

**INFLUENCE OF SMALLHOLDERS' AND
INTERMEDIARY FUNCTIONS ON AGRI-SUPPLY
CHAIN PERFORMANCE IN MALAYSIA'S
HORTICULTURE INDUSTRY**



UMS

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**FACULTY OF SUSTAINABLE AGRICULTURE
UNIVERSITI MALAYSIA SABAH
2019**

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INTERMEDIARY FUNCTIONS ON AGRI-SUPPLY
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HORTICULTURE INDUSTRY**

SHAHIIDA BINTI MUSA



UMS

**THESIS SUBMITTED IN PARTIAL FULFILMENT OF
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**FACULTY OF SUSTAINABLE AGRICULTURE
UNIVERSITI MALAYSIA SABAH
2019**

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I hereby declare that this dissertation is based on my original work except for citations and quotations which have been duly acknowledged. I also declare that no part of this dissertation has been previously or concurrently submitted for a Doctor of Philosophy's degree at this or any other university.

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In the name of Allah.

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ABSTRACT

The horticulture industry in Malaysia has recently shifted from supply chain to value chain. These changes are characterised by consumer pull market, high-value products, global outsourcing, and utilisation of post-harvest technology, but these changes do not benefit the horticulture production at farm level. Although there were numerous studies on value creation, studies on the interorganisational structure and holistic framework of value creation with the integration of transactional-relational approach from the perspectives of smallholders and intermediaries to their respective functions remain inadequate. Thus, this study aimed to assess the integration of transactional and relational approaches in the relationship between smallholders' and intermediaries' functions as well as their effects on the agri-supply chain performance. The study employed a mix-methods approach, which involved 410 smallholders from each state in the questionnaire survey and 17 intermediaries from major cities in Malaysia in the semi-structured interviews. This study analysed quantitative and qualitative data using SmartPLS 3 version 3.2.8 and ATLAS.ti, respectively. The result and outcomes of this study demonstrated the significance of intermediaries' marketing and information functions. These smallholders also expressed their interest to have online access to relevant information. The integration of transactional and relational approaches is deemed crucial to deliver high agri-supply chain performance. Considering that this study only provided empirical evidence, future studies are recommended. This study also presented theoretical and practical implications for effective policy development in Malaysia's horticulture industry.

ABSTRAK

PENGARUH PEKEBUN KECIL DAN PERANTARA PASARAN TERHADAP PRESTASI PEMBEKALAN PRODUK PERTANIAN DALAM INDUSTRI HORTIKULTUR DI MALAYSIA.

Industri hortikultur di Malaysia menyaksikan peralihan daripada rantaian bekalan kepada rantaian nilai. Perubahan ini dikategorikan berdasarkan pasaran berasaskan permintaan pengguna, produk nilai tinggi, pembekalan global dan penggunaan teknologi dalam pengendalian lepas tuai. Bagaimanapun, kajian menunjukkan transformasi ini tidak menguntungkan pengeluaran di peringkat ladang. Walaupun terdapat banyak kajian mengenai pembentukan nilai, kajian mengenai struktur di antara organisasi dan kerangka holistik pembentukan nilai dengan integrasi kaedah hubungan dan transaksi dari perspektif perantara pasaran dan pekebun kecil masih kurang diterokai. Maka, kajian ini bertujuan mengkaji impak terhadap prestasi rantaian bekalan diantara perantara pasaran dan pekebun kecil melalui kaedah transaksi-hubungan. Kajian ini menggunakan gabungan kaedah kualitatif dan kuantitatif dengan melibatkan 410 orang pekebun kecil yang telah dikenalpasti sebagai responden dari seluruh negeri di Malaysia melalui kaedah soal selidik dan 17 perantara pasaran dari bandar-bandar utama telah ditemuduga melalui pendekatan separa berstruktur. Perisian smartPLS3 versi 3.2.8 dan Atlas.ti digunakan bagi menganalisis data-data kuantitatif dan kualitatif. Dapatan utama dari kajian ini menunjukkan fungsi informasi perantara pasaran adalah sama penting dengan fungsi pemasaran perantara pasaran. Malah, pekebun kecil turut berhasrat bagi mendapatkan informasi yang berkenaan secara atas talian. Selain itu, penyatuan pendekatan transaksi-hubungan sangat penting dalam menghasilkan prestasi rantaian bekalan yang efektif. Memandangkan kajian ini hanya memberi penumpuan terhadap bukti empirical, lebih banyak kajian perlu dilaksanakan. Kajian ini turut memberikan implikasi teori and praktikal untuk pembangunan polisi bagi industri hortikultur di Malaysia.

