UNIVERSITI PUTRA MALAYSIA

ENHANCING ORGANIC VEGETABLE FARMING THROUGH CONTRACT FARMING IN PENINSULAR MALAYSIA

TING JENN LING

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By

TING JENN LING

Thesis Submitted to the School of Graduate Studies, Universiti Putra Malaysia, in Fulfillment of the Requirements for the Degree of Master of Science

March 2016

DEDICATIONS

To My Wife Ma Ying, My Dad Ting Mong Hin and Mom Chow Mooi Kian.

Abstract of thesis presented to the Senate of Universiti Putra Malaysia in fulfillment of the requirement for the Degree of Master of Science

ENHANCING ORGANIC VEGETABLE FARMING THROUGH CONTRACT FARMING IN PENINSULAR MALAYSIA

By

TING JENN LING

March 2016

Chairman : Associate Professor Golnaz Rezai, PhD
Faculty : Agriculture

Due to globalization, market liberalization and consumers concern about food safety and environmental issues, there is an expansion in organic crops and livestock products demand from consumers. Malaysia has introduced organic farming through Malaysia Organic Standard since 2001. However, based on the record obtained from Department of Agriculture Malaysia, up to June 2014, there are only 72 (0.02%) organic farmers out a total of 272,000 farmers in Malaysia. This calls for the need to study why majorities of the farmers do not practice organic farming and also suggest possible solution such as contract farming as a motivating tools to enhance farmers' intention to participate in organic farming.

By adopting Theory Planned Behavior from Ajzen as conceptual framework, this study first find out the factors (independent variable) which influence farmers' intention toward organic practice (dependent variable). Then, effect of contract farming as a moderator was tested for its motivational effect. Face to face interview was conducted using structured questionnaire to gather data from 329 conventional vegetable farmers in Peninsular Malaysia. Multiple regression analyze was used to identify factors that contributed to farmers' intention on organic farming, while factor analyze was apply to group those factors with similar pattern of respond and Hierarchical Regression analyses was employed to examine the effect of contract farming as a moderator (motivational factor) in the relationship between the factors (predictors) and the farmers' intention (dependent variable).

The results of this study indicates that there were four groups of factors which explain the farmers' intention towards practicing organic farming. These factors are farmers' attitude, perceived behavioral control, societal influence (subjective norm) and contract farming. The results of hierarchy regression indicates that there is relationship between farmers' attitude and their intention, however their intention will significantly improve by adding contract farming into the equation. Therefore contract farming plays a moderating role between attitude and intention. Perceived

behavior control, does not show any significant relationship with intention to practice organic farming which indicates that since farmers do not have control over the situation, they are reluctant to practice organic farming. However by adding contract farming into the equation this relationship becomes not only positive but also significant which indicates contract farming will develop the control over the outcome by channeling farmers' products to the buyers.

From the results it can be concluded vegetable farmers in Peninsular Malaysia are reluctant to practice organic farming due to lack of sales channel on organic products, although farmer do agree and are well informed about the benefits of organic farming such as better ex-farm price and more environment friendly, but the external factor especially selling and marketing to the right channels seem to be beyond their control. Hence, the results of the current research suggested that contract farming will be able to solve farmer' perceived barriers by giving them more control over the sales channel. Therefore in order to increase organic supply, Malaysia government should consider developing more contract farming which will ensure the farmers of the price, buyers and subsequently secure income.

Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia sebagai memenuhi keperluan untuk Ijazah Master Sains

MENINGKATKAN PENANAMAN SAYUR ORGANIK MELALUI KONTRACK PEMASARAN DI SEMENANJUNG MALAYSIA

Oleh

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Mac 2016

Pengerusi : Profesor Madya Golnaz Rezai, PhD
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Perkembangan globalisasi, liberalisasi pasaran, peningkatan pengetahuan keselamatan makanan dan isu alam sekitar telah menyebabkan permintaan terhadap produk organik daripada pengguna semakin meningkat. Kerajaan Malaysia telah memperkenalkan pertanian organik melalui Standard Organik Malaysia sejak tahun 2001. Walau bagaimanapun, berdasarkan rekod yang diperolehi daripada Jabatan Pertanian Malaysia, sehingga Jun 2014, terdapat hanya 72 (0.02%) petani organik daripada sejumlah 272,000 petani di Malaysia. Ini menunjukkan adanya keperluan untuk mengkaji kenapa majoriti petani tidak mengamalkan pertanian organik dan juga mencadangkan penyelesaian yang mungkin, seperti pemasaran kontrak yang dapat memberi kesan motivasi kepada petani untuk meningkatkan niat petani dalam menyertai pertanian organik.

Dengan menggunakan Teori Tingkah laku (Theory Planned Behaviour) dari Ajzen sebagai rangka konsep, kajian ini mula dengan mengenalpastikan faktor-faktor (pembolehubah bebas) yang mempengaruhi niat petani untuk menyertai penanaman secara organik (peramal / pembolehubah bersandar). Kemudian, kesan perladangan kontrak sebagai moderator telah diuji untuk mengetahui kesan motivasi itu. Temuduga telah dijalankan dengan menggunakan soal selidik berstruktur untuk mengumpul data dari 329 pekebun sayur konvensional di Semenanjung Malaysia. Kaedah Analisis Multi Regrasi telah digunakan untuk mengenal pasti faktor-faktor yang menpengaruhi niat petani untuk pertanian organik, manakala kaedah analisasi faktor telah digunakan untuk mengumpulkan faktor-factor yang serupa kepada kumpulan yang tertentu dan kaedah Hierarki Regresi analisis telah digunakan untuk mengkaji kesan pemasaran kontrak sebagai moderator (faktor motivasi) dalam hubungan antara faktor peramal dan niat petani untuk menanam organik.

