)
azar@upm.edu.my (Azmawani Abd Rahman)
* Corresponding author

INTRODUCTION

With globalisation has come the need for organisations throughout the world to deal with the challenges of drastic change in technology and market liberalisation. The Malaysian economy has also been affected by the rapid changes in business operations globally. Thus, organisations in Malaysia must have a suitable business strategy to

compete effectively in global markets. To be more prepared for the external challenges, which were mostly beyond the control of SMEs, SMEs could capitalise on improving their internal strength in terms of improving work processes. This could be accomplished if employees were productive and fully utilising their skills. If employees were innovatively improving their work by trying out new techniques, methods or processes of doing their job, the effort would translate to improvement of the overall work process of the organisation (Scott & Bruce, 1994).

The innovation process is broadly applied in various situations rather than in product innovation alone. Previously, innovation was only related to large firm as they had the capacity to produce innovative products. Schumpeter (1934) has drawn attention to the fact that large firms generate innovative activity. This form of innovation includes new production, new markets and new organisations (Schumpeter, 1934). Thereafter, entrepreneurs have also come to be seen as innovators as small firms have been found to be more innovative in the context of employment (Acs & Audretchs, 1990). However, the level of innovation at these firms is varied according to industry.

Typically, the organisation's entire innovation is related to innovative production and the process of research and development (R&D) for product improvement (Sundbo, Orfila-Sintes, & Sørensen, 2007) and application of new technological processes for

the firm's operation (Chen, Lin, Lin, & McDonough, 2012). Nowadays, innovation is not only related to the production of ideas but also to the implementation of ideas (Vinarski-Peretz et al., 2011). Therefore, innovation also comprises the process of producing creative ideas and implementation of ideas. This process involves the capacity of employees as humans to produce ideas and then to implement them. Individual innovative behaviour completes the process of innovation, which relates not only to firms both large and small but also to individuals.

One important issue for Malaysian SMEs is to increase their productivity and performance as skilled employees are one of the key factors contributing to a firm's effectiveness and competitiveness (Xerri, 2013). Innovativeness could be one of the skills that employees need. Individual innovative behaviour is described as the accumulation of knowledge, experience and skills (Marcati, Guido, & Peluso, 2008). In addition, innovative behaviour also refers to the intentional establishment or the usage of original ideas, procedures and products within a person's work task or groups (West & Farr, 1989).

Academics and researchers have asserted that employees had the potential to build and cultivate innovation at the personal level, which in turn drives organisational performance and competitive advantage (Reuvers et al., 2008; Stock, 2015; Xerri, 2013; Yuan

et al., 2013). According to McClelland (1961), small entrepreneurs became the driving force for the growth of the national economy. These entrepreneurs have a strong need for achievement and are willing to improve themselves. With such personal qualities, entrepreneurs display the motivation to become innovative (McClelland, 1961). Padilha and Gomes (2016) pointed out the features in organisational culture stimulates innovation. They include the capacity of the employee as a driving force to cultivate an innovative culture in the organisation (Robbins & Coulter, 2016).

Individual innovative behaviour acts as a foundation for high organisational performance and the application of innovative behavior, which is aimed at improving a firm's performance and productivity (Carmeli, Meitar, & Weisberg, 2006). Firms cannot remain static in creating products and services in a similar way without any improvement and continue within a similar standard of employee behaviour (Kheng, June, & Mahmood, 2013). This kind of situation can likely lead to decline in a firm's productivity. According to Pieterse and Knippenberg (2010), employees who were engaged in innovative behaviour could stimulate organisational effectiveness and productivity. Employees who are innovative also contribute to a firm's improvement in terms of economic perspective by increasing the firm's productivity and sales (Knol & Linge, 2008).

Previous studies have revealed that the innovation level of Malaysian companies is still at lower levels compared with countries with a high income (Zakaria, Abdullah & Yusoff, 2016). Most previous studies on innovation were conducted at the organisational level such as that of Aziz and Samad (2016); Hilmi and Ramayah (2008); Zakaria et al. (2016) and notwithstanding the importance of innovation at the organisational level, the need to address more research at the individual level in the Malaysian context has been pointed out in the literature (Hakimian et al., 2015; Othman; 2015; Zakaria et al., 2016).

SMEs have been noted to have a responsibility towards improving the nation's economy and employment rates, as well as towards making social improvements (Harvie & Lee, 2002a, 2002b). SMEs often rely on innovative processes (e.g. cost leadership strategy) and products (e.g. product differentiation strategy) to survive and compete in global markets (June & Mahmood, 2011). However, little is known about the role played by employees in innovative work engagement and whether it contributes to SMEs' innovative performance. Thus, employees' capacity to produce innovative products and services might determine an SME's success such as the increase of the firm's productivity and performance.

This paper also aimed to understand the role of the Theory of Planned Behaviour (TPB) in explaining employee intention to engage in innovative behaviour and also the relationship between intention and actual innovative behaviour. As we can see, the successful performance of an organisation is much more dependent on the skill of its workers and behaviour as its productivity depends on them (June & Mahmood, 2011; Zin, Ahmad, Ngah, Ismail, Ibrahim, & Abdullah, 2012). With this in mind, understanding the innovative behaviour of SME employees who provide new ideas and solutions in their tasks is important as this potentially translates to innovative performance for the firm. As such, this study looked into the role of employees as the innovation driver in helping SMEs to improve their business performance.

