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SMEs' PERCEPTION ON SUPPLY CHAIN RISK: DOES SIZE MATTER?

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Abstract: *Small and Medium Enterprises (SMEs), although a vital component in fostering economic growth of a country, failed to rise to its full potential due to various risks. Using a unique firm size survey data for manufacturing SMEs, we investigate whether firm's size contribute to the level of perception of three supply chain risks: innovation and technology adoption, access to financing and human capital development. Data was collected in Peninsular Malaysia, yielding a response of 152 companies. Results indicate firm's size affect how companies perceive level of two supply chain risk (innovation and technology adoption and access to financing) while there were no significant relationship between firm's size and human capital development risk. Moreover, the result shows these supply chain risks impact depends very much on firm's size, where the smallest firm are most adversely affected. This study would help Malaysian government focus more on the micro and small firm in dealing with business volatilities.*

Keywords: *Supply Chain Risk, Firm Size, Small and Medium Enterprise, Manufacturing*

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Introduction

Small and Medium Enterprise (SMEs) is the largest cluster of business establishment in Malaysia, which encompass 907,065 of total SMEs. SMEs plays a vital role in contributing to the economy in terms of production, employment and exports. According to SME Corp Malaysia, SMEs provide 38.3 percent of GDP, 66.2 percent of employment and 17.3 percent of export (SME Annual Report 2018/19). However, despite its vital contribution, SMEs have many shortcomings such as lack of structure, small management, inadequate organization and lack of risk management (Lavastre et al., 2012). Moreover, Md.Sum and Mahussin (2017) stated that small firm in Malaysia are comfortable with informal risk management practices. Because of this, there is a possibility that SMEs might be unaware of the essential need of risk management in their organisation. The importance of risk management is not limited to resolving risk that arise, it also identify potential risks that might arise from various events. Adding to a more complex business environment nowadays, firm are conducting business with various partners (ultimate supplier, supplier, customer, ultimate customer and service providers) (Hugos, 2003). The extended supply chain may increase the probabilities of risks to arise as the information and material flow become widespread covering several supply chain relationships.

The growing study in supply chain risk management has established various types of supply chain risks. Generally supply chain risk can be divided into internal risk and external risk (Liu et al., 2010) and can be further classified into several classes. Punniyamoorthy et. al. (2013) divided supply chain risks into six classes which are supply risk, demand risk, logistic risk, manufacturing risk, information risk and environment risk. However in this study, the focus is on three types of risk which are innovation and technology adoption risk, access to financing risk and human capital development risk. The reason this three types of risk were chosen was that these risk has been identified as challenges to Malaysian SMEs that impede them to achieve high performance (SME Masterplan 2012-2020). Based on this premise, the paper proposes to address the following research questions:

RQ1: What is the level of risk perceived by the SME's?

RQ2: Do SMEs have different level of perceived risks according to their sizes (micro, small and medium)?

Literature Review

Malaysian SME

The definition of SMEs is diverse across countries and in Malaysia it is based on two factors annual sales turnover and number of full-time employees (Hashim, 2011; Chin & Lim, 2018). According to SME Corp. Malaysia (2013, October), the latest SME definition has been revised and effectively used in 1st January 2014. The definition of Malaysian SMEs is shown in Table 1.

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Table 1: Definition of SMEs in Malaysia

Category	Micro	Small	Medium
Manufacturing	Sales turnover of less than RM 300,000 OR less than 5 full-time employees.	Sales turnover from RM 300,000 to less than RM 15 million OR fulltime employees from 5 to less than 75	Sales turnover from RM 15 million to not exceeding RM 50 million OR full-time employees from 75 to not exceeding 200.
Services & other sectors	Sales turnover of less than RM 300,000 OR less than 5 full-time employees.	Sales turnover from RM 300,000 to less than RM 3 million OR full-time employees from 5 to less than 30.	Sales turnover from RM 3 million to not exceeding RM 20 million OR full-time employees from 30 to not exceeding 75.