Keputusan kajian ini menunjukkan bahawa terdapat empat kumpulan faktor-faktor yang menjelaskan niat petani terhadap amalan pertanian organik. Faktor-faktor ini termasuk sikap petani, keupayaan untuk mengawal hasil kerja, pengaruh sosial (norma subjektif) dan pemasaran kontrak. Hasil regresi hierarki menunjukkan

bahawa terdapat hubungan di antara sikap petani dan niat petani untuk menanam secara organik, niat petani akan meningkatkan dengan ketara dengan wujudnya pemasaran kontrak ke dalam persamaan. Oleh itu kontrak pemasaran memainkan peranan motivasi di antara sikap dan niat. Keupayaan untuk mengawal hasil kerja, pada mulanya tidak menunjukkan sebarang hubungan yang ketara dengan niat untuk mengamalkan pertanian organik. Ini menunjukkan bahawa petani rasa dia tidak mempunyai kawalan ke atas keadaan yang menyebabkan mereka enggan mengamalkan pertanian organik. Walau bagaimanapun dengan menambah perladangan kontrak ke dalam persamaan, hubungan ini bukan sahaja menjadi positif tetapi juga ketara menunjukkan pemasaran kontrak dapat meningkatkan Keupayaan untuk mengawal hasil kerja petani dengan menyalurkan produk tani kepada pembeli.

Daripada keputusan kajian, dapat disimpulkan pekebun sayur di Semenanjung Malaysia enggan mengamalkan pertanian organik kerana kekurangan saluran jualan ke atas produk-produk organik, walaupun petani setuju dan ada pengetahuan tentang manfaat pertanian organik, misalnya harga yang lebih tinggi dan mesra alam. Para petani berasa dia dapat mengawal aktiviti ladang dalaman seperti belajar cara-cara penanaman organik dan melatih kakitangan ladang. Akan tetapi faktor luaran terutamanya jualan dan pemasaran adalah di luar kawalan mereka. Oleh itu, hasil penyelidikan ini mencadangkan bahawa pemasaran kontrak dapat menyelesaikan halangan petani untuk mula menanam organik dengan memberikan lebih kawalan ke atas aktiviti jualan hasil pengeluaran. Oleh itu, untuk meningkatkan bekalan organik, kerajaan Malaysia perlu mengambil kira strategi untuk membangunan kontrak pemasaran untuk produk organik yang dapat memastikan para petani dapat jual hasil jualan dengan harga ladang yang berpatutan, dengan memastikan petani organik boleh dapat keuntungan yang lebih menentu.

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Thank you so much for your kind help.

I certify that a Thesis Examination Committee has met on 29 March 2016 to conduct the final examination of Ting Jenn Ling on his thesis entitled "Enhancing Organic Vegetable Farming through Contract Farming in Peninsular Malaysia" in accordance with the Universities and University Colleges Act 1971 and the Constitution of the Universiti Putra Malaysia [P.U.(A) 106] 15 March 1998. The Committee recommends that the student be awarded the Master of Science.

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LIST OF ABRIVIATIONS

MOA	Ministry Of Agriculture Malaysia
DOA	Department Of Agriculture Malaysia
FAMA	Federal Agriculture Marketing Agencies Malaysia
TPB	Theory Of Planned Behavior
PBC	Perceived Behavior Control
SN	Subjective Norm
CF	Contract Farming
Att	Attitude
DV	Dependent Variable
IV	Independent Variable
FAO	Food and Agriculture Organization of The United Nation
IFAD	International Fund for Agriculture Development
IFOAM	International Federation of Organic Agriculture Movement
TORA	Theory of Reasoned Action
TPB	Theory of Planned Behaviour
DOI	Diffusion of Innovation Theory
NGO	Non Government Organization
SOM	Malaysia Organic Certificate
HLM	Hierarchy Linear Model

CHAPTER 1

INTRODUCTION

Overview of Organic and Contract Farming

Organic concept describes environmentally friendly production methods that permit the cultivation of crops or rearing without damage to human or natural systems (Soil Association, 2015). Organic farming provide better quality of food without applying inputs which may be potentially harmful to human body such as chemical pesticide, chemical fertilizer and other chemicals used in production (IFOAM, 2008) . Despite these benefits, farmers involvement in organic farming and world organic production is still relatively low which might be largely due to lack adequate sales channels (FAO, 2009). Contract farming is an intermediary between the farmers and marketer and therefore share the risk between the smallholder farmers and the markers. According to IFAD (2002), contract farming and marketing provide a means of facilitating market exchange and can be used as a tool to motivate farmers to practice organic production. In this chapter, we will overview organic farming in the world and Malaysia, some of the technical background on organic certification, farmer and governmental bodies' views and lastly, contract farming/ marketing as a possible solution to enhance farmer intention for practice organic.

1.1 Organic Production

Due to globalization and market liberalization couple with consumers concerned about food safety and environmental issues, there is an expansion of organic crops and livestock products demand from consumers. There is also an increasing demand for organic production system throughout the world to help in the conservation of natural resources. Organic agriculture refers to a farming technique that stresses on the importance of environmental issues and conservation of biodiversity couple with the application of natural production techniques. It is concerned not only with the final harvested produce, but with the all agricultural practices in producing and delivering the agricultural produce. Indicating that the organic agricultural practices does not stop at production level but along the value chain. Organic farmers therefore rely solely on organic farming techniques with new ecological discoveries which may enhance health and ecosystem's productivity for long-term, improve the product quality and ensure environmental preservation. It commonly believed that organic methods are better approach to environmental sustainability.

Organic farming came in to spotlight in the 1960s, when it was discovered that the increasing quantity of chemicals used in crop and animal production could have adverse effects on human well being and harmful to the natural environment. Ever since, organic farming concept has developed in to a well-organized movement which has been growing rapidly as one of the sustainable agricultural practices (FAO, 2012).