Hypothesis Development

Innovative Behaviour. Founded by West and Farr (1989), innovative behaviour is described as the planned establishment or the usage of novel ideas, processes and products within an individual's work role or organisation. The definition of innovative behaviour provided by West and Farr (1989) has been widely adopted by innovative behaviour researchers (Janssen, 2000; Scott & Bruce, 1994; Shih & Susanto, 2011; Yuan et al., 2010). Scott and Bruce (1994), on their part, defined and broadened the concept of individual innovative behaviour.

Scott and Bruce (1994) explained the model of individual innovative behavior, which consisted of the process in three stages. Firstly, the innovative process began with the recognition of problems and production of ideas. At the second stage, the seeker of the idea would look for sponsorship and would attempt to create alliance of followers for the ideas to be implemented. Finally, the idea was produced into a prototype or sample by an individual. Thus, innovative behaviour covered actions of finding new ideas, producing the ideas at work and planning for idea implementation. The measurement scale of innovative behaviour provided by Scott and Bruce (1994) has been adopted and applied by most innovative behaviour studies (Carmeli & Spreitzer, 2009; Vinarski-Peretz et al., 2011; Xerri & Brunetto, 2011; Yuan et al., 2010). According to Carmeli and Spreitzer (2009) innovative behaviour requires more risk during the implementation of ideas and also needs a person to think out of the box.

Theory of Planned Behaviour (TPB). The Theory of Planned Behaviour (TPB) was introduced by Ajzen and Fishbein (1977). This theory consists of three dimensions, which are attitude, subjective norm and perceived behavioural control. TPB has been extensively used by researchers to predict human intention to take on a particular behaviour and has the capability to explain actual behavior through the individual's intention (Verbeke & Vackier, 2005). This theory is well known to predict social behaviour and explain individual intention to action (Lu & Luh, 2013). Lu and Luh (2013) tested the intention of students to engage in creative behaviour using TPB, while Ajzen (2002) found in a study that the more favourable the attitude, subjective norm and perceived behavioural control of a person, the higher the intention to execute the action. As such, when a person is given sufficient leeway to plan and control their behaviour, they are expected to demonstrate higher intention for innovative behavior (Wang & Ritchie, 2012).

Attitude. This is viewed as the evaluative predisposition that affects the individual's behaviour (Petty, 2006). Attitude may also be described as the association that exists either in a single, positive or negative or rejected or accepted association (Nepomuceno & Porto, 2010). According to Ajzen and Fishbein (1977), attitude towards a particular behaviour is the outcome of a person's belief that relates to their acted out behaviour (Aghamolaei, 2012). As such, the outcome of attitudes would be the actual behaviour of a person (Ajzen, 2002; Rogelberg, Fisher, Maynard, Hakel, & Horvath, 2001). Ajzen (2002) stated that attitude is related to the evaluation of the overall performance of a person's behaviour. For example, if a person believes that his or her action would bring a positive outcome, he or she would likely have a positive attitude towards the intended behaviour. Similarly, a person who perceives negative outcomes will act from a negative attitude. Moreover, individuals who have a positive evaluation of a behaviour would possess positive attitudes towards a particular behavior (Blankenship, Wegener, & Murray, 2012). Thus, the first hypothesis was developed as below:

H1 Attitude towards innovative behaviour is positively related to intention to engage in innovative behaviour.

Subjective Norm. Subjective norm refers to the individual's perception of how they should or should not perform a behaviour based on other people's thinking (Ajzen & Fishbein, 1977). These people consist of family members, colleagues or supervisors who are perceived to be important and have influence over the person. As such, the individual who acts upon a particular behaviour believes that he or she is confirming someone else's expectation, which also reduces social pressure (Greaves et al., 2013). Subjective norm may also be referred to as the perceived social pressure by an individual who perceives that people who are important to him or her think that he or she should or should not perform the behaviour (Ajzen & Fishbein, 1980). The pressure to behave stems from the individual's belief that his or her performance of behaviour will receive approval or disapproval from society (Abzari, 2011). Thus, a person's action or behaviour is determined or influenced by the pressure from others. Such pressures stems from family members, colleagues and managers within the organisational setting. Therefore, the second hypothesis was developed as follows:

H2 Subjective norm is positively related to intention to engage in innovative behaviour.

Perceived Behavioural Control. This refers to an employee's perception of having control over a particular behaviour (Ajzen, 2011). The individual perceives how much effort is needed to perform the intended behaviour (Greaves et al., 2013). Therefore, the perceived behavioural control would influence the employee's intention to engage in a particular behaviour in the future. Perceived behavioural control is also dependent on the individual's perception of how easy or difficult the behavior will be. An individual who believes that he or she has adequate control over his or her behaviour tends to perform the intended behaviour successfully (Ajzen & Fishbein, 1977). Besides that, perceived behaviour control can also influence the intention and actual behaviour of the individual as he or she believes the behaviour is under his or her control or not (Ferdous, 2010). Based on this argument, the third hypothesis is:

H3 Perceived behavioural control is positively related to the intention to engage in innovative behaviour.