Sources: SME Corp. Malaysia (2013, October)

According to SME Annual Report 2017/18, there are 907,065 SME establishment in Malaysia. Malaysian SMEs consist of five sectors: services, manufacturing, construction, agriculture and mining/quarrying. The number of SME establishment by sector and size are illustrated in Table 2. In addition, because this study focuses on SMEs manufacturing sectors, the detail of SMEs according to their sub-sector and size can be found in Table 3, where there are 21 sub-sector in manufacturing according to their size.

Table 2: Number of Establishments by Sector and Size

Sector	No. of SME Establishments				Share of SMEs (%)
	Micro	Small	Medium	Total SMEs	
Services	649,186	148,078	11,862	809,126	89.2
Manufacturing	22,083	23,096	2,519	47,698	5.3
Construction	17,321	17,008	4,829	39,158	4.3
Agriculture	4,863	4,143	1,212	10,218	1.1
Mining & Quarrying	217	458	190	865	0.1
Total	693,670	192,783	20,612	907,065	100

Source: SME Annual Report 2017/18

Table 3: Distribution of SMEs in Manufacturing Sectors By Sub- Sector And Size.

Sub-sector	Micro	Small	Medium	Total SMEs
Textiles & Wearing Apparel	9,123	872	52	10, 047
F & B Products	3,278	2,233	505	6,016
Fabricated Metal Products	2,070	1,698	190	3,958
Printing & Reproduction of Recorded Media	1,717	1,145	56	2,918
Machinery & Equipment (Including Repair & Installation of Machinery)	841	1,178	97	2,116
Furniture	886	847	110	1,843
Rubber & Plastics Products	322	1,126	308	1,756
Wood & Wood Products	499	791	158	1,448
Non-Metallic Mineral Products	484	758	131	1,373

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Basic Metal	431	543	109	1,083
E & E Products	231	639	198	1,068
Chemicals & Chemical Products	271	534	156	961
Paper & Paper Products	283	442	103	828
Furniture	886	847	110	1,843
Rubber & Plastics Products	322	1,126	308	1,756
Motor Vehicles, Trailers & Semi-Trailers and Other Transport Equipment	242	440	77	759
Leather & Related Products	219	151	6	376
Basic Pharmaceutical Product & Pharmaceutical Preparations	60	115	17	192
Coke & Refined Petroleum Products	19	39	5	63
Tobacco Products	30	27	3	60
Others	613	356	27	996
Total	21,619	13,934	2,308	37,861

Source: Economic Census 2011by Department of Statistics, Malaysia.

As SMEs play a vital role in the Malaysian economy, the government has offered numerous programs to create a positive development for SMEs. According to SME Corporation Malaysia's annual report (2013 until 2017), Malaysian government allocated substantial funds focusing on six factors: innovation and technology adoption, access to finance, human capital development, legal and regulatory environment, market access and infrastructure. Table 4 present number of programmes, financial expenditure as well as number of SME beneficiaries from 2013 to 2017 in efforts to enhance SME performance. However, we could see from the table that although substantial amount of money was spent on developing the SMEs, there has not been much improvement in terms of these SMEs' GDP contribution vis-à-vis the overall Malaysian GDP.

Table 4: Malaysian SME Development for 2013-2017

Year	Number of Programmes	Financial Expenditure (Billion)	SME Beneficiaries	Total SME GDP to Overall GDP
2013	143	9.12	831,221	33.5
2014	139	5.10	503,704	35.9
2015	150	5.02	580,101	36.3
2016	154	7.95	529,390	36.6
2017	148	5.7	541,337	37.1

Source: SME Annual Report (2013 until 2017)

Resource-Based View Theory

Penrose (1959), the pioneer of RBV (through the theory of the growth of the firm) highlighted that from the aspect of internal resource, firm's efforts should not be limited to administrative unit, firms need to look for new product opportunities to accelerate growth. In 1973, Rubin added that firms should recognize relevant external resources for further improvement. The development of RBV has been recognized by many scholars, one of them is Barney (1991), who developed it into a comprehensive framework where he suggested four criteria to sustain competitive advantage. These criteria known as VRIN (valuable, rare, imperfect inimitability

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and non-substitutability) and Barney furthermore divided resources into three classes which are human capital, organisational capital and physical capital.