As identified by FAO Report (2012) there are three main advantages of organic farming which are; social, environmental and economic

1.1.1 Environmental Benefits

Land management is an important aspect of the environment. Conventional farming gives more concern to better productivity and does less to maintain environment. Hence, conventional approach can lead to increased degradation of the environment, thereby leading to soil erosion, air pollution, water pollution, loss of biodiversity, and desertification. Conventional agriculture is claiming to contribute on global warming and accounted for more than thirteen percent of global anthropogenic greenhouse gas emissions in 2015. (IFOAM, 2012) On the other hand, organic farming applies land management techniques that ensure the conservation of the land's natural ecosystem. Organic have less energy consumption and also minimize incidence of pollution which commonly found in conventional approach. Organic practice therefore, provide credible alternative to conventional approach in this era of increasing emphasis on climate change and environmental and biodiversity degradation.

1.1.2 Social Benefits

Organic farming has the effect of enhancing development of sustainable agriculture. In order to compete in the market, farmers must meet local requirements by managing all production factors in efficient way and remains sensitive to the environment. In order to achieve this, farmers must constantly practice modern techniques, organizing farming knowledge and keep learning improved practices. Farmers also need to work with their colleagues to ensure specific standards meet, in order to protect the integrity of their own air, water and soil. Thus, collaboration of farmers may combined resources, ensure better market access, and provide advantage in trade negotiations. Organic farming also enhance food quality by minimizing risks of disease, enhancing productivity and biodiversity, and promoting possibility of local production and access to food.

1.1.3 Economic Benefit

Organic agriculture has rapid growth in the last decade. This is mainly due to increasing in demand as consumers are becoming more concerned with the safety of the food. Farmers, on the other hand, have realized that consumers are interested in paying more for organic foods. This is particularly enticing to developing nations' farmers, as it is expected to enable better access to lucrative and emerging marketing opportunities. Due to makeup on the cost of production, processing and to capture hidden cost associated with issues such as environmental protection, animal welfare, and rural development, organic products attracts premium price compared to conventional counterparts. As more nations develop economically and population become more empowered, demands for organic foods are expected to increase. Continued development of the organic sector, however, depends on economic change and food safety concerns. Thus, farmers need to decide whether to enter such

markets with certifications that will be accepted or stay with conventional practices. Consumers buy organic products because they hope for a specific standard of production, such as devoid of chemical input. Organic certification ensures consumer-trust and further growth of the organic market as they believed certain standards have been met. Consumers are concerned about the type of accreditation received by a product so as to measure the quality of product they purchase.

1.2 Origin and Principles of Organic Farming

Organic farming does not refer to going 'back' to traditional techniques. Most of the farming techniques employed in the past are still important today. Organic practices adopts the best of these methods and combines them with new scientific discoveries (Ryton Organic Gardens, 2004). Traditional techniques were largely replaced with tractors and synthetic farming chemicals during the first half of the 20th century. However, the development and potential adverse effects of such chemicals on the ecosystem remained criticized by some individuals. Notably among these critics is Sir Northbourne, an Oxford University agriculturalist, who authored a book" in 1940 titled, *looking to the Land*, which he wrote to counter the industrialization of agriculture. Other individual such as Northbourne were motivated by Rudolf Steiner theory of biodynamic agriculture. Steiner indicated that farmers play a crucial part in balancing the utilization of land for agriculture with environmental conservation. It was thereby generally agreed that organic techniques will enhance the health of soil in long term, produce better quality products and a more sustainable form of land use. These notion became widespread in Europe and the United States from the 1940s through 1960s among the critics of industrial agriculture, especially due the publish of book in 1962 named *silent spring* by the scientist Rachel Carson's which revealed the dangers associated with industrial agriculture on food and the environment (FAO, 2012).

Before 1980s, a group of grassroots organizations such as Demeter International in Germany; the Soil Association in the United Kingdom; and Rodale Press in the United States, farmers and traders becomes an advocate for the organic movement and they later come together in 1972 to form the International Federation of Organic Agriculture Movements (IFOAM), an international organization for organic agriculture. Now, over 750 organizations in about 108 countries are joining IFOAM (IFOAM, 2013). This organization is concerned with the quality of the product, layout standards that were required to ensure customer trust and standardise system of production across farms. Since 1980s, many countries have responded to it with laws setting on organic certification. The importance of organic farming in promoting environmental conservation had further encouraged some governments to adopt agro-environmental law and regulations. (FAO, 2012)

Today, the International Federation of Organic Agriculture Movements has developed a standard regulating laws for Organic farming standards, and nations have been encouraged to enforce them. (IFOAM, 1972). IFOAM had set up 4 principles in organic agriculture:

a. Principle of Health - Organic agriculture should sustain and enhance the health of soil, plant, animal and human. According to the conception that well being is not just the lack of good health, but also the maintenance of physical, mental, social and ecological well-being. This principle stressed the need to avoid the use of chemical fertilizers, pesticides, animal drugs and food additives in organic agriculture as they are identified to have negative health effects.

b. Principle of Ecology - Organic agriculture should be based on living ecological systems and cycles which should be emulated and sustained. The ecological principle outlines the needs to reuse, recycle and efficiently manage materials and energy with a view to reduce agricultural inputs, preserve and enhance environmental quality, conserve natural resources, and maintain genetic diversity.

c. Principle of Fairness - Organic agriculture should build on relationships that ensure fairness with regard to the common environment and life opportunities. That is, it should be objective, contributing to vittles' availability and alleviation of puberty, requiring open and fair production, distribution and trade, and accounting for actual social and environmental costs.

d. Principle of Care - Organic agriculture need to be managed in safeguarding and responsible manner to protect the environment of the present and subsequent inhabitants and the environment. That is, it not just rely on scientific knowledge, but also on practical know-how and customary and native ideas.

