

The Relationship between Supply Chain Management Practices and Customer Satisfaction in Small and Medium Enterprises

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Abstract

The main purpose of this study is to understand the relationship between supply chain management practices and customer satisfaction in manufacturing sector of small and medium enterprises in Johor. The research objectives are to examine the relationship between supply chain management practices and customer satisfaction and to identify which supply chain management practice contribute the most to customer satisfaction. The collected data was analysed using regression analysis. The findings showed that only information sharing has a significant relationship with customer satisfaction. Besides, the model review also showed that information sharing contributes the most towards customer satisfaction. In managerial implication, this study contributes towards the supply chain management operations and activity in small and medium enterprises which able to improve the customer satisfaction among customers.

Key words: Supply chain management; supply chain management practices; information sharing; information technology; postponement; customer satisfaction

Introduction

Manufacturing sector has achieved massive productivity gains through their operations in hope to differentiate themselves from competitor and in response of rising competition (Koh, Demirbag, Bayraktar, Tatoglu & Zaim, 2007). This led many small and medium enterprises (SME) to shift their focus from productivity to supply chain management to be competitive in the market (Rahman, Wasilan, Deros & Ghani, 2011) which signifies productivity competition shifted to chain competition to obtain competitive advantage such as customer satisfaction (Koh et al, 2007).

In Malaysia, manufacturing industry is one of the leading economic participants and SME plays a major role. Hence, SME are considered to be Malaysian backbone of the economy. According to SME Corp Malaysia (2014), 98.5% of businesses in Malaysia are small medium enterprises, which contributed approximately 36.6% growth in Gross Domestic Product (GDP) in year 2016. Given to the importance of SME and manufacturing sector, scholars and policy makers have attempted to develop the sector (Lee, 2004) through bilateral pacts and international treaty as ASEAN.

Further, globalisation and dynamic customer demands causes SME to encounter uncertainties and complexity (Koh et al, 2007). These challenges and increases the pressure for SME understanding supply chain management. Besides, Rahman et al (2011) stated there is a lack of study on the supply chain management and that SME does not possess sufficient knowledge or understanding on this topic. This emphasises that further research should be done on supply chain practices in SME manufacturing as supply chain practices aids SME with strategies towards improvement in their business. SME needs ample knowledge on supply chain management in order to cope with the dynamic business environment and enhance customer satisfaction.

According to Hague and Islam (2013) the supply chain management practices often result in improved organisational performance, competitiveness, and customer satisfaction. Applying supply chain practices allows SME to identify the market changes and needs, and a unified supply chain will be able to contribute on added value and efficiency in the supply chain (Hague & Islam, 2013).

Literature Review

The dynamic business culture and globalization has led businesses to focus internally especially in supply chain management (SCM). According to Marinagi, Trivellas and Sakas (2014) increase in competition globally has made it mandatory for many organizations to manage their

supply chain well to survive in the market. Based on Stock and Boyer's (2007) study, most supply chain management definitions comprising of 3 main elements which are activities, benefits and components. Whereby, most of the activities defined as material or physical elements, information flows and finances, while benefits include creating value, efficiencies and customer satisfaction. In supply chain management, the practices are crucial to customer satisfaction and there are several theories used to understand further on the supply chain management practices.

Theory of supply chain management practices

There are several theoretical models are explained based on previous researchers and studies done on the topic. Firstly, Social Capital Theory was used to explain on role of social relations in supply chain management practices (Gerlach, 1992). Nahapiet and Ghoshal (1998) stated that economic, political, technological and cultural resources are rooted in relationships and it allows adaptation of practices in the supply chain that will improve an organisation and allow it to achieve its goals. Singh and Power (2009) stated researchers used the social capital theory model to reveal the supply chain management practices as information sharing to measure the relationships among organisations and its outcome in different theoretical foundations.