Resource-based view theory (RBV) can be defined as "analyses and interprets resources of the organizations to understand how organizations achieve sustainable competitive advantage" (Madhani, 2010, p. 4). In relation to supply chain, Rungtusanatham et. al. (2003) explained RBV via the linkage (as a resource) from supplier to customer that could be utilised to enhance firm performance. Table 5 presents types of resources and capabilities SME could have in order to gain competitive advantage. This study is iterating that if there are any inability to provide these resources, it could then become a risk to the SMEs. Therefore, this study hope that SMEs acknowledge the importance of identifying risk because these risks can easily transform from resources to factors that can destroy firm's competitive advantage. Below is the example of resource used in this study that can gain competitive advantage.

Table 5: Types of Resources and Capabilities

Resources and Capabilities	Examples
Innovation & Technological	• Increase the capabilities of research and development (R & D) to innovate new product, process and services • Ability to adapt organizational innovation and change of environment. • Able to renew the value of its assets • Increase customer impression about product quality, durability, and reliability.
Financial	• Ability to generate internal funds • Ability to increase external capital
Human Capital	• Develop managerial talents. • Develop positive organizational culture • Develop creativity and idea development skills

Sources: Madhani (2010); Prajogo and Oke (2016); Srivastava et. al. (2001); Bird (2011); Kitching et. al. (2013).

Supply Chain Risk

The global business environment are facing rapid changes in terms of technological, customer preferences, shorter product lifecycle, political instability, etc. These changes are examples of threat and could become risks to companies which affect not only the focal firm but others in the supply chain. Supply chain risk can be arise from uncertain events or circumstances that leads to negative consequence (Moktadir et al., 2018). These risks can cause problematic and decreased performance of firm (Bavarsad et al., 2014). Coupled with lack of risk management, it can further exacerbate poor company performance (Ali & Shukran, 2015).

Supply chain risk consist of multi-dimensional construct and not limited to specific dimension. According to Liu et. al. (2010) supply chain risk can be classified into demand risk and supply risk, or segregate into internal and external risks. While other are focusing on more certain dimension risks. For example manufacturing risk (Ho et al., 2015), innovation and technology risk (Prakash et al., 2017), financial risk (Yeboah et al., 2014), environmental risk (Munyuko, 2015), human resource risk (Bavarsad et al., 2014) and etc. Past research has pointed out many

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types of risks but due to some limitations (time and budget), this study focuses on three types of risks: innovation and technology adoption risk, access to financing risk and human capital development risk.

This study is interested in identifying barriers of innovation and technology adoption, in order to help SMEs to obtain market opportunities, increase product demand, improve quality and at the same time increase company performance. Innovation can be defined as "implementing new ideas that create value" (Linder et al., 2003, p. 44) while technology is defined as "firm-specific information concerning characteristics and performance properties of production processes and product design" (Dean & LeMaster, 1995, p. 19).

The benefit of adopting innovation and technology in enhancing company performance cannot be denied. Some examples of benefits include ability to sustain market position especially in hypercompetitive markets and strengthening performance level (Gunday et al., 2011; Karabulut, 2015; Ndubisi & Iftikhar, 2012; Mamun, 2018). However, according to Anuar and Yusuff (2011), Malaysian manufacturing SMEs are lacking in terms of technology and product innovation in their practice. This might be due to inadequate fund (Torres et al., 2015), high cost of innovation and technology (Bobera, 2013; Kaufmaan & Tödtling, 2002), low technological skills, insufficient infrastructure and ambiguity of benefits from technology adoption (Ardjouman, 2014) and reasons such as "no money to invest in technology" and "only focus on manufacture in local market" (Ismail, 2018, p.144). However, past research has also shown that, in relations to firm size, medium-sized firm have managed to be more innovative compared to small firm (Hosseini, 2014), due to the bigger firm having more resources to utilise for research and development (Shefer & Frenkel, 2005). Therefore, this leads to the following hypothesis:

H1: There are differences on how firm perceive innovation and technology adoption risk based on their size.

