



***ANTECEDENTS AND OUTCOMES OF EFFECTUATION AMONG THE  
WORKFORCE OF SMALL AND MEDIUM-SIZED ENTERPRISES***

**THANUJA A/P RATHAKRISHNAN**

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By

**THANUJA A/P RATHAKRISHNAN**

**Thesis Submitted to the School of Graduate Studies, Universiti Putra  
Malaysia, in Fulfilment of the Requirements for the Degree of  
Doctor of Philosophy**

**November 2018**

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Abstract of thesis presented to the Senate of Universiti Putra Malaysia in fulfillment of the requirement for the degree of Doctor of Philosophy

## **ANTECEDENTS AND OUTCOMES OF EFFECTUATION AMONG THE WORKFORCE OF SMALL AND MEDIUM-SIZED ENTERPRISES**

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**November 2018**

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For many years, innovation is known as an ‘antidote’ towards organizations sustainability and survival. Nonetheless, the small and medium sized enterprises (SMEs) in Malaysia is suffering from low innovation, which stems from the lack of innovative behavior. In an environment where change is pervasive and unpredictable, innovation serves as a necessity for firms to compete in. Little attention, however, has been given to the employees’ decision making and its impact on innovative behavior. The main objective of this research is to identify antecedents and outcomes of effectuation decision making logic to enhance the innovative behavior in SMEs. In order to answer the research question, this study looks into the underpinning theories of Person – Organization Fit and Effectuation. These theories suggest that the congruence of employees’ values (i.e openness to change or self-transcendence) and the SMEs’ organization culture (i.e. adhocracy or clan) would enable the workforce to use effectuation decision making effectively, which has been shown to work better under the uncertain conditions that surrounds SMEs. This would then lead to enhanced innovative behavior among the workforce that may translate to firm performance, with the intervention of Knowledge Management Orientation (KMO). Survey questionnaires were distributed to the SME workforce in Selangor whose nature of their work involves decision making and the process of innovation. The study found that adhocracy mediates between openness to change and effectuation; effectuation mediates between individual values and innovative behavior and KMO mediates between innovative behavior and firm performance. Clan, however, shows no mediation between self-transcendence and effectuation. Overall, this study achieved the main research objective which is on the antecedents and outcomes of effectuation. The antecedents are openness to change, self-transcendence, and adhocracy whereas the outcomes are innovative behaviour and firm performance. Also, the mechanism from how the antecedents (openness to change and self-transcendence individual values)

lead to outcomes (firm performance) was uncovered. This study implies that effectuation indeed enhance the innovative behavior of the SME workforce. For that to happen, the SMEs must ensure that the information and ideas are managed carefully in a system to improve the firm performance. To encourage more effectuation use, individual value of openness to change and self-transcendence and organization culture of adhocracy should be cultivated. This study adds nuance to our understanding that effectuation theory works well in a dynamic environment such as the SMEs. This is due to the flexibility in the logic itself that is less rigid and structured in the face of high uncertain environment. Knowing effectuation leads to positive outcomes, this study looks at the compatibility of the workforce and the organizational culture based on the P-O fit theory. Since this study found effectuation would achieve high innovation, this logic can be introduced in selection and hiring candidates, trainings, and business education, which is in line with the Industrial Revolution 4.0 (IR 4.0).

Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia  
sebagai memenuhi keperluan untuk ijazah Doktor Falsafah

**LATAR BELAKANG DAN HASIL DARIPADA *EFFECTUATION* DI  
KALANGAN TENAGA KERJA DALAM PERUSAHAAN KECIL DAN  
SEDERHANA**

Oleh

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Sejak beberapa tahun lalu, inovasi dikenal sebagai penyelesaian ke arah organisasi kelestarian dan kelangsungan hidup. Walau bagaimanapun, perusahaan kecil dan sederhana (PKS) di Malaysia mengalami kadar inovasi yang rendah, berpunca daripada kekurangan perilaku inovatif. Dalam persekitaran di mana perubahan adalah ketara dan tidak dapat diramalkan, inovasi berfungsi sebagai keperluan bagi firma untuk bersaing. Walau bagaimanapun, kurang perhatian telah diberi kepada penglibatan tenaga kerja dalam membuat keputusan dan kesan terhadap tingkah laku yang inovatif. Objektif utama penyelidikan ini adalah untuk mengenalpasti latar belakang dan hasil daripada membuat keputusan menggunakan logik *effectuation* untuk meningkatkan tingkah laku inovatif dalam PKS. Untuk menjawab soalan penyelidikan, kajian ini dikaji berdasarkan dengan teori-teori asas; *Person – Organization Fit (P-O Fit)* dan Teori *Effectuation*. Teori-teori ini mencadangkan bahawa keserasian pekerja dan PKS membolehkan pekerja membuat keputusan menggunakan logik *effectuation* secara berkesan, dimana logik ini telah menunjukkan prestasi yang lebih baik di dalam keadaan PKS yang tidak menentu. Ini kemudian akan membawa kepada peningkatan tingkah laku inovatif di kalangan tenaga kerja yang boleh diterjemahkan kepada prestasi firma, dengan campur tangan Orientasi Pengurusan Pengetahuan (OPP). Borang soal selidik telah diedarkan kepada tenaga kerja PKS di Selangor yang terlibat dalam membuat keputusan dan proses inovasi. Kajian ini mendapati bahawa *adhocracy* mengantara antara *openness to change* dan *effectuation*; pengaruh mediasi antara nilai-nilai individu dan tingkah laku yang inovatif dan OPP mengantara antara tingkah laku inovatif dan prestasi firma. *Clan*, bagaimanapun, tidak menunjukkan pengantaraan di antara *self-transcendence* dan *effectuation*. Secara keseluruhannya, kajian ini telah mencapai objektif penyelidikan utama yang merupakan latar belakang dan hasil daripada *effectuation*. Latar belakang

adalah *openness to change*, *self-transcendence*, dan *adhocracy* manakala hasilnya adalah tingkah laku inovatif dan prestasi firma. Selain itu, mekanisme dari later belakang (*openness to change* dan *self-transcendence*) kepada hasil (prestasi firma) telah ditemui. Kajian ini menunjukkan bahawa *effectuation* meningkatkan tingkah laku inovatif di kalangan tenaga kerja di PKS; walau bagaimanapun, PKS mesti memastikan bahawa maklumat dan idea diuruskan dengan teliti dalam satu sistem untuk meningkatkan prestasi firma. Untuk menggalakkan penggunaan *effectuation*, nilai individu *openness to change* dan *self-transcendence* dan budaya organisasi *adhocracy* perlu dipupuk. Kajian ini menambah pemahaman kita bahawa teori *effectuation* adalah sesuai di dalam persekitaran dinamik seperti PKS. Ini disebabkan oleh fleksibiliti dalam logik itu sendiri yang kurang tegar dan berstruktur dalam keadaan persekitaran tinggi yang tidak menentu. Berdasarkan hasil daripada *effectuation* yang positif, kajian ini melihat dalam keserasian tenaga kerja dan budaya organisasi berpandukan teori *P-O fit*. Oleh kerana kajian ini mendapati *effectuation* akan mencapai inovasi yang tinggi, logik ini dapat diperkenalkan dalam pemilihan dan pengambilan calon pekerja, latihan, dan pendidikan perniagaan, yang selaras dengan Revolusi Perindustrian 4.0 (IR 4.0).

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This thesis was submitted to the Senate of Universiti Putra Malaysia and has been accepted as fulfilment of the requirement for the degree of Doctor of Philosophy. The members of the Supervisory Committee were as follows:

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## LIST OF ABBREVIATIONS

SME	Small and Medium Sized Enterprises
KMO	Knowledge Management Orientation
P-O Fit	Person – Organization Fit
RBV	Resource-based View
GII	Global Innovation Index
TN50	National Transformational 2050
IR 4.0	Industrial Revolution 4.0
HOC	Higher Order Component

# CHAPTER 1

## INTRODUCTION

### 1.1 Introduction

This chapter elaborates the area of study on the Small and Medium Enterprises (SMEs) and justify reasons for focusing on SMEs. Then it proceeds to highlight the problem statement that deserves research attention. Subsequently, this chapter lists the research questions and research objectives this study aims to achieve. Finally, the significances of the study are outlined to emphasize the importance of this research.

### 1.2 Effectuation in Small Medium Enterprises (SMEs)

The concept of effectuation was introduced by Saras Sarasvathy in 2001. Effectuation is a theory that uncovers the logic of decision making and explains how employees make decisions, especially in an uncertain condition. Uncertain condition here refers to the market fragmentation, competitive pressures, economic turbulence, rapid technological change, innovations, and shift in customer demands (Read, Dew, Sarasvathy, Song, & Wiltbank, 2009; Yukl & Lepsinger, 2006). Sarasvathy conducted her study on how expert entrepreneurs make decisions in their businesses. From the study, she found variations on how these entrepreneurs actually make decisions; effectuation versus causation. The logic of the two is an alternative and inverse to each other and does not suggest if one is more superior to the other (Read & Sarasvathy, 2005; Sarasvathy, 2001).

