

The Effects of External Barriers on Entrepreneurial Bricolage among Smes in an Emerging Economy

Hasliza Abdul Halim¹, Associate Professor, haslizahalim@usm.my
Tarnima Warda Andalib^{2*}, Post Doctoral Fellow, tarnimawarda.andalib@usm.my
Noor Hazlina Ahmad³, Dean and Professor, hazlina@usm.my
T Ramayah⁴, Professor, ramayah@usm.my
¹⁻⁴School of Management, Universiti Sains Malaysia, 11800 USM, Penang, Malaysia

Article Info

Volume 83

Page Number: 15493 - 15507

Publication Issue:

May - June 2020

Abstract

Research scope here is to scrutinize the inter-connection between external barriers and entrepreneurial bricolage among Malaysian manufacturing enterprises, which are either small or medium in size. Since barriers come in many types and forms, this study focuses on two prominent barriers that could hamper entrepreneurial bricolage; namely business uncertainty and environmental hostility. This study adds to the present literature by analyzing conceptually the linkages between business uncertainty and entrepreneurial bricolage, and between environmental hostility and entrepreneurial bricolage. The study also contributes to the literature by presenting preliminary results of the study. The findings from the interviews will offer an introductory insight on the relationship between external barriers and entrepreneurial bricolage among Malaysian SMEs in manufacturing sector..

Keywords: Barriers, Entrepreneurial Bricolage, SMEs, Economy.

Article History

Article Received: 1May 2020

Revised: 11 May 2020

Accepted: 20 May 2020

Publication: 24May 2020

I. Introduction

The Government of Malaysia has launched the 11th Malaysian Plan (2016 – 2020) blueprint to clearly highlight the aspiration of Malaysia and to become a developed economy in terms of both being sustainable and inclusive (Re-engineering economic growth for a better prosperity, 2016) This plan was created to ensure that Malaysia will become a nation with more earning. Since 1991, Malaysian has positioned various edges to transmute this country to a developed country. Vision 2020 serves as a roadmap and it demands a focused notion (Malaysian Economic Planning Unit, 2001). [1]

To sustain with consistent and higher economic condition and improve production of the country, industry formations in Malaysia need to be sturdy in facing the challenges of globalization. Therefore, adapting quickly to the changes in environment is necessary for business survival (Abdullah, Shamsuddin, Wahab, & Hamid, 2014; Hairuddin, Noor, & Ab Malik, 2012). [2] To overcome challenges and for business continuation, entrepreneurs should be more innovative and utilize any available resources that can enhance the Malaysia's economy. In addition to this, the Government has recognized that the SMEs' are the principle handlers of consistent economic progress (Rahman, Amran, Ahmad, & Taghizadeh, 2015). SMEs expands remuneration packages, introduces employment

possibilities and redesigns the economic structures that relies on the massive companies more (Rahman et al., 2015; Savlovski & Robu, 2011).

[3][4]

SMEs' are the mostly private entities but prominent to that serve as the backbone of nation's GDP (Khalique, Isa, Shaari, Abdul, & Ageel, 2011; Ramayah, Ling, Taghizadeh, & Rahman, 2016). In Malaysia, SMEs' are performing significantl in the expansion of Malaysia's economy. According to Department of Statistics Malaysia (2018), in 2017, SMEs subsidized RM 435.1 billion to Malaysia's economy with a GDP (Gross Domestic Product) of 7.2%. As compared with year 2016, Malaysia GDP rose from 36.6% to 37.1% in year 2017 (Syed Jafar, 2018). Furthermore, according to the Statistics Department, SME Corp Malaysia 2016/2017 SME GDP growth had been recorded in overall areas specifically in the manufacturing, services, and agricultural portions. SMEs also contribute largely toward Malaysia's employment at 66% in 2017 from 65.3% in 2016 (Department of Statistics Malaysia, 2018). [5][6][7][8]

Manufacturing enterprises are ranked as the second highest provider among SMEs to national GDP. Furthermore, they provide middle-class employments at numerous aptitude (Ali, 2009; Chandran, 2009; Ezell & Atkinson, 2011). According to Kassim and Sulaiman (2011), the Malaysian's manufacturing areas economy and influence will surge in the future. Most of the manufacturing SMEs' process and produce raw materials like petroleum, beverages, wood, textiles, food and rubber. Therefore, this sector is crucial and also serves as value added to Malaysian economy. Despite the supports and initiatives provided by the Malaysian Government, SMEs are still far from reaching the expected superior performance. [9][10][11][12]

According to the Malaysian statistics' wing, in 2017, enterprises' support to total GDP was comparatively small at 37.1%. Although the

majority of businesses in Malaysia are SMEs, their contribution towards national GDP is small if compared with their counterparts of other nations. For instance, SMEs in Singapore contribute half to their national GDP at 50% (The Asia Pacific SME Cloud Computing Attractiveness Index, 2015). Even though huge efforts had been undertaken, somehow something is hampering the progress of SMEs in Malaysia. Innovation offers several decent perks to business firms in the form of competitive advantages (Bhaskaran, 2006; Andalib and Halim, 2019; Guo, Su, & Ahlstrom, 2016), value creation (Rosenbusch, Brinckmann, & Bausch, 2011) and improves firm performance (Rosli & Sidek, 2013). [13][14][15][16][17][18]

The term 'entrepreneurial bricolage' refers to the behaviors that "make do" by employing existing assets to assemble innovative trials. It has been applied in a range of research domains, and it is useful in explaining various phenomena (Guo et al., 2016). To pursue opportunities or overcome challenges entrepreneurial bricolage transforms, alters, and utilizes any obtainable supplies (Baker & Nelson, 2005). In this view, entrepreneurial bricolage somehow reflects the creativity of entrepreneurs in transforming any available resources to pursue business opportunities and ensure the survival of their businesses. Since bricolage make use any available resource at hand, it is somehow associated with innovation (Baker & Nelson, 2005). Here, the entrepreneurs find a new way to produce a product or solutions to meet market demand. Nowadays, business environment described by (Andalib et. al, 2019; Andalib and Halim-Abdul, 2019)is quickly changing and in order to survive, firms need to adjust to the arcade's requirements. One way to such accomplishments is through innovation. [19][20][21][22]