Furthermore, Supply Chain Network Theory explains on set of nodes which represents independent businesses units that possesses a network or connections with other businesses which links them together for the purpose of producing a product or service (Hearnshaw & Wilson, 2011). Ketchen and Hult (2007), stated that firms which operates in networks gain advantages through business relationships and collaborations. The information technology involves multiple channels and multiple supply chain entities where the companies collaborate to achieve similar goals (Chae, Yen & Sheu, 2005). In accordance to the theory, Chin et al (2004) addressed the information technology network design which includes third party logistics provider, supplier and many more.

Thirdly, Resource based view provides theoretical perspective on how a firm can achieve their goals through acquisition and control over resources (Barney, 1991). The theory states that firm's resources varies from physical assets, capabilities, organisation processes and practices, knowledge and so on to obtain the desired outcome of an organisation (Barney, 1991). Day and Wensley (1988) argued that resource sharing only effective when it has value and strategic, such as sharing tangible resources as assets, distribution facilities, technology and services as well as intangible resources as information to the supply chain parties. Besides, the theory also emphasises on competitiveness and outcome of a company's efforts is depending on the resources which the organisation utilises and the degree of the utilisation. Therefore, resource based view theory reflects a modern concept of supply chain which influenced by many elements and globalisation. Moreover, as supply chain does not operate in isolation, most assets available for the organisation are considered as resources (Day & Wensley, 1988).

Supply Chain Management Practices: Supply chain practices are defined as acts undertaken by an organisation to establish effective management of its supply chain (Li, Lin, Wang & Yan, 2006). For many years scholars have defined the supply chain management practices (SCMP) through several perspectives. Firstly, Tan et al (2002) stated that materials flow, information flow and postponement strategy, supply chain integration, information sharing, supply chain characteristics, customer service management, geography proximity and just in time as supply chain management practices. The SCMP model developed by Tan et al (2002) provided a fundamental practice which results in improvement of organisational performance, financial performance and customer satisfaction.

Similar model was created by Li et al (2005) which includes 6 practices that is strategic supplier partnership, customer relationships, information sharing, information quality, internal lean practices and postponement. A recent study done by Hague and Islam (2013) included information sharing and information technology as part of the supply chain practices, which was used as underpinning concept for this study. This study includes information sharing, information technology and postponement.

Information sharing is defined as access to private data between business associates therefore allowing them to monitor the progress and orders as it passes through several processes in

the supply chain (Simatupang & Sridharan, 2002). Information sharing includes identifying and distributing timely pertinent information for supply chain operations as planning and controlling (Simatupang & Sridharan, 2005). The integrated process allows the information sharing between the parties and this leads to strengthen relationships and social ties among the parties (Marshall & Bly, 2004). In addition, information sharing is also one of the main components towards supply chain collaboration (Simatupang & Sridharan, 2005). Benton and Maloni (2006) stated that the supply chain partners perceive a better relationship with an organisation when it allows the partners to access critical information and planning which allows the partners to perform better and ensure the product to be well-designed and has a better quality which improves customer satisfaction.

Secondly **Information Technology** is essential to business's sustainability (Auramo et.al, 2005). Through applying information technology in supply chain management, the firms can enhance their performance in competitive market globally (Bayraktar et.al, 2009). Furthermore, Chae et al (2005) has agreed and stated that information technology can influence inter-organisation collaboration and allows organisations to keep track of market needs, demand fluctuations and allocate resources accordingly (Ngai et al., 2010). Information technology does not operate in isolation, but interacts within the organisation and also with external parties as customers and suppliers. Furthermore, Mariotti (1999) discovered that using information technology between an organisation and its supply chain partners improves communication, reduces risk and create efficiency in sharing information and data. In other words, high usage of information technology in a firm, ensures the higher level of customer satisfaction (Hague & Islam, 2013). Hence, information technology allows the supply chain partners to help them deliver products and services to customers specifically based on demand.