Effectuation theory emphasizes a logic of non-predictive control by using four principles that form the core of the effectuation approach. The principles are (1) experimentation with different business models and methods rather than predicting and planning; (2) affordable loss (investing what you can afford to lose) rather than predicting profits and expected returns; (3) pre-commitments (partnership) rather than conducting competitive analyses; and (4) flexibility during contingencies as opposed to avoiding contingencies.

Sarasvathy (2001) explained the logic of causation and effectuation by applying the example of a chef assigned to the task of cooking dinner. This task could have taken place in two ways. The first way, where the chef selects a menu in advance. Subsequently, the chef lists down the ingredients required, shops for them, and cooks the meal. This way is known as the causation, where the menu is given and the chef needs to select ways in preparing it. In contrast, following

an effectuation, the chef looks through the kitchen for available ingredients and utensils on hand. Then, the chef prepares the meal based on the available ingredients. The second way suggests effectuation as it starts with given ingredients and utensils, and focuses on preparing one of many possible desirable meals with them. Chandler, DeTienne, McKelvie, and Mumford (2011) added that through the pre-commitment principle, the chef would have networks that would provide some additional ingredients for preparing the meal.

The example of the chef in decision making can also be applied among SME employees. SMEs need to continuously experiment with different approaches or products in the marketplace before settling on a business concept (Chandler et al., 2011). This series of afforded experimentation is done within the available means they have in hand (knowledge, expertise, resources from networks, pre-commitments) as well as within the budget they are willing to lose (affordable loss) (Chandler, DeTienne, & Mumford, 2007). The flexibility sub-dimension in effectuation emphasizes on taking advantage in unexpected situations, thereby viewing obstacles as opportunities. All in all, the process of effectuation is a “purposeful, enables experiential learning and is propelled through high level goals that get shaped and embodied into workable business models and opportunities through pre-commitments from self-selected stakeholders (Sarasvathy & Dew, 2005)” (Read, Sarasvathy, Dew, & Wiltbank, 2016, p. 6).

The adaptability of effectual employees in withstanding contingencies, especially in a high uncertain business environment would enable favourable outcomes (Sarasvathy, 2008). Uncertain environment refers to the extent to which the future can be predicted (McKelvie, DeTienne, & Chandler, 2013). When a business environment is highly uncertain, it would be complicated to use planning and predictive strategies. As such, the firms need to focus on seeking ways in reducing uncertainties. One of the ways is through the help of stakeholders (Chandler et al., 2011) as they make actual commitments and share both the risk and success of the ventures (Sarasvathy, Kumar, York, & Bhagavatula, 2014). In addition to that, the stakeholders are able to share resources in terms of information and knowledge. This allows the individual to generate ideas, thereby reducing uncertainties (Salter, Wal, Criscuolo, & Alexy, 2015; Brettel, Mauer, Engelen, & Küpper, 2012; Sarasvathy & Dew, 2005). Therefore, it is important for Malaysian SMEs to build and develop the right networks and stakeholders to get various supports in this competitive business environment (Hung, Effendi, Talib, & Rani, 2011).

Extant studies have reported on the use of effectuation in SMEs and how it positively contributes to outcomes like networking, firm performance, business opportunities, and projects. Past studies looked into pre-commitments and networking (Galkina & Chetty, 2015); exploring new business opportunities (Randerson, DeGeorge, & Fayolle 2016; Evald & Senderovitz, 2013); new venture performance (Smolka, Verheul, Burmeister-Lamp, & Heugens, 2016; Read, Song, & Smit, 2009); start-up performance (Harms & Schiele, 2012;

Nienhuis, 2010); SME performance (Urban & Heydenrych, 2015; McKelvie et al., 2013); and research and development (R&D) projects (Brettel et al., 2012). The outcomes of these studies boil down to how employees use effectuation in their daily decision making in SMEs and how the logic of effectuation brings positive outcomes to SMEs.

However, most of the SMEs in Malaysia were reported to use causation. According to the survey done by GE Global Innovation Barometer (2014), the majority of Malaysian firms adopt causation such as structured process, customer surveys, and predictive analysis in making decisions. Knowing that effectuation suits situations of high risks and uncertainties while causation is more suitable when the future is certain and predictable (Sarasvathy, 2001), SMEs in Malaysia should be encouraged to use effectuation. This is because, SMEs are generally dynamic, exposed to high risks, unpredictable, and uncertain (Reymen, Berends, Oudehand, & Stultiëns, 2016; Li & Zheng, 2014). Therefore, exploring the use of effectuation in the context of SMEs is relevant as it fits in the uncertain situation of the industry.

Having established through effectuation theory that the use of effectuation may bring positive outcomes to SMEs in Malaysia, the question arises "How do we encourage the use of effectuation in SMEs?" Effectuation can only be used effectively in organizations that embrace change, cooperation, learning, and flexibility (Hakkinen, 2015). In other words, organizational culture is the immediate antecedent to effectuation.

According to organizational theory of Cameron and Quinn (1999), there are four cultures typically found in organizations; adhocracy, clan, market, and hierarchy. Two of these cultures seem to match the characteristics of effectuation – adhocracy and clan. Adhocracy refers to a workplace culture where employees are encouraged to take initiative, experiment, innovate, and continuously improve to enable the production of innovative products and services. This shows that, adhocracy allows experimentation of the business models and flexibility in plans to overcome obstacles and turning it into opportunities. Clan refers to a workplace culture that focuses on human relations, concern in employees' growth and development, loyalty, collaboration, commitment, group cohesion and consensus. As such, clan stresses the importance of stakeholder relationship emphasized by the pre-commitment principle in effectuation.

Employing the right people to uphold the organizational culture is equally important. As P-O fit theory puts it, matching the right person with values consistent to organizational culture would ensure job effectiveness. Schwartz (2003) proposed four broad types of personal values; openness to change, self-enhancement, conservation, and self-transcendence. Two of these values are consistent with adhocracy and clan organizational cultures – openness to change and self-transcendence. Openness to change refers to value that

emphasizes independence of thought, action, and feelings and readiness for change whereas self-transcendence emphasizes concern for the welfare and interests of others.

In short, P-O fit theory supports the selection of openness to change and self-transcendence values that lead to the upholding of adhocracy and clan organizational culture, which encourages the use of effectuation. Thus, the following reviews P-O fit theory to give context to the antecedent selection.

### **1.3 Person-Organization Fit**

Person-Organization fit (P-O fit) is defined as the “compatibility between people and organizations that occurs when at least one entity provides what the other needs or they share similar fundamental characteristics or both” (Kristof, 1996, p. 4-5). The definition of P-O fit focuses on the congruence between the person and the organization rather than a “specific job, vocation, or group” (McCulloch & Turban, 2007, p. 63). In other words, the P-O fit also looks into the value congruence between the individual and the organization (Kristof-Brown, Zimmerman, & Johnson, 2005). According to Chatman (1989), P-O fit involves matching employees’ interests, values, and needs of the organizational culture. Hence, the individual values are being tested as a fundamental basis in comparing the individual and organization fit “directly and meaningfully” (Cable & Judge, 1996, p. 295).

Maloney et al. (2010) found that the individuals perceived a significant gap between the current and preferred organizational cultures. As such, the current organizational culture that is based on structures and processes is limiting the employee’s ability to be effective in their tasks (Maloney et al., 2010). This rationalizes that the presence of a good fit will ensure the effective completion of a job and excel at tasks (Edwards, 1991) which may enhance the success of the firm performance. According to Verquer, Beehr, and Wagner (2003), firms that reflect cultures that are incongruent with the employees’ values would result in demotivation among employees – which would reveal in their task performance. Harris and Brannick (1999) also highlight that the role of organizational culture is more fundamental than the job itself to ensure the fit between individuals and organizations. This is because, problems tend to arise when employees and the organizations have misfit in underlying value priority. That is, for effectuation to be used effectively, the two organizational cultures (adhocracy and clan) are more likely to be successful if the employees’ personal values matched the culture well. Past literature suggests effectuation brings positive outcomes to organization. This includes new venture performance (Smolka et al., 2016; Read, Song, & Smit, 2009), start-up performance (Fisher, 2012), and R&D success (Brettel et al., 2012). Having established the concepts that precede and succeed effectuation, it is found that a common denominator

to these outcomes is innovation. As such, this study proposes innovative behaviour as the outcome of effectuation, which is further discussed below.