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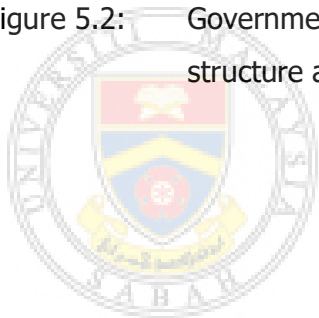
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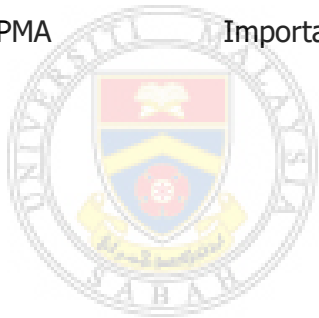
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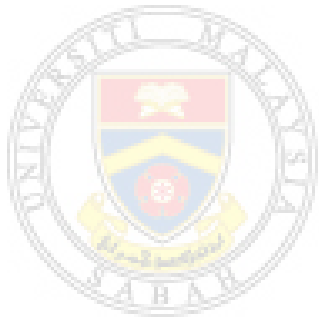
IINF	Intermediaries information functions
IMAR	Intermediaires marketing functions
SBRF	Smallholder business relationship function
PD	Price determination
RQ	Relationship quality
ASCP	Agri-supply chain peformance
TCE	Transaction Cost Economy theory
SET	Social Exchange Theory
AVE	Average Variance Extracted ()
R^2	coefficient of determination (value
f^2	effect size
Q^2	The Stone-Geisser's
IPMA	Importance and Performance Matrix Analysis (A)



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CHAPTER 1

INTRODUCTION

1.1 Introduction

In this chapter, the reader will gain an overview of the current study. The overview will incorporate the background of the study globally and in Malaysia perspective. The issues that will be encounter and objectives to be achieved will be described. In order to achieve the objectives, a list of research questions is formulated. Furthermore, the significance and scopes of the study, as well as the definition of a key term, will further explain. Lastly, this chapter will list out the thesis organization to assist in understanding of the reader.

1.2 Background of Study

Globally, horticulture's supply chain is changing. The rigorous transformation due to the modernization of the retail food industry. These changes were observed all over ASEAN countries including Malaysia and will continue to do so in the next few years (Romo & Reardson, 2009; Nguyen, Wood & Wingley, 2013; Dyck, Woolverton, & Rangkuti, 2012; Fatimah Mohammad Arshad, 2006; Shannon, 2009). Furthermore, the changes in the Malaysian consumer pattern toward high-quality vegetables are expected to grow, resulting in intense business-to-business activities (Tey *et al.*, 2009). The modification of lifestyle corresponding with the increase of per capita income (Hussin *et al.* 2010), reflect the buying pattern of fresh produce and may influence their retail patronage behavior.

In the perspective of the horticulture industry, supply chain performance integrates key business processes through the original producers. They produce and distribute agricultural (e.g., horticultural) products with the simultaneous occurrence of both product and information flows that add value for consumers and other stakeholders (Bijman, 2003). In the case of Malaysia, horticulture produces predominantly by the smallholder.

Smallholders produce 80% of the foods and possess most of the agricultural lands of smaller than 10 hectares (97%). Moreover, 87% of the farms, smaller than two hectares (500 million) in the world are within the Asian and Pacific regions (Thapa & Gaiha, 2011). Despite this dominance, smallholders encounter various limitations. For instance, from an internal perspective, they don't have economies of scale acreages, which are susceptible to any dramatic changes in the input cost, and inadequate capital. They are also still practicing traditional farming methods. From an external perspective, they face various challenges of globalization, consumer lifestyle changes, price instability, climate changes, and the modernization of the horticulture industry (Reardon *et al.*, 2009).