1.3 Trends in Global Organic Farming

Organic farming has been increasing globally since 1998 (FiBL-IFOAM, 2015). According to IFOAM 2015 report, there are about 11 million hectares of organic agricultural land in the world in year 1999, and it grew by almost 300% in 14 years to 43.1 million hectares in 2013. Growth in organic agriculture land over the year indicates increasing demand for organic products. Figure 1.1 below shows the growth in organic agricultural land (1998 – 2014)

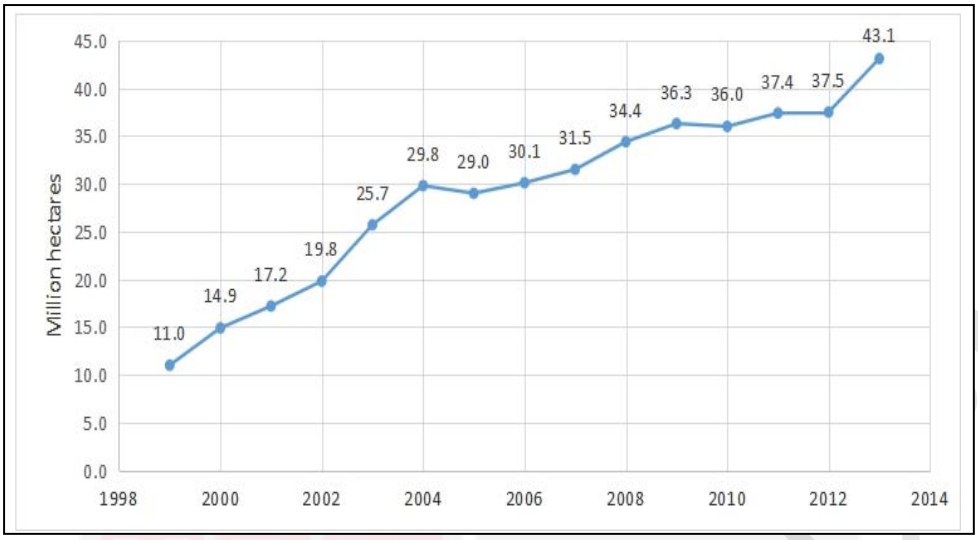

Figure 1.1 : Growth of world organic agricultural land
(Source: FiBL-IFOAM, 2015)

Figure 1.2 below shows the growth in organic agricultural land by continent. From 2005 – 2013, organic agricultural land grew by 42% and 8% in Oceania and Europe respectively, while Asia and Africa recorded a small positive growth and a decline in organic agricultural land was recorded in America

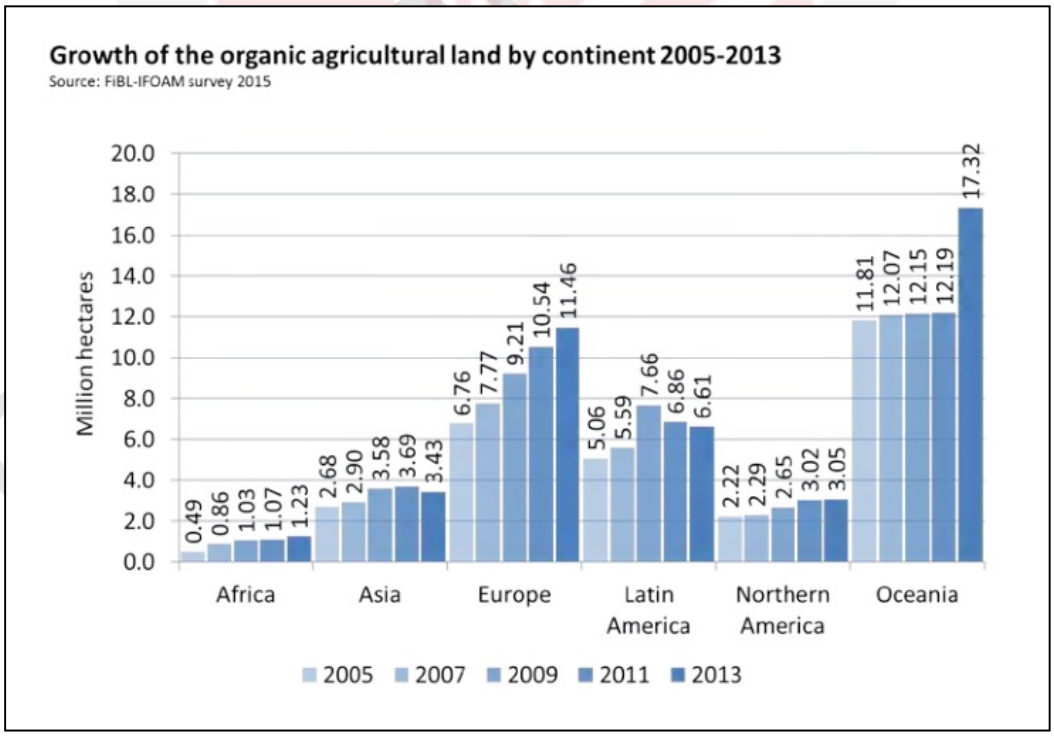

Figure 1.2 : Growth of world organic agricultural land By Continent
(Source: FiBL-IFOAM, 2015)

Figure 1.3 below shows the increase in organic food retail sales from 2011-2013. Organic retail sales increased especially in United State and European countries such as UK, France and Germany