#### **1.4 Innovative Behaviour**

In order for innovation to take place, employees should portray the behaviour of innovativeness (de Jong & den Hartog, 2010). The topic on innovation is getting prevalent for past three decades. Initial studies looked into innovative behaviour as the combination of both idea generation (new idea, method, or device) and the implementation of the ideas (Hülsheger, Anderson, & Salgado, 2009; Scott & Bruce, 1994). In the later stage, de Jong and den Hartog (2010) labelled innovative behaviour as idea exploration, idea generation, idea championing, and idea implementation.

The use of effectuation is proposed to translate to innovative behaviour and then firm performance. Although this relationship has not been empirically supported, there are some evidences to the relationship. First, the study of Roach et al. (2016) referred the works of Schumpeter (1934) on entrepreneurship and innovation. Subsequently, they linked effectuation and the types of innovation (product/service innovation) which showed effectuation impacts innovativeness and ultimately firm performance.

Nonetheless, it is also found that innovative behaviour is not always a viable strategy in achieving high firm performance (Zaied, Louati, & Affes, 2015; Saunila, 2014). Past efforts revealed the link between innovative behaviour and firm performance has been contradicting. Wright, Palmer, and Perkins (2005) mentioned that businesses with low competition should place more emphasize in promotional efforts or customer service rather than allocating resources for innovation efforts such as R&D which can be costly and unnecessarily risky to the firm. However, past studies also acknowledged the fact when the innovative behaviour is high, this will lead to a high performance of the firm (Zakaria, Abdullah, & Yusoff, 2016; Rosli & Sidek, 2013; Salim & Sulaiman, 2011).

The pressure to contribute to the firms' growth and innovation as well as keeping abreast in a dynamic environment causes scarcity or overflow of information (Johansson & Engström, 2016). Depending on how effective the firms manage information, innovative behavior might take place or fail to take place (e.g., information remain idle, ideation without proper documentation). Unfortunately, most SMEs do not have a proper system to manage information and knowledge (Najmaei & Sadeghinejad, 2009; Nunes, Annansingh, Eaglestone, & Wakefield, 2006). Since the ideas were not captured in a system, this can be a redundant process where the whole problem solving process needs to go through replication. This is not only costly, but also time consuming and risky as the probability of repeating mistakes is high (Wang et al., 2009). Therefore, having

a system to handle the storage of ideas, knowledge distribution and sharing, as well as embracing new information would contribute to the betterment of the firm. As such, in identifying the resource that would help to bridge the link between innovative behaviour and firm performance, the knowledge management orientation (KMO) is introduced as a mediator in the study. Thus, the lack of KMO in SMEs in Malaysia and why the concept of KMO needs to be introduced in achieving firm performance are discussed.

### **1.5 Knowledge Management Orientation in SMEs**

The growing number of SMEs indicates that the business is constantly exposed to tight competitions. One of the ways to sustain the business is by identifying the key competitive advantage that would improve the firm performance. Studies in the past have shown how firms exploit competitive advantage by the maximum use of the knowledge management (Carrasco-Hernández & Jiménez-Jiménez, 2016; Wei et al., 2011; Marqués, & Simón, 2006). Hence, this study looks into the KMO as the mediator in turning innovative behaviour to firm performance.

Knowledge management implies “the effort to systematically find, organize, and make available a company’s intellectual capital and to foster a culture of continuous learning and knowledge sharing so that organizational activities build on what is already known” (Daft, 2007, p. 452-453). Sadly, the knowledge management represents a neglected field of study, especially in the context of SME (Durst and Edvardsson, 2012). According to Durst and Wilhelm (2012), the reason why most SMEs have not been emphasizing greater importance towards knowledge management is due to budget constraints and poor administrative resources. The lack of focus in knowledge management raises a red flag, as SMEs are heavily dependent on the employees’ tacit knowledge and expertise they brought to the firm (Durst & Wilhelm, 2012). Relying on employees’ tacit knowledge is not a problem, however, the issues arise when these employees leave the SMEs; bringing along their knowledge with them. Hence, having a system that enables documentation of the tacit knowledge will be valuable for the firm even when the employee resigns.

The adoption of informal processes on storing information (knowledge via on-the-job training) to disburse and share is insufficient for effective handling and processing of data compared to information technology (IT) based tools that are generally cheaper and easier to use (e.g. decision support, cloud computing, crowd-sourcing systems, and collaborative filtering) (Cerchione, Esposito, & Spadaro, 2015; Hutchinson and Quintas, 2008). According to Wei, Choy, and Chew (2011), the common tools used by the SMEs in sharing their knowledge include face-to-face discussion, e-mail, and intranet. Though these methods are generally used by the SMEs, the outcomes of these discussions are rarely documented in a way where the knowledge can be retrieved for future use (Wei, Choy, & Chew, 2011).

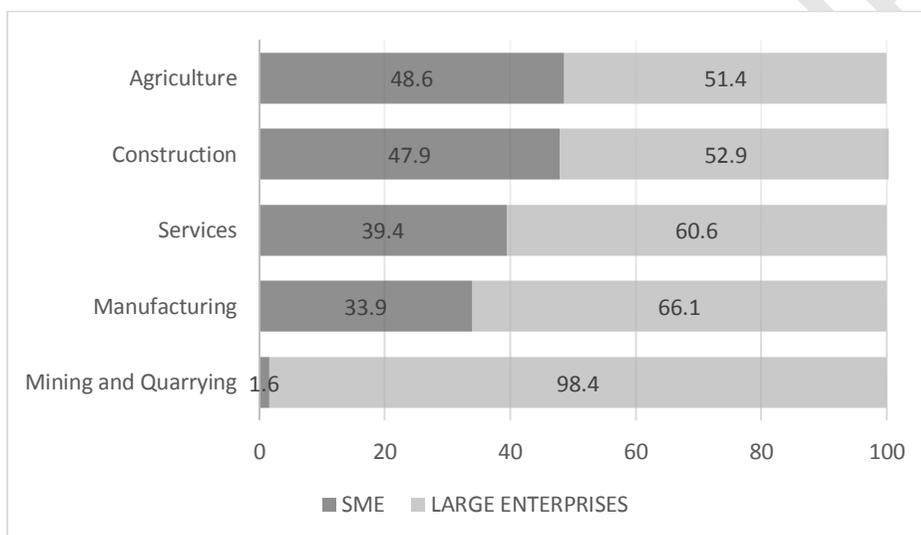
The SME industry makes up a huge percentage (98.5%) of the businesses in Malaysia and is a major contributor to the economy (SME Corp, 2018). Nevertheless, these SMEs face a knowledge gap on the importance and convenience of implementing knowledge systems in their companies (Inn, 2016). Christodoulou (2016) also mentioned that the lack of skills, knowledge, and right attitude in the SMEs is damaging the overall performance of the firm. This is where the sharing of knowledge among subordinates and superiors as well as the willingness of the peers in accepting new knowledge (knowledge receptivity) is significant towards improving the firm. Additionally, the employees must recognize the value of the information as well as utilize given information (Cohen & Levinthal, 1990) for knowledge exploitation (Grandinetti, 2016) which would improve the firm's performance.

The SMEs also face issues in attracting relevant talent to lead them forward in these developments. In addition to the poorly skilled employees, it is found that the senior management teams are skeptical in exploring new technologies or systems (Lee, 2018). This reluctance has been due to the risks involved in incorporating new technologies such as wiki, crowdsourcing systems, collaborative filtering infrastructures, cloud computing, e-commerce, Big Data and information security. This further causes SMEs to be content in retaining the traditional ways of storing and sharing information such as physical bookkeeping (Inn, 2016), e-mails, and face-to-face meetings (Wei et al., 2011). Therefore, the hesitance in adopting these new systems that are easier and effective for information storage, information sharing, knowledge absorption, and knowledge receptive would lead to a low knowledge management use in the SMEs.

## **1.6 SMEs: Definition, Challenges, and Government Support**

SMEs are significant in contributing to the growth and development of the nation. According to Mohamad, Rashed, and Rahman (2008), SMEs play a monumental role in achieving the developed nation status. Malaysia strives to upgrade to a developed nation status, however, we are facing stagnant R&D, low levels of entrepreneurship and venture capital, and deteriorating rankings in innovation (Organisation for Economic Co-operation and Development, 2013). One of the ways identified to develop the economy is on the advancement of the SMEs (Abdullah, 1997). In order to break the middle-income plateau, innovation rather than imitation is required (Aghion & Howitt, 1996). Two countries; Korea and Taiwan Province of China, which were under Malaysia's income in 1970, made it to the high-income status have shown that they were much successful in innovating and increasing productivity (Cherif & Hasanov, 2015). Hence, Malaysia's transformation depends greatly on the development of SMEs as this could lead to a fully developed and become an industrialized nation (Omar, Arokiasamy, & Ismail, 2009). Therefore, more focus should be given on the SMEs, as their role is undeniably substantial to the wellbeing of the nation.

