Malaysian entrepreneurs propensity to use IT innovation

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1. Introduction

Recently, the interest on the issue of entrepreneurs and entrepreneurship, both among academics and industry, has seen a steady but noticeable increase. Information technology (IT) creates opportunities for entrepreneurs to be innovative, be more efficient and effective, and more readily access emerging domestic and international markets in the current business environment (Ridzuan and Ghani, 2000). Entrepreneurial activities, particularly those in the small- and medium sized enterprises (SMEs), are the most active economic growing forces in nearly every nation, playing significant roles in economic growth, making it the backbone of industrial development of any nation (Wang and Yang, 2005; Guriting and Ndubisi, 2006; Ramayah et al., 2003; Alam, 2009), therefore, investigating the determinants that encourages entrepreneurs to adopt and use IT innovation in their daily business activities is a critical issue.

Research on individual-level technology adoption is one of the most mature streams in information systems research (Venkatesh et al., 2007; Chan et al., 2010), while IT adoption is considered as traditional research in this field (Chuang et al., 2009). In order to remain connected to the business world, organizations largely depend on information technology, which assists them in their daily operations (Abbasi et al., 2010), and improve organizational efficacy and effectiveness (Irani, 2002). With respect to the importance of information technology for an organization’s success, a large and growing body of literature details IT adoption and use behaviour, and several models have been developed to explain users’ acceptance of technology (Koivumaki et al., 2008; Kannabiran, 2012). Extensive research has been conducted to identify the different factors for the success and failure of new technologies (Kamal, 2006; Williams et al., 2009; Jeyaraj et al., 2006). Most of the prior studies in the information systems’ context adopted the Technology Acceptance Model (TAM), Theory of Reason action to investigate SMEs IT adoption behaviour (e.g., Seneler et al., 2009; Yu and Tao, 2009; Khalifa amd Ning Shen, 2008 ), while other studies on SMEs employ other theories and models, such as the theory of planned behaviour (TPB) to investigate SMEs adoption of IT (e.g., Riemenschneider and McKinney, 2001), or extend the IS adoption models, such as Innovation Diffusion Theory,
Institutional Theory, and Unified Theory of Acceptance and Use of Technology to investigate IS acceptance among SMEs (Ramdani et al., 2009; Williams et al., 2009).

This development prompts IS researchers to propose a variety of determinants that may or may not influence IS adoption behavior. Literature review regarding IT adoption revealed that perceived usefulness, Top Management Support, Computer Experience, Behavioral Intention and User Support are the best predictors of individual IT adoption (Jeyaraj et al., 2006). However, the proposed determinants are mostly replications with minor tweaks or minor extensions with no substantive theoretical advance (Venkatesh et al., 2007). Most of them are silent about the volitional aspects of behaviour, and the effect of the propensity to act on the individuals’ intention to take action. Understanding the effect of pervasive decision on the intention to take action is an important issue, and it is hard to envision well-formed intentions without at least some propensity to act (Krueger et al., 2000). Research shows that starting a new action requires at least a threshold level of perceptions of feasibility and desirability, plus some propensity to act upon an opportunity (Lee et al., 2011). Individuals are susceptible in their decision to accept new technology, and when they persist on their decision, it is considered as a volitional aspect of it. Individuals will start using new technology if they have the desire to use it, and decide strongly to use it, however, their skills and capabilities to use new technology will affect their perception. Therefore, the main factors when introducing technologies is its attractiveness to the target audiences. Satisfying this, an individual may adopt and use the new technology if it’s perceived as feasible. These two factors are related to individual perception, and will significantly affect both intention and behavior. Many useful and user-friendly technologies introduced to the market failed due to the fact that they could not command the attention of the consumers. Therefore, there is a need for a theory/model that considers other determinants of technology acceptance to answer the question of how and why individuals adopt new technology, and why numerous technologies introduced to the market that failed to capture consumer attention fails.

Investigating these factors requires more than just the literature from information systems; it requires strengthening by theoretical perspectives from other fields, such as the entrepreneurship discipline. One intention-based model in entrepreneurship is the Entrepreneurial Event Model (EEM), which hypothesizes that the intent to take action derives from the perception of perceived desirability, perceived feasibility and the propensity to act upon an opportunity.
(Shapero and Sokol, 1982). This is an intentional model, which researchers use to study the entrepreneur’s perception to take action, and although Shapero’s (1982) model is an intention-based model of decision to initiate a new action, it has never been tested in the technology acceptance context. The main purpose of this study is to examine and validate the Entrepreneurial Event Model as a base model to investigate the key determinants of entrepreneurs’ intention, and examine the importance of individual perceptions on the entrepreneurs’ intention to adopt IT innovation.

The Malaysian government started a policy that aims to convince entrepreneurs to adopt and use IS products as a new, more efficient method of performing work. Despite many programs to encourage entrepreneurs to use information technology (IT), surveys show that only 5% of Malaysian SMEs have fully automated IT and communication operations, and only 30% have any form of enterprise-level ICT solutions (Malaysian International Report, 2010). Much research has been carried out in order to determine what will actually influence entrepreneurs to use IT innovation. Given this backdrop, this study used the Entrepreneurial Event Model (EEM) to identify the determinants that may influence an entrepreneur’s decision to use IT innovation. In view of this, we propose that perceived desirability, perceived feasibility, and the propensity to act are determinants of entrepreneurs’ intention to use IT innovation. Using the context of technology acceptance (IT innovation), this research identifies key factors related to entrepreneurs’ intention to use IT innovation. The findings of this study will not only help advance the understanding of technology adoption in general, but it will also provide a theoretical foundation for future research to investigate the volitional aspects of individual behaviour, shed additional light on individual decision-making, and reveal new knowledge perspectives. Policy makers can use the findings of this study to encourage entrepreneurial use of IT innovation.

