

The Moderating Effects of Logistics and Supply Chain Issues on the Relationship Between Organisational Innovations, Entrepreneurial Orientation and Market Orientation of Smes in Malaysia

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Abstract

SMEs need to develop market orientation (MO) of the company together with entrepreneurial orientation (EO) and organisational innovation (OI) in order to sustain its business via market expansion. Venturing into new markets, however, could bring forth issues in logistics and supply chain such as transportation, packaging, documentation and warehousing. This study is conducted with focus on the moderating effects of logistics and supply chain issues on the relationship between entrepreneurial orientation and organizational innovation, on the market orientation of SMEs. This study used a combination of both the qualitative and quantitative research design. Data were obtained through face-to-face interviews and survey questionnaires. The population of the study were SMEs in Kedah, Perlis and Penang. A total of 5 companies were interviewed and 106 mail survey questionnaires were collected. Data gathered from survey questionnaires were analysed using SPSS and Partial Least Square Regression technique. Findings indicate that there is a mix of logistics and supply chain issues faced by the SMEs' with most common issues being customer service and inventory management. Quantitative data analysis indicates that both entrepreneurial orientation and organisational innovations do influence the level of market orientation. In addition, logistics and supply chain issues are found to significantly moderate the relationship between both independent variables and the dependent variable.

Keywords: Logistics and Supply Chain Issues; Organisational Innovations; Entrepreneurial Orientation; Market Orientation; SME.



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1. Introduction

Small and medium enterprises (SMEs) play a vital role in the Malaysian economy and are considered to be the backbone of industrial development in the country (Saleh and Ndubisi, 2006). SMEs, however, is defined differently across countries and various multilateral institutions such as the World Bank, Multilateral Investment Fund (MIF) of the Inter-American Development Bank (IADB), the African Development Bank (AFDB) or even the United Nation Development Programme (UNDP) (Gibson and Vaart, 2008). Even in Asia, there is official definition of SMEs and the Asian Development Bank uses only definitions of individual national governments. According to SMEs Corp., Malaysia, Malaysian SMEs are defined based on their sector, as shown in Table 1.

Table-1. Definition of SMEs in Malaysia

Category	Small Enterprise	Medium Enterprise
Manufacturing	Sales turnover from RM300,000 to less than RM15 mil	Sales turnover from RM15 mil to not exceeding RM50 mil
	OR employees from 5 to less than 75	OR employees from 75 to not exceeding 200
Services and Other Sectors	Sales turnover from RM300,000 to less than RM3mil	Sales turnover from RM3 mil to not exceeding RM20 mil
	OR employees from 5 to less than 30	OR employees from 30 to not exceeding 75

Source: Official website of SME Corp. Malaysia, 2015

The contribution made by Small and medium enterprises (SMEs) towards economic development of a nation is significant. In Malaysia, 97.3% or 645,163 of 662,939 business establishments in this country are SMEs (SME Corp. Malaysia, 2014). An annual report produced by the SME Corp. Malaysia, showed that the contribution of SMEs towards Malaysian GDP is 35.9% in 2014 and accounted for 65% of the total employment in this country. Various factors contributes toward the success of Malaysian SMEs, including reputation of honesty, good customer service and hard work (Chong, 2012); leadership behaviours of leaders (Arham et al., 2013); and government business support (Shamsuddin, 2014). In addition, Hung et al. (2011) identified six other main factors: networking, product,

and ability to focus on market, customer, supportive management, and leadership. Indarti and Langenberg (2004) identified components such as characteristics of the entrepreneurs, the characteristics of the SMEs, and the contextual elements of SME development for the business success of SMEs. There is also evidence that Malaysian SMEs have successfully expanded their business into foreign market and increase in profit is the major reason behind their move. This is understandable as Malaysian market is very small and therefore, SMEs have to expand their market to gain more revenue (Abdullah and Zain, 2011). Overall, Malaysian SMES contributes 19% of the export of this country (SME Corp. Malaysia, 2014).

Technological advancements and declining trade barriers have open up opportunities enabling SMEs to become international quickly and effectively. If a proper strategy is taken, these micro enterprises may become a Born Global or International New Ventures (INVs) company, referring to a firm that start selling internationally right from its establishment (Abdullah and Zain, 2011). In order to achieve market expansion, the company needs to develop market orientation (MO) of the firms. Firms that are market oriented are continuously responding to changing customer and market needs. As such, firms need to invest in new technologies and equipment, provide training to their workforce and also explore new markets. High level of entrepreneurial orientation (EO) and organisational innovation (OI) are expected to boost SMEs market orientation resulting in competitive advantage.

Despite some success, there are also cases where SMEs failed to sustain their business. Even though there have been no comprehensive studies or accurate figures published so far, the estimated failure rate for SMEs was 60% (Portal Komuniti KTAK, 2006). Causes of SMEs failure comes from both internal and external factors (Fatoki, 2014). Internal factors include lack of management experience, lack of functional skills and poor staff training and development and poor attitude towards customers. External factors include logistics and supply chain inefficiency, high cost of distribution, competition, rising costs of doing business and lack of finance. Logistics and supply chain has been identified as one of the external factors by Fatoki (2014) and a further study that focuses on the logistics and supply chain related factors may provide better understanding on how this aspect may influence SMEs success. Therefore, the research questions for this study are:

- i. Does entrepreneurial orientation influence the level of market orientation?
- ii. Does organisational innovation influence the level of market orientation?
- iii. Which factors, either entrepreneurial orientation or organisational innovation has the most impact on the level of market orientation?
- iv. Do logistics and supply chain issues moderate the relationship between entrepreneurial orientation, organisational innovations and market orientation?