According to The World Bank Group (2016), SMEs has contributed 65% to total employment in Malaysia. The total employment by SMEs alone has amounted to 2,302,421 (SME Corp, 2016). In addition to that, 36% of gross domestic product (GDP) and nearly 18% of the country's exports has been contributed by SMEs. By 2020, under the SME Masterplan (2012-2020), it is expected that SMEs' contribution to GDP will hit 41%, and the share of the country's exports from SMEs to reach 23%. The chart below shows the contribution of SMEs according to their respective sectors (Department of Statistics, 2015).



**Chart 1: Contribution of SMEs to Malaysia's main sectors**  
(Department of Statistics, 2015)

During the 14<sup>th</sup> National SME Development Council Meeting in 2013, the former Prime Minister of Malaysia, Dato Sri Mohd Najib Razak, announced the new definition of SMEs. Previously, the manufacturing sector defined SMEs with sales turnover not exceeding RM 25 million or employment not exceeding 150 workers (SME Bank, 2016). As of 1<sup>st</sup> January 2014, it is defined as RM 50 million or employment not exceeding 200 workers. For the services and other sectors, sales turnover not exceeding RM 20 million or employment not exceeding 75 workers, as oppose to RM 5 million or employment not exceeding 50 workers (refer Table 1.1).

**Table 1.1: New Definition of Small and Medium Enterprises (SMEs)  
Malaysia**

<b>Category</b>	<b>Small</b>	<b>Medium</b>
<b>Manufacturing</b>	Sales Turnover from RM 300,000 - < RM 15 mil or Full time employees from 5 - < 75	Sales Turnover from RM 15 mil - < RM 50 mil or Full time employees from 75 - < 200
<b>Services and Other Sectors</b>	Sales Turnover from RM 300,000 - < RM 3 mil or Full time employees from 5 - < 30	Sales Turnover from RM 3 mil - < RM 20 mil or Full time employees from 30 - < 75

Adapted from SME Bank (2016)

Back in the 1970s, the SMEs contributed in a small portion towards the nation's economic development due to the dominance of the large industry (Sahran, Zeinalnezhad, & Mukhtar, 2010). Today, SMEs are known as the key source of economic growth (Haron, Said, Jayaraman, & Ismail, 2013). SMEs are transforming into a globalization phenomenon and this brings both opportunities and challenges for the SMEs. The global economic framework requires them to reconsider their competitive position with their local and foreign rivals (Rosli & Sidek, 2013). However, most SMEs still remain in their national boundaries (Ruzzier, Hisrich, & Antoncic, 2006).

One of the main challenges faced by SMEs in Malaysia is on the innovation capability. It is important to innovate continuously to remain competitive in today's modern world (Teece, 2007). Innovation is central not only for firm's sustainability, but also to strengthen the country's economy. According to the CEO of Agensi Inovasi Malaysia (AIM) Mark Rozario, innovation involves taking a gamble with no guarantees of commercial success. Therefore, it is vital to make risky decisions to climb up the ladder (Innovate & Disrupt: AIM, 2015).

Having said that, the government provides great support to SMEs in innovation. The government has taken a few measures in the areas that are lacking such as implementation of programs to enhance the capabilities of SMEs. Those are financial accessibility, advisory services, marketing, information and communications technology (ICT), and technology (Malaysian Industrial Development Authority, 2006). Unfortunately, in spite of the government's initiatives, SME Corp Chief Executive Director Datuk Dr. Hafsa Hashim said that the SMEs still suffer from low innovation and the lack of entrepreneurial spirit (Pail, 2015; Hung et al., 2011). This is also reported by the National Survey of Innovation (a survey conducted by the Ministry of Science, Technology & Innovation) that only 35.75% of small companies and 49.42% of medium companies are innovating. It is also reported that the Malaysia Global Innovation Index (GII) has dropped from 31<sup>st</sup> rank in year 2011, 32<sup>nd</sup> rank in year 2012 and 2013 respectively, and in year 2017, the rank has dropped to 37th (MASTIC & MOSTI, 2017) (refer Table 1.2).

**Table 1.2: Comparison of Global Innovation Index (GII) for 2011 – 2017**

Country	2011 GII Rank	2012 GII Rank	2013 GII Rank	2014 GII Rank	2015 GII Rank	2016 GII Rank	2017 GII Rank
Malaysia	31	32	32	33	32	35	37

Adapted from MASTIC & MOSTI (2017)

Rasiah and Yap (2015) stated that Malaysia is suffering from the poor performance in the efficiency of innovation. SMEs are faced with challenges compared to larger firms due to their small size such as limited managerial capabilities, weak innovation structure, low market power, and scarcity of resources (Radam, Abu, & Abdullah, 2008). Apart from that, the shortage of skilled workers, weak productivity growth stemming from a lack of creativity and innovation in the workforce, and an over-reliance on unskilled and low-wage migrant workers also contribute to the low innovation issue (National Economic Advisory Council, 2010).

SMEs differ from large firms in terms of motivations, constraints, and uncertainties. The challenges facing SMEs are external (e.g. globalization, political, social, economic, technological) and internal (e.g. human capital) (Ting, 2004; Hashim, 2000). With such issues evolving around SMEs, management competencies are necessary for growth in small organizations compared to large organizations (Snell & Lau, 1994). De Jong (2007) mentioned that individuals should be able to have the capabilities to revolutionize generated ideas into products and process development. Unfortunately, employees are lacking in attitude, skills, knowledge, and competencies within smaller organizations (Christodoulou, 2016). In the hopes of achieving innovation, employees' attitude plays an important role in problem solving as well as to withstand and overcome challenges faced by the dynamic and uncertain environment (Li & Zheng, 2014; Sweetman, Luthans, Avey, & Luthans, 2011).

Omar, Arokiasamy, and Ismail (2009) stated that the limitation in skills, knowledge, and competency issue is due to financial constraints and insufficient training. Kaufmann and Todtling (2002) also stressed that SMEs are restricted in innovative capacity due to their financial and human resources. When employees lack knowledge and training, they may face difficulties and challenges in making entrepreneurial decisions. These issues hinder the innovative behaviour among employees in SMEs, which have led to SMEs being labeled as imitators rather than innovators, especially in the developing countries (Savitskaya, 2009).

Most of the SMEs have flexibilities due to their simple systems and procedures. This allows them to provide immediate response to customers as they have a shorter decision making chain than the large enterprises (Singh, Garg, &

Deshmukh, 2008). Nevertheless, majority of SMEs have not achieved the growth they desire. SMEs lack in resources such as access to finance, human resource constraints, limited or inability to adopt technology, lack of information on potential markets and customers, and global competition (Ting, 2004). Moreover, in the family business, which stands about 72% of the Malaysian SMEs (Rachagan & Satkunasingam, 2009) often favour placing family members, relatives, and close friends in senior management positions over hiring outside professional managers (Rachagan & Satkunasingam, 2009). Thus, the decision making power lies greatly on them, usually leading to idea rejections of others, poor management decisions, and reluctance to delegate decision making, which reduce innovativeness (Block, 2012; Dyer & Handler, 1994). Apart from that, family owned SMEs usually have a non-complex and centralized decision making process, which focus on short-term planning thus, lowering the innovative behaviour among employees (Rohde, 2004).

In a study done by United Parcel Services (2005), innovation, access to market intelligence, and access to capital are the biggest challenges facing SMEs across Asia. A pilot survey of 100 Malaysian SMEs shows that labour cost, innovation, and access to funding and working capital are the main challenges to Malaysian SMEs (United Parcel Services, 2005). According to Grando and Belvedere (2006), the deficiency in human and financial resources, inhibits SMEs from adopting new technological solutions and innovative managerial practices for an organization to achieve productivity. Apart from those issues mentioned above, Malaysian SMEs are also challenged by “relatively low productivity; lower business formation rates than in high income nations; concentration of output and employment in a relatively small number of firms; and a high share of SMEs operating in the informal sector” (Organization for Economic Co-operation and Development, 2013, p. 12).

Many studies have looked into adapting the unexpected market changes, however, the business leaders in Malaysia are still far from developing and implementing the ideal innovation model (GE Global Innovation Barometer, 2014). Thus, the application of effectuation in improving SME employees' innovative behaviour is relevant and timely. This study proposes that innovative behaviour can be improved if SMEs hire employees with appropriate individual values (e.g. openness to change, self-transcendence), provides a culture that supports innovation (e.g. adhocracy culture, clan culture) and encourages the use of effectuation in employees' decision making process.

## **1.7 Scope of the Study**

This study explores the use of effectuation theory in enhancing the innovative behaviour of the workforce in SMEs. This study uses individuals as the unit of analysis. Apart from that, this study excludes certain individual values (self-enhancement and conservation) and organizational cultures (market and

hierarchical). The reasons for doing so are justified below (refer to 1.7.3.1, 1.7.3.2, 1.7.3.3; page 13, 14, and 15).