2. The Entrepreneurial Event Model (EEM)

The majority of intention models in the entrepreneurial context are largely homologous and entirely focused on the pre-entrepreneurial event. Both individual and situational variables are important, as they determine the entrepreneurial intentions to take action (Bird, 1988; Shapero and Sokol, 1982; Zampetakis, 2008; Tukamushaba et al., 2011; Diaz-Casero et al., 2012).
According to Krueger (2000), intention is the best predictor of any planned behaviour, which includes entrepreneurship. An action is highly unlikely to be taken when intention is absent. Some of the theories that are extensively used in the area of entrepreneurship to investigate entrepreneurs intention to take action are Entrepreneurial Event Model (EEM) (Shapero, 1982), Theory of Planned Behaviour (TPB) (Ajzen, 1991), Entrepreneurial Attitude Orientation (Robinson et al., 1991), Intentional Basic Model (Krueger and Carsrud, 1993), Entrepreneurial Potential Model (EPM) (Krueger and Brazeal, 1994) and Davidsson Model (Davidson, 1995).

One of the first intention-based and comprehensive academic models is the Entrepreneurial Event Model (EEM), proposed by Shapero and Sokol in 1982. The premise of the model is that the decision to perform an entrepreneurial activity requires a pre-existing attitude that regards the activity as desirable and feasible, as well as the propensity to act upon an opportunity (Shapero and Sokol, 1982; Krueger and Brazeal, 1994; Krueger, 1993). This means that the appropriate attitude(s) alone may not be enough to initiate action. However, without perceiving a likelihood of taking action, an individual is unlikely to form a serious intention towards behaviour. Shapero’s (1982) model assumes that inertia guides human behaviour, until something interrupts or displaces that inertia. Displacement precipitates a change in behaviour when the decision maker seeks the best opportunity. Nevertheless, the intention must be reasonably well formed in order to predict behaviour, and it is not possible without a significant propensity to act. Therefore, Shapero added the volitional element (propensity to act) to intention to account for these phenomena (Kruger, 1993; Krueger et al., 2000). However, when the propensity to act is high, taking action is more likely seen as being feasible and desirable (Krueger, 1993). The three variables (perceived desirability, perceived feasibility, and propensity to act) account for over half of the variance (54%) in intention.

Perceived desirability is defined as the degree of attraction an individual perceives towards a specific behaviour (intrapersonal and extra personal) (Krueger and Brazeal, 1994; Krueger et al., 2000), and it is shaped by family, peers, culture, colleagues and mentors (Shapero and Sokol, 1982). Krueger and Brazeal (1994) posited that this construct contains two components of the Theory of Planned Behaviour: attitude towards the act, and social norms. People with favourable attitudes toward behaviour have desirable consequences, while negative attitudes towards behaviour are associated with undesirable consequences (Ajzen, 1991).
Perceived feasibility refers to the extent to which an individual feels personally capable of starting a business or performing the task. According to Krueger (1993), if people do not believe that they have the skills or capabilities to take action, they will not even attempt it. Perceived feasibility is similar to the perception of behavioural control in the Theory of Planned Behaviour, and very similar to Bandura’s (1986) self-efficacy (Krueger, 1993). The central idea behind the concept of self-efficacy is that an individual’s belief regarding his or her efficacy influences what that individual can accomplish. The behaviour is credible if it can be seen as both desirable and feasible (Krueger and Brazeal, 1994). Credibility in entrepreneurship implies that to perform a behavior, it must be seen as believable, therefore requiring a threshold level of perceptions of both feasibility and desirability upon the opportunity.

The propensity to act is defined as the personal disposition to act on one’s decisions (Bateman and Crant, 1993; Krueger, 1993). Therefore, it shows the volitional aspect of intentions (I will do it). This is conceptualized as a stable personality trait, and is closely related to the locus of control (Krueger, 2000). Finally, intention is defined as a person’s willingness to pursue a given behaviour, and represent an individual’s commitment towards the target behaviour (Shapero and Sokol, 1982; Krueger and Brazeal, 1994; Stopford and Baden-Fuller, 1994) (Krueger, 2000). Intent is a state of mind that directs attention and action towards a specific goal (Drnovšek et al., 2010). According to Krueger (1993), action is unlikely if intention is absent.

Researchers of entrepreneurship use various theories and models to investigate entrepreneurial intention. For example, Kolvereid and Isaken (2008) applied the theory of reasoned action and theory of planned behaviour to study new business ventures and self-employment, while Segal et al. (2005) presented a new model of entrepreneurial motivation based on the entrepreneurial intention model in order to understand the motivation of entrepreneurs. They proposed a net desirability for self-employment, tolerance for risk of propensity to act, and perceived feasibility (self-efficacy) in the model as determinants toward self-employment intention.