Intention. The individual's intention to perform a behaviour is recognised as an immediate and important factor in predicting the actual behaviour in the future (de Bruin et al., 2012). Ajzen (2002) stated that intention was a representative of the individual's expectation towards a particular behaviour, where intention would

result in the behaviour's outcome. Intention determines the effort of an individual who is willing to try to perform a behavior and therefore plans how to carry it out (Conner & Armitage, 1998). Gollwitzer (2009) highlighted that intention includes the actual realisation and mental representation of the individual. Moreover, a person's intention to perform a behaviour is determined by his or her personal and social interests (Markus & Street, 2009). Accordingly, the more favourable his or her attitude and subjective and perceived behavioural control, the greater the individual's intention to undertake the behavior (Wang & Ritchie, 2012). In summary, previous studies reported that intention was discovered to be a reliable predictor of actual behaviour (Brandon & Lewis, 1999; Egmond, Jonkers, & Kok, 2005; Greaves, Zibarras, & Stride, 2013). So far, all innovative behaviour (IB) models studied predictors to innovative behaviour without measuring "intention of innovative behaviour" (Carmeli & Spreitzer, 2009; Vinarski-Peretz et al., 2011; Yuan et al., 2010). It is important to have intention in a framework if referring to the TPB because some predictors might influence intention but not behaviour, and intention does not always translate to behaviour (Verbeke & Vackier, 2005). Measuring intention to engage in innovative behaviour is important because intention leads the individual to have strong motivation to undertake the behaviour (Norman & Hoyle, 2004). This allows us to understand better the process of the individual engagement with innovative behaviour. For that reason, this study

helps to close the gap in the literature by understanding the employee's innovative behaviour using the TPB as a theoretical basis. Hence, the fourth hypothesis is:

H4 There is a positive relationship between intention and innovative behaviour.

Based on the above arguments and suggested hypotheses, the framework of this study was depicted as shown in Figure 1:

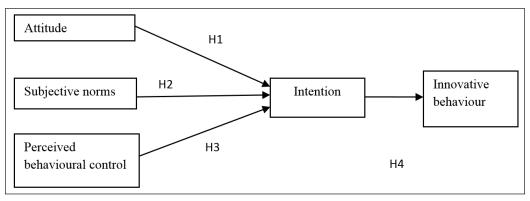


Figure 1. Conceptual framework

METHODS

This study employed the primary data collection method via survey questionnaires. Malaysian SMEs were selected as the sample for this study because of their importance in Malaysian economic growth. The definition of SMEs was adopted from SME Corporation, which categorised SMEs according to the quantity of workers (not exceeding 200 workers) and yearly sales turnover (not exceeding RM50 million). In terms of industry, the SMEs were from the electrical and electronic (E & E) industry. This is because the electrical and electronic industry has expanded and become one of the main contributors to the growth of Malaysian gross domestic product (GDP) (Tuah, 2016). This has been deemed a promising industry for the Malaysian economy. The demand for local and imported electrical and electronic products and services is ever increasing pointing to a bright future for the electrical and electronic sector in Malaysia. Thus, the electrical and electronic sector pertaining to SMEs was considered the sample frame for this study because these organisations would most likely need to be innovative to compete with international competitors. The list of electrical and electronic SMEs was obtained from the Malaysian External Trade Development Corporation (MATRADE). The unit of analysis used in this study was based on individual employees working in E & E SMEs around Malaysia. The questionnaires were distributed randomly among employees of these SMEs.

The questionnaires were written in English and translated into Malay to facilitate understanding among the respondents in order to obtain accurate responses. The seven items for attitude towards innovative behaviour practices was adapted from Ajzen (2001). The respondents were asked about their opinion and feelings towards innovative behaviour practices, whether they looked for new technology, processes, techniques, and/or product ideas (taken from Yuan and Woodman (2010)'s innovative behaviour scale with the highest factor loading), using a semantic differential scale. Each of the bipolar scales was measured in range whereby 1 was the negative end of the scale and 5 the positive. A high attitude score indicated that the respondent had a more positive attitude towards innovative behavior, while a lower attitude score indicated that the respondent had a more negative attitude towards innovative behaviour.

The three items to measure subjective norm of employees were adapted from Ajzen (2001) and Wang and Ritchie (2012)'s studies. The items were rephrased to match the current study of innovative behaviour. The respondents were asked about their opinion and feeling of support or pressure from others towards innovative behavior; a 5-point Likert scale was used as the measure. The scale ranged from 1 ("extremely unlikely") to 5 ("extremely likely"). A higher subjective norm score indicated that the respondent felt much social pressure to engage in innovative behaviour. A lower subjective norm score indicated that the respondent felt less social pressure to perform innovative behaviour.

The three items for perceived behavioural control were adapted from Ajzen (2001). The items were rephrased to match the context of innovative behaviour. Thus, the respondents were asked about how they perceived their ability to control their behaviour towards innovativeness. Each item was rated based on a 5-point Likert scale which ranged from 1 ("strongly disagree") to 5 ("strongly agree"). A higher perceived behavioural control score signified that the respondent had more control of innovative behaviour and a lower perceived behavioural control score indicated that the respondent had less control of innovative behaviour.

The items of intention in Ajzen (2001)'s studies were adapted to measure intention to engage in innovative behaviour. The three items were rephrased to match the context of innovative behaviour. Those items of intention were developed based on the theory of planned behaviour and were adapted to measure intention to undertake innovative (search for new technology, processes, techniques and/or product ideas and implement them to improve my work) activities in the respondent's daily work. The three items were rated on a five-point Likert scale from 1 or "strongly disagree" to 5 "strongly agree." Lastly, the variable of innovative behaviour was measured using a six-item scale adopted from Scott and Bruce (1994) and Yuan and Woodman (2010). The participants were asked about characteristics of innovative behaviour rated on a response scale from 1 ("not like me at all") to 5 ("very much like me").