In the context of Malaysia, studies on the barriers to innovation, particularly on internal control and external factors among SMEs are still at a primitive stage (Andalib et. al, 2020). Therefore,

this study seeks to find out the impact of external barriers to innovation on entrepreneurial bricolage among Malaysian SMEs in manufacturing sector. It is hoped that this modest study could shed some light on this little-known gap of research. [23]

II. LITERATURE REVIEW

In Malaysia, according to Malaysian SMECorp (2013), a original description of SMEs acknowledged by 14th NSDC Assembly in July 2013. In Malaysia the new meaning got adopted in 2014. For the manufacturing sector, SMEs, which operate in Malaysia are defined as corporations with atleast 200 workforces and sales-turnover that do not exceed RM50 million. The number of employees also indicate either micro, small or medium corporations (SMECorp, 2013). For SMEs in manufacturing sector, firms with sales turnover of less than RM300,000 or having less than five employees are considered as micro. Small corporations usually have 5 to 75 employees and sales turnover RM300,000 to less than RM15 million. Lastly, medium sized manufacturing corporations have 75 to 200 permanent fulltime employees and RM 15 sales turnover.[24]

Various scholars have agreed that SMEs play an important role to economic growth (Aris, 2007; Ayyagari, Demircuc-Kunt, & Maksimovic, 2011; Rahman et al., 2015; Saleh & Ndubisi, 2006). In addition, small businesses make an important contribution to job creation and also toward employment (Ayyagari et al., 2011; Neumark, Wall, & Zhang, 2011). Malaysian SMEs own 97.3% of total establishments in the country through Economic Census 2011, and contribute over 77% of total full-time employment in Malaysia (SME Corp. Malaysia, 2013). As per chief executive of SME-Corporation-Malaysia, Dato Hafsah Hashim said "In terms of numbers, SMEs are significant, and they form the backbone of Malaysian economy". Therefore, strengthening

the growth of SMEs is crucial for future expansion of Malaysian economy. In this respect, Governments' integrity have responded to this scenario by providing various initiatives that aim to create a conducive environment for manufacturing companies including the SMEs to flourish and thrive (Andalib et. al, 2019). SMEs are expected to be a crucial element of economic growth, employment and the transformation of Malaysia into a developed country by year 2020; therefore, it is essential to further support the development of SMEs (Andalib and Halim-Abdul, 2020). In order to reach high income nation, Malaysian government has introduced various mechanisms and initiatives that aim to improve the SMEs' performance.[23][24][25][26][27][28][29]

As per Khalique et al. (2011), SMEs struggle in enhancing their competitive advantage. Technological capabilities, human capital resources, research & development, penetration of technology & ICT, market orientation and international competition are the potential challenges that will be faced by Malaysian SMEs, whereas among various other significant barriers, financial barrier is always present in new venture creation particularly among women entrepreneurs (Saleh & Ndubisi, 2006). have further argued that, among rs. (2017). [5][27]

This study explores the influence of present barriers on innovation through multiple logistic regression models. By analyzing a sample of 247 executives from food processing SMEs in Malaysia, the study has found that financial barriers do significantly influence the aspect of innovation. From the above discussion, barriers and challenges exist in many forms; and scholars have conducted various studies to understand the mechanism of these barriers and their influences on competitiveness, performance, and innovation. Therefore, this study has identified a gap where trivial importance has been employed on the

impact of external factors on entrepreneurial bricolage.

Entrepreneurial Bricolage

Lévi-Strauss (1967) precluded the term bricolage and was further explained by Baker and Nelson (2005). They define the term bricolage as, “making do by applying combinations of the resources at hand to new problems and opportunities.” The definition includes three strategic foundations such as Making do, combination of resources for new purposes, and resources at hand (Baker and Nelson, 2005, Guo et al., 2016). The first one “Making do” signifies a preference toward action and active engagement with problems or opportunities. The second, “combination of resources for new purposes” suggests to the permutation and combination of reusable assets instead of using them for their original intended purposes. Finally, the third one “resources at hand” includes both obtainable and free resources (Baker and Nelson, 2005; Guo et al., 2016).[20][30]

Entrepreneurial bricolage is quite conceptual to the industries because entrepreneurial bricolage embraces strategizing to overcome constraints’ regarding the assets pretty efficaciously where competitive advantage is created. Additionally, such bricolage is portrayed as an activity with distinct contributions (Merkel, 2013; Pierce, Johnson, & White, 2013), resulting from combinations of ideas, vision, skills, abilities, products and innovative processes (Potts, 2011), are used to reach the goal to solve problems or create a new opportunities in market development. The bricolage behavior allows firms to utilize existing resources through recombining the remaining of these resources to manage current market’s uncertainties, and subsequently sustain or even flourish despite the various constraints. In this context of study, entrepreneurial bricolage can be used as an approach to boost innovation performance. This is because the outcomes of

bricolage may play an important role in shaping firm innovativeness (Andersen, 2008). This study applies the concept of entrepreneurial bricolage in deriving new insight on innovation performance.[31][32][33][34]

External Barriers

Business uncertainty is one of the most important business situations faced by an industry (Lee & Klassen, 2016). Usually, uncertainty defines a situation or environment, in which something is not known. Padukkage, Hooper, and Toland (2016) have pointed out that perceived unpredictability of environmental variables pose certain degree of impact on organizational performance. In business, it is often caused by changes in technologies, markets and regulatory environment (Engau & Hoffmann, 2009). Uncertainty in the environment emerges when probabilities are not known and it increases the difficulties in understanding the environment (Xu & Koronios, 2005). [35][36][37]