Linan and Santos (2007) apply the entrepreneurial potential model (EPM) and revised the model by considering cognitive factors (bonding cognitive social capital, and bridging cognitive social capital) that influence the formation of entrepreneurial intentions. Nasurdin et al. (2009) uses the entrepreneurial event model and posits that perceived desirability mediates the relationship between role models, social identification and social norms toward entrepreneurial intention.
They discovered that role models and social norms have positive relationships with entrepreneurial intention. Shook and Bratianu (2008) found that self-efficacy and desirability associated with creating a venture were positively related to entrepreneurial intent by students, and that the more supportive the students’ referents were, the more likely it is for the students to develop intentions of starting a business. Guerrero et al. (2008) apply EPM to analyse the relationships between perceived desirability and feasibility on university students’ intention to create a new firm, while Devonish et al. (2010) validated the Entrepreneurial Intention Model in the Caribbean, and discovered that prior exposure to entrepreneurial experience(s) has a direct and positive effect on both perceived desirability and feasibility, which in turn has a positive and direct effect on entrepreneurial intentions. Fitzsimmons and Douglas (2011), when investigating MBA students’ entrepreneurial intention, determined that entrepreneurial intentions depend on perceptions of desirability and feasibility. The findings of all these prior studies reveal that entrepreneurial intention may be high, even when one of the two main determinants is relatively low.

3. IT Adoption in Malaysian SME’s

Given the increased level of global competition, the rapid change in technology and market conditions, as well as continuous demand by consumers for quality products and services, information Technology (IT) has begun to garner considerable attention as a source that contributes to the growth of the economy and creates competitive advantage opportunities (Kulviwat et al., 2009; Yu and Tao, 2009; Tushman and O’Reily, 2002). Adopting an appropriate IT system enables business organisations to develop and maintain competency, improve its performance, and ensure that their competitive advantage is retained. Therefore, Malaysia has embarked on a major push to convince entrepreneurs; especially owners of small and medium size enterprises’ (SMEs) to adopt IT as a new, more efficient way of conducting businesses. There are more than 200,000 business establishments in Malaysia, and Ninety-one percent of these establishments are classified as SMEs (Small and Medium Industries Development Corporation of Malaysia, 2011). Government agencies offer funding for these enterprises to upgrade their computer system and develop online businesses. Additionally, the Malaysian government established important strategic technology priorities, whereby the government uses cloud computing to deliver selected government services in Malaysia, with the
hope that it would lead to an advanced and developed economy. Furthermore, the Malaysia Finance Ministry has made it compulsory for government suppliers to engage and implement an electronic procurement system.

Despite the many programs convincing entrepreneurs (especially SMEs owners) to adopt and use IS as a new way of performing a task, the overall uptake of IT by entrepreneurs are still quite low, as most entrepreneurs deem IS adoption to be very difficult (Hashim et al., 2007). According to statistics, 82% of SME’s entrepreneurs use computers only for office work such as billing and invoicing, and although 53% of them do own a website, they lack electronic commerce (e-commerce) capabilities, and as a matter of fact, almost 94% of them have no e-commerce exposure whatsoever (Star online portal, 2009). A 2010 survey shows that only 5% of Malaysian SMEs have fully automated IS and communication operations, while only 30% have any form of enterprise level ICT solutions (Malaysian International Report, 2010). A number of possible explanations exist for this lack of adoption/utilisation. Firstly, Malaysia, like many Asian countries, tends to be less technologically developed than their Western counterparts, and as such, Malaysian entrepreneurs are still incapable of fully utilizing IT systems. Secondly, there is also a lack of a successful; locally based IT adoption model for these entrepreneurs to emulate (Ridzuan and Ghani, 2000).

4. Model Developments
There are many adoption behavior models/theories being developed in the IS research disciplines which consider technological, environmental and organizational factors as important predictor of individual technology adoption. Understanding the impact of the volitional aspect of the behaviour (propensity to act) and individual desirability and feasibility to adopt and use new technology is another important issue that only a handful of studies have examined in the context of technology acceptance. Prior research on Entrepreneurial Event Model revealed that this model is capable of measuring individual dimensions towards taking action (Krueger, 1993), and is also able to measure the volitional aspect of human behaviour. Therefore, we revise the EEM (Shapero and Sokol, 1982; Krueger, 1993), and validate it in the context of technology acceptance, in order to investigate entrepreneurs’ intention to use IT innovation. This model is
able to measure individual intention towards technology adoption and use. The constructs for the research model that are integrated from the Entrepreneurial Event model are (1) perceived desirability, (2) perceived feasibility, (3) propensity to act and (4) intention to use. The research model tested in this study is shown in Figure 1. We considered perceived desirability, perceived feasibility and the propensity to act as determinants of the intention to use IT innovation. The proposed theoretical model was developed to provide a comprehensive understanding of the determinants that affect the adoption and use of innovative IT among entrepreneurs. Hence, the model provides an initial prediction of the determinants that activate entrepreneurs’ intention to adopt and use IT innovation. The following section discusses a number of empirically testable hypotheses from the proposed model. These hypotheses describe the relationships between each of the individual factors on the intention to use.