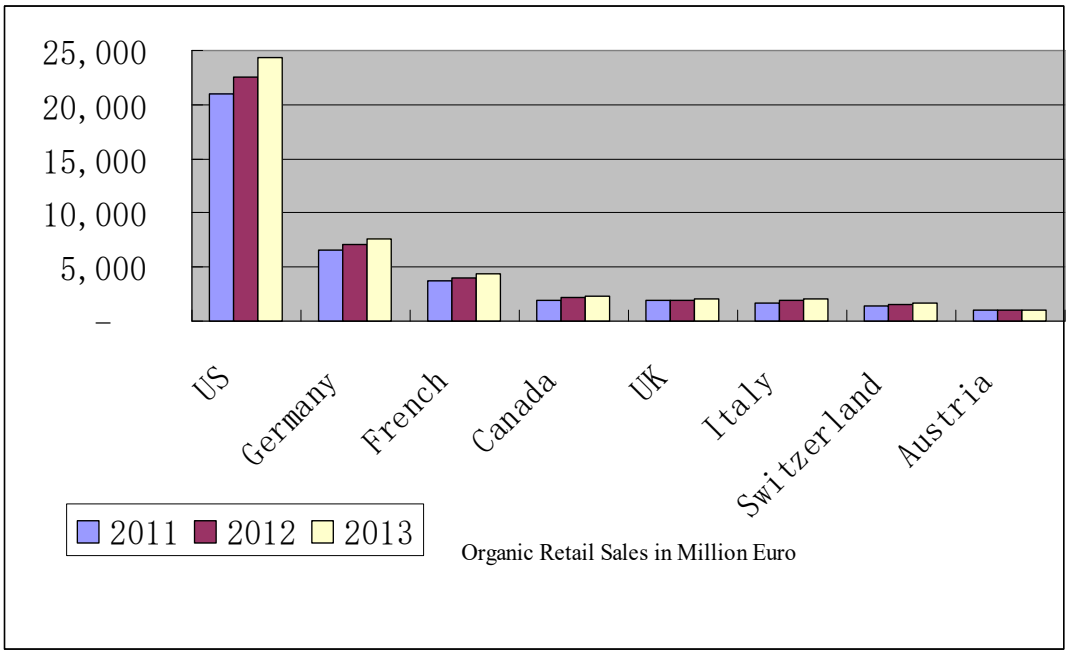

Figure 1.3 : Organic Retail Sales (Sources: IFOAM Annual Report 2012-2015)

Figure 1.4 presents the top ten largest organic retail sales in 2015. It shows that organic retail sales is dominated by the United States and the European Union. However, China also shows a considerable sales in Asia making it to the top 4 with a record of 2,430 million euros organic food sales in year 2013.

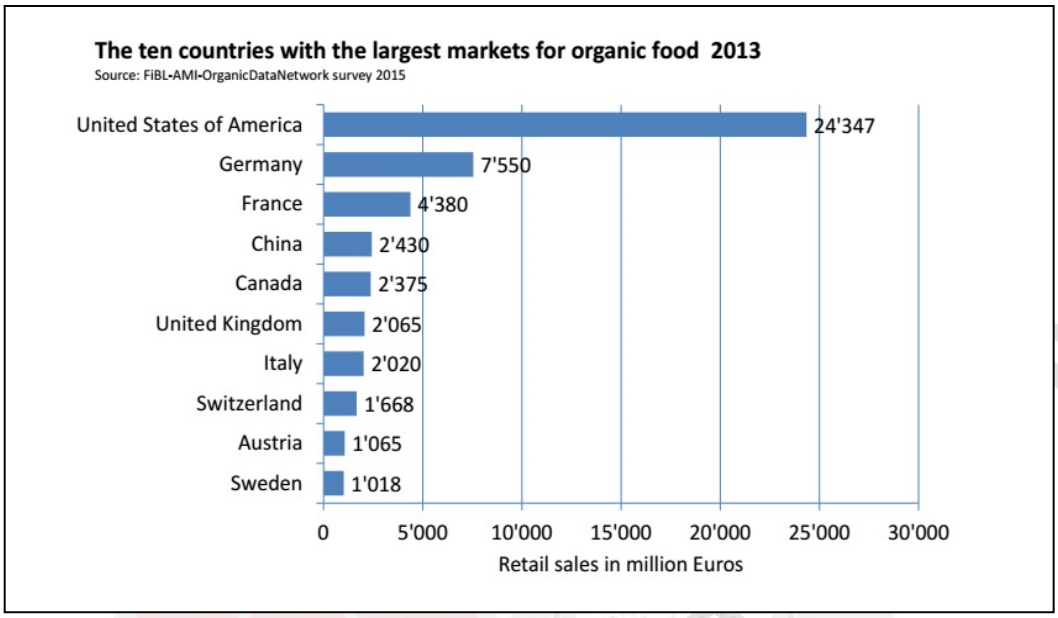

Figure 1.4 : Ten Counties with largest retail sales for organic 2013
(Source: IFOAM annual report 2015)

1.4 Organic Farming in Malaysia

Malaysian government has encouraged organic production in the country as better quality food resources. With the establishment of Malaysia Organic Standard in Year 2001, retailers such as AEON have setup a special Organic Products Section in their hypermarkets to motivate farmers to grow organic vegetable. According to the Economic Transformation Programme (2013), the size of organic agricultural land coupled with the number of organic producers still remain relatively low.

According to the Department Of Agriculture, there are only 72 farmers who obtained organic certification in 2014 out of the total 278,768 farmers in Malaysia and about 300 farmers have applied for organic certification in the past 14 years. The price difference between organic and conventional product cannot be over emphasized as organic vegetables sell for about 350% higher than conventional vegetables. This is presumed to gear the farmers to shift from convention to organic production. However, the reverse is the case in Malaysia. Figure 1.5 below shows the price difference between organic and conventional vegetable in the market:

	
Conventional Vegetable RM 1.20 per 250g (RM 4.00 per kg)	Organic vegetable :RM3.50 per 250g (RM 14 per kg)

Figure 1.5 : Price of organic and conventional vegetable in Malaysia

Figure 1.6 below shows the Malaysia Organic Scheme issued by the Department Of Agriculture based on the Malaysia Organic Standard. This scheme mainly highlight the farming methods which is in compliance with the requirements of the organic standard such as requirement of buffering zone, allowed input material, soil and water requirement.