On the other hand, intermediaries known to provide an important link between smallholders and the market (Pokhrel & Thapa, 2007). Apart from transferring the produces from the producers to the consumers that involve sequential changes in the product form and price, they also provide services that reduce the transaction cost for farmers, such as transportation (Bingen, Serrano, & Howard, 2003). Additionally, the intermediaries also serve as a risk bearer to smallholders by absorbing the risk of fluctuations of production and price due to the rapidly changing market environment. The adaptation of intermediaries in the modern market remarkably deems, which positively assists the smallholders and the transformation of the supply chain to value chain in the horticulture industry (Barrett, 2008). They are known as packers who cater to the special needs of hypermarkets, such as pre-pack supply (Fatimah Mohamed Arshad *et al.*, 2006). Intermediaries or commonly known as middleman defines as an economic agent who purchases from the suppliers to sell to the buyers; who helps the buyers and sellers to meet and perform a transaction (Spulber, 2015).

Although there are significant roles of intermediaries in Malaysia's horticulture industry, their existence in the market is not welcome by the government. They are most of the time labeled as an irresponsible middleman. Since 2014, the government has launched a campaign so-called 'Jihad Memerangi Orang Tengah 'or 'To Fight Middleman' (Bernama, 2014 & Mohamad Husin, 2015). The campaign urges smallholders to free themselves from overdependent on middleman and directly sell to the consumer. Nevertheless, there are various efforts made to provide direct linkage to the market for the smallholders, such as through the governance system (Blanc & Kledal, 2012), agriculture system (Brummett *et al.*, 2011; Crow *et al.*, 2012), and alternative market (e.g., Fair Trade and Alternative Food Networks—AFN) (Raynolds & Ngcwangu, 2010). The primary

objectives of these efforts are to increase the profit margin, reduce the risk of domineering intermediaries, and expand the access to the market (Thapa *et al.*, 1995; Shrestha & Shrestha, 2000). However, the disintegration effort may cause certain disadvantages to the horticulture industry.

Fatimah Mohamed Arshad *et al.*, 2006 reported the shift from supply chain to value chain in Malaysia's horticulture industry. The shifting demonstrates the integration of governance structure, physical infrastructure, and information sharing. The drivers of this transformation are the development of large retail chains and the upgrading of consumers' consumption. Besides that, the transformation is also characterizing with consumer orientation supply chain, grading and private labeling, food safety, value creation, and the dominance of retailers rather than a wholesaler.

To govern the changes, three most highlighted tools to ensure inclusivity of smallholder. Those tools are contract farming, partnership and producer organizational (Royer, Bijman & Bitzer, 2016). Contract farming approach was promoted to increase the participation of smallholder direct to market (Arumugam, Mohamed Arshad, Mohamed & Chiew, 2011; Chin, 2015). However, the issues of price competitiveness and inconsistent supply resulted in the failure of contract farming approach (Suryandari & Buang, 2010; Chin, 2015).

Transformation of the supply chain to value chain indicates the importance of value creation. The form of governance structure that contributes to value creation known as interorganizational collaboration (Barringer & Harrison, 2000; Matinheikki *et al.*, 2016). Interorganisational collaboration is a form of governance which indicate a set of organizations or firms and the linkages that connect them which focuses on several forms of collaborative arrangements (Chaddad & Rodriguez-Alcala, 2010; Matinheikki *et al.*, 2016; Le Pennec & Raufflet, 2018). This type of relationship does not indicate any specific type of contract and focuses on several forms of collaborative arrangements.

However, the governance structure alone does not ensure the effectiveness of supply chain performance (Neely, 2007). It is due to the immeasurable approach towards appropriate structure to improve the supply chain performance was not recognized (Neely *et al.*, 2002). Primarily, the success of the supply chain performance depends not only on the accuracy of measurement yet equally important in term of the incorporation of the