### **1.7.1 SMEs**

SMEs have shown to contribute significantly towards the economic growth, facilitates innovation, and creating employment towards the development of the standard of living (Malaysian-German Chamber of Commerce and Industry, 2015). Attempts by government has been made in achieving the developed nation status, however, Malaysia is still stuck in the middle-income trap. One of the setbacks identified is on the lack of innovative behaviour in SMEs (Ministry of Science, Technology & Innovation, 2013).

Due to the small and medium size of the enterprises, the SMEs have the flexibility to implement effectuation. However, SMEs in Malaysia were reported to adopt causation decision making that focuses on predicting, structured planning, competitive analysis, and setting up pre-determined goals and objectives (Cheng, Kadir, & Bohari, 2014; Kee-Luen, Thiam-Yong & Seng-Fook, 2013). Since employees' decision making are influenced by the environment set by the organization (Cameron, 2008; Schultz, 2005), it could also be that the rigid and structured culture in SMEs (market, hierarachy) may have contributed to the increased use of causation. The causation is found to be quite a challenge since the businesses are faced with uncertainties. Effectuation was said to suit situations of high uncertainty (Sarasvathy, 2001). Thus, researching effectuation in SMEs is appropriate.

Futhermore, the research problem looks into the innovation issues faced by the SME industry. One of the ways identified to enhance the innovation is by using effectuation (Roach et al., 2016). The effectuation theory works best in situation that faces dynamic and high uncertainty conditions. High uncertainties here refer to market fragmentation, economic turbulence, competitive pressures, innovation, technological changes, and the constant changes in customer's demands (Read et al., 2015). Additionally, the SMEs face limitations in resources (e.g. R&D department, finances, equipment and skills) compared to large firms. The theory of effectuation guides individuals to experiment within the means they have, work within allocated loss, network with stakeholders, and turn obstacles into opportunities. As such, the theory favours the dynamic condition of the SMEs.

## **1.7.2 Unit of Analysis**

The unit of analysis is individuals, which is on the SME workforce. The term workforce here refer to those individuals who are involved in innovative behaviour and making decisions in the firm. Firms are not used as this study focuses on the perception of the individual towards the organizational culture. In addition to that, this study looks into effectuation; which is dependent on the decision makers themselves (Read, Sarasvathy, Dew, & Wiltbank, 2015). Hence, individuals as the unit of analysis is much suited for the objective of the study.

## **1.7.3 Exclusions of Antecedents in the Framework and Industries**

This study opts for the law of Occam's razor that follows the principle of parsimony. Occam's razor, "cautions us not to multiply entities beyond necessity" (Dieterle, 2001, p. 52). Beyond necessity in this sense suggests that this study must look into what is important or necessary for social science. This study also focuses on effectuation use in SMEs that requires certain individual values and organization culture. Preliminary investigation is done by conducting personal communication with a few respondents that have experience working in the SMEs (refer 1.7.3.1; page 13). Past studies (refer 1.7.3.2 and 1.7.3.3; page 14 and 15) illustrate that the logic of effectuation is unlikely to be adapted by individual values of self-enhancement and conservation as well as survive in a rigid and hierarchical culture. The excluded antecedents (self-enhancement, conservation, market, hierarchy) suited better in the traditional decision making which is used by other industries such as large and multinational companies (Sarasvathy, 2005, 2001). Therefore, this study focuses on the "necessity entities" mentioned by the law of parsimony. Subsequently, this study also considers the respondent fatigue in answering the survey question. Respondent fatigue happens when there are high numbers of questions in a survey, which leads to lower response rates, reduced completion, and reduced data quality (Rolstad, Adler, & Rydén, 2011). Considering the aforementioned, this study excludes both the conservation value as well as the self-enhancement value in the framework.

### **1.7.3.1 Personal Communication**

Preliminary investigation has been conducted by the researcher to understand the gist of the issue from the industrial viewpoint. Upon identifying the research problem, the researcher has spoken to four respondents who are involved in innovative work behaviour and decision making. All four respondents are from an engineering background. Two of these respondents are in SMEs whereas the remaining two respondents formerly worked in an SME before moving to a large firm.

Karthik is a consultant of an engineering company of an SME. His firm is a good platform to learn however, the management is not too keen on accepting fresh or new ideas regarding the work process (Karthik, Electrical Engineering Consultant, personal communication, 3 December 2016). He added that the firm is comfortable in following the old methods of doing things. Another respondent, Christopher works as a technician in a medium sized firm. Although the management has meetings on work improvements and innovation, most often these ideas remain idle and would not be documented properly (Christopher, Technician, personal communication, 15 January 2017). Christopher added that the ideas would just perish due to fear of change and budget. Both respondents expressed that they do not have high authority and autonomy in their work decisions. Eventually, every decisions need to go through the higher management or Director's approval, which would be time consuming.

Siva and Hussein are currently an engineer at a large firm. Both of these respondents were previously colleagues working as a consultant for the SME. According to Siva (Electical Engineer, personal communication, 12 February 2017) and Hussein (Senior Engineer, personal communication, 12 February 2017), they left the firm as they are recognized as an engineer in large firms. They added that, most SMEs do not have engineers, but they do have consultants and technicians with engineering background. Upon a certain period, these employees then shift to a large firm and are given the position of engineers. In addition, the SMEs could not expand in terms of innovation due to the lack of budget and resources. They added that, although the SME they worked for has a low bureaucracy, the firm does not have the proper resources to make the ideas feasible. Having said that, any decisions taken must still go through the final say of the higher management.

This preliminary data showed that the SMEs workforce are facing challenges in portraying innovative behaviour due to the culture of the organization. This might also lead to the suppression of the effectuation use since the employees have a low job authority and decision making. Considering the above, this study focused on the individual values and the organizational culture that would enable effectuation use and innovative behaviour. Therefore, the selection of antecedents was justified through literature and personal communication.

### **1.7.3.2 Exclusion of Self-enhancement and Conservation Values**

Schwartz (2012) proposed four individual values; openness to change, self-transcendence, self- enhancement, and conservation. Two of these values (self-enhancement and conservation) are excluded from this study. Self-enhancement individuals are achievement oriented. Such people with a high need for achievement have the fear of failure (Rabideau, 2005). This fear may result in individuals being persistent with their familiar strategies and routines. Sagiv and Schwartz (2007) also mentioned that people with a high need to

achieve their goals, set their own personal goals and strive their best to accomplish these rigid goals.

According to Schwartz (2012), self-enhancement individuals have a high emphasis for power. They preserve their dominant position and control over people and resources. Therefore, individuals exert control and dominance by running through competitive analysis to ensure its dominant position (Noordin, Zainuddin, Mail, & Sariman, 2015). This act resembles the causation approach in decision making, which is not the characteristic of effectuation.

Conservation individuals are more conventional and conservative of the past and change resistant (Schwartz, 2003). As most businesses are facing uncertainties, conservatives may be inclined to increase their safety and security (Bar-Tal, 2001). Hence, they avoid making risky experimentations by proceeding to follow the norms of doing things. Such characteristics also hinder the creativity process, which is important for innovative behaviour to take place. As stated by Schwartz and Bardi (2001), security and conformity values promote harmony by maintaining the status quo and weakening the motivation to innovate. Apart from that, creativity requires tolerance for ambiguity and risk-taking, thereby; “safety, caution, security, and prudence” value should clash with creativity (Kasof, Chen, Himsel, & Greenberger, 2007, p. 109).

The aim of this study is to look into the individual values that promote innovative behaviour of the employees. Past studies have found that self-enhancement characteristics favor the use of traditional decision making logic; also known as causation (Păunescu & Cantaragiu, 2012; Tyszka et al., 2011; Hepper, Gramzow, & Sedikides, 2010). In addition to that, conservation values have shown preference for the status quo. The emphasis on preserving the status quo of the conservation value individuals shows a mismatch with the logic of effectuation. Thus, individuals with such values would not thrive well under effectuation.

### **1.7.3.3 Exclusion of Hierarchical and Market Organizational Culture**

Competing Values Model developed by Cameron and Quinn (1999) proposed four organizational cultures (adhocracy, clan, market, and hierarchy). Of these, two cultures (market, hierarchy) that do not cultivate effectuation use are excluded from this study. The hierarchy culture follows a structured and formalization environment with a tight procedure, policies, and rules (Cameron & Quinn, 1999). Therefore, the employees' autonomy and flexibility are low in this type of setting (Cramm, Strating, & Nieboer, 2013). McAdam, McConvery, and Armstrong (2004) also stated that organizational cultures that follow the hierarchical structures have fewer opportunities to innovate. The rigidity of the structure is needed to ensure a smooth running organization, thereby causing

delays in approvals and communication (Menzel, 2008). This typically can be seen in large enterprises where they need to follow rules and procedures (Duh, Belak, & Milfelner, 2016). Such organizational culture would prefer the use of causation approach where it involves planning, obeying to routines, and the formalization of activities (Menzel, 2008).