The data obtained was then analysed using the PLS-SEM in order to get a structural model that could be used to test all the hypotheses. PLS-SEM was used in this study as it helped the researcher to maximise the explained variance of the endogenous latent construct (Hair et al., 2014). In this study, constructs were measured using multiple items. All the constructs used reflective measurement as the items were reflective of the constructs and dropping items would not change the meaning of the construct (Hair et al., 2014).

RESULTS

Atotal of 382 questionnaires were distributed to E & E SMEs in Malaysia, with 201 completed questionnaires collected for data analysis, representing a 52.6% response rate. The characteristics of the respondents are indicated in Table 1. Respondents' profiles showed that the employees who participated in the study were working in various departments of electrical and electronic SMEs.

The majority of respondents were in the 30-40-year-old age group. The

Table 1
Profile of respondents

		Frequency	Percentage
Occupation	Engineer	127	63.2
	Marketing Officer	25	12.4
	HR Officer	21	10.4
	Finance/Accountant	28	13.9
Years of Working	<1	24	11.9
Experience	1-5	68	33.8
	6-10	63	31.3
	>10	46	22.9
Position	Non-executive	8	4.0
	Junior Executive	79	39.3
	Senior Executive	82	40.8
	Manager	28	13.9
	Senior Manager	4	2.0
Age	<30	73	36.3
	31-40	89	44.3
	>41	39	19.4
Gender	Male	130	64.7
	Female	71	35.3
Race	Malay	127	63.2
	Chinese	58	28.9
	Indian	15	7.5
	Others	1	0.5
	Total	201	100.0

second largest group was of those below 30 years of age. The smallest age group was the above-41 years-of-age group, which consisted of 19.4% of the respondents. In terms of gender, male respondents represented 65% of the total, while females represented 35%. As for race, the largest group of respondents were Malays, who consisted of 63.2% of the total number respondents, followed by the Chinese (28.9%) and then the Indians (7.5%). The smallest group was 'Others' such as the Iban, who made up 0.5% or one respondent from the sample. The respondents of this survey consisted of knowledge workers. The majority of the respondents were engineers. This represented 63% or 127 respondents of the sample. The remaining participants were marketing officers (12.4%), human resource officers (10.4%) and finance officers and accountants (13.9%). As for job tenure, 11.9% of the respondents had working experience of less than one year, 33.8% had working experience from one to five years, 31.3% had working experience from six to 10 years and 22.9% respondents had more than 10 years' working experience. In terms of position, the majority of the respondents, consisting of 40.8% of the respondents, held senior executive positions. The second highest group of respondents was made up of junior executives. This group numbered 79 or 39.3% of the respondents. The third highest group held managerial positions (13.9%), while the smallest group was made up of non-executives (4%) and senior managers (2%).

The structural model of path coefficient using PLS-SEM was used to test all direct relationships. Reflective measurement analysis was conducted to assess consistency reliability, convergent validity and discriminant validity of the items. The measurement model of this study is presented in Table 2. The composite reliability (CR) with higher value determines the internal consistency reliability. Indicators with outer loading value greater than 0.60 were retained, while those with values less than 0.40 were removed automatically. Lastly, the discriminant validity was determined by the square root of average variance extracted (AVE), which needed to be greater than 0.50. The results revealed that the value of the AVE for retained constructs was greater than 0.50.

The analysis of the structural model was used to test if the underlying theory or concept of the path model proposed in the earlier stage of this study was supported by data. The assessment of the structural model was based on five steps as proposed by Hair et al. (2014).

Firstly, a collinearity assessment was conducted in order to eliminate similar constructs. Table 2 showed the collinearity test. All VIF values of each predictor to the constructs were less than five. This indicated that multicollinearity did not exist as only values above five were considered as having collinearity issues.

Secondly, the results of the path coefficient assessment were obtained and are shown in Table 3. The results signified the

Table 2
Reflective Measurement Model: Factor loadings, Composite Reliability (CR) and Average Variance Extracted (AVE)

Construct	Indicators	Loadings	AVE	CR
1. Attitude	ATT1	0.794	0.514	0.84
	ATT2	0.793		
	ATT3		Item deleted	
	ATT4	0.658		
	ATT5	0.647		
	ATT6	0.679		
	ATT7		Item deleted	
15. Subjective Norm	SN1	0.859	0.610	0.756
	SN2	0.695		
	SN3		Item deleted	
12. Perceived Behavioural	PBC1		0.699	0.822
Control		0.900		
	PBC2		Item deleted	
	PBC3	0.767		
4. Intention	INT1	0.776	0.585	0.809
	INT2	0.738		
	INT3	0.781		
3. Innovative Behaviour	INNOBEH1	0.870	0.670	0.910
	INNOBEH2	0.869		
	INNOBEH3	0.809		
	INNOBEH4		Item deleted	
	INNOBEH5	0.756		
	INNOBEH6	0.783		
Total Items				22

Table 3 *Collinearity assessment*

	Innovative Behaviour	Intention
Attitude		1.13
Innovative Behaviour		
Intention	1.40	
Perceived Behavioural Control		1.21
Subjective Norm		1.17

Note: VIF <5

significance of the path coefficients between each construct that were tested based on the hypotheses developed earlier. According to the assessment of path coefficients in Table 3, H1, H2, H3 and H4 were found to have results of t-value >1.725 at the value of 0.05 level of significance. Based on these findings, all the hypotheses proposed earlier had been accepted as the results

showed a positive relationship between all the variables. Looking at the construct of intention, perceived behavioural control was the most important predictor (0.439), followed by subjective norm (0.210) and attitude (0.182), while the relationship between intention and innovative behaviour showed a moderate strength of 0.476.