The remainder of the paper is as follows. Section 2 provides an overview of extant literature in the field of entrepreneurial and market orientation as well as logistics and supply chain management to provide a better comprehension of definitions and concepts. It is followed by the next section detailing the methodology adopted to collect data and data analysis. Section 4 presents the findings and discussion. Limitations and future research directions along with conclusions are drawn in the last two sections.

2. Literature Review

Entrepreneurial orientation (EO) is a firm-level strategic orientation that captures an organization's strategy-making practices, managerial philosophies, and firm behaviours entrepreneurial in nature (Brian and Slevin, 2009). (Lumpkin and Dess, 1996) classified entrepreneurial orientation into three major dimensions namely pro-activeness, risk-taking and innovativeness. Dickson *et al.* (2008) express EO in the context of SMEs as their inclination towards more proactive, innovative and risky actions. Organisational innovations on the other hand is the firm's tendency to engage in and support new ideas, novelty, experimentation and creative processes that may result in new products, services or technological processes (Lin *et al.*, 2008). According to (Hurley and Hult, 1998) organisational innovation consists of two dimensions namely innovativeness and capacity to innovate. Innovativeness refers to individual or organisation's openness to new idea, while capacity to innovate refers to organisation's ability to adopt or implement new innovative ideas. It is even considered as one of the primary mechanism for responding to market needs.

At the same time, one of the main stream of research on business or market expansion focus on the factors that encourage firms to expand. Some of the factors identified include entrepreneurial orientation and organizational innovation. The firm's effort towards market expansion is widely known as market orientation. Business expansion at the same time will involve logistics and supply chain management. All these factors were identified as the variables of the study and each of them are further discussed below.

2.1. Market Orientation (MO)

Market orientation (MO) is a firm-level strategic orientation which captures an organization's strategy-making practices, managerial philosophies, and firm behaviours that are entrepreneurial in nature (Brian and Slevin, 2009). Narver and Slater (1990) meanwhile define MO as a business culture committed to the continuous creation of superior value for the customers. Market orientation is expected to provide solid foundation for firm's competitive advantage and simultaneously enhance business performance (Hunt and Morgan, 1995; Narver and Slater, 1990). It is also the organisation-wide generation of market intelligence, dissemination of the intelligence across departments and organisation-wide responsiveness to it (Kohli and Jaworski, 1990).

2.2. Entrepreneurial Orientation (EO)

Entrepreneurial orientation (EO) can be defined as the inclination of firms towards more innovative, proactive and risky actions (Dickson *et al.*, 2008). (Huang *et al.*, 2010) further clarify the elements of EO as the organisation's willingness to innovate and rejuvenate its market offerings (innovativeness), to take risk by trying out new and uncertain products or services (risk-taking) and to be more proactive than its competitors in seeking out new marketplace opportunities (proactiveness).

2.3. Organisational Innovation (OI)

Organisational Innovation (OI) refers to the tendency to engage in and support new ideas, novelty, experimentation and creative processes that may result in new products, services or technological processes (Lin *et al.*, 2008). It portrays the firm's willingness and tendency in achieving the desired innovation, demonstrated in terms of behaviour, strategies, activities and processes (Entebang *et al.*, 2010).

2.4. Logistics and Supply Chain Management Issues

Efficient logistics and supply chain management is essential for new market expansion. Council of Supply Chain Management Professionals (CSCMP, 2015) iterates that supply chain management encompasses the planning and management of all activities involved in sourcing and procurement, conversion, and all logistics management activities including coordination and collaboration with channel partners (suppliers, intermediaries, third party service providers). Authors, such as Pollit (1998); Gurau *et al.* (2001) and Gunasekaran and Ngai (2003); have categorized logistics and supply chain management into a broad range of activities that can be grouped into six key decision areas: Facilities (plant, warehouse, and depot location, size and design), Inventories (raw material, component, work-in-progress, and finished goods stocks), Communications (order processing, data transmission, and data processing), Unitization (Packaging in its broadest sense including container or cargo handling), Transport (physical movement of material into, within and out of, the company or port and vessel) and Value-added services (break-bulk, testing and repackaging; quality inspection Import/export documentations).

Logistics and supply chain issues refers to the barriers associated with any of the logistics and supply chain activities and could become barriers to market expansion. These issues tend to offset a firm's effort to establish an efficient supply chains system and often lead to higher total supply chains costs and decrease flexibility that will adversely affect the firm's competitive position (Carter and Ellram, 1998). Lack of knowledge on logistics and supply chain strategy or in other words high level of logistics and supply chain issues is expected to negatively influence the market expansion (Zhang *et al.*, 2012) of managers and reduce the possibility of risk taking behaviour and intention to venture abroad (Carter and Ellram, 1998). The complexity of logistics and supply chain management that include different business customs, inadequate logistics infrastructure, restrictive regulatory frameworks and different levels of supply chain services give rise to issues that tend to offset efforts to establish an efficient supply chain and often lead to higher total supply chain costs.

Previous studies have tried to identify logistics and supply chain issues faced by firms. Among them are time-based competition issues, trade issues, transportation issues, restructuring issues and country specific issues (Harvey and Richey, 2001). Some studies look at technology, distribution, transportation and telecommunications infrastructure, communication and functional silos (the organizational structure of the firm). Aspects concerning management also dominate the literature. The role of top management, self-fulfilling prophecies, internal management style and problem of control appear to be dominant in the discussion of management issues (Akkermans *et al.*, 1999; Harvey and Richey, 2001; McAdam and McCormack, 2011; Sheu *et al.*, 2004).