Postponement is moving frontward the one of more supply chain activities such as making, sourcing and delivering to later part in the chain (Hoek et al, 1999). The purpose is for organisations to build a flexible and lenient supply chain and able to cater the dynamic customer's needs through elements such as product development and even differentiation of the products or alter the demand functions (Waller, Dabholkar & Gentry, 2000). Thus, postponement allows firms to respond efficiently towards customer's demand and market fluctuations (Li et al, 2006). Overall, postponement can be effective in certain conditions such as high specialisation products and wide range products, low delivery rate, and high market uncertainties (Pagh & Cooper, 1998). This allows organisations to lower their supply chain costs. Wallin, Johnny, Rungtusanatham and Rabinovich (2006) explained that through postponement, the organisation is able to meet the dynamic customer needs and cope with the changing needs and wants of the customer, thus possibly increase customer satisfaction.

Customer Satisfaction: Customer satisfaction defined as the skill of making customer joyful, by attending to them and responding to their desires (Zhang et al, 2003). Attending to the customer's needs is a specific aspect of a business where it leads to satisfying the customer where it will further contribute towards loyalty and long-term strategic relationship with the manufacturer. Customer satisfaction is ensured when a business being operated based on customer's needs instead of organisational needs (Herrmann, Huber & Braunstein, 2000). Furthermore, Keiningham, Aksoy, Andreassen, Cooil and Wahren (2006) stated that the customer satisfaction is strongly determined by capability of organisation to meet customer's expectations. Thus, when customers receive services or products according to their perceived expectations, this tend to increase their satisfaction and loyalty.

Previous studies on the relationship between supply chain management practices and customer satisfaction

In the research done by Lagat, Koech and Kemboi (2016), information sharing has positive relationship with customer satisfaction. It expressed that sharing reliable, accurate and adequate information plays an utmost importance in information sharing as distortion of information or delays may lead to decrease in customer satisfaction. When employees share relevant information to their supply chain partners such as key performance metrics and process data, it can contribute to enhancement of the customer satisfaction.

Further, Karimi, Rafiee and Aqqad (2014) stated that in Iran Pumps Company, postponement is not a strong indicator to measure supply chain management practice with customer satisfaction. It is found that postponement is a weak indicator in the study. It explained that postponement is strongly dependent on the application by the company which is unique for every company and its industry, thus in certain company, postponement practices may not be a strong supply chain management indicator. The research findings that done by Ghatebi, Ramezani and Shiraz (2013) indicated that there is a positive relationship between information sharing and customer satisfaction. Suggestions were made where to ensure proper information sharing where managers or relevant employees should share important information related to changes on business plans and make the partners aware of the issues the company is facing.

Besides that, Hague and Islam (2013) found that information sharing and information technology has a significant relationship with customer satisfaction. It is expressed that high initiative of information sharing among the supply chain partners lead to increase in customer satisfaction. It is found that information technology contributes towards information sharing in the organisation. This enables the organisation to cope with large scale of information sharing with the aid of information technology. This allows the company to increase its customer satisfaction with appropriate SCMP.

Toyin, Rotich and Aqqad (2012) stated that there is no significant relationship between postponement and customer satisfaction. It is indicated that the products produced are seeming to have a stable demand and longer life cycle (Toyin, Rotich & Aqqad (2012). Thus, postponement practices may not use vastly in the industry as postponement depending on the firm's product types and other relevant aspects as life cycle and market characteristics.

Similarly, Ibrahim and Hamid (2012), showed that both information technology (supply chain integration) and information sharing has no affiliation with customer satisfaction. This suggested that, the correlation aspect might be a result from companies who are reluctant to share information or encourage any strong information technology collaboration with supply chain parties as some organisations might be uncertain that the information shared might be used against the organisation unfairly.

Lastly, According to Pandiyan, Ibrahim and Govindaraju (2011), there is a strong relationship between information sharing and postponement with customer satisfaction. This indicates that the supply chain managers have to share information with their supply chain partner's as well as practice postponement in their operations in order to keep their customer satisfaction by fulfilling their needs. Moreover, Pandiyan et al (2011) indicated that for the long-term prospect of an organisation, information sharing is a determinant of an organisation's supply chain management success.

Development of Hypothesis

Based on the theoretical background, literature review and previous studies, there are several relationship possibilities are stated between the independent and dependent variables specifically. For this study, there are 3 hypotheses developed from the supply chain management practices and customer satisfaction.