Table 4
Path Coefficient Assessment (N=201)

Hypothesis	Relationship	Path Coefficient	Standard Error	T-values (One- tailed)	p Values	Result
H1	Attitude > Intention	0.182	0.062	2.940	0.003	Significant
H2	Subjective Norm > Intention	0.210	0.073	2.887	0.004	Significant
Н3	Perceived Behavioural Control > Intention	0.439	0.069	6.367	0.000	Significant
H4	Intention > Innovative Behaviour	0.476	0.080	5.961	0.000	Significant

Thirdly, coefficient determination (R²) was used to evaluate the structural model. R² values ranged from 0 to 1 on the principle that the closer the value is to 1, the higher the level of predictive accuracy. R² value of 0.401 for intention indicated that attitudes, subjective norm and perceived behavioural control represented 40.1%

of the variance for intention, as shown in Table 4. In the same way, the R² value of 0.297 for innovative behaviour showed that intention accounted for 29.7% of the variance in innovative behaviour. Based on the explanatory power of R² provided by Cohen (1988), an R² scored greater than 0.26 is considered substantial.

Table 5
Co-Efficient of Determination (R² value)

Construct	Co-efficient of Determination R ²	Explanatory Power
Innovative Behaviour	0.297	Substantial
Intention	0.401	Substantial

Note: R² score interpretation (0.26 substantial, 0.13 moderate, 0.02 weak) (Cohen, 1989)

Fourthly, effect size was used to evaluate whether exogenous constructs had substantive impact on endogenous constructs. Only perceived behavioural control had a medium effect size compared with attitude and subjective norm, which had a small effect size. According to Hair et al. (2009) and Sullivan and Feinn (2012), it was difficult to produce a high f² effect size due to the complexity of the model and conditions of research area.

Table 6 f² Effect Size

	Innovative Behaviour	Intention
Attitude		0.049
Innovative Behaviour		
Intention	0.100	
Perceived Behavioural Control		0.267
Subjective Norm		0.063

Note: f² Score Interpretation (0.35 large effect size, 0.15 medium effect size, <0.02 trivial effect size)

The last step as mentioned by Hair et al. (2014) was related to predictive relevance Q² assessment. The predictive relevance Q² (Geisser, 1975; Stone, 1974) was used to examine whether exogenous constructs had predictive power over endogenous constructs. The blindfolding procedure was used to obtain cross-validated redundancy measures for every endogenous construct. It was a resampling technique that systematically deleted and predicted the indicator's point in the reflective measurement model. A value of Q2 that was larger than 0 showed that the exogenous constructs had predictive application on the endogenous constructs (Hair et. al., 2014). Table 6 showed that all the endogenous constructs of intention and innovative behaviour had Q^2 value > 0. This indicated that the model had appropriate predictive relevance.

Table 7
Assessment of predictive relevance Q²

Construct	Predictive Relevance Q ²		
Innovative Behaviour	0.146		
Intention	0.216		

Note: Q²>0

Based on the evaluation of structural path analysis using PLS-SEM (Hair et al., 2009), a summary of the hypothesis results for this study is presented in Table 8.

The supported results for H1, H2 and H3 indicated that these empirical findings were consistent with those of previous studies in the literature on innovative behaviour practices. This also supported the TPB, which described that attitudes, subjective norm and perceived behavioural control were predictors of intention. Apart from that, H4, which indicated the relationship between intention and innovative behavior, was also supported.

Table 8
Summary of hypotheses results

Hypothesis	Hypothesis Statement	Result
H1	Attitude towards innovative behaviour is positively related to intention to engage in innovative behaviour.	Supported
H2	Subjective norm is positively related to intention to engage in innovative behaviour.	Supported
Н3	Perceived behavioural control is positively related to intention to engage in innovative behaviour.	Supported
H4	There is a positive relationship between intention and innovative behaviour.	Supported

DISCUSSION

The research findings showed the association between components of TPB (attitude, subjective norm and perceived behavioural control) and intention that worked as a platform to explain the employee's innovative behaviour. The findings of this study supported the previous study by Ajzen (2001) that stated that attitude influences the intention of the individual to perform a specific behaviour. This study further enhances research into this area by examining it in the context of innovative behavior. The findings confirmed that attitude influences the intention of an employee to engage in innovative behaviour. The findings of the current study also support the TPB model by Ajzen (2001) that showed the association between subjective norm and intention. In addition, this study is aligned with the result of Yuan and Woodman (2012)'s study, which showed that social norm influenced the individual reaction to innovative work behaviour. The results also found a positive relationship between intention and innovative behaviour in the context of SME employees. This was in line with the previous study by

Gollwitzer et al. (2009), who stated that intention was related to the attainment of the performance of a specific behaviour. Thus, a positive attitude, social norms and perceived behavioural control were validated in this study as important elements of an employee's intention to engage in innovative behaviour. Therefore, the findings of this study extended the applicability of TPB in the context of innovative behaviour.