In other words, the term uncertainty is described as imperfect knowledge. Kraus, Kauranen, and Henning Reschke (2011), find that small SMEs are experiencing an increasing pressure from unpredictable environment because of globalization. Other researchers (Kurtz, Menezes, & Rados, 2014; Stigter, 2002) argue that SMEs face various forces of change in their business environment due to turbulent environment, globalization, innovation technology, and mass individualization. Parnell, Lester, Long, and Köseoglu (2012), point-out that environmental uncertainty affects business strategy and SMEs’ performance. However, there are evidence that suggest in established organizations, executives in SMEs and their counterparts interpret environmental uncertainty in different ways (Lester, Parnell, “Rick” Crandall, & Menefee, 2008). [38][39][40][41][42]

Consequently, a strong entrepreneurial mind-set is needed to distinguish the pressures and changes in unpredictable environment. Moreover, this will create a crucial support in developing actions related to business innovation and performance. Innovation is broadly known by various researchers and professionals in management area and considered as a precarious factor that has huge impact on business performance and economic growth (Andalib and Halim-Abdul, 2019). [43]

Business environment is progressively becoming more complex, and unpredictable (Tang & Hull, 2012), where innovation, competitiveness, technology, knowledge have crucial roles in business activities. (Hadjimanolis, 1999). Prajogo and McDermott (2014) have explained that hostile environment is the level of competition revealed in the number of customers and competitor areas in which competition exists. Martins and Rialp (2011) point-out that company's achievements cannot be calculated with the attributes like structure and leadership style and etc but can be estimated by the degree of hostility and uncertainty in the company's environment. Hostile environment is defined as a stressful, very risky, with few opportunities (Khandwalla, 1972). Further (Covin & Slevin, 1989), emphasize that hostile environment is harsh, precarious, overwhelming and lack in exploitable resources and opportunities. [44][44][45][46][47]

There are various definitions of what the term 'environmental hostility' means. Researchers (Bluedorn, 1993; Rajagopalan, Rasheed, & Datta, 1993) define that firms' external environment is theorized and operationalized at distinct altitudes, which consists of dimensions of complexity, and dynamism (uncertainty). Further, Miller (1988), suggest two magnitudes of environmental uncertainty such as 'dynamism' and 'unpredictability'. Meanwhile, Wolff and Pett (2006) have found undesirable relationship

between hostility and innovation performance. Other than that, hostile environment could be characterized by multi-faceted, intense competition in the industry (Kotey, 2014). In addition, based on Bhaskaran (2006), environmental hostility poses a bigger threat to SMEs in line with their limited resource base such as skill, ability, knowledge and others. Therefore, the hostility from the environment serves as external factors that could somehow influence the creativity and the entrepreneurial capacity with obtainable reserves at hand. [48][49][50][51][52][43][72]

III. CONCEPTUAL FRAMEWORK

Based on the discussion above, this study shall propose a framework that could explain the relationship between the external factors that contribute as barriers to innovations and entrepreneurial bricolage. Despite the various external barriers that could hamper innovation, this study focuses only on two barriers namely business uncertainty and hostility of the environment. The framework of this study is presented in Figure 1 below.

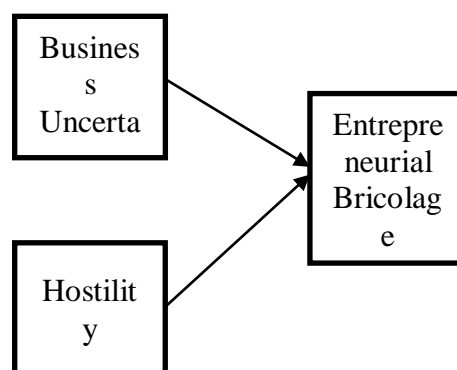


Figure 1 The proposed model with their respective indicators

Preliminary findings

In developing countries, especially in Malaysia, SMEs are frequently experiencing various constraints from internal and external factors. Many previous research has highlighted on

internal constraints such as elevated cost and threat allied with invention, deficiency of capital, logistic inflexibility, absence of talented employees, scarcity of bazaar data and equipment, fragile expertise and government regulation (Lim & Shyamala, 2007). [54]

However, the external factors also hamper the performance of the SMEs. For SMEs to hold the concept of entrepreneurial bricolage, business owners need to predict on the external forces that may affect their businesses. To probe further on this issue, a series of interviews with regard to external factors and entrepreneurial bricolage had been conducted among SMEs. During semi-structured, direct in-depth interviews 10 Malaysian entrepreneurs participated who were recognized through snowball sampling technique and who were asked about external factors that encourage them to embrace the concept of entrepreneurial bricolage.

The findings of preliminary interview will offer an introductory insight on the relationship between business uncertainty and entrepreneurial bricolage, and hostility and entrepreneurial bricolage in the SMEs' manufacturing sector.

Respondents' characteristics are exhibited in Table 1.

Profile	Frequency	Percentage (%)
Race		
Malay	8	80
Chinese	2	20
Education Level		
Diploma	4	40
Degree	5	50
Master	1	10
Industry		
IT Industry	4	40
Food and	2	20

Beverages	3	30
Printing and designing	1	10
Agro-based		
Types of Business		
Sole Proprietor	8	80
Partnership	1	10
Private limited	1	10
No of Years in Business		
Less than 5 years	3	60
5 – 10 years	5	30
More than 10 years	2	10
Number of employees		
Less than 5	5	50
5 - 75	4	40
76 – 200	1	10

Table 1 exhibits that, most of the SMEs owners were Malay (80%) and 20% were Chinese. Majority of them hold bachelor's degree, followed by diplomas (40%) and only 10% were with master's degree. Most of the SMEs were in the IT industry at 40%. This is followed by 30% in printing and advertising, 20% in Food and Beverages, and lastly 10% were Agro-based SMEs. It was also found that 60% of them had been established less than 5 years, 30% operated from 5 years to 10 years and only 1 SME had been established for more than 10 years. In terms of number of employees were micro SMEs and had been operated between five to ten years (50%). Finally, for number of employees, 50% reported to have less than 5 employees, 40% of SMEs employed 5 to 75 employees and only 10% were with 76 to 200 employees.