The second supply chain risk is access to financing, which many scholars claim as one of the more serious risk faced by SMEs (Rahman, 2012; Saleh & Ndubisi, 2006; Coskun & Altunisk, 2002). Access to financing is the most wide-ranging of all resources (Filser et al., 2014) and arguably as a source of competitive advantage (Enz, 2008). Onyango and Achieng (2013) stated that SMEs have difficulties in obtaining loans from financial institution because of insufficiency of collateral and creditworthiness, poor saving, unclear business plan, high bank charges and high risk default. This has been supported by Department of Statistics Malaysia (2006) where most of the SMEs would rather use internal sources of financing compared to large companies. According to the statistic, the sources of financing through bank for SMEs is 13.4 percent compared to large enterprise is 47.6 percent. Peou (2009) revealed that short of capital and additional capital are the reason that affect growth of SMEs performance. Several scholars agreed that access to financing causes affect SMEs performance, for example having difficulties to obtain longer cash to cash cycle, postpone of development of new product and failure to create company brand (Wong & Merriless, 2005; Soinio et al., 2012). In the context of firm size, some scholars argued that the size of firm play a role in determining the ease of access to financing. For example, Lee (2014), Wang (2016), Hassan et. al. (2011) and Selamat et. al. (2011) found that the smaller the firm, the more difficult it is to have access to financing. Balogun et. al. (2016) suggested that in order to obtain funding from bank, firm need to have

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personal or business assets to be used as collateral. The smaller firm seem to be charged with high interest rate (Kundid & Ercegovac, 2011) because of insufficient collateral (Hanedar et al., 2014). In addition, Zelalem and Wubante (2019) stated that most of micro enterprise fail to access debt financing and causes lack of capital structure.

This leads to the following hypothesis:

H2: There are differences on how firm perceive access to financing risk based on their size.

Lastly is the human capital development risk. SMEs need to focus on development of human capital as many previous studies agreed that human capital is a key sources to obtain competitive advantage (Prajogo & Oke, 2016; Pasban & Nojedeh, 2016; Valle & Castillo, 2009; Yaseen et al., 2016). Human capital can be categorised as intangible resource, by way of human knowledge generating creativity and improvement of idea and skills which is difficult to replicate (Prajogo & Oke, 2016; Valle & Castillo, 2009). The benefits of human capital development on organisational improvement cannot be denied, Malaysian SMEs are facing problem in shortage of quality labour, and high labour cost of Malaysian workers (Deloitte, 2015 April). Moy and Lee (2002) found that graduates have less desire to work with SMEs as compared to working with MNCs. Furthermore, compared to MNCs, SMEs mostly lack knowledge, expertise and skills (Coras & Tanţău, 2013; Rahman, 2012). Indeed, Ahmad and Seet (2009) claimed that SMEs tend to fail in business because of deficiency in business knowledge as they lack skilled and experienced employees.

In relation to the firm size, it could be argued that medium-sized firms tend to face less obstacles in human capital development compared to micro and small-sized firms with smaller firms tending to have more obstacles in recruiting employees due to lack of resource and legitimacy (Cardon & Stevens, 2004). On the other hand, Mubarik (2015) found that medium-sized firms have better quality labour (skilled, educated and positive attitude) compared to smaller-sized firms. These differences could be explained due to employees leaving the company for larger companies to attain higher salary and more benefits with the assumption that they started with small company to acquire skill and experience that help to move to better company. Moreover, human capital pose a larger risk to smaller companies as they depend on each and every employee where one person's absence will potentially delay the processes and could impact the others work. Therefore this leads to the following hypothesis:

H3: There are differences on how firm perceive human capital development risk based on their size.

According to prior studies the firm size can be an influential factor in interpreting risks (Hosseini, 2014; Thaker & Mohammed, 2015). The above studies indicate that supply chain risk affecting perceive of firm size differently, therefore we are interested to investigate whether firm's size contribute to the level of perception of three supply chain risks: innovation and technology adoption, access to financing and human capital development. The result are expected to answer the two research questioned raised above. Figure 1 presents the conceptual model used in the present paper.