Innovative behaviour was related to human competence and created opportunities as well as benefitted the individual and organisation at large (Skerlavaj et al., 2010). On their part, Scott and Bruce (1994) stated that innovation generated the production of ideas, processes, products or solutions in an organisation. Cultivating innovative behaviour among employees could help a firm gain market competitiveness, performance and productivity (Carmeli et al., 2006; Xerri, 2013; Yuan et al., 2010). Understanding the factors contributing to organisational success was the focal point area of the current study. The success of the organisation was much dependent on the employee's capacity to work and behave accordingly. Responses from the employees participating in the current study suggested that innovative behaviour of the employee was driven by the employee's attitude, subjective norm and perceived behavioural control. Thus, electrical and electronic SMEs might wish to identify potential employees through individual assessment based on the innovativeness of the individual. This study also showed that social support is important in encouraging workers to engage in innovative behaviour. The workers needed support from their leaders, colleagues and also the organisation at large. Thus, managers need to encourage innovative behaviour by setting appropriate surroundings and expectations for employees. The findings of this study were useful for electrical and electronic SMEs to utilise the capacity of innovative employees. Having workers who possess the required skills will help the E & E SMEs to expand their business as skilled workers will contribute to increasing a firm's productivity.

CONCLUSION

Research on SME employees' innovative behaviour in Malaysia is still at the infancy stage. There are broad opportunities for further research in this context. This study provides a platform for future studies interested to delve further into this topic either in Malaysia or other contexts. This study offers a theoretical contribution by adding an insight into understanding employees' innovative behaviour through the Theory of Planned Behaviour (TPB). Thus, this study provided insights into understanding the antecedents of the TPB

that explained the employee's intention to engage in innovative behaviour. As recommended by various scholars such as Carmeli and Spreitzer (2009); Scott and Bruce (1994); Xerri and Brunetto (2011), and Yuan and Woodman (2010) being innovative is one of the more important aspects for ensuring the long-term success of the organisation. Employees play crucial roles in enhancing the innovative capacity of an organisation. As a result, this study illustrated the theoretical aspects of using the TPB in the context of innovative behaviour and also demonstrated the empirical evidence to support the literature on Malaysian SMEs.

REFERENCES

Abdullah, N. L., Jamaludin, K. R., & Hayati, H. A. T. (2014). Pretesting impact of operational complexity in Malaysia's electrical and electronics manufacturing industry. *Jurnal Teknologi (Sciences & Engineering)*, 67(3), 43–50.

Abzari, M., & Abbasi, R. (2011). Investigating impact of organizational climate on intention to knowledge sharing behavior by using theory of planned behavior (TPB). *Interdisciplinary Journal of Contemporary Research in Business*, 2, 121–135.

Acs, Z. J., & Audretsch, D. B. (2003). Introduction to the handbook of entrepreneurship research. In Z. J. Acs & D. B. Audretsch (Eds.), *Handbook of entrepreneurship research* (pp. 3–20). Dordrecht: Kluwer.

Acs, Z. J., & Audretsch, D. B. (1990). *Innovation and small firms*, Cambridge, MA: MIT Press.

Aghamolaei, T., Tavafian, S. S., & Madani, A. (2012). Fish consumption in a sample of people in

- Bandar Abbas, Iran: Application of the theory of planned behavior. *Archive of Iranian Medicine*, *15*, 545–548.
- Ajzen, I. (2001). Nature and operations of attitudes. *Annual Review of Psychology, 52*, 27–58.
- Ajzen, I. (2002). Residual effects of past on later behavior: Habituation and reasoned action perspective. Personality and Social Psychology Review, 6(2), 107–122.
- Ajzen, I. (2011). The theory of planned behaviour: Reactions and reflections. *Psychology and Health*, 26(9), 1113–1127.
- Ajzen, I., & Fishbein, M. (1977). Attitude-Behavior relations: A theoretical analysis and review of empirical research. *Psychological Bulletin*, 84(5), 888–918.
- Ajzen, I., & Fishbein, M. (1980). Understanding attitudes and predicting social behavior. Englewood Cliffs, NJ: Prentice-Hall.
- Aziz, N. N. A., & Samad, S. (2016). Innovation and competitive advantage: Moderating effects of firm age in foods manufacturing SMEs in Malaysia. *Procedia Economics and Finance*, 35, 256–266.
- Blankenship, K. L., Wegener, D. T., & Murray, R. A. (2012). Circumventing resistance: Using values to indirectly change attitudes. *Journal of Personality and Social Psychology*, 103(4), 606–21. doi:10.1037/a0029226.
- Brandon, G., & Lewis, A. (1999). Reducing household energy consumption: A qualitative and quantitative field study. *Journal of Environmental Psychology*, 19, 75–85.
- Carmeli, A., Meitar, R., & Weisberg, J. (2006). Self-leadership skills and innovative behavior at work. *International Journal of Manpower*, *27*(1), 75–90. doi:10.1108/01437720610652853.
- Carmeli, A., & Spreitzer, G. M. (2009). Trust, connectivity, and thriving: Implications for