4.1 Perceived Desirability

Krueger and Brazeal (1994) argued that intentions are driven by the perception of what the individual find desirable, which in turn depends on the outcome of performing the said behaviour. Prior studies using the Entrepreneurial Event Model confirmed that perceived desirability is the strongest determinant of behavioural intention (Krueger and Brazeal, 1994; Shook and Bratianu, 2008; Linan and Santos, 2007; Zampetakis, 2008; Guerrero et al., 2006; Devonish et al., 2009; Nasurdin et al., 2009; Fitzsimmons and Douglas 2011). According to Fitzsimmons and Douglas (2011), perceived desirability is a strong determinant of entrepreneurial intention, whereby entrepreneurs with a strong perception of desirability (i.e., the system are attractive) may form the intention to act even when they perceive themselves as having inadequate skills and knowledge to proceed. Thus, a higher level of perceived desirability will lead to higher levels of intention to take action (Fitzsimmons and Douglas, 2011; Devonish et al., 2009; Krueger, 1993).

Based on previous studies, perceived desirability is conceptualized as the degree of attraction an entrepreneur perceives towards using IT innovation. It captures the perceived attractiveness of using IT innovation, and this construct is able to measure the effect of attitude and social norm in one construct. The attractiveness of IT innovation gravitates the entrepreneurs towards it. It is postulated that perceived desirability has a significant positive influence on the entrepreneurs’
intention to use IT innovation (See figure 1), thus, a higher level of perceived desirability leads to a higher level of intention to use IT innovation. Respondents were asked to evaluate their perception on the attractiveness and desirability of using IT innovation. Accordingly, using the rationale above as a guideline, this study hypothesises that:

H1: Perceived desirability will have a significant effect on entrepreneurs’ intention to use IT innovation.

4.2 Perceived Feasibility

According to the Entrepreneurial Potential Model and other related studies, perceived feasibility significantly effect behavioural intention to take action (Krueger and Brazeal, 1994; Krueger, 1993, Krueger et al., 2000; Linan and Santos, 2007; Shook and Bratianu, 2008). Numerous studies have reported significant empirical relationships between the perceived feasibility and the intention across a wide range of behavioural domains (Veciana et al., 2005; Guerrero et al., 2006; Devonish et al., 2010; Fitzsimmons and Douglas, 2011; Sajjad et al., 2012). According to Bandura (1986), perceived feasibility of a particular course of action overlaps, to a large extent, with the notion of self-efficacy. The persistence is vital, as perceived feasibility is more than ‘I can do this’, where it also includes ‘I can figure out how to do this’ (and I will keep trying in the face of adversity) (Krueger, 1998).

In IS research, the construct self-efficacy contains similar definition(s), whereby self-efficacy is defined as “people’s judgments of their capabilities to organize and execute courses of action required to attain designated types of performance” (Bandura, 1986). Users evaluate the product, and if they are capable of using them, they conclude that it is easy to use (Seneler et al., 2009). Prior research in the technology acceptance context found that computer self-efficacy has a positive effect on computer usage behaviour (Thong et al., 2002; Venkatesh and Davis, 1996; Venkatesh, 2000). In the other words, a high level of self-efficacy will lead to higher levels of intention and IT usage (Compeau and Higgins, 1995, Agarwal et al., 2000). However, a low level of self-efficacy reduces effort and performance. Thus, a higher level of self-efficacy leads to increased initiative and persistence, and subsequently better performance (Krueger, 1998).

In this study, perceived feasibility is conceptualized as the degree to which entrepreneurs perceive that they are capable and have the skill to use IT innovation in their job. Extending
prior research on this study, the perceived feasibility is expected to affect the entrepreneur’s intention to use IT innovation (See Figure 1). Perceived feasibility is able to measure the entrepreneurs’ perception about their skill and ability to use IT innovation. Thus, a high level of perceived feasibility will increase the level of the entrepreneurs’ intention to actually use IT innovation. Given that perceived feasibility and self-efficacy are considered as distinct proximal determinants of behaviour intention, this study hypothesizes that:

H2: Perceived feasibility will have significant effect on entrepreneurs’ intention to use IT innovation.

4.3 Propensity to use
According to Krueger (1993), without a significant propensity to act, it is hard to arrive at well-formed intentions. The propensity to act was conceptualized as a stable personality trait, and is closely related to the locus of control (Krueger, 2000; Bateman and Crant, 1993). Furthermore, the desire for control is closely linked with initiating and maintaining goal-directed behaviours, and is significantly associated with entrepreneurial intentions (Krueger, 1993). Shapero and Sokol (1982) conceptualized the propensity to act as a disposition to act upon one’s decision, as it reflects the volitional components of intentions (will I actually do it?). This study changed the word to propensity to use, and it was conceptualized as the degree to which entrepreneurs perceive disposition to use IT innovation and is reflected in the volitional aspects of their behaviour. The propensity to use shows entrepreneurs’ tendency towards using IT innovation; the degree to which entrepreneurs act to influence their environment and to achieve their goals (use IT innovation). A higher level of propensity to use will increase the entrepreneurs’ intention to use IT innovation. Thus:

H3: Propensity to use will have a significant effect on entrepreneurs’ intention to use IT innovation.

4.4 Intention
According to Krueger (1993), intention is the best predictor of human behaviour. He defines intention as the individuals’ willingness to pursue a given behavior, and represent the
individuals’ commitment towards their target’s behaviour (Shapero, 1982). According to Krueger (1993), action is unlikely to taken in the absence of intention. Intention serves as a conduit to better understanding the act itself (Krueger, et al., 2000), with the intention to use indicating how people are willing to try and exert the necessary effort to perform the behaviour (Venkatesh, 2000; Ajzen, 1991). In this study, the intention to use is conceptualized as the degree to which entrepreneurs have formulated a conscious plans to use IT innovation (e.g., mobile banking, online banking, Enterprise Resource Planning) to improve their businesses.