H1: Information Sharing have a significant relationship with customer satisfaction

H2: Information Technology have a significant relationship with customer satisfaction

H3: Postponement have a significant relationship with customer satisfaction

Conceptual Framework

Based on Figure 1, the conceptual framework for this study are explained. The independent variable is the components of supply chain management practices which are information sharing, information technology and postponement. Meanwhile, the dependent variable is customer satisfaction. The framework explains the possible relationship between the two variables.

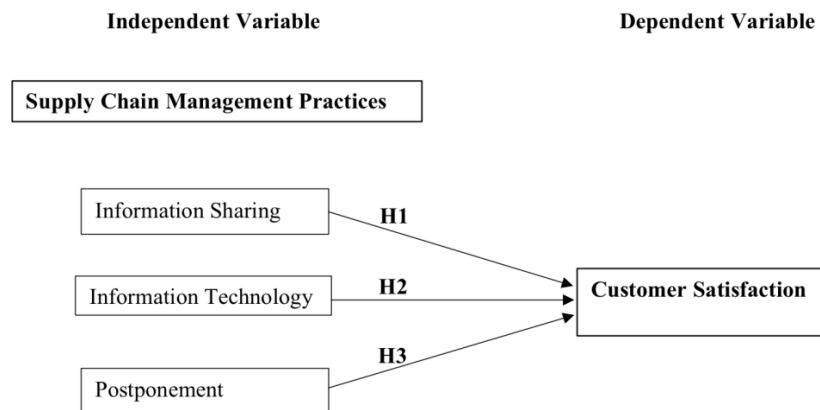


Figure 1: Conceptual Framework

Research Methodology

Research Design: The purpose of this research design is to guarantee the researcher to answer the initial research questions in clarity. This study is a quantitative research. According to Aliaga and Gunderson (2000) quantitative research is defined as a method used to rationalize the phenomena through numerical data collection and analysing using mathematical or statistical techniques. The study intends to examine the relationship between supply chain management practices and customer satisfaction, hence regression analysis research design is most suitable in this research.

Furthermore, this study uses survey questionnaires as research design. The design is preferred as it is convenient to measure and analyse the data obtained from the survey. According to Kelley, Clark, Brown and Sitzia (2003), survey questionnaires should be carefully designed, and questions should be easily analyzable and not vague. Taking this into contemplations, the questions was designed in direct and concise manner in simple language. The research focusses on manufacturing industry of small and medium enterprises in the state of Johor, Malaysia.

Sampling Method: Sampling plan for this research is decided as it accords with the objective and aim of this research. For this study, the proposed sampling method for this study is non-probability sampling technique. Convenient sampling is a technique of non- probability sampling technique which comprises of selecting random those who are relevant and easiest to obtain the sample (Saunders et al, 2016). Convenient sampling is also referred as accidental sampling as respondents may be selected purely as they happened to be located at the particular place where the researcher is conducting data collection (Etikan, Musa & Alkassim, 2015). The respondents of this study are the employees in the manufacturing sector in SMEs in Johor. Convenient sampling is easy and affordable, as well as the subjects are accessible. According to Wilson, Vanvoorhis and Morgan (2007), in order to test correlation and regression of a data, the sample size should be at least 50. Hence for this study, the sample size will be 100 samples.

Research instrument: The research instrument of this study is using questionnaire that has been developed and used in the previous studies. This is mainly to ensure that the questionnaire design is affiliating with the research objectives and research questions. The questionnaire are separated into 3 parts, part A on demographic profile of the respondents, part B on supply chain management practices which includes information sharing, information technology and postponement and lastly part C on customer satisfaction.

The study adapted 5 point Likert scale which allows the researcher to analyse the data clearly through comparisons and through reporting how negatively or positively a respondent was inclined to the element in the questionnaire (Johns, 2010). Likert scales in this research consists of five response alternatives: 1 = Strongly Disagree, 2 = Disagree, 3 = Not sure, 4 = Agree, and 5 = Strongly Agree.