The concept of Entrepreneurial Bricolage

The concept of entrepreneurial bricolage efforts to comprehend the dealings with the confronted limitations of the entrepreneurs. In other words, entrepreneurial bricolage transforms, alters and re-assembles obtainable assets for successful endeavor. Most of the organizations were not familiar with the term entrepreneurial bricolage. However when explained in detail, most of the respondents claimed that they have to possess the characteristic of entrepreneurial bricolage in order to understand their constraints and weaknesses in running their businesses daily.

This is described as one of the respondents: *We definitely need to have this and always have be ready to turn our limitations into workable solutions* (translation)

As also stated by one SME of a printing and designing organization: *The environment is very volatile and as a competitive SME, I need to ensure that my employees have various abilities and resources to generate what that could not be, be possible in a resource constrained environment* (translation)

Additionally, one respondent echoed that: *We must know how to adapt and recombine the materials available in the company and once we manage to do this, we have the opportunity to boost our innovativeness and SMEs' performance subsequently* (translation).

External Barriers

Globalization has caused SMEs to operate in a very competitive world. To survive in this environment, SMEs need to be creative, innovative and continuously improve their operation's techniques and technology. In fact, business environment is progressively becoming more complex, uncertain, and unpredictable; and as such SMEs need to understand the external factors that hamper their innovativeness and performance. Based on the preliminary findings, the respondents acknowledged that SMEs should recognize the barriers and constraints that prohibit superior performance.

One of the respondents said that: *Business uncertainty is definitely a major factor that hampers our plan; and what we need to do is to be ready to face our competitors and try our best to find the potential solutions for these uncertainties.* (translation)

Similarly, another participant from food and beverages remarked that: *There are many factors that SMEs need to pay extra attention to, especially the external factors; because these factors are beyond the control of the company.* (translation)

He also added that: *To survive during uncertainty and volatility, SMEs need to be resilient, robust and vigorous and at the same time combat the ambiguity* (translation)

Moreover, other respondents also came out with almost similar opinions that external barriers are crucial and need to be handled with care. They said that: *Business uncertainty due to unfavorable economic condition and political instability have pushed many SMEs to be out of business in seconds, only strong SMEs survive.* (Translation)

As a business owner, *I have experienced increasing pressure from unpredictable environment, and I need to find ways to survive and position my situation in order to sustain during turbulent environment* (translation).

Another concern is the environmental hostility, which poses a bigger threat to my company especially when I do not have sufficient resources such as skill, ability, knowledge and talent. Money of course a major concern, but I need to deploy whatever resources available to have better solutions to solve the problems. (Translation)

My company has experienced many uncertainties and turbulent situations in running this business and we found that these hostile environments are harsh, hazardous, devastating and lacking in exploitable resources and opportunities. The competition is very intense and is difficult to gauge (translation)

Based on the interview above, to some extent, SMEs realize that when they are pressured with intense external barriers, namely business uncertainty and hostility especially with the advent of technology, fierce competition, volatility in economic situation and political factors, SMEs will engage entrepreneurial

IV. HYPOTHESES DEVELOPMENT AND RESEARCH METHODOLOGY

The Relationship between External Barriers and Entrepreneurial Bricolage

As portrayed by Figure 1, the external barriers (business uncertainty and hostility) are the antecedents to entrepreneurial bricolage. Baker & Nelson (2005) express bricolage as “making do” by permuting the permutation and combinations to deal with confronted issues. Business uncertainty refers to the environment that is not known; or unpredictability of environmental variables that can impact organizational performance (Padukkage et al., 2016). [20][55]

In addition, Kraus et al. (2011) have argued that globalization gives challenges to the SMEs; and SMEs need to be prepared to face the growing pressure from their unpredictable environment. In this respect, SMEs that face challenging environment (business uncertainty) have to specially keep abreast with changes in creating new products, catching new target customers, introducing new marketing technique and others, whereby these will spur their entrepreneurial bricolage to overcome these challenges. During this period, entrepreneurs may conduct experimentation to find the best and more efficient way to use their resource. According to Chandler, DeTienne, McKelvie, and Mumford (2011) experimentation is positively correlated with uncertainty. Therefore, H1 is formed to understand the relationship between business uncertainty and entrepreneurial bricolage practices. [38]

H1: The higher the business uncertainty, the higher the entrepreneurial bricolage practices among manufacturing SMEs

bricolage behavior in order to survive. They will push themselves to be resilient, flexible and strive to find workable solutions within their limited resources. As such, it is feasible to dwell further on hypotheses development to investigate the relationship between business uncertainty and hostility and entrepreneurial bricolage.

Prajogo and McDermott (2014) have pointed out that hostility environment refers to the level of competition as reflected in the number of competitors and customers in the market. Hostility environment is harsh, precarious, overwhelming and lack in exploitable resources and opportunities (Covin & Slevin, 1989). Consequently, Wolff and Pett (2006) have found that a hostile environment could negatively impact the ability of entrepreneurs to innovate. Therefore, SMEs should adapt entrepreneurial bricolage by utilizing their accessible properties in a diverse way. This may generate relative benefits for the SMEs when they confront resource constraints where this will simultaneously increase their competitive advantages and overcome fierce competition in the market. As hostility is influenced by the level of competition and impact of globalization, the nature of hostility is rather dynamic. Therefore, the dimension of hostility for the current business environment is hard to predict. Based on the above argument, hypothesis 2 is developed to observe the relationship between hostility and entrepreneurial bricolage tries. [46][49]

H2: The higher the hostility, the higher the entrepreneurial bricolage practices among manufacturing SMEs.