![Research Model](image)

**Figure. 1: Research Model**

5. Method

5.1 Participants and procedures

The sampling frame used in this study was entrepreneurs (SMEs owners) involved in providing professional services in the areas of manufacturing, telecommunication, education, banking and finance, service, and agriculture in Malaysia. The data collection period was from April to August 2011. The sampling frame used was drawn from SMIDEC-listed members in Klang Valley region in Malaysia, and the target sample was SMEs based on the total workforce of less than 150 employees (SMIDEC, 2002). The survey was issued to 1,000 SMEs owners. The willing respondents were first introduced to the definition of IT innovation. In the questionnaire, IT innovation is defined as a new idea, practice, or technology that is new to an entrepreneur or other units of adoption (e.g., Mobile Commerce, Enterprise Resource Planning, online banking service, mobile banking, and web2). A total of 420 questionnaires were returned, of which 412 were considered usable in this study. Of these respondents, 305 (74.3 per cent) were men, and 107 (25.7 per cent) were women. The average age of the respondents was about 35 years old. Most of the SMEs were relatively new to the business, with 33.3% being established after the
year 2007. In terms of type of industry, most respondents worked in the service sector, 164 (40%). The number of SMEs owners in the service industry has the highest percentage. The lowest percentage belongs to the agriculture industry (7%). Telecommunications (13.6%), banking and finance 35 (8%), education 42 (10.9%), and manufacturing 67 (16.9%) have an almost equal number of entrepreneurs.

5.2 Measurement
Appendix A provides the list of scales developed for this study, along with their original sources. Whenever possible, this study used previously validated scales and adapted them to the context of IT innovation. Certain scales were modified to better fit the current research context. The questions that measure perceived desirability, propensity to use and perceived feasibility were adopted from the entrepreneurial event model, developed by Krueger in 1993 (Krueger, 1993; Krueger et al., 2000; Krueger and Brazeal, 1994). For example, in the context of entrepreneurship, perceived desirability examines the attractiveness of a behaviour that was modified in order to measure the attractiveness of IT innovation. Similarly, in the context of entrepreneurship, perceived feasibility is defined as the perception of their ability to carry out a specific behaviour (Krueger and Brazeal, 1994; Krueger, 1993; Shapero, 1985), which was modified to measure entrepreneurs’ perception on their skills and abilities in using IT innovation. Finally, the propensity to act was changed to propensity to use, and modified to measure the volitional aspects of entrepreneurs’ intention to use IT innovation. This construct concerns the individuals’ pervasive decision to perform the behaviour (Use IT innovation), and is able to measure individual pervasive decision in using new technology. Likert scales (1-7) ranging from ‘strongly agree’ to ‘strongly disagree’ were used for all the construct items, and entrepreneurs were asked to rate their perception on their intention to use IT innovation.

6. Results
In this study, the exploratory factor analysis in SPSS using the principle component method with varimax rotation was performed in order to verify whether the questionnaire items properly mapped the corresponding construct. The results are shown in Appendix A. The Cronbach’s alpha coefficient for all dimensions exceeded 0.929, which confirms the validity of the construct,
and indicates a high content consistency between the questions relating to each of the constructs. A one way between group analysis of variance (ANOVA) conducted to examine the effect of different type of industry on entrepreneur’s intention level. Result shows that there was a statistically significant difference at the p<.05 in entrepreneur’s intention scores for the six types of industry. However, despite reaching statistical significance, the actual difference in mean scores between the groups is quite small.

The results of examining the correlations indicated that although the correlation among some variables was greater than .70, it is acceptable (See Table 1). Based on Pallant (2005), values of more than 0.8 or 0.9 are reasons for concern. In this study, Structural Equation Modeling (SEM) is used to test the research model. SEM is a multivariate technique that combines aspects of multiple regressions, and is able to estimate a series of inter-related dependence relationships simultaneously (Hair et al., 2006). Additionally, SEM is a powerful technique that combines both the measurement and structural model into a simultaneous test (Hair et al., 2006). Due to the nature and purpose of this study, SEM is deemed appropriate for model testing purposes. Therefore, the confirmatory factor analysis was conducted via the AMOS in order to test the measurement model, and to explain how the measured variables logically and systematically represent constructs involved in a theoretical model. Hair et al. (2006) noted that the measurement model provides a basis for assessing the validity of the structural theory, and testing the model fit and construct validity of the proposed measurement model in the CFA once a satisfactory measurement model is obtained.

6.1 Reliability and Validity Assessment

Hair et al. (2006) believe that assessing the construct validity of a proposed measurement theory is one of CFA’s advantages, as it describes the extent to which a set of measured items actually reflects the theoretical latent construct. Construct validity can be formed by unidimensionality, reliability, convergent validity, and discriminant validity.