Furthermore, Table 1 explains the classification of questions in the questionnaire used and where it was adapted from.

Table 1: Classification of Questionnaire's questions

Variables	Questions	Adapted from
Information Sharing	5 – 9	Li et al (2005), Pandian et.al (2011)
Information Technology	10 – 14	Li et al (2005), Pandian et.al (2011)
Postponement	15 – 19	Li et al (2005)
Customer Satisfaction	20 – 24	Chen and Paulraj (2004)

Findings

As a purpose to perform reliability test for supply chain management practices and customer satisfaction, Cronbach's Alpha was selected as preferred method as it was used in a study conducted by Hague and Islam (2013). Cronbach's Alpha is designed to measure the reliability of the variables or items through its consistency in the test (Cronbach & Shavelson, 2004). Burns and Burns (2013) stated that Cronbach's Alpha range between 0.7 to 0.9 is considered to be very good and that the research is reliable. Based on the table, it was observed that all variables exceeded 0.8, which is in preferable range.

Table 2: Reliability Analysis

Variables	Number of Items	Cronbach's Alpha
Information Sharing	5	0.814
Information Technology	5	0.950
Postponement	5	0.810
Customer Satisfaction	5	0.806

Table 3 shows the demographic information of the respondents which comprises of gender, age, level of education and working experience in the company. Overall 130 questionnaire was distributed, and a total of 100 questionnaire was collected which has a 77% return rate.

Table 3: Demographic Profile of Respondents

Demographic Variables	Categories	Frequency	Percentages
Gender	Male	46	46%
	Female	54	54%
Respondents Age	30 and below	55	55%
	31 to 40	25	25%
	41 to 50	8	8%
	51 to 55	9	9%
	55 and above	3	3%
Level of Education	SPM and below	11	11%
	Diploma or equivalent	29	29%
	Bachelor's Degree	44	44%
	Master's Degree and above	16	16%
Working experience in the company	Below 3 years	44	44%
	3 to 5 years	20	20%
	5 to 9 years	23	23%
	More than 9 years	13	13%

A research study with large samples require normality test before doing another analysis (Arabmazar & Schmidt, 1982). The normality results should be between -2 to +2 which is considered

as a normal result for the data (George & Mallery, 2010). According to Table 4, all data falls between -2 to +2, hence all variables are normally distributed.

Table 4: Normality Analysis

Variables	Skewness	Kurtosis
Information Sharing	- 0.702	1.541
Information Technology	- 0.417	0.152
Postponement	- 0.315	0.145
Customer Satisfaction	- 0.748	1.077

The Relationship between Supply Chain Management Practices and Customer Satisfaction

In this research, regression will be used to analyze both research objectives. According to Table 5, the result showed that information sharing has a significant relationship with customer satisfaction. The results also showed that Information technology ($\beta = 0.167$, $p > 0.05$) and postponement ($\beta = 0.109$, $p > 0.05$) does not have a significant relationship with customer satisfaction.

In addition, Information sharing contributes the most to customer satisfaction ($\beta = 0.332$, $p < 0.05$). The R-square value represents the total percentage of supply chain management practices contribute on customer satisfaction. The value of r-square is 28.3%, hence all variables under supply chain management practices are good predictors of customer satisfaction.

Table 5: Regression Analysis

Table 57. Regression Analysis

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	
1	0.532	0.283	0.260	0.54257	
Coefficients					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.500	.362		4.148	.000
Information Sharing	.349	.131	.332	2.652	.009
Information Technology	.121	.082	.167	1.486	.140
Postponement	.112	.115	.109	.969	.335

Discussion

The relationship between supply chain management practices and customer satisfaction

The findings showed that information sharing has significant relationship with customer satisfaction. The information sharing has positive and significant relationship on customer satisfaction, therefore hypothesis is accepted. This finding support the social capital theory and resource based view theory which signifies information sharing as a resource can contribute to customer satisfaction when the organisation trust and has social ties with its partners. Hague and Islam (2013) reflected that information sharing found to have strongest and significant relationship with customer satisfaction, this is identical to the findings of this study. Ketchen and Hult (2007) argued that information sharing between essential supply chain partners allows the organisation to achieve its goals and its organisational performance and customer satisfaction. This is also supported by Lagat, Koech and Kemboi (2016) who stated that sharing relevant, reliable, accurate and adequate information and data with relevant parties can enhance the customer satisfaction.