RESEARCH METHODOLOGY

From the findings of preliminary, this study extends the analysis by using diagonal scheme that is executed one-time to reveal the print-shot of the moment (Sekaran & Bougie, 2010) and thus it is chosen in here because the collected data reveals the factual sensation besides disclosing personnel's perceptions. The target population comes from these enterprises and the unit of analysis is the owner of the manufacturing SMEs. The criteria of SMEs for this study are determined through the definition provided by Malaysian SMEs Corporation in which it depends on two norms;

namely sales-turnover (not exceeding RM50 million) and the amount of full-time and permanent workforces (not exceeding 200). [56]

This research's sampling guideline has been originated from 2018's FMM (Federation Malaysian Manufactures) Directory regarding manufacturing SMEs' list since it's massively far-reaching than SME Annual Report 2013/2014 catalogue (Chelliah, Sulaiman, & Yusoff, 2010). To rationalize participants from 500 manufacturers among 1869 have been preferred. Questionnaires were distributed to the SMEs owners through simple random sample technique. The instruments for the variables were adapted from previous research. The measurement for entrepreneurial bricolage was adapted from Gundry et al (2011), while the measurements for both business uncertainty and hostility were adapted from Prajogo & McDermott (2014).[46][59][60]

V. ANALYSIS AND FINDINGS

This study used Statistical Package for Social Science (SPSS) and Partial-Least Squares (PLS) software industrialized by Ringle, Wende, and Will (2005). SPSS software was used to screen the data, demographic, descriptive statistic and profiling while PLS was useful to test the hypothesis by measures of Structure Equation Model (SEM).

Measurement Model

Convergent validity: Convergent validity comprises the unit of distinct marker that exposes a construct converging (Urbach & Ahlemann, 2010). Well, it refers to the range to which pointers of a precise paradigm, coverage or share a high proportion of variance in common (Hair et al., 2010). As per Hair et al. (2014), indicator's outer loading values need to be equal to and greater than threshold value of 0.708; indicating a latent variable is able to explain at least 50% of indicator's variance. Table 1 shows that the value of outer loadings for every indicators in the construct is greater than the threshold value of 0.708. This shows that the dormant pointer describes additional

attributes than 50% of its marker's variance.[63] [64] [65]

Chin (2010) states that for error in the scale, AVE needs to investigate variance pointers where the dormant pointer takes snap. To achieve adequate convergent validity, each construct should account for at least 50% of the assigned indicator's variance ($AVE > 0.50$) (Bagozzi & Yi, 1988; Fornell & Larcker, 1981; Hair et al., 2014). [64] [67] [64] [68]

Table 1 also shows that the value of AVE for all constructs in the model is greater than 0.5, higher than the threshold value. This indicates that the constructs in the model enlighten a lot of pointing variances.

As for the value of composite reliability (CR), Gefen, Straub, & Boudreau (2000) suggest that CR is more appropriate for the measure of internal consistency reliability. Thumb-rule of CR is that 0.70 or higher denotes sufficient convergence or internal consistency. On the other hand, composite reliability with value below than 0.60 indicates a lack of internal consistency reliability (Hair Jr et al., 2016). Table 1 shows that the value of composite reliability for all constructs in the model falls within the range from 0.93 to 0.94, suggesting that these constructs do possess sufficient criteria for internal consistency reliability.[59][61][62]

Table 2 Summary of the Evaluation of Reflective Measurement Models

Constructs	Item	Outer Loading	Average	Composite Reliability	Cronbach's Alfa
Business uncertainty	B U1	0.813	0.728	0.930	0.909
	B U2	0.858			
	B U3	0.855			
	B U4	0.884			
	B U5	0.852			

Entrepreneurial Bricolage	EB 1	0.831	0.712	0.952	0.942
	EB 2	0.883			
	EB 3	0.844			
	EB 4	0.806			
	EB 5	0.865			
	EB 6	0.864			
	EB 7	0.884			
	EB 8	0.763			
Hostility	H1	0.905	0.852	0.945	0.922
	H2	0.917			
	H3	0.946			

Discriminant validity: Discriminant validity denotes to the assortment of the paradigm beneath exploration that is dissimilar from other theoretical-constructs (Hair et al., 2010; Sekaran & Bougie, 2013). For this particular study, the discriminant validity will be assessed by using Fornell and Lacker's criterion. [64][56]

Table 2 indicates that all the AVEs for each construct are superior to the off-diagonal features in the consequent rows and columns of the correlation-matric. Therefore, the results show that each of the construct in the model is truly distinct from each other. Since the criteria for discriminant validity has been met, the evaluation shall proceed to the structural model assessment.

Table 3 Discriminant validity of Construct using Fornell and Lacker Criterion

	Business uncertainty	Entrepreneurial bricolage	Hostility
Business	0.853		

uncertainty			
Entrepreneurial bricolage	0.251	0.844	
Hostility	0.514	0.096	0.923

Result of Structural Model Assessment.

After achieving satisfactory outcomes in terms of validity and reliability in the evaluation of measurement-model, the following step is to evaluate the structural-model (Hair et al., 2010).[65]

Hypotheses testing

According to Hair Jr et al. (2016), path coefficients have standardized values between -1 and +1 where the relationship strength is determined through the distant of value from zero. In other words, as the estimated coefficients are closer to zero, the weaker their relationships are. The t-value is obtained through bootstrapping routine in PLS-SEM. In the bootstrapping routine, the number of cases is set to 217, representing the actual number of sample in the data. As recommended by Hair Jr et al. (2016), the number of bootstrap subsamples is set to 5000 for final results preparation. The p-value is determined separately since PLS 2.0 did not provide the output for it. So the p-value is calculated through Excel spreadsheet using the function TDIST (t-value; degree of freedom; 2 tail). The degree of freedom is obtained by subtracting the bootstrap cases by 1. For this study, the degree of freedom is 216.[62]

Table 3 shows that the p-value of the relationship between business uncertainty and entrepreneurial bricolage is at 0.001. Since the p-value is less than .01, the relationship is highly significant. On the other hand, the p-value of the relationship between hostility and entrepreneurial bricolage is at 0.642. This indicates that the relationship is not significant since the p-value is greater than 0.1. Therefore, H1

is accepted. Since there is no significant relationship between hostility and entrepreneurial bricolage, H2 is rejected.