Reliability: Based on the formula of composite reliability (CR) (Garver and Mentzer, 1999) and Average Variance Extracted (AVE) (Hair et al., 2006), the result of AVE and CR were calculated (See Table 1). Table 1 shows that the Composite Reliability on all the constructs was greater than 0.70 and the output of AVE were higher than 0.5, which proves the reliability of this study.
Convergent Validity: Steenkamp and Trijp (1991), and Hair et al. (2006) found that the convergent validity assesses the overall fit of the measurement model: the magnitude, direction, and statistical significance of the estimated parameters between latent variables and their indicators. In this study, the overall fit of the two models was within the acceptable index. The magnitudes of the standardized parameter estimations were higher than 0.50, and the directions to measure specific latent variables were similar. The estimated parameters were all statistically significant between the latent and measured variables. Thus, the results proved the convergent validity in this study.

Discriminant Validity: With regard to testing discriminant validity, a pair-wise comparison (Long, 1983; Hair et al., 2006) was used in this study. In comparing the two models (constrained and unconstrained), the chi-square difference was tested in order to check whether the models were statistically significant for the purpose of confirming discriminant validity. All $\chi^2$ differences were significant at the $p < 0.01$ level, and the fit indices for the unconstrained models were all better than the constrained models. This indicates that the result strongly supports the discriminant validity’s criterion. The following Table shows the mean, standard deviation, Average Variance Extracted, composite reliability and correlation among the variables.

<table>
<thead>
<tr>
<th>Table 1: Descriptive Statistics and Correlation</th>
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<tbody>
<tr>
<td>Mean</td>
</tr>
<tr>
<td>------</td>
</tr>
<tr>
<td>1. Perceived Desirability</td>
</tr>
<tr>
<td>2. Perceived Feasibility</td>
</tr>
<tr>
<td>3. Propensity to Use</td>
</tr>
<tr>
<td>4. Behavioural Intention</td>
</tr>
</tbody>
</table>

AVE = Average variance extracted.  
CR = Composite reliability.  
Value on diagonal are square root of AVE.  
*p < .05; **p < .01.

6.2 Structural Model Testing

Once an acceptable measurement model is available, the evaluation of the structural model should commence. The Structural Equation Modelling (SEM) technique was used to test a set of relationships between the independent and the dependent variables. The results of the structural model show that the model achieved a good level of fit (See Table 2). As illustrated in Table 2,
the results of the fit indices showed that most of the fit indices are above their recommended values of 0.90, with an RMSEA value of 0.062, indicating that the data fits the model very well, making it valid and acceptable for this validation purposes. The model presents the possibility of influences of determinants toward IT innovation adoption behaviour by entrepreneurs.

Table 2: Fit Indices for Measurement Model

<table>
<thead>
<tr>
<th>Chi-Square</th>
<th>Probability</th>
<th>( \chi^2/df )</th>
<th>TLI</th>
<th>CFI</th>
<th>RMSEA</th>
<th>GFI</th>
<th>AGFI</th>
</tr>
</thead>
<tbody>
<tr>
<td>376.628</td>
<td>0.000</td>
<td>2.671</td>
<td>0.958</td>
<td>0.966</td>
<td>0.062</td>
<td>0.912</td>
<td>0.882</td>
</tr>
</tbody>
</table>

The results indicate that the propensity to use is the strongest determinant towards the intention to use IT innovation, thus, supporting H3 (See Table 3). This shows that if the entrepreneurs decided to use IT innovation in their job, and they persist in their decision, the probability to use IT innovation is higher. The effect of perceived desirability and perceived feasibility to the intention to use IT innovation was positive and significant, supporting H1 and H2 (See Table 3).

Table 3: Standardized Regression Weights for Structural Model and Hypotheses

<table>
<thead>
<tr>
<th>Hypotheses</th>
<th>( \beta )</th>
<th>S.E.</th>
<th>C.R.</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1 Perceived Desirability</td>
<td>0.364</td>
<td>0.064</td>
<td>5.161</td>
<td>***</td>
</tr>
<tr>
<td>H2 Perceived Feasibility</td>
<td>0.220</td>
<td>0.042</td>
<td>4.372</td>
<td>***</td>
</tr>
<tr>
<td>H3 Propensity to Act</td>
<td>0.393</td>
<td>0.044</td>
<td>5.941</td>
<td>***</td>
</tr>
</tbody>
</table>

\( \beta \): Standardized Regression Weight; S.E.: Standardized Error; C.R.: Critical Ratio; **p< 0.01; ***p< 0.001

This suggests that the attractiveness of IT innovation and entrepreneurs’ skill and ability to use IT innovation are the other important factors that influence entrepreneurs intention to use IT innovation. The results also reported that 82 percent of the variance associated with intention to use IT innovation was accounted for by its three predictors: perceived desirability, perceived feasibility and the propensity to use. Overall, the results support the importance of the theorized factors in affecting the entrepreneurs’ intention to use IT innovation, and the applicability of the Entrepreneurial Event Model to measure individual perception towards technology adoption and the intention to use.
In the case of entrepreneurs’, it seems that the perceptions of individual intrinsic interest (Propensity to act, perceived desirability and perceived feasibility) are the determinants that stimulate their intention to use IT innovation. This finding indicates that the prominent role of the propensity to use the system when entrepreneurs decide to adopt IT innovation. Therefore, the model improves the predictive power of the intention to use IT innovation.