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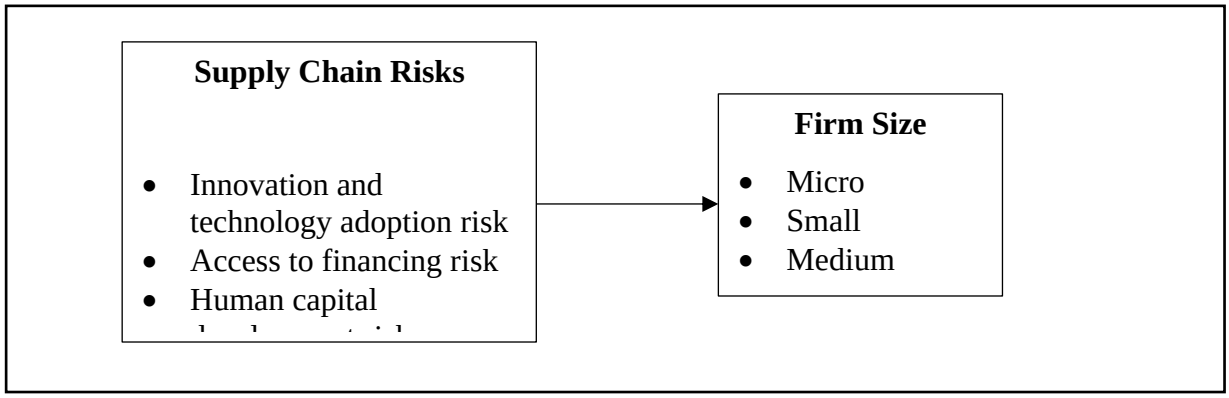

Figure 1: Conceptual Framework

Methodology

This study focuses on SMEs in manufacturing sectors around Peninsular Malaysia as the population. The selected firms were the firms with 200 and less full time employees (SME definition by SME Corp. Malaysia, 2013, October). Cross-sectional study was chosen as it is deemed to be the most appropriate approach to analyse present issues. Data were collected using a questionnaire and the respondents consist of the owner, director or manager of SMEs. This is because they are the key person in the company and with experience in companies operations. This study obtained 152 useable responses after rejecting 39 unusable questionnaire due to incomplete parts answered and the respondents' position below than manager. Data analysis was conducted using SPSS 24. The questionnaire consists of four sections: innovation and technology adoption risk, access to financing risk, human capital development risk and demographic background (full time employees and the position of respondent). The population frame of this study is companies registered with SME Corporation Malaysia. This study used a list of companies from SME Corporation Malaysia because it is a one-stop agency for the overall coordination of SME policy formulation and evaluation of SME development programs in all sectors.

Findings and Results

Demographically (refer to Table 6), the majority of the respondent companies consist of small firm (55.9 percent), followed by micro firm (36.2 percent) and medium companies (7.9 percent) with 65 (42.8 percent) are owners, 30 (19.7 percent) directors and 57 (37.5 percent) are managers.

Table 6: Demographic Profile of the Respondent.

Demographic Profile	Frequency	Percentage
Full Time Employees:		
Less than 5	55	36.2
5-74	85	55.9
75-200	12	7.9
More than 200	0	0
Position:		
Owner	65	42.8
Director	30	19.7
Manager	57	37.5

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The first research question were concern about the perceived supply chain risks among SMEs. In order to answer the question, a descriptive analysis were conducted in order to create a hierarchy of supply chain risk. The analysis aim to explain the characteristic of the variables of interest (Sekaran & Bougie, 2010). The variables were measured through Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).Table 7 shows the detail of mean and standard deviation for supply chain risks: innovation and technology adoption, access to financing and human capital development. Table 8 shows the mean and standard deviation value for each of supply chain risk according to firm sizes.