Table 4 Significance Testing Results of the Structural Model Path Coefficients

	Path coefficient	Standard Deviation	Standard Error	t-Value	P-Value	Level of significant
BU -> EB	0.273	0.082	0.082	3.321	0.001	***
H -> EB	-0.044	0.095	0.095	0.465	0.642	NS

*p< .1. **p< .05. ***p< .01.

Model predictive capability

In determining the model predictive capability, two types of measures, namely coefficient determination (R2 value) and predictive relevance (Q2 value) were examined. Hair Jr et al. (2016) state that the coefficient of determination is a degree of the model's predictive-accurateness. The R2 value ranges from 0 to 1 and as the value gets higher, the predictive accuracy for that particular model is also higher. Value of R2 should be high to ensure it is sufficient for the model to attain a minimum level of descriptive command (Urbach & Ahlemann, 2010). Cohen (1988) mentioned the R2 values, where 0.26 is mentioned as to be extensive, 0.13 is as reasonable and 0.02 as feeble. On the other hand, the Q2 value is obtained through blindfolding procedure. [62][63][69]

Hair Jr et al. (2016) also recommends that the Q2 value is obtained through cross-validated redundancy approach. Q2 values, when it is greater than 0, it points out that the model consists of predictive-relevance for a particular endogenous-

paradigm.[62] The R2 and Q2 values are presented in Table 4 below.

Table 4: Results of R2 and Q2 values

	R2 value	Q2 Value
Entrepreneurial bricolage	0.06	0.03

According to the Table 4, the R2 value is at 0.06, indicating that the model has weak predictive accuracy. On the other hand, the Q2 value is at 0.03; which implies that the model has predictive relevance. Although the R2 value is considerably small, this indicates that the model has more predictors that are yet to be found in explaining entrepreneurial bricolage.

VI. DISCUSSION AND CONCLUSION

This study aimed to investigate the influence of external barriers on entrepreneurial bricolage through the lens of effectuation theory. More specifically, this modest study has served its purpose in filling a research gap by acknowledging the relationship between external barriers namely business uncertainty and hostility and entrepreneurial bricolage. The preliminary findings suggested that SMEs are really concerned over the external barriers that affect their business since these barriers are uncontrollable. The SMEs owners realize that they are experiencing an increasing pressure from unpredictable environment because of globalization and uncertainties. Although the SMEs could not predict accurately what is going to be next, they tried their best to handle the situation by making preparation to the changes in technologies, markets and regulatory environment in order to sustain in the market. As such, the SMEs believe that they need to embrace strong entrepreneurial mind-set to cope with the pressures and changes in unpredictable environment. [70] Apparently, the concept of entrepreneurial bricolage is essential to continue and outshine in

operations. Importantly, the SMEs realize that business uncertainty and hostility are the main external factors that need to be focused upon. Business uncertainty, for instance, require them to understand the environment, that is the unpredictability of environmental variables that could affect their overall performance. Hostility on the other hand, refers to the level of competition in the market, which is reflected in the number of competitors and customers in those particular areas. SMEs need to be prepared for hostility. It is harsh, precarious, overwhelming and lack in exploitable resources and opportunities.

For data analysis, overall findings reported that out of two hypotheses proposed by this study only one hypothesis is accepted. This study has found that there is a noteworthy rapport amongst industrial uncertainty and entrepreneurial bricolage among SMEs in the manufacturing sector. However this research has to reject the proposed hypothesis for the relationship between hostility and entrepreneurial bricolage since the findings indicate that there is no significant relationship between those two dimensions.

Although this study has to reject one of the hypotheses, this finding is similar to previous study by Mthanti & Urban (2014) that investigates the interaction between environmental hostility and effectuation concept. In addition, a much recent study by Mauda (2016) has also obtained similar result whereby the relationship between industry uncertainty (as reflected by hostility and dynamism) and effectuation is not significant. Although this study does not directly employ effectuation in the model, this study looks for the aspect of bricolage where entrepreneurs use any available resources at hand to pursue and create business opportunities. In this process, an entrepreneur will start to examine the best and efficient ways to success through experimentation based his/her initial aspiration. According to Sarasvathy (2001), experimentation is another sub dimension of effectuation. Hopefully this modest study is able to shed some light to a

little known area of research and provides some insight on the interaction between the external-barriers and entrepreneurial-bricolage amongst manufacturing enterprises here.[72][73][74]

Therefore, for the improvement of both theoretical and practical significance, future studies should focus more on the relationship of business uncertainty and entrepreneurial bricolage, and relationship between hostility and entrepreneurial bricolage. These relationships can be studied over a wider array of respondents or subjects. Therefore, for future survival, entrepreneurs should focus on both business uncertainty and hostility to achieve their competitive advantages.

ACKNOWLEDGEMENT

We would like to express our appreciation to Fundamental Research Grant Scheme (FRGS) – 203. PMGT.6711585 under the Ministry of Education Malaysia for funding this project.