7. Discussion
This study investigates the entrepreneurs’ usage intention of IT innovation. Drawing upon prior research from the entrepreneurship context, and the entrepreneurial event model, we proposed and empirically examined a set of individual factors that might influence the entrepreneurs to use IT innovation. In general, the results provide support for the capability of the Entrepreneurial Event Model to measure the individual perception towards technology acceptance. Furthermore, we discovered evidence of the influence of the propensity to use, perceived desirability, and perceived feasibility on the entrepreneur’s intention to use IT innovation. Similar to the entrepreneurship context, where the propensity to act, perceived desirability, and perceived feasibility are expected to have a positive effect on individual intentions to take action, these three key beliefs directly effects the entrepreneurs’ intention to use IT innovation in the technology acceptance context.

The propensity to use was the strongest influence on the intention to use IT innovation, followed by perceived desirability, and perceived feasibility. The strong positive effect of the propensity to use suggests that if the entrepreneurs decide to use IT innovation, and they persist in their decision, the probability to use IT innovation would be higher. The findings of this study suggest that the effect of the perceived desirability towards usage intention is positive and significant.
The entrepreneurs are more willing to use IT innovation if they feel that using IT innovation is attractive. If entrepreneurs have positive feelings towards new technology, and they have the skills and capabilities to use it, their intention to use IT innovation in their companies would be a lot higher. The results indicated that the pervasive decision to use IT innovation and high desirability and feasibility to use IT innovation are determinants of the entrepreneurs’ intention to use IT innovation. This suggests that the most important driver of IT adoption is the strong decision to use new technology. When individuals decide to adopt IT innovation, they will consider the attractiveness of the new technology, and their desirability to use it. If it is unattractive for them, and they lack the desire to use it, they will most likely ignore it. Many useful technologies were introduced to the market failed due to the fact that they could not capture the attention of the consumers. In addition, if entrepreneurs perceive that they do not have the adequate and appropriate IS skill and capability to use IS innovation, they would not be interested in using it, even if these innovations are useful and user friendly. The results of this study are consistent with the previous studies in the entrepreneurship area (Krueger and Brazeal, 1994; Krueger et al., 2000; Coduras et al., 2008; Veciana et al., 2005; Shook and Bratianu, 2008; Meeks, 2004; Guerrero et al., 2008), and show that if the perceived desirability and propensity to use are high, and entrepreneurs perceived high feasibility, the probability to take action would be higher.

7.1 Theoretical Implications

By increasing our understanding of voluntary technology adoption, this work contributes to the research in this field. We build on the Entrepreneurial Potential Model (Krueger, 1993) and use its core individual beliefs to predict the entrepreneurs’ IT adoption. This study validates the EEM in the technology acceptance context, and our results shows that the propensity to act, perceived desirability and perceived feasibility are important predictors of the entrepreneurs’ intention to adopt IT innovation. The results indicated that EEM, as an intentional model that focuses on individual factors, have the ability to accurately measure IT adoption. Literature review in the technology acceptance context shows that researchers examined different model/theories to predict individual technology adoption, and found many factors which effect individual intention towards technology adoption (e.g., effort expectancy, performance expectancy, habit, and facilitating condition), but few studies measure individual pervasive decision, perceived
desirability and perceived feasibility towards the intention to adopt a new system. Satisfying this, an individual may adopt and use the new technology if they perceived it to be feasible, regardless of how useful or user-friendly a technology might turn out to be. These factors are related to individual perception, and will significantly affect intentions and behaviours. Additionally, in previous model/theories in the technology acceptance context, behavioral intention could not actually predict the adoption behaviour in a completely volitional-controlled condition (Venkatesh et al., 2008) while in this study, the propensity to act measured the volitional aspect of the entrepreneurs’ behavior, and the result shows that the propensity to act is the strongest factor toward intention to adopt IT innovation. Applying this model in technology acceptance will shed additional light on this area, and reveal new knowledge perspectives. The results demonstrate the importance of these factors in influencing the entrepreneurs’ intention to use IT innovation.

7.2 Practical Contributions
This study provides new information to policy makers and educational leaders (i.e., business associations, business communities, business groups) that may be useful in understanding the entrepreneur’s behaviour and acceptance of IT innovations.

Information technology (IT) has the potential to enhance operational efficiency and effectiveness, change the way businesses compete, and create strategic opportunities and redraw competitive boundaries. End-users do like to use IT innovation, but they may not use it often. Thus, developers and inventors of IT innovation need to understand factors that can influence users’ decision to adopt and use IT innovation. This study suggests that strong decision, attractiveness and the feasibility of IT innovation play a significant role in facilitating the intention to adopt IT innovation by entrepreneurs. The attractiveness of IT innovation is a factor that IT developers and providers should consider when designing new technology. On the other hand, when policy makers or developer want to implement IT innovation, they should consider the attractiveness of such innovation for user. Even though the new IT technology is useful and easy to use, if it is deemed unattractive for users, they would not be interested in using it.

Overall, the findings of this work significantly enhance the understanding of entrepreneurs’ technology adoption, and serve to further highlight the important role of this context in our
theory. It is expected that this study will assist policy makers in identifying individual issues faced by entrepreneurs, and facilitate and provide guidance in relation to the adoption of IT, once an entrepreneur ventures into the business community. The policy makers should provide a special programme that would encourage entrepreneurs to have a strong motive concerning adoption and use of IT innovation.