On the other hand, market culture also known as the result-oriented organization, focuses on getting the job done through competition, achievement, and winning (Duygulu & Özeren, 2009). The market culture focuses on competition and achievement, which may motivate goal-oriented individuals to follow causation. Looking at the amount of planning and prediction needed to reach the objectives of the market culture, effectuation would not be significant in such structured environment. In short, the two cultures (market and hierarchy) have been excluded from the study as they do not promote the use of effectuation.

#### **1.7.4 National Policy Agenda**

Due to the benefits SME brings to the development of the nation, the government has been supportive towards the growth of the industry. In 2<sup>nd</sup> July 2018, the government has set up the Ministry of Entrepreneur Development (MED). The vision of the ministry is to create high integrity entrepreneurs who are competitive in the global marketplace. To realize the aim of the MED, the SME Corp agency was linked with the ministry in November 2018. The role of the SME Corp is to promote the development of competitive, innovative and resilient SMEs through effective coordination and provision of business support (Ministry of Entrepreneur Development, 2018).

The Ministry of Finance has announced the 2019 budget on 2<sup>nd</sup> November 2018. One of the highlights is on the assistance for the 500 SMEs to switch to Industry 4.0 technology (Ministry of Finance, 2018). The Industry Revolution 4.0 (IR 4.0) transforms the industries and nation when they become a part of the core initiatives. Malaysia needs to join in the wave of IR 4.0 to remain significant in innovation aspect. The question is, 'Are we ready for IR 4.0?' Therefore, this study intends to link the transformation of business education that is parallel with the IR 4.0 movement. Since rapid changes are taking place, a massive change in the education system is central. The aim of IR 4.0 in education is for graduates to be innovative and entrepreneurial, as well as withstand complexity by being flexible (Haseeb, 2018).

Additionally, the Eleventh Malaysian Plan (11MP) endeavors to address the area of weakness and heightened innovation by exploring new approaches (Economic Planning Unit, 2015). One of the six pillars in 11MP is to strengthen the economic growth by enhancing productivity and increasing competitiveness

of the industries (Ministry of Economic Affairs, 2018). The 11MP strives to unlock productivity and transform innovation to wealth in the hopes to sustain economic growth, create new economic opportunities and ensure continued wellbeing and prosperity of the nation (Ministry of Economic Affairs, 2018). This can be made possible by focusing on the SMEs growth and development.

The government's initiatives above share a common goal that highlights on innovation. One of the ways to facilitate the aim and vision of these initiatives could be through effectuation. The introduction of effectuation logic in training and development and business education would expand critical thinking and solving complexities, uncertainties, rising expectations, and limitation in resources. Not only employees and future graduates learn a new decision making strategy, but they are likely to adapt a flexible approach and resilient towards potential challenges through the application of effectuation logic. By doing so, the innovation would translate to wealth, which is the aim of 11MP. Since effectuation logic was founded to impact positively in the SMEs, the effectuation might be the puzzle in finding a mechanism that coordinates effectively and acts as a business support; which is the aim of the SME Corp.

## **1.8 Problem Statement**

Malaysia's common goal is to transform into a high-income status. Unfortunately, the country is still trapped at the middle-income plateau. Korea and Taiwan; which were under the Malaysia's income in 1970s have advanced into a high-income country due to their success in productivity and innovation (Cherif & Hasanov, 2015). Malaysia, on the other hand, still suffer from low innovation. This slows down the process of achieving the developed nation status.

The SMEs play a monumental role in facilitating innovation, providing job opportunities, reducing poverty, and boosting the economy. As such, this study focuses on the SMEs. Due to the advantages the SMEs bring to the country, the government has been supportive towards the development of the SMEs. However, in spite of the government's support, the SME Chief Director Dr Hafsah have mentioned that SMEs are still suffering from low innovation and lack of entrepreneurial spirit.

Sadly, Malaysia is facing loopholes in innovation (drop in GII rank; high percentages of non-innovating SMEs) (Global Innovation Index, 2014; Ministry of Science, Technology and Innovation, 2013). The Ministry of Science, Technology and Innovation (2013) has reported only 35.75% of small companies and 49.42% of medium companies are innovating whereas a higher percentage of non-innovating firm in both firm sizes. In addition to that, the Global Innovation Index (GII) level has declined in its ranking from 31 in year 2011 to 37 in year

2017. The decreasing trend in innovation is alarming as it indicates that Malaysia is losing its focus in innovativeness, which serves as a competitive advantages and business sustainability in the firms (Singh, Garg, & Deshmukh, 2008). If these issues are left unresolved, Malaysia will be far behind in innovation and subsequently might lead to another failed vision (in reference to Vision 2020). Therefore, Malaysian SMEs need to focus on innovativeness in order to stay relevant in today's global economy. With the purpose of dealing with the innovation issue, this study looks into the use of effectuation to enhance innovative behaviour. This research is underpinned by two theories; effectuation theory and P-O fit theory.

Effectuation theory suggests that the logic of effectuation is suited for the uncertain condition of the SMEs. This is because the SMEs generally face limitations in terms of financial, human capital, and competitive advantages (Ting, 2004; Hashim, 2000). However, its outcome of using effectuation in SME Malaysia context is unclear. The P-O fit theory looks into the congruence between the individual values with the organizational culture in creating a close fit. Past studies have mentioned about the importance of innovation towards the betterment of the firms (Rosenbusch et al., 2011; Teece, 2007; Kaufmann & Todtling, 2002). However, little has been done in terms of creating an organizational culture that is supported by individuals with matched value in order for effectuation, innovation, and subsequently, enhanced firm performance to take place. In fact, there are five research gaps this study intends to close.

## **1.9 Research Gaps**

In every research, it is important to identify the theoretical gaps as well as in addressing them. There are five gaps identified from the literature. Those are on 1) under-researched effectuation decision making; 2) the inconsistencies in innovative behaviour and firm performance relationship; 3) under-researched individual values; 4) P-O fit gap; and 5) the mechanism linking individual values in effectuation to innovative behaviour.

First, effectuation is under-researched in the context of innovative behaviour and firm performance of SMEs in Malaysia. Causation heavily relies on planning, fixed targets, predictions, achieving maximum profits, competitive analysis while striving to avoid contingencies. On the contrary, effectuation focuses on control by experimentation, invest what is affordable to lose, pre-commitments, and turning obstacles into opportunities (Sarasvathy, 2005; 2001). Causation is said to work well in an environment that is more stable and predictable (Sarasvathy, 2001); low innovation level, hence low uncertainty (Brettel et al., 2012); and large firms (McKelvie et al., 2013). On the other hand, effectuation theory mentioned that effectuation suits well in uncertain situations (Sarasvathy, 2005) where SMEs are faced with resource and skill limitations (Berends, Jelinek, Reymen, & Stultiens, 2014; Radam, Abu & Abdullah, 2008). However, the survey done by

GE Global Innovation Barometer (2014), encapsulated that the majority of the Malaysian firms (72%) believe in planning and following a structured innovation process and adopts the competitor analysis in order to achieve innovations successfully (83%).

Effectuation was reported to enhance start-up performance (Harms & Schiele, 2012; Nienhuis, 2010); firm's performance (Urban & Heydenrych, 2015; McKelvie et al., 2013); creativity (Dane, Baer, Pratt, & Oldham, 2011); product innovation (Berends et al., 2014), and R&D projects (Brettel et al., 2012). In other words, the findings from these studies showed that the use of effectuation results in positive outcomes to the firm. There were past reports of effectuation – firm performance (Urban & Heydenrych, 2015; McKelvie et al., 2013). However, its outcome of using effectuation in SME Malaysia context is unclear.

Similar studies have been done on effectuation – creativity (sub process of innovative behaviour) (Dane et al., 2011); product innovation (Berends et al., 2014); and project innovation (Brettel et al., 2012). Effectuation theory may explain the complexities of a person, organization, and innovative endeavors as it is an “internally consistent set of ideas that forms a clear basis for action upon the world” (Sarasvathy, 2009, p. 17). According to Roach, Ryman, and Makani (2016) and Blekman (2011), effectuation theory facilitates innovation due to the flexibility of effectuation. For example, effectuation provides the space to experiment within allocated budget and without worrying about creating severe damages to the financial. However, the effectuation – innovative behaviour relationship in SMEs is unclear.

This study builds on the effectuation to increase the theoretical understanding of how innovative behaviour unfolds in Malaysian SMEs. Although past studies were established on effectuation and firm performance in other countries (e.g. United States), this study looks into the Malaysian context. Malaysia is different from the United States in terms of income group, poverty rate, employment rate, and low standard of living. If the results from (1) effectuation and firm performance and (2) effectuation and innovative behaviour showed a positive relationship, this would help SMEs to provide more job opportunities, reduce the poverty rate, and improve the standard of living; which in the long run would boost the economy and income group in Malaysia. Thus, this study fills the gap by looking into effectuation in Malaysian SMEs and evaluates if it brings outcomes like firm performance and innovative behaviour. This study attempts to contribute to the knowledge base by determining the relationship between (1) effectuation and firm performance and (2) effectuation and innovative behaviour.