The result showed that there is no significant relationship between information technology and customer satisfaction. This finding does not support the supply chain network theory which states higher usage of information technology causes increase in customer satisfaction (Tseng, Wu & Nguyen, 2011). Fawcett et al (2011) supported the findings result emphasising organisations tend to invest in information technology if their products manufacturing

processes are complicated which requires collaboration with other supply chain partners. Correspondingly Kim, Cavusgil and Calantone (2006)'s study, indicated that information technology in small or medium businesses may not impose any impact on customer satisfaction due to less collaboration with supply chain partners. The findings indicated that there is no significant relationship between postponement and customer satisfaction. This finding does not support the resource based view theory that possessing and utilising ample resources, it can provide towards customer satisfaction. Postponement is strongly depending on an organisation culture and also the products that the company produces (Karimi, Rafiee & Aqqad, 2014). Mikkola and Skjott Larson (2004)'s study, postponement requires participation and collaboration from various parties in the supply chain which tend to present in large business organisations however not in small businesses organisations such as small and medium enterprises

Discussion on Information Sharing and Customer Satisfaction

According to the regression analysis (Table 5), information sharing has the highest beta coefficient value of 0.332 which shows that information sharing contributes the most to customer satisfaction. Beta coefficient value portrays the influence of the independent variable on dependent variable. Hence in this study, information sharing has the highest influence on customer satisfaction. This is consistent with the finding of Hague and Islam (2013)'s study. Mohr and Speckman (1994) stated that information sharing refers to critical and proprietary information with an organisation's supply chain partners. Lagat et al (2016) found that information sharing not only contributed the most towards customer satisfaction but also concluded that by the information sharing practice should be reliable, accurate and adequate to have higher customer satisfaction. High level of information sharing can be established with trust and close relationships with supply chain partners heightens the competitive advantage of the supply chain as a whole and results in improved satisfaction among customers (Holland, 1995). Thus, employees tend to feel more confident and trust with the supply chain partners as the information sharing allows the organisation to improve and enhance the customer satisfaction levels of their customers.

Sharing relevant and crucial information with supply chain partners allows the manufacturers to make better decisions on ordering, production planning, distribution and many more (Pereira, 2009). This will subsequently enhance the efficiency and effectiveness of the supply chain in catering the needs and wants of the customers along with responding to the demands fluctuations and also reduce the uncertainty in the market (Li & Lin, 2006). Therefore, companies must establish focus on sharing information with supply chain partners by creating mutual trust and confidence.

Management Implication

Based on the findings, it showed that there is a positive relationship between information sharing and customer satisfaction. Therefore, it is important for manufacturing companies to share information with their supply chain partners.

Firstly, mutual trust and confidence must be developed through focussing on long-term relationship with supply chain partners such as suppliers and many more. As Ghatebi et al (2013) stated the organisation should share vital information regarding the business or products with their supply chain partners. This would establish a trustworthiness and commitment that managers are willing to share information that can affect the supply chain partners. This would also encourage the flow of reliable information along the upstream and downstream supply chain, which would enable the manufacturer and their supply chain partners to improve on their products.

The managers should create an organisational culture through strategic planning to increase willingness to share information and to reduce the reluctance of employees to share information. This would reduce departmental barriers and remove the barrier in information sharing between parties (Popp, 2000). This planning can be promoted through several methods such as employees are expected to provide necessary information to upstream supply chain and on downstream supply chain, and appropriate channel for customer to provide feedback and it should be taken into considerations to improve the products or services.