Supply chains issues could come from a number of sources such as governmental, economic, trade, political, regulations and legal requirements, corporate politics, complicated customs procedures, social and cultural and geographic (Carter and Ellram, 1998). Foggini *et al.* (2004) describe major supply chain issues as a five-factor model that includes inventory, customer service, organisation, systems and product flow issues. These dimensions address five major "pain points" in the supply chain and is adopted as a basis for this study.

2.5. Hypotheses and Theoretical Framework

Previous studies posit a positive relationship between EO and MO. (Narver and Slater, 1990) found out that businesses may achieve market orientation's full potential when they are driven by an entrepreneurial orientation in line with studies by Morris *et al.* (2002) and Matsuno *et al.* (2002). Therefore, the first hypothesis of this study is:

H1: Entrepreneurial orientation is positively related to market orientation

Literature also indicated that OI has a positive relationship with MO (Deshpande *et al.*, 1993; Lin *et al.*, 2008). Based on these studies, the second hypothesis is:

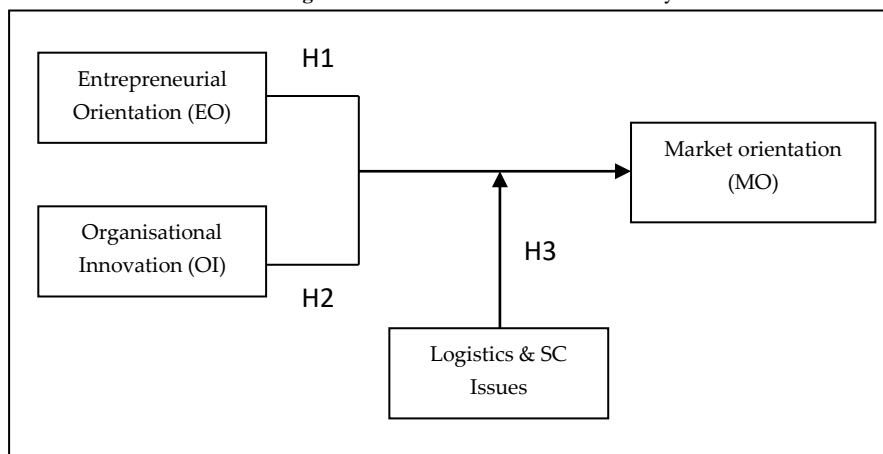
H2: Organisational Innovation is positively related to market orientation

As stated earlier, logistics and supply chain issues (LSCI) have been found to negatively affect market expansion or internationalisation (Zhang *et al.*, 2012) and reduce risk taking behaviour (Carter *et al.*, 1997). LSCI is considered as a moderator in this study as it is expected to affect the strength of the relationship between EO, OI and MO. In other words, LSCI is expected to reduce the effects of EO and OI on market orientation. Since there were no evidence of studies that specifically looked at the moderating effect of logistics and supply chain issues, with EO, OI and MO, the last hypothesis for this study is:

H3: Logistics and supply chain issues moderates the relationship between entrepreneurial orientation, organisational innovation and market orientation.

The theoretical framework and all four hypothesis of this study is presented in Figure 1.

Figure-1. Theoretical framework of the study



3. Methodology

A combination of qualitative and quantitative research design were utilised in the present study. Data were first obtained through face-to-face interviews, followed by survey questionnaires. Face-to-face interviews were held first because the case study method is more exploratory in nature and assist gathering in-depth information to affirm the validity of each independent variable proposed for this study. Furthermore, case study interviews help determined the most relevant logistics and supply chain issues for this study. Both data collection methods are discussed in details below.

3.1. Case Study Interviews

For qualitative research design, data collection was conducted through case study interviews with five SME managers from manufacturing and retail industry. The managers are chosen from the list of SMEs available through the SMECorp directory based on convenience basis due to difficulties in getting the agreement from many managers to be interviewed. The objective of the interview is to learn the manager's view on business internationalisation, logistics and supply chain issues experienced by these firms and their level of severity. Relevant questions were asked using the "Supply Chain Diagnostic Tool Framework" by [Foggin et al. \(2004\)](#); to ascertain the logistics and supply chain issues faced by the companies.

In total, 5 companies were interviewed. From the interview, a list of logistics and supply chain issues that are most relevant from Malaysian SMEs context are produced and used as a basis in developing the survey questionnaire items. The interview data were analysed based on the thematic method. Thematic analysis is one of the most common forms of analysis in qualitative research. It emphasizes pinpointing, examining, and recording patterns (or themes) within data. Themes are patterns across data sets that are important to the description of a phenomenon and are associated to a specific research question.

3.2. Survey Questionnaire

The population of the study are SMEs in Kedah, Perlis and Penang with sampling frame from the SME Business Directory (www.smeinfo.com.my). The survey questionnaire for this study consist of three different sections: company's demographic information, the independent (OI and EO) and dependent variables (MO) with the third section consisting of questions for logistics and supply chain issues. Survey questionnaire for OI, EO and MO was developed based on measures used in previous related studies as highlighted in Table 2. The items for EO, OI and MO used the 5 point Likert Scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). Measurements for supply chain issues were selected and adapted from previous study by [Abdullah, Yaakub and Don \(2013\)](#) and used the 5 point Likert Scale ranging from 1 (Rarely Happen) to 5 (Always Happen) with list of items presented in Table 3.