Table 7: Mean and Standard Deviation of Supply Chain Risk

Variables	Mean	Std. Deviation
ITA	2.994	0.911
AF	3.570	0.869
HCD	3.140	0.720

Note: ITA = Innovation and Technology Adaption, AF = Access to Financing, HCD = Human Capital Development.

Table 8: Mean and Standard Deviation of Supply Chain Risk According to Firm Sizes

Size		ITA	AF	HCD
Micro	N	55	55	55
	Mean	3.123	2.880	3.074
	Std. Deviation	0.883	0.686	0.722
Small	N	85	85	85
	Mean	2.994	3.635	3.203
	Std. Deviation	0.914	0.864	0.737
Medium	N	12	12	12
	Mean	2.403	2.771	3.000
	Std. Deviation	0.851	0.813	0.580
Total	N	152	152	152
	Mean	2.994	3.570	3.140
	Std. Deviation	0.911	0.869	0.720

Note: ITA = Innovation and Technology Adaption, AF = Access to Financing, HCD = Human Capital Development.

According to Table 7 the results showed all supply chain risks elements were at a moderate level with the range of mean of 2.994 to 3.570. It would seem that SME's biggest supply chain risks is access to financing, followed by human capital development and lastly the innovation and technology adoption. The result of this study, is supported by previous study that SMEs lack access to financing (Torres et al., 2015; Larsen & Lewis, 2007). Interestingly, referring to Table 8, each sizes of firms perceived different level of supply chain risk. For example, the micro size tend to perceive more risk on innovation and technology adoption, followed by human capital development and access to financing. Small firm has more difficulty on access to financing followed by human capital development and innovation and technology adoption. For medium size, the highest rank is human capital development, access to financing and innovation and technology adoption.

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The above result stated the rank of supply chain risk in SMEs and the relation to the firm size. The second research question was concerned with the differences of perceived supply chain risks according to firm's sizes. In order to obtain the differences, this study used one-way ANOVA analysis and Post Hoc Tukey's multiple comparison test. According to Hair, Jr et. al. (2010) the one-way ANOVA is appropriate to use to analyse the differences of two group or more. The result of one-way ANOVA were illustrated in Table 9 and it was shown that two supply chain risk has significant differences in innovation and technology adoption and access to financing, thus supporting hypothesis 1 (p=0.45) and hypothesis 2 (p=0.04). However there was no significant differences in human capital development, therefore hypothesis 3 (p=0.457) was rejected.

Table 9: One-way ANOVA Result

		Sum of Squares	Df	Mean Square	F	Sig.
ITA	Between Groups	5.106	2	2.553	3.162	.045
	Within Groups	120.312	149	.807		
	Total	125.418	151			
AF	Between Groups	8.330	2	4.165	5.866	.004
	Within Groups	105.797	149	.710		
	Total	114.127	151			
HCD	Between Groups	.817	2	.408	.786	.457
	Within Groups	77.393	149	.519		
	Total	78.210	151			

Note: ITA = Innovation and Technology Adaption, AF = Access to Financing, HCD = Human Capital Development.

Because of the significant differences found in innovation and technology adoption risk and access to financing risk, this study further compute a post-hoc test in order to obtain a more accurate picture of how they differ. There are a few post-hoc method, but for this study we followed Salkind's (2007) suggestion to use Tukey-Kramer method as it suitable to analyse when the group compared is having unequal sample sizes. Referring the Table 9, because innovation and technology adoption risk and access to financing risk were found with significant differences, therefore the Tukey-Kramer test will focus only on these two risk. The result of Tukey-Kramer test is presented in Table 10.