Further, establishing information technology system (IT) to facilitate information sharing between supply chain partners can benefit the organisation greatly. Implementing information technology system can create a platform for managers to share relevant information to their partners timely, effectively and efficiently (Namagembe et al, 2012). Information technology systems such as Electronic Data Interchange (EDI) would benefit the organisations to share real time information to their supply chain partners for both upstream and downstream supply chain can allow optimisation to take place. The small and medium enterprises do not necessarily invest in high end information technology system to facilitate information sharing, even simplistic methods as e-mail which can be effective tool for sharing information on primary levels (Barrat & Green, 2001).

Limitation of study

There are several limitations in this study. Firstly, the data obtained from questionnaire in this research has been distributed to manufacturing companies of small and medium enterprises in Johor. The study is focussing on one state and one particular industry. Thus, the results may not represent the overall manufacturing companies of small and medium enterprises in Malaysia. Secondly, some respondents ignore the researcher and refuse to answer the questionnaire. This is mainly because most respondents do not have time to answer the questionnaire due to their busy schedule. Therefore, future researchers should distribute more questionnaires to target respondents and industry to get sufficient data.

Recommendation of study

As this study was done in only one state in Malaysia, future researchers should conduct the research on a wider geographical context such as in more developed cities such as Kuala Lumpur and Penang to obtain more respondents to obtain sufficient and accurate results. Besides, future researchers can explore other industries such as healthcare and e-commerce. Lastly, future researchers could explore more supply chain management practices such as strategic supplier partnerships, and customer relationships and this can enable the future researchers to identify practices that affect the organisation in terms of organisation's performance, financial performance and customer satisfaction. Future researches can help organisation to understand and apply supply chain practices which can assist the firms to improve their level of competitiveness, performance and achieve their goals.

Conclusion

Research studied on the relationship between supply chain management practices and customer satisfaction among manufacturing sector of small and medium enterprises, Johor. Information sharing, information technology and postponement are the dimensions of supply chain management practices that was used to investigate whether there is customer satisfaction. According to the result, only one of the supply chain management practices has significant relationship with customer satisfaction. Besides, information sharing contribute the most on customer satisfaction among manufacturing sector of small and medium enterprise, Johor. Therefore, it had proven that when an organisation shares relevant and important information among supply chain partners, it can result in customer satisfaction.

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Appendix: Questionnaire

Information Sharing

5	Information exchange between your organization and its supply chain partners is timely	1	2	3	4	5
6	Information exchange between your organization and its supply chain partners is accurate	1	2	3	4	5
7	Information exchange between your organization and its supply chain partners is complete	1	2	3	4	5
8	Information exchange between your organization and its supply chain partners is adequate	1	2	3	4	5
9	We (our organization) have frequent face-to-face communication with our supply chain partners	1	2	3	4	5

Information Technology

10	IT system in the organization enables information sharing with all department inside company.	1	2	3	4	5
11	The IT system effectively integrates with whole supply chain system (including supply chain partners)	1	2	3	4	5
12	IT system provides a direct computer to computer linkages with main suppliers	1	2	3	4	5
13	IT system in company allows the organization to achieve inter-organization coordination	1	2	3	4	5
14	IT system in the company reduces response time across supply chain and its partners	1	2	3	4	5

Postponement

15	Our products are designed for modular assembly	1	2	3	4	5
16	Our production process modules can be re-arranged so that customisation can be carried out later	1	2	3	4	5
17	We (our organisation) delay final product assembly activities until customer orders have actually been received	1	2	3	4	5
18	We (our organisation) delay final product assembly activities until the last possible position (or nearest to customers) in the supply chain	1	2	3	4	5
19	Our goods are stored at appropriate distribution points close to the customers in the supply chain	1	2	3	4	5

Customer Satisfaction

20	Our customers are pleased with our products and often provide positive feedback	1	2	3	4	5
21	We (our organisation) emphasise the evaluation of formal and informal customer complains	1	2	3	4	5
22	We (our organisation) follow up with customer for feedback or opinions	1	2	3	4	5
23	Our customers do not return back purchased products	1	2	3	4	5
24	We (our organisation) interact with customer to set reliability, responsiveness and standards	1	2	3	4	5