Table-2. Survey questionnaire items for EO, OI and MO

Variables	Items	Sources
Organisational Innovation (OI)	1. Technical innovations are readily accepted (EntOr1)	Hurley and Hult (1998)
	2. Management actively seeks for innovative ideas (EntOr2)	
	3. People are rewarded for new ideas that work well (EntOr3)	
	4. Innovations are constructive and well accepted (EntOr4)	
	5. Product and process innovations are important to our company (EntOr5)	
Entrepreneurial orientation (EO)	1. Take risk in investing towards project that promises a very high returns (OrgInn1)	Khandwalla (1977)
	2. Choose bold and wide-ranging acts in order to achieve the company's objectives (OrgInn2)	
	3. Execute bold and aggressive strategy in maximising the probability of exploiting potential opportunities (OrgInn3)	
	4. Initiate actions which competitors then respond to (OrgInn4)	
	5. Be the first to introduce new product, service, administrative techniques, or operating technologies etc. (OrgInn5)	
	6. Be the first to venture into new market (OrgInn6)	
Market Orientation (MO)	1. We always response rapidly to competitive actions (MktOr1)	Narver and Slater (1990)
	2. We continuously seek for a new market (MktOr2)	
	3. We pay close attention to after-sales service (MktOr3)	
	4. The company's business objectives are driven by customer satisfaction (MktOr4)	
	5. The company's competitive advantage is based on understanding of customers' needs (MktOr5)	
	6. We closely monitor and assess our level of commitment and performance in serving customers' needs (MktOr6)	
	7. The company's strategies are driven by the goal of increasing customer value and satisfaction (MktOr7)	

Table-3. Survey items for supply chain issues

Variables	Items	Sources
Logistics and supply chain issues	1. Long transit times or delay caused by transportation	Abdullah et al. (2013)
	2. Inventory forecasting difficulties or inaccuracies	
	3. Late delivery complaint by customers	
	4. Incomplete or wrong shipments complaints by customers	
	5. High logistics and supply chain activities cost	
	6. No information systems linkages with supply chain members	
	7. Poor information or data flows	
	8. Lack or no information systems expert/personnel	
	9. Lack of logistics/supply chain providers availability and capability	
	10. Lack of knowledge on import/export procedures	
	11. Lack of understanding on International Trade Terms (INCOTERMS)	

Before the actual distribution of questionnaires, a pilot study was conducted to determine the respondents' understanding of the items and to confirm internal reliability. A total of 30 companies were selected based on convenience basis for this pilot study. Table 4 presents result of pilot study data analysis where all variables of the study have a Cronbach's Alpha value of more than 0.7, which is the cut-off value or the acceptable reliability level. It also shows that there is good internal consistency of the survey items in the scale.

Table-4. Cronbach Alpha Coefficient

Variables	Cronbach's Alpha
Entrepreneurial Orientation	0.908
Organisational Innovation	0.744
Market Orientation	0.902
Supply chain issues	0.791

During the actual data collection, a total of 300 surveys were distributed on a convenience basis through mail or self-administered during SME exposition and training sessions organised by Co-operative and Entrepreneurship

Development Institute (CEDI), Universiti Utara Malaysia. 106 mail survey questionnaires were returned yielding a response rate of 35.3%. Data gathered from survey questionnaires were analysed using SPSS for descriptive analysis, while the relationship between variables and the effect of moderating variables were tested with a Partial Least Square Regression Technique, using SmartPLS 2.0 software.

4. Results and Discussion

4.1. Case Study Interviews Result and Findings

In total, five SMEs involved in this study and four of them are from the retail industry while the other one is from the manufacturing industry (refer Table 4). In terms of the interviewees' position, three of them are the owner (CS2, CS3 and CS4) while the other two are manager (CS5) and import-export officer (CS1). Based on the number of employees, four companies (CS2, CS3, CS4 and CS5) are in the small enterprise category as the number of employees is more than 5 but less than 30. Meanwhile, CS1 is a medium sized enterprise as the number of employees employed is 180 people.

Results of the interview indicate a mix of logistics and supply chain issues faced by the SMEs' owners or managers. The most common issues identified are customer service issues and inventory management issues. In terms of customer service issues, one of the companies (CS2) are having problems servicing their customers, which results in loss of sales and loss of customers to their competitors due to inventory shortages. Loss of sales and consequently loss of customers happens when the customer goes into the shop but could not buy what they want because the product is not available and they leave the shop empty-handed. These customers will go to another shop and if that shop could satisfy the customer's needs, they might not come back to the first shop therefore resulting in the loss of the customer (maybe forever). The inventory shortages sometimes are also caused by late delivery of the suppliers. These suppliers, on occasion, also sent incomplete shipments to the company. This further exacerbates the inventory shortage for the company. When investigated, the reason for incomplete shipments is that the supplier themselves are having problems with their inventory level (sometimes the item that was ordered was out of stock at the supplier's end).