Figure 1.6 : Illustration of organic standard in Malaysia

With compliance to the guidelines of the Malaysia Organic scheme, farmer will go through an audit process in order to obtain the Organic Certificate while the decision to approve an organic farm is made by the Certification Committee Chaired by the Director General of the Department Agriculture, Malaysia. Figure 1.7 illustrate the Malaysian organic certificate

Figure 1.7 : Malaysian organic certificate

Subject to the field inspection conducted by the officers, Farmers have to go through the organic certification process as illustrated in Figure 1.8 below in order to be accredited with the scheme

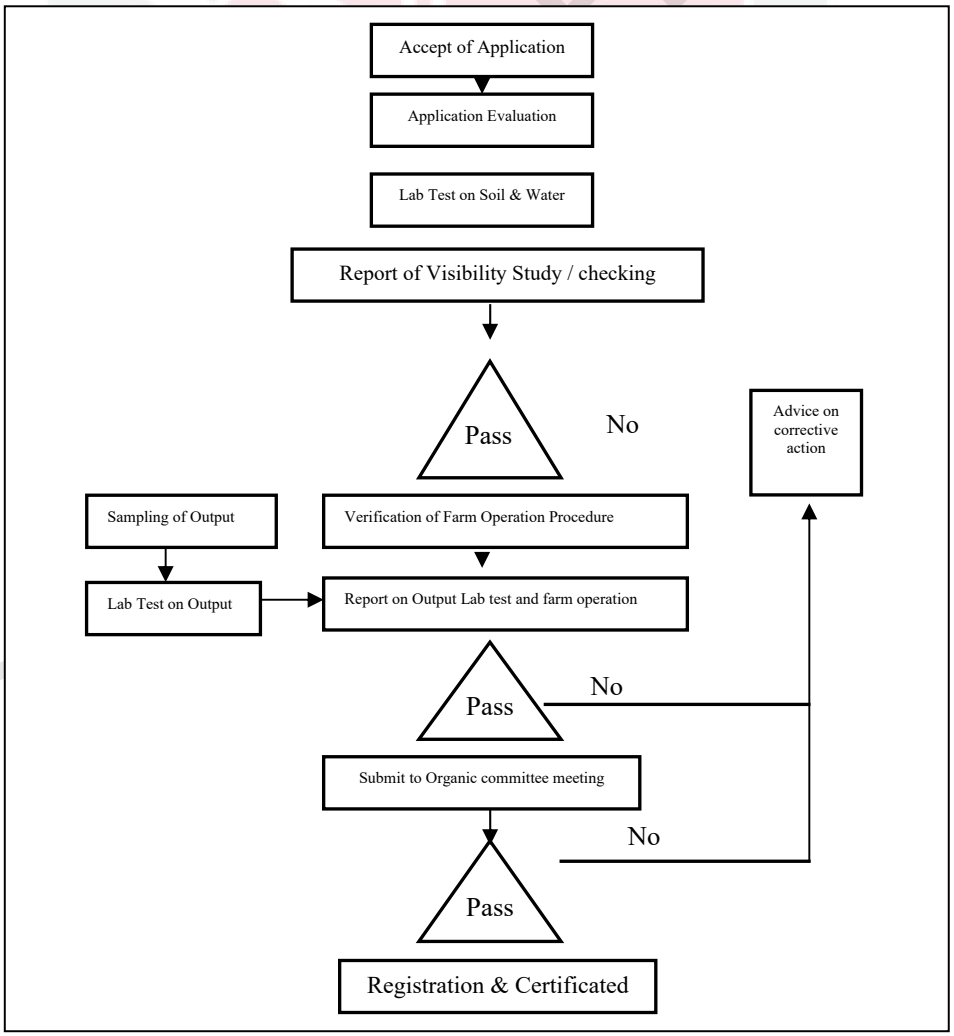

Figure 1.8 : Illustration of Organic certification process in Malaysia

According to interview done with Quality Division of Department Agriculture Malaysia, farmers are worried about the marketing channel and price of organic product, especially during the period of conversion from conventional to organic farming which typically takes 2-5 years. Before the farm is certified, Farmers may face reduced income as they can only sell their vegetables through the regular distribution channel at the same price with the conventionally planted vegetables while also facing reduced yield during this period. (DOA, 2014)

On the other hand, during the interview with officer at the Federal Agriculture Marketing Agency FAMA, she explained that lack of marketing channel especially distributor who will serve as a link between farmers and retailers for organic product may contribute to low interest of farmer in organic farming. As explain by FAMA officer, the existing Organic Producer in Pennisular Malaysia, such as Zhenxin, titieco-farm are directly dealing with the retailers such as AEON hypermarket. Hence, there are no organic distributors available in the market as production level is low and cannot be enough to sustain the business of the middlemen. (FAMA, 2014)

High risk in implementing organic farming such as lack of distribution channel, possible drop in productivity and reduced income during conversion may contribute to the factors restricting organic farming adoption among farmers in Malaysia (Hanson *et al*, 2004, Canavari and Olsen, 2007). Therefore, studies are required to determine why farmers are not adopting organic farming and to suggest possible solution such as contract farming in order to motivate more farmers' involvement in organic farming.

Currently, contract farming and contract farming are being practiced for different types of agriculture products in Malaysia. For example, Chili plantation in Kelantan for Nestle Company (Maggie Chili Source) and poultry production for KFC can be portrayed as two successful examples in Malaysia

1.5 Contract Farming and Contract farming

Contract farming and contract farming can be described as an agricultural production carried out according to a prior agreement between a farmer and a buyer in which the farmer commits to producing a given product in a given manner and the buyer commits to purchasing it (Eaton and Shepherd 2001). The growth of high-value agriculture and the rising demand for quality and food safety are driving the need for vertical coordination in agricultural supply chains (Gulati *et al*. 2006). There are three common dimensions in contract farming; first is the degree of formality in the contract itself. The contract can be an oral agreement between a farmer and a buyer. Example of this type of contract is usually when the buyer is a trader purchasing an organic product to resell in a larger market. On the other extreme, the contract can be a legal written agreement that states the input to be used, production methods to be employed, minimum quality standards required, and price at which it will be purchased from the farmer. Formal contracts are usually offered by large processing firms, especially when buying from medium- to large-scale farmers. Secondly,

contract farming can be categorized based on the types of commitments made in the contract between buyer and seller. Mighel categorized contract farming schemes into three classes.