REFERENCES

- [1] The Malaysian Economic Plan Uni, 2001, Real GDP growth remained positive in 2001, supported by countercyclical measures and diversified economic structure, <https://www.bnm.gov.my/files/publication/ar/en/2001/ch01.pdf>
- [2] Abdullah, N. H., Shamsuddin, A., Wahab, E., & Hamid, N. A. A. (2014). The relationship between organizational culture and product innovativeness. *Procedia-Social and Behavioral Sciences*, 129, 140-147.
- [3] Rahman, S. A., Amran, A., Ahmad, N. H., & Taghizadeh, S. K. (2015). Supporting entrepreneurial business success at the base of pyramid through entrepreneurial competencies. *Management decision*, 53(6), 1203-1223.
- [4] Savlovski, L. I., & Robu, N. R. (2011). The role of SMEs in modern economy. *Economia, Seria Management*, 14(1), 277-281.
- [5] Khalique, M., Isa, A. H. B. M., Shaari, N., Abdul, J., & Ageel, A. (2011). Challenges

- faced by the small and medium enterprises (SMEs) in Malaysia: An intellectual capital perspective.
- [6] Ramayah, T., Ling, N. S., Taghizadeh, S. K., & Rahman, S. A. (2016). Factors influencing SMEs website continuance intention in Malaysia. *Telematics and Informatics*, 33(1), 150-164.
- [7] Syed Jafar, S. (2018). SME contribution to Malaysia's economy rose to 37% in 2017. from theedgemarkets.com <http://www.theedgemarkets.com/article/sme-contribution-malaysias-economy-rose-37-2017> on 18/1/2019
- [8] Department of Statistics Malaysia. (2018). SMALL AND MEDIUM ENTERPRISES (SMEs) PERFORMANCE 2017 [Press release]. Retrieved from <https://www.dosm.gov.my/v1/index.php?r=column/pdfPrev&id=cEI0bk1pZHJaTlhRND B3d2ozbnFIUT09>
- [9] Ali, H. (2009). Manufacturing and job creations between regions in Malaysia. *International review of business research papers*, 5(6), 98-116.
- [10] Chandran, V. (2009). Trade openness and manufacturing growth in Malaysia. *Journal of Policy Modeling*, 31(5), 637-647.
- [11] Ezell, S. J., & Atkinson, R. D. (2011). The case for a national manufacturing strategy. *Information Technology and Innovation Foundation*, 29.
- [12] Kassim, Z. A., & Sulaiman, M. (2011). Market orientation and leadership styles of managers in Malaysia. *International Journal of Leadership Studies*, 6(2), 230-245.
- [13] 11th Malaysia Plan Implemented by Economic Plan Unit (EPU), Economy, Focus : 11th Malaysian Plan, 2017, <https://www.thebusinessyear.com/malaysia-2017/11th-malaysia-plan-implemented-by-economic-planning-unit-epu/focus>
- [14] The Asia Pacific SME Cloud Computing Attractiveness Index, 2015,
- [15] Bhaskaran, S. (2006). Incremental innovation and business performance: small and medium-size food enterprises in a concentrated industry environment. *Journal of Small Business Management*, 44(1), 64-80.
- [16] Andalib, T W & Halim-Abdul, Hasliza (2019), Convergence of Conceptual Innovation Model to Reduce Challenges Faced by the Small and Medium Sized Enterprises' (SMEs) in Bangladesh, *Journal of Open Innovation: Technology, Market and Complexity*, 5 (3), MDPI <https://doi.org/10.3390/joitmc5030063>
- [17] Rosenbusch, N., Brinckmann, J., & Bausch, A. (2011). Is innovation always beneficial? A meta-analysis of the relationship between innovation and performance in SMEs. *Journal of business Venturing*, 26(4), 441-457.
- [18] Rosli, M. M., & Sidek, S. (2013). The Impact of Innovation on the Performance of Small and Medium Manufacturing Enterprises:: Evidence from Malaysia. *Journal of Innovation Management in Small & Medium Enterprises*, 2013, 1.
- [19] Guo, H., Su, Z., & Ahlstrom, D. (2016). Business model innovation: The effects of exploratory orientation, opportunity recognition, and entrepreneurial bricolage in an emerging economy. *Asia Pacific Journal of Management*, 33(2), 533-549.
- [20] Baker, T., & Nelson, R. E. (2005). Creating something from nothing: Resource construction through entrepreneurial bricolage. *Administrative science quarterly*, 50(3), 329-366.
- [21] Andalib, T, W; Darun, Azizan, N, A; Darun, M R; Halim-Abdu., Hasliza (2019), Case Matrices and Connections of Entrepreneurial Career Management Module, *International Journal of Entrepreneurship*, 23 (3), 10
- [22] Andalib, T, W; Halim-Abdul, Hasliza (2019), A Conceptual Model to Resolve Frustration of Employees in the SMEs of Bangladesh, *Indian Journal of Science and Technology*, 13(9), 1015-1026
- [23] Andalib, T, W; Azizan, N, A; Halim-Abdul, Hasliza (2020), Leading Determinants for Sustainability of SMEs in Bangladesh : Multiple Case Studies,