The findings of this study suggest that before adopting the new systems, the policy makers need to organise workshops or seminars to educate entrepreneurs on the benefits of using the systems. Using the systems would increase entrepreneurs’ chances of getting a new tender or contract, thus creating the attractiveness of using the system(s). At the same time, during these workshops and/or seminars, the policy makers can demonstrate the use of the systems to create confidence, and enhance the skills and knowledge of the entrepreneurs regarding the systems. This will lead to entrepreneurs being more comfortable and willing to use it.

8. Conclusions

This work contributes to the research body on technology acceptance, examines and validates the EEM model, and increases our understanding of IT innovation adoption. The present study set out to revise and validate the Entrepreneurial Event Model in the technology acceptance context. We build on EEM (Krueger, 1993), and use its three core individual beliefs to predict the entrepreneurs’ intention to use IT innovation. The results provided strong empirical support, and showed that the model is a robust model that is capable of measuring individual intention towards technology adoption and usage intention. Based on the results of the current research, the propensity to use, perceived desirability, and perceived feasibility all positively influenced usage intention. EEM was able to account for 82 percent of the variance in usage intention. Furthermore, EEM was successful in measuring the individual dimension of technology acceptance, and the volitional aspect of one’s behaviour, which most IS literature has ignored. Therefore, EEM is a definitive model, which provides a useful theoretical basis to identify individual factors applicable to the technology acceptance context, and researchers can use this model to measure individual perception towards technology adoption. This model is a useful tool for managers, and helps them understand the drivers of technology acceptance and the likelihood of success for new technology introduction. Further and future work can apply this model in order to study user adoption of other technologies in voluntary settings.
9. Limitations and Future Research

The nature of this study may restrict its generalizability to other research settings. Future research will be necessary to validate the findings of this study by applying the EEM model in the technology acceptance context. Since this model measures individual perception toward technology adoption, other research can apply this model to investigate acceptance of different technology in different context. Based on Venkatesh and Zhang (2010), future researches should examine the role of uncertainty avoidance, because the implementation of innovation is likely to be accompanied by uncertainty, and this is a very interesting topic in the entrepreneurship context as well. This study considers SMEs involved in providing professional services in the areas of manufacturing, telecommunication, education, banking and finance, service, and agriculture and did not focus on specific sector or particular innovation therefore future research should concentrate on particular industry or specific innovation. Future research should consider the effect of moderating variables such as age and gender on the determinants of intention. Examining the effect of culture as moderator on the determinants of intention is another interesting topic to investigate, as suggested by Venkatesh and Zhang (2010). Cultural and social value could also diffuse perceptions of desirability, thus lowering intentions.

References


## Appendix A

### Factor loading and Cronbach’s Alpha Value for Each Construct

<table>
<thead>
<tr>
<th>Variables</th>
<th>Sources</th>
<th>Factor loading</th>
<th>Cronbach Alpha α</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Perceived Desirability</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Using IT innovation in my business is much more desirable for me.</td>
<td>Krueger (1993)</td>
<td>.750</td>
<td>.929</td>
</tr>
<tr>
<td>I would enjoy the personal satisfaction of using IT innovation in my business.</td>
<td></td>
<td>.762</td>
<td></td>
</tr>
<tr>
<td>Using IT innovation would increase quality of work in my business.</td>
<td></td>
<td>.720</td>
<td></td>
</tr>
<tr>
<td>Using IT innovation in my business is an attractive idea.</td>
<td></td>
<td>.784</td>
<td></td>
</tr>
<tr>
<td>I am very enthusiastic to use IT innovation in my business.</td>
<td></td>
<td>.775</td>
<td></td>
</tr>
<tr>
<td>The success of my business lies in the use of IT innovation.</td>
<td></td>
<td>.691</td>
<td></td>
</tr>
<tr>
<td>Using IT innovation would result in a more relax working environment in my business.</td>
<td></td>
<td>.656</td>
<td></td>
</tr>
<tr>
<td><strong>Perceived Feasibility</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I am able to use the IT innovation even if there is no one around to show me how to use it.</td>
<td>Krueger (1993)</td>
<td>.654</td>
<td>.929</td>
</tr>
<tr>
<td>I would feel comfortable using IT innovation in my business.</td>
<td></td>
<td>.766</td>
<td></td>
</tr>
<tr>
<td>I have the skills and capabilities required to use IT innovation.</td>
<td></td>
<td>.846</td>
<td></td>
</tr>
<tr>
<td>I am confident I can put in the effort needed to use new IT innovation in my business.</td>
<td></td>
<td>.804</td>
<td></td>
</tr>
<tr>
<td>It would be very practical for me to use new IT innovation in my business.</td>
<td></td>
<td>.800</td>
<td></td>
</tr>
<tr>
<td>It would be very feasible for me to use IT innovation in my business.</td>
<td></td>
<td>.762</td>
<td></td>
</tr>
<tr>
<td><strong>Propensity to use</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I will learn to operate IT innovation in my business.</td>
<td>Krueger (1993)</td>
<td>.764</td>
<td>.934</td>
</tr>
<tr>
<td>I will use IT innovation to achieve more opportunity in my business.</td>
<td></td>
<td>.815</td>
<td></td>
</tr>
<tr>
<td>I will use IT innovation because I cherish the feeling of a useful service.</td>
<td></td>
<td>.634</td>
<td></td>
</tr>
<tr>
<td>I will use IT innovations that enable me to run my business successfully.</td>
<td></td>
<td>.766</td>
<td></td>
</tr>
</tbody>
</table>