Table-4. Case study interview - summary of findings

Case Study	Profile	Major Logistics and Supply Chain Issues	Severity
CS1	Interviewee Position: Import-Export Officer Industry: Manufacturing No of employees: 180	Product Flow Issues. The problem lies with the carriers/3PL providers that they use. The company have inadequate buying leverage with carriers and their 3PLs.	Moderate
CS2	Interviewee Position: Owner Industry: Retail No of employees: 6	Customer Service Issues. There are lost sales and lost customers due to inventory shortages.	Moderate to severe
CS3	Interviewee Position: Owner Industry: Retail No of employees: 5	Customer Service Issues. Relationship with external supply chain members (suppliers) are stressful Result in erratic order delivery lead time	Moderate
CS4	Interviewee Position: Owner Industry: Retail No of employees: 7	Inventory Issues. Company have too little inventory.	Moderate to severe
CS5	Interviewee Position: Manager Industry: Retail No of employees: 10	Inventory Issues. Too much inventory. Also having problems with obsolete inventory.	Moderate to severe.

Again, from the aspect of customer service issues, another company interviewed (CS3) stated that their relationship with external supply chain members (their suppliers) are stressful. This company says that the nature of their relationship with their suppliers are transactional, arms-length and with low coordination. The company could not afford a closer relationship with the suppliers because, being a small company, their orders are small and infrequent. The company is also sometimes being relegated to the end of the sequence of importance because of the size of their order. They cannot demand much from the suppliers (for example, a faster delivery) due to the size of their order. As a result, the order delivery lead times become unpredictable and erratic, which affect the company's service and reputation among their customers.

The second most common logistics issue faced by the companies is inventory issues. Two of the SMEs have a contrasting inventory issue: one has too little inventory while the other one faced too much inventory issue. However, one common denominator is that both these companies are in the clothing retail sector that deals with the fast changing trends in fashion. The first company (CS 4) has too little inventory due to their financial constraints (lack of capital). Being a small company, the company do not have the capital to buy a large amount of clothing for each of the sizes. According to this company, sizes (of the clothes) have to be carried in the sizes of XS to XXL. To have adequate inventory to service their customer fully, there should at least be 5 pieces for each size (this means 5 pieces for XS, 5 pieces of S, 5 pieces for M etc.). Unfortunately, due to their lack of capital, they could only buy 1

piece for each of the sizes. This is also due to having to carry several colours for the each of the sizes. The company could not afford to buy so many pieces for the same size while at the same time carrying it in so many colours.

In contrast to CS4, another SME interviewed (CS5) has a too much inventory problem. Upon investigation, the reason for this is that the company source their products overseas and to make up for the transportation costs, they order in big bundles to get transportation discounts. The company also carry too many SKUs (Stock Keeping Units). Another problem that contributes to this is that their forecast is not accurate enough. Forecasting is vital in the clothing industry because they follow a certain fashion trends. Unfortunately, the forecast that the company used are sometimes not accurate for the Malaysian consumers (i.e. the product might be a bestseller in an overseas market but only receives a lukewarm response here in Malaysia). The inaccuracy in forecasting results in the company having too many unsold inventory and this leads to another problem for the company, which is considering what to do with obsolete inventory. Finally, CS1 is facing a product flow issues as the company have inadequate buying leverage with carriers and their third party logistics (3PL) service providers. This is almost similar to the situation faced by CS3 as small number of orders and infrequent use of the carriers or 3PL services resulted in they are not been considered as a priority among the carriers and the 3PLs.

This case study contributes towards the literature as it provides more detail and in depth explanation on the logistics and supply chain related issues faced by SMEs. For practitioners and the government, this study shed lights on the most common issues faced by SMEs. Firms themselves need to rectify these issues as they may result in loss of sales, which will eventually result in loss of customers. The case study finding also indicates the important role of external supply chain members such as the supplier, carrier or third-party logistics (3PL) service providers as they directly influence the level of customer services provided by SMEs.

4.2. Survey Questionnaire Result and Findings

4.2.1. Demographic Information

Table 5 summarises the demographic information of the respondents. Both Kedah and Penang have equal numbers of companies, numbered at 38 or 35.8% each. 30 SMEs are located in Perlis. Majority SMEs are in the food and beverages industries with a total of 46 companies (43.4%), followed by pharmaceuticals and healthcare product with 26 (24.5%), and agriculture with 14 SMEs (13.2%). In terms of years of operations, almost half of the SMEs involved in this study have been operating in between 6 to 15 years, with a cumulative total of 52 SMEs and cumulative percentage of 49%. 32 SMEs (30.2%) are relatively new SMEs as they have been operating for less than 5 years. In contrast, 11 SMEs (10.4%) are established SMEs as they have been operating for more than 25 years.

Table-5. Demographic information

Variables N = 106	Categories	Frequency	Percentage
Location	Perlis	30	28.3
	Kedah	38	35.8
	Penang	38	35.8
Industry	Metal & Construction	9	8.5
	Food & Beverages	46	43.4
	Pharmaceuticals/Health	26	24.5
	Chemical/Petro-Chemical	2	1.9
	Textiles, apparel, leather	5	4.7
	Rubber & Plastics	3	2.8
	Palm oil based	1	0.9
	Agriculture	14	13.2
Years of operations	< 5 years	32	30.2
	6 - 10 years	26	24.5
	11 - 15 years	26	24.5
	16 - 20 years	6	5.7
	21 - 25 years	5	4.7
	> 25 years	11	10.4
Number of employees	< 5	44	41.5
	6 - 75	38	35.8
	76 - 100	19	17.9
	> 200	5	4.7
Annual turnover	< 300k	54	50.9
	301k - 15 million	28	26.4
	15.1 - 30 million	15	14.2
	30.1 - 45 million	6	5.7
	> 50 million	3	2.8
Designation	CEO/Director/Sen Mgr	52	49.1
	Manager/Asst. Mgr	32	30.2
	Senior Executive/Executive	22	20.8

For the number of employees, 44 SMEs employ less than 5 employees (41.5%), followed by 38 (35.8%) that employs in between 6 to 75 employees. 5 firms (4.7%) have more than 200 employees. Analysis on SMEs' annual turnover shows that more than half of these SMEs earned less than RM 300,000.00 annually, which is 54 SMEs (50.9%). Another 28 SMEs (26.4%) earned in between RM 301,000.00 to RM 15 Million, while 15 (14.2%) earned in between RM 15.1 million to RM 30 million yearly. Only 3 SMEs earned more than RM 50 million or 2.8%.