Table 10: The Results of Multiple Comparisons Utilizing the Post Hoc Tukey-Kramer Test by SPSS Program

Dependent Variable			Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
ITA	Micro	Small	.12861	.15550	.687	-.2395	.4967
		Medium	.71995*	.28630	.034	.0422	1.3977
	Small	Micro	-.12861	.15550	.687	-.4967	.2395
		Medium	.59134	.27711	.086	-.0647	1.2474
	Medium	Micro	-.71995*	.28630	.034	-1.3977	-.0422
		Small	-.59134	.27711	.086	-1.2474	.0647

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AF	Micro	Small	.00902	.14582	.998	-.3362	.3542
		Medium	.87348*	.26848	.004	.2379	1.5091
	Small	Micro	-.00902	.14582	.998	-.3542	.3362
		Medium	.86446*	.25985	.003	.2493	1.4796
	Medium	Micro	-.87348*	.26848	.004	-1.5091	-.2379
		Small	-.86446*	.25985	.003	-1.4796	-.2493

*. The mean difference is significant at the 0.05 level.

According to Table in 10, the result indicated that innovation and technology adoption risk has differences between micro and medium (p=0.34). For access to financing risk, the differences were found in micro and medium (p=0.004) and small and medium (p=0.003). The result indicated that innovation and technology adoption risk and access to financing risk has a significant differences level according to size of firm (micro, small and medium). Referring to Table 8, increasing firm size reduces the risk of innovation and technology adoption, in line with studies by Shefer and Frenkel (2005) and Hosseini (2014). For access to financing, micro and small size tend to have more risk is accessing financing compared to medium size which is also supported with previous study (Lee, 2014; Wang, 2016). However for human capital development risk, we found no significant differences level according to size of firm. One explanation could be because of firm size not the only variable that had caused SMEs perception of level of risks. Other firm characteristics such as firm age and ownership should be considered.

Conclusion

This study have presented some evidences on the perception of SMEs towards supply chain risk according to their firm sizes. As we can see from the result each sizes of firm has different perception of level of supply chain risk. It seems that smaller firms tend to have a higher level perception and could be stemming from conflict in relations to aggressive and competitive business environment. Past literatures have agreed that firm size plays a significant role in evaluating perceived supply chain risk level among SME, indeed many studies concurred with this result as smaller firm experienced more risks compared to medium firm (Beck et al., 2005; Schiffer & Weder, 2001).

Regardless of their sizes, SMEs need to aware of these supply chain risk and utilise these risk as potential resources in order to obtain competitive advantage (Conto et al., 2016; Li-Hua & Khalil, 2006; Enz, 2008; Prajogo & Oke, 2016; Pasban & Nojedeh, 2016; Valle & Castillo, 2009; Yaseen et al., 2016). Along this note, Malaysian government should create more incentive and programmes that give extra attention to micro and small firm. In addition, SMEs should be aware of the programmes provided by government, there are various of programmes provided by government in helping SMEs on innovation and technology adoption risk, access to financing risk and human capital development risk.

Limitations of the Study

This study makes several contribution to the body of knowledge on SMEs' studies. However there are few limitation that emerge from this study, which provides opportunities for future direction. The first limitation is associated with the Malaysian SMEs in manufacturing sector as a scope of study. To enrich generalizability, other sector would provide further understanding

on the topic of SMEs' supply chain risk. The second limitation, because of time constraint and limited fund, this study only focuses on Peninsular Malaysia and doesn't include SMEs from Sabah and Sarawak. Another limitation is that this study is design specifically to study SMEs supply chain risk from a management perspective. However, employees' viewpoint from different level of management shall give different consideration and reflection on the supply chain risk issue.

Recommendation for Future Research

The scope of this study is to explore the supply chain risks on the SMEs perspective. However, this study only focus on three types of supply chain risk. Supply chain risk consist of multi-dimensional construct and not limited to specific dimension, thus further research is required. The result of this study showed that smaller firms tend to have a higher level perception of supply chain risk, it is also suggested that future researchers focus on micro-enterprises. Furthermore, this study is focusing on the perception of supply chain risk related to firm sizes. Replication of this study would also can be extend to age, ownership and experience of the firm. In addition, the additional research also is needed by taking consideration the impact of these supply chain risks towards SME performance. Lastly, refer to SME Corp. Malaysia (2017), there is a total of 117,012 SMEs in East Malaysia (Sabah and Sarawak). Significant numbers of the SMEs in the East Malaysia might give significant impact on the study outcome of future studies.

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