1. Market-specifying contract or contract farming: this type of contract defines the terms of the sales transaction with regard to price, quantity, timing, and product attributes. This type of contract is more suitable when market coordination is required, but the farmer does not need assistance in procuring inputs and the buyer is not concerned about production methods, other than the product quality which can be measured at harvest. This type of contract may be informal or formal.
2. Resource-providing contract: the buyer supplies agricultural inputs and technical assistance on credit. This type of contract is more suitable when the buyer has better access to credit and inputs required for production than the farmers. Resource providing contracts are more likely to be formal because of the need to state the terms of the input credit.
3. Production-management contract: this type of contract state the method in which the produce is to be grown, as in organic production method. This type of contract is suitable when the buyer has more expertize of the production techniques or when certain quality or food safety need to be maintained. This type of contract is usually a formal written document in order to describe the desired production methods. (Mighell and Jones, 1963)

However, in practice contracts usually combine elements of these three types. That is, the contract will specify the production methods and the terms of sale, as well as providing inputs to farmers on credit (Martinez 2002).

Another important manner in contract is how price is determined in contract farming, there are three methods with some variations within them as identified by (Minot, 2011)

1. Fixed-price contracts: this is the type of contract in which the buyer fixed the price of the commodity during planting. This is beneficial as it minimize the risk beard by the produces, however it also be tricky especially if the price of the produce harvest period changes too much from the agreement. If the market price is higher, it may lead to side-selling, in which farmers break the terms of the contract by selling some or all of their harvest in the market. Also, if the current price at the market is lower, the purchaser may abandon the farmer and purchase his supplies from the market.
2. Formula-price contracts: this is initiated to prevent breaching of contract. Here, the contract depends on a pricing scheme, and the buyer agrees to buy a price equals to the current price. Farmers have less certainty about the returns to producing the crop, but the formula guarantees that they will be at least as well off as if they had produced for the market.
3. Split-payment contracts: In this type of contract, the contractor offers initial capital to the farmer. The initial capital is usually a fixed amount estimated prior to cultivation, while the further payment varies based on the on the market price of the product.

Theoretically, contract farming and contract farming act as a tool to match up the appropriate buyer and producer with more certain price and times. Hence, both parties will be able to gain more control over the costing and production scheduling. Large initial investment is required to establish a contract farming and marketing scheme. In addition to that, the purchaser requires expertize such as field agents or advisors who serve as intermediary between the farmers and the purchasers and also provide function such as farmers training and product collection. That is, traditional wholesalers or other small- and medium-scale buyers will benefit less from contracting. Rather, the players in contract farming and marketing schemes are usually large-scale processors, exporters, or supermarket chains. This is because these large scale buyers has access to more capital, more knowledge about the production method and market information that the farmer is lacking (Minot, 2011).

Minot also identified commodities in which vertical integration is required;

1. Economically important quality variation: contract is more adequate if consumers wish to pay extra for a variety or characteristic that will make up for extra cost incurred in producing the commodity and the cost of vertical coordination. In this case, contracts is required to provide producers with the incentives and the means to make those investments such as farm-level investment in human capital such as skills acquiring, physical capital assets investment, or specialized inputs which required to raise quality.
2. High perishability: contract is not necessary for all perishable goods, but perishability refers to a situation in which the farmers and buyers need to coordinate the timing of harvest and delivery, thus increasing the incentive for some form of vertical coordination. Also of equal importance is the fact that once the product is harvested farmers bargaining power is seriously weakened unless there is a fixed price or at least a personal relationship that ensures a fair price through contract agreement.
3. Technically difficult production: contract is also useful when the resources can be transferred to the farmers in a reduced cost through buyer's technical expertise, specialized inputs, or credit. Producers in developing nations may not have the capability to buy inputs at planting time, thereby the buyer can provide inputs on credit and to recover the cost by deducting it from the payment to farmers at harvest.

1.6 Problem Statement

Now, consumers are becoming more health conscious and therefore give more concern to their food intake especially food safety issue. The information about convention method of agricultural production that utilizes lot of chemicals input which may properly toxic to food content is calling for adoption of alternative methods such as organic farming which is usually an improvement to the traditional techniques employed in the past. Organic farming is an ecological plantation system. It promotes biodiversity enhancement, biological cycles and soil biological activity. It is based on practices that restore, maintain and enhance ecological harmony while prohibited chemical and pesticide which believe may be potentially harm human body.

Organic vegetable are present in Malaysian market since 2002. Today, the organic products price are 350% higher than conventional planted vegetable and shortage of supply always happen. Majority of farmers are reluctant to adopt organic practices although government and NGO had put in tons of efforts to organize courses, training and other motivational incentives. Hence, consumer may continuous suffer from high price, shortage of organic products if the output of organic raw material still remaining low.

In order to enhance farmer intention in organic farming, we need to find out their concern on organic or in other word why farmer do not plant organic, for example attitude of the farmers toward organic practice and the environmental and social impact..

In the other hand, contract farming as a motivating tools which widely use to help farmer adopt new technologies or change may be a potential alternative in the agriculture system to motivating farmer planting organic. Motivations such as price premiums for certified organic products, sales channel access capabilities, economic sustainability may impact farmers' intention to participation in organic farming. Contract farming is an incentive and insurance for small scale farmers involving in environmental improvement activities such as organic practices, it provide linkage to help farmers access the market, increase their income, reduce the risks of price fluctuation, increase labour incentives and introduce high value crops. Hence, this study will look at the moderating effect of contract farming on these latent factors which influence farmer's intention to practice organic farming

1.7 Research Questions

1. What are the factors that could influence farmers' intention to practice organic farming?
2. Did contract farming able to influence farmers' intention towards practicing organic farming?