4.2.2. Assessment of Reliability and Validity of the Measurement Model

Structural equation modelling technique using the Partial Least Square (PLS) regression software known as SmartPLS (2.0) is used to validate the measurement instrument and research model. PLS has the ability to model latent constructs under conditions of non-normality and small sample sizes as it places minimal restrictions on measurement scales and residual distribution (Chin *et al.*, 2003; Hair *et al.*, 2011). It involves two stages; (1) the assessment of reliability and validity of the measurement model, and (2) the assessment of the structural model. The outcome to accept or reject the hypothesis is based on PLS findings, where the relationship must be significant and the direction is as proposed for it to be accepted. Assessment is done by examining the content reliability, convergent validity and discriminant validity.

Content reliability: All scales used in this study are derived from previous studies and the draft questionnaire is pilot tested at 30 SMEs. Based on the result of the pilot test, the CronbachAlpha value fulfils the minimum cut-off value and thus, content validity has been fulfilled.

Convergent validity: Item loadings for individual item (indicator) for each latent variable (construct) help determine the convergent validity. Table 6 shows that all standardized loadings for each items and some items did not reach the cut-off level of 0.7. Loadings of more than 0.7 indicate that there is more shared variance between the constructs and their measure than error variance (Hair *et al.*, 1998). As a result, 4 items (EntOr4, Issue1, Issue4 and Issue5) which have loading score of less than 0.70 was subsequently removed from the construct. Results indicate that item loading for all items are satisfactory after the model is re-run without the removed items. In addition, Average Variance Extracted (AVE) value can also be used to assess convergent validity. Items that have an AVE value of more than 0.5 are considered to have high convergent validity (Diamantopoulos and Winklhofer, 2001). Table 6 shows that all constructs have an AVE value of more than 0.5.

Table-6. Survey Items Loadings, composite reliability and AVE

Indicators	Loadings	Composite Reliability	Average Variance Extracted (AVE)
<i>Entrepreneurial Orientation</i>		0.945	0.776
EntOr1	0.812		
EntOr2	0.881		
EntOr3	0.832		
EntOr4	0.601		
EntOr5	0.915		
EntOr6	0.900		
<i>Organisational Innovations</i>		0.836	0.507
OrgInn1	0.770		
OrgInn2	0.788		
OrgInn3	0.721		
OrgInn4	0.736		
OrgInn5	0.729		
<i>Market orientation</i>		0.929	0.651
MktOr1	0.728		
MktOr2	0.802		
MktOr3	0.774		
MktOr4	0.885		
MktOr5	0.885		
MktOr6	0.801		
MktOr7	0.760		
<i>Logistics & Supply Chain Issues</i>		0.872	0.572
Issue1	0.502		
Issue2	0.751		
Issue3	0.712		
Issue4	0.215		
Issue5	0.409		
Issue6	0.789		
Issue7	0.738		
Issue8	0.782		
Issue9	0.860		
Issue10	0.771		
Issue11	0.751		

Discriminant validity: shows that a test of a concept is not strongly correlated with other tests designed to measure theoretically different concepts. Square root of the average AVE is calculated and compared with the correlations among the latent variables using the latent variable correlation matrix output of PLS (Chin *et al.*, 2003). Correlations between constructs are displayed in the lower left off-diagonal elements in the matrix as shown in Table 7. AVE shared between the construct and its measure should be greater than the variance shared between the construct and other constructs in the model (Fornell and Larcker, 1981). The diagonal elements highlighted in bold (square root of AVE) are greater than the off-diagonal elements in both corresponding rows and columns, which provided evidence of discriminant validity.

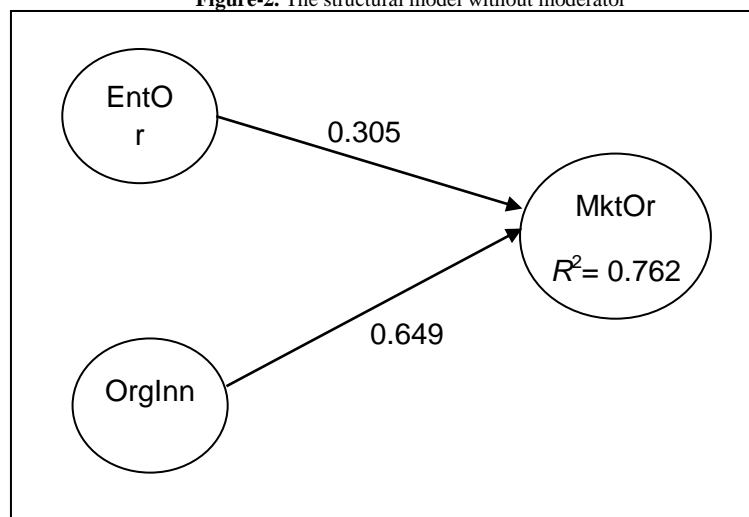
Table-7. Latent Variable Correlation Matrix

	EntOr	Issue	MktOr	OrgIn
EntOr	0.88063			
Issue	-0.2361	0.68768		
MktOr	0.7307	-0.3604	0.85695	
OrgIn	0.66994	-0.3138	0.84535	0.87168

4.2.3. Assessment of the structural model

Figure 2 shows the structural model (without moderator variable) used to determine the relationship between entrepreneurial orientation, organisational innovations and market orientation. Summary of the results the path coefficients, t-values, significant or not significant and the variance explained values (R^2) is available in Table 8.