Second, the relationship between innovative behaviour and firm performance in past studies was inconsistent (Prifti & Alimehmeti, 2017; Omri 2015; Atalay, Anafarta, & Sarvan, 2013; Rosenbusch, Brinckmann, & Bausch, 2011). Rosenbusch et al. (2011) found that although there is a positive relationship

between innovation–performance, this relationship heavily relies on the context such as firm’s age, the type of innovation, and the cultural context. Atalay et al. (2013) also studied on the types of innovation (product, process, organization, and marketing) and the effects toward firm performance. They found that the product and process innovation have a significant and positive impact on firm performance while the organizational and marketing innovation have no significant effect on firm performance. Antalay et al. (2013) reasoned that the discrepancy in the relationships was due to the type of the industry they were studying (automotive supplier industry). Thereby, the types of innovation affect the firm performance differently depending on the types of industry.

The innovative behaviour has always been on the positive light in terms of enhancing the firm performance (Rosli & Sidek, 2013). However, most of these studies did not cover the SME industry. According to Madrid-Guijarro, García-Pérez-de-Lema, and Van Auken (2016) innovation enhances performance in large firms whereas it imposes unwanted risks to the SMEs. This is because innovation requires substantial resources and capabilities which large firms can afford; for instance, R&D department, training costs, attractive compensation to competent employees in order to retain them (Madrid-Guijarro et al., 2016). Given that the SMEs have limited resources, these challenges will damage the firm performance as they do not have the financial resources to cover the costs of innovation (Berends et al., 2014).

In short, past literatures showed that innovative behaviour and firm performance relationship were inconclusive especially in SME context. Some reported significant positive relationship (Rosli & Sidek, 2013; Salim & Sulaiman, 2011; Hyytinen & Toivanen, 2003), while others have reported insignificant relationship (Zaied, Louati, & Affes, 2015; Saunila, 2014; Darroch, 2005). It is unclear if the direct innovative behaviour and firm performance relationship holds in the SME context. The inconsistent findings also point out the possibility of a mediator in innovative behaviour and firm performance relationship.

This study addressed the gap by introducing a mediator (knowledge management orientation). Knowledge Management Orientation (KMO) is found to mediate technology and organizational effectiveness (Kuo, Chi, & Dorjgotov, 2011), and intellectual capital and innovation (Hsu & Sabherwal, 2011). This suggests that, KMO may play a similar mediating role in innovative behaviour – firm performance relationship. This notion is consistent with RBV proposal that resource plays a major role in achieving competitive advantage (i.e. firm performance) (Penrose, 1959).

Third, there is a lack of studies that have looked into the antecedents of effectuation. Some of the limited studies have reported that the individual characteristics like self-driven, stimulation, proactiveness, and achievement oriented influence the decision making (Yuan & Woodman 2010; Osland et al.,

2007; Shane & Venkataraman, 2000). However, there are no known studies that have looked into the individual values and effectuation. Individual values are stable characteristics that influence a person's behaviour (Léger-Jarniou & Tegtmeier, 2017; Linan, 2008; Connor & Becker, 2003). Values have reported to influence consumer's environmental behaviour (Joshi & Rahman, 2015; Gifford & Nilsson, 2014); tourist planning behaviour (Jovanovic, 2014; Cohen, Prayag, & Moital, 2014); and corporate social responsibility (González-Rodríguez, Díaz-Fernández, Pawlak, & Simonetti, 2013). Nevertheless, values are not known if they have the same predictive ability in effectuation. According to Read et al. (2015), "effectuation builds on individual differences" (p. 3). Therefore, this study addressed the gap mentioned by looking into the relationship of the individual values (openness to change or self-transcendence) in explaining the use of effectuation. If the result of this relationship has shown a positive and significant relationship, hiring employees of these values would enhance the SMEs' use of effectuation in decision making.

Fourth, there is a gap in identifying organizational culture that supports the individuals' use of effectuation. Organizational culture often sets the conditions that influence employees' decision making process (Cameron, 2008; Tierney, 1988). Yousef (1998) found a significant relationship between organizational culture and the decision making style. Most companies perceived themselves to be creative and pioneering; however, in reality, the systems and culture of the organization prefers to follow the status quo (Dingli, 2008). Conflicts will bound to happen, especially when employees' values are incongruent with the organizational culture they are in. As Tierney (1988) said, employees are reminded of the culture presence and power only when conflicts happen between employees and the organization. For instance, the uncertainties in SMEs condition motivates employees to think outside the box; however, it is unlikely for employees to make decisions spontaneously and without restrictions especially when the organization has a strict adherence to follow. Consequently, employees portray their full potential when organizational culture is synonymous with their characteristics, behaviour, and capabilities (June & Mahmood, 2011). Therefore, understanding the organizational culture is important to increase the fit between the person and the organization (P-O fit).

There are less researches on P-O fit theory in linking the decision making process. Although a research done by Hakkinen (2015) has shown the linkage between P-O fit and effectuation, the study mainly looks into the P-O fit as a variable investigating the relationship towards effectuation. It did not consider looking at the individuals and the organization separately at achieving effectuation. Therefore, this study links the individual values and effectuation; thereby introducing the organizational culture as the mediator. The congruence between the values of the individuals with the organization is substantial towards a good fit, which may lead to the innovative behaviour. This is also in line with the P-O fit theory, where it states that the organizational culture that supports the values of employees may result in desired outcomes.

Fifth, there is a gap in understanding the mechanism in which individual value translates to innovative behaviour. A recent study by Roach et al. (2016) identified that effectuation acts as a mediator between innovation orientation – product/service innovation relationship. It is found that those with innovative orientation used more of effectuation and therefore result in product/service innovation. The understanding of effectuation as mediator indicated that effectuation is the main reason for innovation, not innovation orientation. In this study, effectuation may work as a mediator in the same way. That is, those with openness to change and self-transcendence values are more likely to use effectuation that leads to innovative behaviour. Although it is likely for innovative behaviour to take place in the SME context, nevertheless, studies has not been tested on effectuation as a mediator between values and innovative behaviour. Hence, the intervening variable of effectuation should be studied as a mediator to explain how values translate to firm performance.

### **1.10 Research Questions**

Research gaps in general formulates the research questions. Thereby, this research would like to fill in the gaps by answering the research questions. There are five research questions derived from the research gaps mentioned earlier (refer to 1.9; page 18). The research questions are:

RQ1: What are the outcomes of effectuation?

RQ2: Does KMO mediate innovative behaviour and firm performance relationship?

RQ3: What individual value types explain the use of effectuation?

RQ4: What types of organizational culture mediate the relationship between value and effectuation?

RQ5: Does effectuation mediate the value and innovative behaviour relationship?

### **1.11 Research Objectives**

Innovation-led organizations are one of the ways to mold the economy into a high-income status. Hence, this study examines the process that leads to innovative behaviour in SMEs. From a separate standpoint, the effectuation theory is suggested to create a link and support on the innovative behaviour in SMEs. In short, effectuation is proposed to result in innovative behaviour and firm performance. Then, the study further dives into the adhocracy and clan culture as the mediator between individuals who embrace openness to change and self-transcendence values respectively and effectuation. The study also introduces the KMO as the mediator between innovative behaviour and firm performance. Besides that, effectuation is proposed to play a mediation role in value and innovative behaviour relationship. Thus, the objectives of this research are as below:

## **General Objectives**

- To identify antecedents and outcomes of effectuation.

## **Specific Objectives**

- RO1: To determine the relationship between effectuation and firm performance.
- RO2: To determine the relationship between effectuation and innovative behaviour.
- RO3: To determine the innovative behaviour – firm performance relationship.
- RO4: To determine the mediating role of KMO in innovative behaviour – firm performance relationship.
- RO5: To determine the values (openness to change; self-transcendence) – effectuation relationship.
- RO6: To determine the mediating role of adhocracy culture in openness to change value – effectuation relationship.
- RO7: To determine the mediating role of clan culture in self-transcendence value – effectuation relationship.
- RO8: To determine the mediating role of effectuation in values (openness to change; self-transcendence) – innovative behaviour.

## **1.12 Significance of Research**

This study aims to make significant contributions to both theoretical and management practices. There are four theoretical significances and three managerial significances identified in the study. Those are discussed as below.