- International Journal of Supply Chain Management, 9(2), 175-181
- [24] Malaysian SME Corp, 2013
- [25] Aris, N. M. (2007). SMEs: Building blocks for economic growth. *Department of National Statistics, Malaysia*.
- [26] Ayyagari, M., Demircuc-Kunt, A., & Maksimovic, V. (2011). *Small vs. young firms across the world: contribution to employment, job creation, and growth*: The World Bank.
- [27] Saleh, A. S., & Ndubisi, N. O. (2006). An evaluation of SME development in Malaysia. *International review of business research papers*, 2(1), 1-14.
- [28] Neumark, D., Wall, B., & Zhang, J. (2011). Do small businesses create more jobs? New evidence for the United States from the National Establishment Time Series. *The Review of Economics and Statistics*, 93(1), 16-29.
- [29] Andalib, T, W; Darun, M, R; Halim-Abdul (2019), Re-engineered and Integrated Industrial Relations Model for Governance Integrity : Multiple Case Studies in Bangladesh, *KnE Social Sciences*, 1254-1270
- [30] Guo et al., 2016)
- [31] Merkel, J. (2013). Stefan Krätke 2011: The Creative Capital of Cities. Interactive Knowledge Creation and the Urbanization Economies of Innovation. Malden and Oxford: Wiley-Blackwell. *International Journal of Urban and Regional Research*, 37(1), 357-358.
- [32] Pierce, J., Johnson, B. J., & White, S. S. (2013). Social, creative, human, and political capital effects on sustainability initiatives in Kansas counties: a research note. *Community Development*, 44(2), 188-199.
- [33] Potts, J. (2011). *Creative industries and economic evolution*: Edward Elgar Publishing.
- [34] Andersen, O. J. (2008). A bottom-up perspective on innovations: Mobilizing knowledge and social capital through innovative processes of bricolage. *Administration & Society*, 40(1), 54-78.
- [35] Lee, S. Y., & Klassen, R. D. (2016). Firms' response to climate change: the interplay of business uncertainty and organizational capabilities. *Business Strategy and the Environment*, 25(8), 577-592.
- [36] Engau, C., & Hoffmann, V. H. (2009). Effects of regulatory uncertainty on corporate strategy—an analysis of firms' responses to uncertainty about post-Kyoto policy. *environmental science & policy*, 12(7), 766-777.
- [37] Xu, H., & Koronios, A. (2005). Understanding information quality in e-business. *Journal of Computer Information Systems*, 45(2), 73-82.
- [38] Kraus, S., Kauranen, I., & Henning Reschke, C. (2011). Identification of domains for a new conceptual model of strategic entrepreneurship using the configuration approach. *Management Research Review*, 34(1), 58-74.
- [39] Kurtz, D., Menezes, L., & Rados, G. (2014). Turbulent Environments and SMEs: How to Survive in a Unpredictable World.
- [40] Stigter, H. (2002). Co-operation as a response to a turbulent environment. *EIM Business & Policy Research*, 1-40.
- [41] Parnell, J. A., Lester, D. L., Long, Z., & Köseoglu, M. A. (2012). How environmental uncertainty affects the link between business strategy and performance in SMEs: Evidence from China, Turkey, and the USA. *Management decision*, 50(4), 546-568.
- [42] Lester, D. L., Parnell, J. A., "Rick" Crandall, W., & Menefee, M. L. (2008). Organizational life cycle and performance among SMEs: Generic strategies for high and low performers. *International Journal of Commerce and Management*, 18(4), 313-330.
- [43] Andalib, T, W and Halim-Abdul (2019), Entrepreneurial Approach to Career Enhancement Model for the Small and Medium Enterprises (SMEs) of Bangladesh, *International Journal of Business Society*, 3 (10), 1-7.
- [44] Tang, Z., & Hull, C. (2012). An investigation of entrepreneurial orientation, perceived environmental hostility, and strategy application among Chinese SMEs.

- Journal of Small Business Management*, 50(1), 132-158.
- [45] Hadjimanolis, A. (1999). Barriers to innovation for SMEs in a small less developed country (Cyprus). *Technovation*, 19(9), 561-570.
- [46] Prajogo, D., & McDermott, C. M. (2014). Antecedents of Service Innovation in SMEs: Comparing the Effects of External and Internal Factors. *Journal of Small Business Management*, 52(3), 521-540.
- [47] Martins, I., & Rialp, A. (2011). Entrepreneurial Orientation, Environmental Hostility and SMEs Profitability: A Contingency Approach.
- [48] Khandwalla, P. N. (1972). Environment and its impact on the organization. *International studies of management & organization*, 2(3), 297-313.
- [49] Covin, J. G., & Slevin, D. P. (1989). Strategic management of small firms in hostile and benign environments. *Strategic management journal*, 10(1), 75-87.
- [50] Bluedorn, A. C. (1993). Pilgrim's progress: Trends and convergence in research on organizational size and environments. *Journal of Management*, 19(2), 163-191.
- [51] Rajagopalan, N., Rasheed, A. M., & Datta, D. K. (1993). Strategic decision processes: Critical review and future directions. *Journal of Management*, 19(2), 349-384.
- [52] Miller, D. (1988). Relating Porter's business strategies to environment and structure: Analysis and performance implications. *Academy of management Journal*, 31(2), 280-308.
- [53] Kotey, B. (2014). Small business innovation in the hostile environment of Australia's drought stricken rural communities. *Australasian Journal of Regional Studies*, 20(2), 325.
- [54] Lim, E. S., & Shyamala, N. (2007). Obstacles to innovation: Evidence from Malaysian manufacturing firms.
- [55] Padukkage, A., Hooper, V., & Toland, J. (2016). Implications of Environmental Uncertainty for Business-IT Alignment: A Comparative Study of SMEs and Large Organizations. *arXiv preprint arXiv:1606.00744*.
- [56] Sekaran & Bougie, 2010
- [57] Chandler, G. N., DeTienne, D. R., McKelvie, A., & Mumford, T. V. (2011). Causation and effectuation processes: A validation study. *Journal of business Venturing*, 26(3), 375-390.
- [58] Hairuddin, H., Noor, N. L. M., & Ab Malik, A. M. (2012). Why do microenterprise refuse to use information technology: A case of batik microenterprises in Malaysia. *Procedia-Social and Behavioral Sciences*, 57, 494-502.
- [59] (Chelliah, Sulaiman, & Yusoff, 2010)
- [60] Gundry et al (2011)
- [61] Gefen, Straub, & Boudreau (2000)
- [62] (Hair Jr et al., 2016).
- [63] (Urbach & Ahlemann, 2010).
- [64] Hair et al. (2014)
- [65] Hair et al. (2010)
- [66] Chin (2010)
- [67] Bagozzi & Yi, 1988;
- [68] Fornell & Larcker, 1981;
- [69] Cohen (1988)
- [70] Re-engineering economic growth for a better prosperity. (2016). <http://www.epu.gov.my/sites/default/files/Capter%208.pdf> on 19/1/2019
- [71] Wolff, J. A., & Pett, T. L. (2006). Small-firm performance: modeling the role of product and process improvements. *Journal of Small Business Management*, 44(2), 268-284.
- [72] Mthanti & Urban (2014)
- [73] Mauda (2016)
- [74] Sarasvathy (2001)