- innovative behaviors at work. *The Journal of Creative Behavior*, 43(3), 169–191. doi:10.1002/j.2162-6057.2009.tb01313.x
- Chen, M. Y.-C., Lin, C. Y.-Y., Lin, H.-E., & McDonough, E. F. (2012). Does transformational leadership facilitate technological innovation? The moderating roles of innovative culture and incentive compensation. *Asia Pacific Journal of Management*, 29(2), 239–264. doi:10.1007/s10490-012-9285-9
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, New Jersey: Lawrence Erlbaum Associates.
- Conner, M., & Armitage, J. (1998). Extending the theory of planned behavior: A review and avenues for further research. *Educational and Child Psychology*, 1429–1464.
- de Bruin, M., Sheeran, P., Kok, G., Hiemstra, A., Prins, J. M., Hospers, H. J., & van Breukelen, G. J. P. (2012). Self-regulatory processes mediate the intention-behavior relation for adherence and exercise behaviors. *Journal of Health Psychology*, 31(6), 695–703. doi:10.1037/a0027425.
- Egmond C., R. Jonkers, R., & Kok, G. (2005). A strategy to encourage housing associations to invest in energy conservation. *Energy Policy*, 33, 2374–2384.
- Ferdous, A. S. (2010). Applying the theory of planned behavior to explain marketing managers' perspectives on sustainable marketing, *Journal of International Consumer Marketing*, 313–325. doi:10.1080/08961530.2010.505883.
- Geisser, S. (1975). The predictive sample reuse method with applications. *Journal of the American Statistical Association*, 70(350), 320–328.
- Greaves, M., Zibarras, L. D., & Stride, C. (2013). Using theory of planned behavior to explore environmental behavioral intentions in

- the workplace. Journal of Environmental Psychology, 34, 109–120.
- Gollwitzer, P. M., Sheeran, P., Michalski, V., & Seifert, A. E. (2009). When intentions go public does social reality widen the intention-behavior gap? *Psychological Science*, 20(5), 612–619.
- Hair, J., Bush, R., & Ortinau, D. (2009). *Marketing research*. New York: McGraw-Hills Ltd.
- Hair, J. F., Hult, G. T. M., Ringle, C., & Sarstedt, M. (2014). A primer on partial least squares structural equation modeling (PLS-SEM). Los Angeles: SAGE Publications.
- Hakimian, F., Farid, H., Ismail, M. N., & Nair, P. K. (2015). Importance of commitment in encouraging employees' innovative behaviour. *Asia-Pacific Journal of Business Administration*, 8(1), 70–83.
- Harvie, C., & Lee, B. C. (2002a). Globalisation and SMEs in East Asia. *Studies of small and medium sized enterprises in East Asia* (pp. 318). Cheltenham, UK.
- Harvie, C., & Lee, B. C. (2002b). The role of SMEs in national economies in East Asia. *Studies of small and medium sized enterprises in East Asia* (pp. 404). Cheltenham, UK.
- Hilmi, M. F., & Ramayah, T. (2008). Market innovativeness of Malaysian SMEs: Preliminary results from a first wave data collection. *Asian Social Science*, 4(12), 42–49.
- Janssen, O. (2000). Job demands, perceptions of effort – Reward fairness and innovative work behaviour. *Journal of Occupational and Organizational Psychology*, 73, 287–302.
- June, S., & Mahmood, R. (2011). The relationship between person-job fit and job performance: A study among the employees of the service sector SMEs in Malaysia. *International Journal* of Business, Humanities and Technology, 1(2), 95–105.

- Kheng, Y. K., June, S., & Mahmood, R. (2013). The determinants of innovative work behavior in the knowledge intensive business services sector in Malaysia. *International Journal of Business*, *Humanities and Technology*, 9(15), 47–59.
- Knol, J., & Linge, R. V. (2008). Innovative behavior: The effect of structural and psychological empowerment on nurses. *Journal of Advanced Nursing*, 359–370. doi:10.1111/j.1365-2648.2008.04876.x
- Lu C. C., & Luh D. B. (2013) Innovative behavioral intention and creativity achievement in design:

 Test of an integrated model. *International Conference of Design, User Experience and Usability* (pp. 535–544). Berlin: Springer.
- Marcati, A., Guido, G., & Peluso, A. M. (2008). The role of SME entrepreneurs' innovativeness and personality in the adoption of innovations. *Research Policy*, *37*, 1579–1590.
- Markus, M. L., & Street, F. (2009). Issues and opinions why break the habit of a lifetime? Rethinking the roles of intention, habit, and emotion in continuing information technology use. *Management Information System Quarterly*, 33(3), 433–444.
- McClelland, D. C. (1961). *The achieving society*. Princeton, NJ: van Nostrand.
- Nepomuceno, M. V., & Porto, J. B. (2010). Human values and attitudes toward bank services in Brazil. International Journal of Bank Marketing, 28(3), 168–192. doi:10.1108/02652321011036459
- Norman, P., & Hoyle, S. (2004). The theory of planned behavior and breast self-examination: Distinguishing between perceived control and self-efficacy. *Journal of Applied Social Psychology*, 34, 694–708.
- Othman, N. (2016). Exploring the innovative personality characteristics among teachers. *International Education Studies*, 9(4), 1–7.