Figure-2. The structural model without moderator



The findings of the PLS path analysis shown in Table 8 help answer the hypothesis number 1, 2 and 4. Based on the path coefficient value between EO and MO (0.305), and OI and MO (0.649), it is clear that organisational innovation has a more significant impact on market orientation. Therefore, the answer to research questions 4, which try to determine which factor have a stronger influence on market orientation. Both variables do have a positive significant influence on MO, but OI is found to have a stronger influence on MO than EO based on the path coefficient value.

Table-8. Path coefficient, t-value and significance

	Sign	Path	T-Value	Sig	R^2
EntOr → MktOr	+	0.305	1.97	Yes	0.762
OrgInn → MktOr	+	0.649	4.05	Yes	

H1: Entrepreneurial orientation is positively related to market orientation

The finding indicates that there is a significant positive relationship between entrepreneurial orientation and market orientation. Thus, there is enough evidence to reject the null hypothesis. The relationship is strong as the path coefficient value is 0.305. Chin (1998) indicates that standardized paths should be at least 0.20 and ideally above 0.30 in order to be considered meaningful or have a strong relationship, while indicating that coefficients of 0.10 are neither theoretically nor practically interesting. The finding is similar to previous studies that posit a positive relationship between EO and MO (Narver and Slater, 1990); (Matsuno *et al.*, 2002; Morris *et al.*, 2002). Thus, it may be assumed that SMEs with greater innovativeness, pro-activeness and risk taking behaviour will have a higher level of market orientation. These entrepreneurial characteristics will make SMEs more willing to explore and expand their business even beyond the national border.

H2: Organisational Innovation is positively related to market orientation

The result shows that organisational innovations do have a significant positive relationship with market orientation. Thus, there is enough evidence to reject the null hypothesis. The path coefficient is 0.649 and it means a

strong relationship exists between OI and MO. This result provides further support to other studies that observed the same outcome (Deshpande *et al.*, 1993; Lin *et al.*, 2008). Managers that continuously seek innovative ideas and encourage innovation in every aspect of their business are expected to make the firms more competitive and capable of improving their market reach. Thus, it is clear that adoption of innovation as a continuous process in the organisation may enhance SMEs market orientation. In addition, the strong relationship indicates that innovation is the key towards marketing success these days even for SMEs.

H3: Logistics and supply chain issues moderates the relationship between entrepreneurial orientation, organisational innovation and market orientation.

In order to test the fourth hypothesis, another structural model which includes supply chain issues as a moderating variable was analysed using PLS (Refer Figure 4). The result indicates some changes in the path coefficient between EO to MO and OI to MO, as the value has decrease from 0.305 to 0.300 and from 0.649 to 0.632 respectively. The variance explained value or R^2 has also increase to 0.773. The moderating effect is accessed by comparing the proportion of R^2 from the model without the moderating variable with the R^2 of the full model, which includes the moderator. Based on Cohen (1988), this formula is used to determine the effect size (f^2) of supply chain issues as a moderating variable.

$$f^2 = \frac{R^2_{\text{model with moderator}} - R^2_{\text{model without moderator}}}{1 - R^2_{\text{model with moderator}}}$$

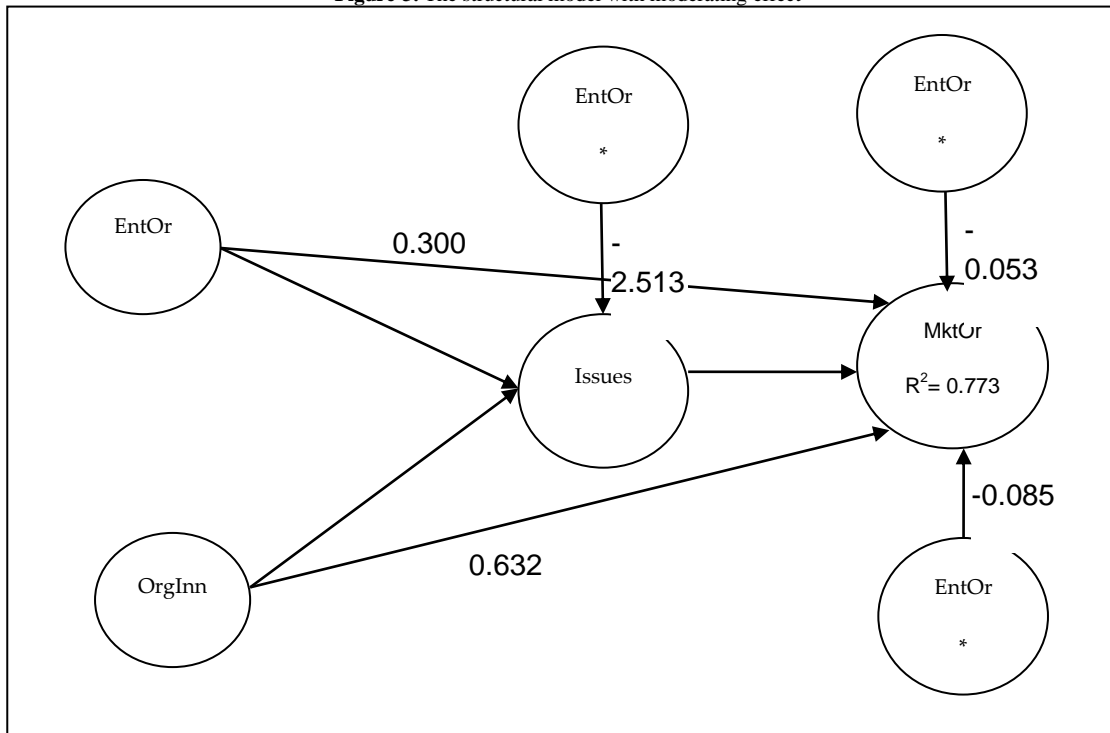
$$f^2 = \frac{0.773 - 0.762}{1 - 0.773}$$