### **1.12.1 Theoretical Significance**

This study adds value to the literature in four ways. First, it highlights the importance of using effectuation in SMEs to bring about innovation. By identifying the importance of innovation in firms, this study aims to validate the effectuation theory as a process of decision making in times of uncertainty. Given that the SMEs are very much uncertain, effectuation may help SMEs to achieve innovation they deserve. Nonetheless, the SMEs prefer the causation way of making decisions (GE Global Innovation Barometer, 2014; Kee-Luen, Thiam-Yong, & Seng-Fook, 2013). It could be that they might not be aware of the existence of effectuation. While effectuation theory does not claim that it is superior to causation decision making strategy, effectuation has been shown to have desirable outcomes in previous studies e.g. creativity in the new product development (Blauth, Mauer, & Brettel, 2014) and performance (Harms & Schiele, 2012; McKelvie et al., 2013). This research substantially adds to the innovation literature by shedding new light on the relationship between

effectuation and innovative behaviour. Hence, this study would like to validate the use of effectuation in Malaysia SMEs.

The second theoretical significance of the research is on the resource based view (RBV). The RBV suggests that resources are important to improve firm performance where the use of KMO is proposed as the mediator between innovative behaviour and firm performance. It is unsure how SMEs share knowledge (Jayasingam, Ansari, Ramayah, & Jantan, 2013); utilize knowledge (Durst & Edvardsson, 2012); how they store information or what type of knowledge management systems they are using (Cerchione & Esposito, 2017; McAdam & Reid, 2001). Hutchinson and Quintas (2008) stated that most SMEs adopt informal processes of storing information (e.g. knowledge via on-the-job training) unlike large firms where they have information technology (IT) based tools to manage knowledge (e.g. decision support systems, data warehouse systems, document management systems, customer relation management, and enterprise resource planning). Adopting informal processes of knowledge management may affect the chances of SMEs translating innovative behaviour to firm performance. For example, SMEs that do not manage knowledge well might not be able to retain innovative ideas, which may help firm perform better. In doing so, this study would like to contribute to the knowledge management systems and highlight its importance of KMO as the mediating role between the relationship of innovative behaviour and firm performance. Understanding the role of KMO as the mediator between the innovative behaviour and firm performance relationship, will help to understand the influence of KMO in enhancing firm performance.

Third, this study would like to contribute to Schwartz Theory by looking into the individual values (openness to change and self-transcendence) towards innovative behaviour with the intervention of effectuation. Past efforts have been made on individual values and innovation. While studies have supported the relationship between openness to change and innovative behaviour (Fedotova 2015; Lebedeva & Schmidt, 2012; Dollinger, Burke & Gump, 2007; Shane, 1992), the relationship between self-transcendence and innovative behaviour have been shown insignificant (Hirschi & Fischer, 2013; Gorgievsky, Ascalon, & Stephan, 2011; Holland, 2008). This suggests that a mechanism should be introduced for self-transcendence individuals to achieve innovative behaviour. Additionally, past studies have yet to look at the link between individual values and effectuation. However, according to Read et al. (2015), "effectuation begins with an agent or a decision-maker"; which could be "value system, beliefs, intentions and aspirations" (p. 11). This suggests that the decision-maker's values and beliefs play an essential role in decision making. Since there are no known studies that have looked into the relationship between the individual values and effectuation, this study would like to contribute to the Schwartz Theory by looking into individual values (openness to change and self-transcendence) towards innovative behaviour with the intervention of effectuation. The outcomes of these relationships would assist in identifying if

effectuation works best for individuals who emphasize openness to change and self-transcendence values in achieving innovative behaviour.

Fourth, this study identifies organizational culture that facilitates employees' use of effectuation based on the proposal of P-O fit theory. The effects of organizational characteristics, such as the effect of organizational culture on employees' decision making logic, are still unclear. This is because, organizational culture varies from one another and plays a role in influencing the behaviour of employees (Ravasi & Schultz, 2006; Schein, 1985); which includes the way employees make decisions. Cultures may encourage or hamper employees' use of effectuation in the firms. P-O fit proposes a close fit between the individuals and the organization. Therefore, this study adds value to literature by empirically testing this relationship. Thus, this study would like to heighten the innovation level among the SMEs based on the compatibility between the individuals and the organization, which is known as the P-O fit theory (Kristof, 1996).

### **1.12.2 Managerial Significance**

This study is significant to practitioners in three ways. First, SME managers are provided with information on how effectuation can enhance the innovative behaviour in SMEs. The awareness of the close fit between the individual values and the SMEs will facilitate in the selection and hiring process. It is important for SMEs to ensure they are hiring employees with corresponding values with the organization's culture in order to achieve high effectuation use, which subsequently leads to innovative behaviour and enhanced firm performance.

Second, training and development would face transformation. Instead of setting goals, predicting the unknown, and analyzing competitors, trainings would now include effectuation training, whereby learning the importance of suitable partnership, innovating by using the existing means, leveraging contingencies, and such. Not only the individuals will learn new approach, but the organization will also shift into more flexible, tolerance towards contingencies, and less dependent towards predicting future plans. The training and development is important especially for the current workforce in learning new decision making approach that suits the condition of the firms. Before conducting trainings for the workforce, the firms need to go through assessment (e.g. needs assessment). The needs assessment is important in identifying areas the workforce is lacking for the skills required by the job and department as well as the type of trainings needed to achieve desirable outcome (Miller & Osinski, 2002).

Third, this study would contribute in the Industrial Revolution 4.0 (IR 4.0) in terms of transformation in business education. Effectuation would likely to add a new perspective in the syllabus. Effectuation as a new curriculum in education

echoes the aim of IR 4.0 where “graduates must be innovative and entrepreneurial, and have cognitive flexibility to deal with complexity” (Haseeb, 2018). IR 4.0 on education emphasizes on collaborative skills, flexibility, creativity, and innovation; which all of these are being emphasized in effectuation (Roach et al., 2016; Sarasvathy, 2005). Education is one of the ways to reach to a higher number of people to be more innovative in their critical thinking and decision making skills; thereby generating graduates with the knowledge of both causation and effectuation as decision making tools. By introducing effectuation in the education syllabus, in long run, fresh graduates will be equipped with effectuation knowledge. This would create a workforce that is able to apply the decision making tools accordingly to the situation (resource limitations, high uncertainty) or firms (SMEs; large; multinational companies). Thus, this study intends to amplify the understanding level of how effectuation can be used in making decisions, along with the IR 4.0 movement towards innovation.

### **1.13 Construct Conceptualization/Operational Definition**

Construct conceptualization is the definition of the constructs used in the study. In addition to that, the operational definition is also significant because it shows how the research intends to measure the variables. Both construct conceptualization and operational definition are crucial as they provide clarification and a clearer picture on how the constructs are measured. Table 1.3 shows a list of constructs used in the theoretical framework of the study. They are:

**Table 1.3: Construct Conceptualization/Operational Definition**

<b>Construct</b>	<b>Construct Conceptualization</b>	<b>Operational Definition</b>	<b>Source(s)</b>
Openness to Change	Value that emphasizes independence of thought, action, and feelings and readiness for change.	Scores on the Portrait Values Questionnaire	Schwartz (2003)
Self-transcendence	Value that emphasizes concern for the welfare and interests of others.	Scores on the Portrait Values Questionnaire	Schwartz (2003)
Adhocracy Culture	A workplace culture where employees are encouraged to take initiative, experiment, innovate, and continuously improve to enable the production of innovative products and services.	Scores on the Organizational Culture Assessment Instrument (OCAI)	Cameron and Quinn (1999)
Clan Culture	A workplace culture that focuses on human relations, concern in employee growth and development, loyalty, collaboration, tradition, commitment and group cohesion and consensus.	Scores on the Organizational Culture Assessment Instrument (OCAI)	Cameron and Quinn (1999)
Effectuation	It is an alternative decision making logic that is based on experimentation where they minimize the risk of losing more than they can afford by partnering with self-selected stakeholders (potential, suppliers, competitors, and customers); as well as treating challenges as an input in order to turn it into opportunities.	Response to Effectuation Process	Chandler, DeTienne, McKelvie, and Mumford (2011)
Innovative Behaviour	Innovative behaviour includes idea exploration, idea generation, idea championing, and idea implementation.	Response to idea exploration, idea generation, idea championing, and idea implementation.	de Jong and den Hartog (2010)
Knowledge Management Orientation (KMO)	How knowledge is managed through storage, shared among individuals, absorbed, and accepted within the firm.	Response to how knowledge is stored, shared, absorbed, and accepted within the firm.	Wang, Hult, Ketchen Jr, and Ahmed (2009)
Firm Performance	The ability of a firm to produce the expected results	Score on the Subjective Measurement of Performance	Jaworski and Kohli (1993)

#### 1.14 Summary

This chapter provides the overview of the study. It describes the overview of SMEs in Malaysia as well as the importance of innovation for sustainability and growth. The research problems allow readers to understand the underlying issues faced by the respective parties to improvise innovation in the country. Additionally, the research questions and objectives enable readers to identify the focus of this research. Overall, this research contributes in both; theoretically and practically.



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