- Padilha, C. K., & Gomes, G. (2016). Innovation culture and performance in innovation of products and processes: A study in companies of textile industry. *Innovation and Management Review*, 13, 285–294.
- Petty, R. E. (2006). A metacognitive model of attitudes. *Journal of Consumer Research*, 33, 22–24.
- Pieterse, A. N., & Knippenberg, D. V. A. N. (2010). Transformational and transactional leadership and innovative behavior: The moderating role of psychological empowerment transformational and transactional leadership. *Journal of Organizational Behavior*, 31, 609–623. doi:10.1002/job
- Reuvers, M., Engen, M. L. V., Vinkenburg, C. J., & Wilson-Evered, E. (2008). Transformational leadership and innovative work behaviour: Exploring the relevance of gender differences. *Leadership and Innovation*, 17(3), 227–245. doi:10.1111/j.1467-8691.2008.00487.x
- Robbins, S. P., & Coulter, M. (2016). *Management*. Essex, England: Pearson.
- Rogelberg, S. G., Fisher, G. G., Maynard, D. C., Hakel, M. D., & Horvath, M. (2001). Attitudes toward surveys: Development of a measure and its relationship to respondent behavior. *Organizational Research Methods*, 4(1), 3–25. doi:10.1177/109442810141001
- Schumpeter, J. A. (1934). *The theory of economic development*. Cambridge, MA: Harvard University Press.
- Scott, S. G., & Bruce, R. (1994). Determinants of innovative behavior: A path model of individual innovation in the workplace. *Academy* of Management Journal, 37(3), 580-607. doi:10.2307/256701.
- Shih, H. A., & Susanto, E. (2011). Is innovative behavior really good for the firm? Innovative work behavior, conflict with co-workers and

- turnover intention: Moderating roles of perceived distributive fairness. *International Journal of Conflict Management*, 22(2), 111–130. doi:10.1108/10444061111126666.
- Škerlavaj, M., Song, J. H., & Lee, Y. (2010). Organizational learning culture, innovative culture and innovations in South Korean firms. *Expert Systems with Applications*, *37*(9), 6390–6403. doi:10.1016/j.eswa.2010.02.080.
- Stock, R. M. (2015). Is boreout a threat to frontline employees' innovative work behavior? *Journal of Productivity Innovation Management*, 32, 574–592. doi:10.1111/jpim.12239
- Stone, M. (1974). Cross-validatory choice and assessment of statistical predictions. *Journal of Royal Statistical Society*, *36*, 111–147.
- Sullivan, G. M., & Feinn, R. (2012). Using effect size Or why the *P* value is not enough. *Journal of Graduate Medical Education*, 4(3), 279–282.
- Sundbo, J., Orfila-Sintes, F., & Sørensen, F. (2007).

 The innovative behaviour of tourism firms —
 Comparative studies of Denmark and Spain.

 Research Policy, 36(1), 88–106. doi:10.1016/j.
 respol.2006.08.004
- Tang, J., & Pee, L. G. & Iijima, J. (2011). Employee's innovation behavior: The role of external information awareness and proactiveness of innovation strategy. Proceedings of the International Conference on Knowledge Management and Information Sharing (pp. 5-17). Berlin: Springer.
- Tuah, Y. (2016). E&E A gateway to Malaysia's trade. *The Borneo Post.* p. 1. Retrieved January 6, 2017, from http://www.theborneopost.com/2016/04/17
- Verbeke, W., & Vackier, I. (2005). Individual determinants of fish consumption: Application of the theory of planed behavior. *Appetite*, 44, 67–82.
- Vinarski-Peretz, H., Binyamin, G., & Carmeli, A. (2011). Subjective relational experiences and

- employee innovative behaviors in the workplace. *Journal of Vocational Behavior*, 78(2), 290–304. doi:10.1016/j.jvb.2010.09.005.
- Vinarski-Peretz, H., & Carmeli, A. (2011). Linking care felt to engagement in innovative behaviors in the workplace: The mediating role of psychological conditions. *Psychology of Aesthetics, Creativity,* and the Arts, 5(1), 43–53. doi:10.1037/a0018241.
- Wang, J., & Ritchie, B. W. (2012). Understanding accommodation managers' crisis planning intention: An application of the theory of planned behaviour. *Tourism Management*, *33*(5), 1057–1067. doi:10.1016/j.tourman.2011.12.006
- West, M. A., & Farr, J. (1989). Innovation among healthcare professionals. *European Journal of Social Psychology*, 4(3), 173–184.
- Xerri, M. (2013). Workplace relationships and the innovative behaviour of nursing employees: A social exchange perspective. *Asia Pacific Journal of Human Resources*, *I*(4), 103–123. doi:10.1111/j.1744-7941.2012.00031.x
- Xerri, M. J., & Brunetto, Y. (2011). The impact of the perceived usefulness of workplace social

- networks upon the innovative behaviour of SME employees: A social capital perspective. *International Journal of Innovation Management*, 15(5), 959–987. doi:10.1142/S1363919611003350
- Yuan, F., & Woodman, R. (2010). Innovative behavior in the workplace: The role of performance and image outcome expectations performance and image. Academy of Management Journal, 53(2), 323–342.
- Zakaria, N., Abdullah, N. A. C., & Yusoff, R. Z. (2016). The innovation-performance linkage: Empirical evidence of Malaysian manufacturing SMEs. *International Soft Science Conference*. UK: Future Academy.
- Zin, S. M., Ahmad, N., Ngah, N. E. B., Ismail, R. B., Ibrahim, N. B., & Abdullah, I. H. T. B. (2012). Motivation model for employee retention: Applicability to HRM practices in Malaysian SME sector. *Canadian Social Science*, 8(5), 8-12.doi:10.3968/j.css.1923669720120805.2239