$$f^2 = 0.0048$$

Moderating effect with effect size f^2 of more than 0.0048 may be regarded as weak as $f^2 \geq 0.15$ is moderate and $f^2 \geq 0.35$ is consider as stron

Therefore, it can be concluded that logistics and supply chain issues weakly moderate the relationship between entrepreneurial orientation and organisational innovation on market orientation of SMEs in Malaysia.

Figure-3. The structural model with moderating effect



This is one major finding of this study as previous study on market orientation did not consider logistics and supply chain issues as a factor that may moderate the relationship. This result however is in line with the other research findings which states that logistics and supply chain issues are found to negatively affect market expansion or internationalisation (Zhang *et al.*, 2012) and reduce the risk taking behaviour (Carter *et al.*, 1997). As evidence through the path coefficient value decrease in the later model (with moderation), logistics and supply chain issues may significantly reduce the impact of entrepreneurial orientation and organisational innovation on market orientation. SMEs might be proactive, have risk-taking behaviour, innovative and continuously innovate, but they these might not be good enough to enhance their market orientation as there are serious logistics and supply chain issues that hampers efforts to expand their market domestically and internationally. Therefore, it is imperative for SMEs to solve any logistics and supply chain related issues and at the same time improve these two aspects in order to improve their market orientation.

4.2.4 Practical and Theoretical Implications

Practically, this study contributes towards SME managers, the government and also relevant policymakers. It is very clear from the above findings that inculcating entrepreneurial orientation and organisational innovation within the SMEs may help enhance their market orientation. Managers should encourage innovativeness among employees and the same time ready to take risk, be proactive and improve product or process innovations if they want to improve their market orientation and ultimately, business performance. Although business performance is not the focus of this study, it is generally proven by other researchers such as Ellis (2006) and Jyoti and Sharma (2012) that market orientation will eventually leads to better business performance.

This study has also clearly demonstrates that SMEs need to improve their logistics and supply chain activities as existence of issues may hamper their efforts towards achieving greater market orientation. Policymakers' especially relevant government agencies such as the Ministry of International Trade, Ministry of Transportation and even customs department need to ensure that their policy, infrastructure and procedures are supportive to SMEs business development and expansion. Removing logistics and supply chain issues may help improve SMEs market orientation and competitive advantage. There must be an effort to ensure that all legal, regulatory and administrative environments that are related to logistics and supply chain are supportive to SMEs business performance.

From the theoretical point of view, this study has expanded previous research on EO, OI and MO by introducing a moderating variable which is logistics and supply chain issues. Previous studies mostly studied the direct role of logistics and supply chain as an enabler for market orientation, such as by (Fugate *et al.*, 2008). This study is different as it has shown different aspects of logistics and supply chain, which is the issues that faced by firms that may hamper SMEs market orientation, even though their level of entrepreneurial orientation and organisational innovation are high.

5. Limitations and Future Research Direction

There are several limitations of this study. First, the study involved only SMEs within the Northern Region of Malaysia, and due to difficulties in gaining completed survey from the respondents, the number of samples are relatively small. Hence, the result may not represent the total SME population in Malaysia as a whole. Future study may try to expand the location and number of samples and make comparison of the result. Second, literatures highlight the two independent variables of this study as consisting of various different dimensions, for example entrepreneurial orientation consists of pro-activeness, innovativeness and risk taking. This study just focused on EO as one factor that influences the level of market orientation. A similar study that is more focused and looks at these three dimensions as independent variables and logistics and supply chain issues as the moderator is worth a try. The same applies to organisational innovation as it also contains of a few different dimensions.

6. Conclusion

Expanding market reach either locally or globally is what most managers are looking forward to these days and SME owners in Malaysia are no exception. Firms, however, need to have good market orientation which is expected to provide solid foundation for firm's competitive advantage and simultaneously enhance business performance. The findings of case study interviews reveal that there is a mix of logistics and supply chain issues faced by the SMEs' owners or managers. The most common issues identified are customer service issues and inventory management issues. The quantitative data analysis has further proofs that entrepreneurial orientation, which is the SMEs' inclination towards more innovative, proactive and risky actions, may enhance their market orientation. In addition, organisational innovation which may result in new products, services or technological processes is also found to be essential in enhancing the SMEs market orientation. However, existence of logistics and supply chain issues which encompasses of inventory, transportation, information system, documentation, and packaging issues are expected to weakly effect both independent variables on market orientation.

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