1.8 Objectives of the Study

General objective of the study is to investigate the moderation effect of contract farming on enhancing farmers' intention to practice organic farming in Peninsular Malaysia.

The specific Objectives are:

a. to determine factors influencing farmers' intention toward organic practice; including demographic profile, contract marketing, attitude, social norm, behavior control.
b. to identify significant factors influence farmers' intention on organic practice which can be group by similarity as latent factors ; and

c. to predict moderating effect of contract farming toward farmers' intention on organic practices with its latent factors .

1.9 Significance of Study.

This study will reveal important information about organic farming and farmers' mind set upon organic practice which will have an important policy implication for government and private agencies in the supply of organic vegetables. This study define the reasons why 270,000 conventional farmer do not practice organic. It may help the Ministry of Agriculture Malaysia understand the conventional farmer mindset on organic practice which may help to form more effective strategies for boost up organic farmer quantities. Beside, this study provide possible solution such as contract farming as motivation tool to increase organic vegetables supply too.

1.10 Structure of the Thesis

General background information of the research from different ankle and aspect of organic farming and contract farming are discuss in chapter 1. In Chapter 2, literature review regarding organic farming, contract farming and theoretical framework used being discussed. Research methodologies are presented in chapter 3. This chapter focus on research design, data management and analysis conducted, sampling method, sampling procedure, questionnaire formulation and strategies used for gathering data. In chapter 4, results of data analysis are presented. This including description analysis on the background of respondents such as age, area, education background etc.; factors analysis to discover the lantern factors influencing the intention of farmer toward organic farming and Hierarchical regression analysis used to examine the motivational effect of contract farming between farmer intention and the lantern factors on intention. In chapter 5, I had summaries the important result of the study with some conclusion and opinion, outline the limitations of the study, providing recommendation and suggestion for future study.

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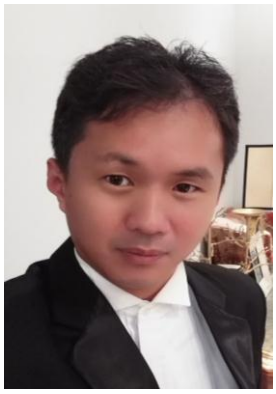
BIODATA OF STUDENT



The student is director of Farm Direct 4 U Sdn Bhd, with main business in organic vegetable and fruits plantation, distribution and retailing. Growing and educated in Cameron Highlands with SPM graduate in Sekolah Menengah Sultan Ahmad Shah. Graduate as Bachelor of Accountancy from University Putra Malaysia in year 2001.

Biodata

Year	
1997	Join Ng Seng Ann & Co as Junior Auditor
1998-2001	Study Accountancy Degree in University Putra Malaysia
2001	Complete / Pass ACCA Part II exam
2001	Joined Taikong Yokohama Ltd (Malaysia Public Listed Company) as Account Officer, In charge of group taxation compliance, planning and costing. Helping companies to save more than 35% of tax payable after reclassify of account presentation.
2002	Joined Elcomp Technologies Pte Ltd as marketing officer. Helping International PCB manufacturer such as Intel, Sanyo, Solectron, Sony each build component verification system and component tracing system. These systems have helping the customer to reduce rejection rate to (below) 0.01%, and saving multimillion of reject cost yearly.
2003	Joined newly setup company Neosys Documail Pte Ltd as Product Executive (Sales personal) for selling of digital stamp franking machine. Helping companies to gain more than 600 customers within 1 years plus. Neosys become the largest franking machine supplier in Malaysia in the year 2004.
2004	Appointed as internal audit by Board of Director Kuala Lumpur Chinese Assembly Hall. Committee member of Youth Wing. (Non-profit organization)
2005-2010	Joined Song Box Ptd Ltd as Operation Manager，lead Account Department, Support Department, R&D Department. Promoted to General Manager by 2006. Manage more than 40 chained KTV entertainment outlets.
2007	Appointed as V.President of Kuala Lumpur Charity Walk Hunt to raise fund for Selangor & Kuala Lumpur Spathic Children Association.

2008	Joined Enterprize Asia Exhibition organizing committee as Representative of Kuala Lumpur Chinese Assemble Hall. An exhibition chair by Malaysia government, jointly organize by 3 main chambers in Malaysia.
2009	Organizing committee of Malaysia Pavillion in China Xian Annual Trade Conference, Protocol officer for Malaysia government officer. Elected as V.President For Junior Chamber International Kuala Lumpur Malaysia Participate in organizing Malaysia Halal Certificate training between Halal Development Corporation Malaysia and China Xian Department Of Commerce. Helping Gansu Province, Bai Ying City Tomato factories to obtain Halal Certificate, Bai Ying Tomato Paste factory is having contract farming agreement for more than 2000 farmer in Gansu country side. Helped the factory in the sales of existing 3 years accumulated tomato paste stock within 3 months after obtaining the Halal certificate.
2010	Participate in organizing Malaysia Pavillion in China Xian Annual Exhibition and Trade Conference. In charge of both setting up, Goods clearance and meeting setup between Malaysia and China government officer. Under supervision of Secretary General Ministry Of Agriculture Malaysia, helping the Beijing Agriculture attache office handling import application for Malaysia Durian to china to AQSIQ Chairman for University Next Tycoon Projects, University Malaya Malaysia, the project aim at inspiring undergraduate entrepreneurship spirit with providing practical environment for startup business.
2011	Setup LIT Trading (Beijing) Pte Ltd – import and distribution of Malaysia Products to China. Committee member of Bilateral Meeting between Ministry Of Agriculture Malaysia with China Agriculture Wholesaler Association. Protocol officer for meeting arrangement, china delegation receptioning and backup translator for meeting.
2012	Committee member of MAHAL exhibition and forum working committee hosted by Ministry Of Agriculture Malaysia. In charge of China delegate receptioning, meeting arrangement and site visiting, involve in negotiating Editable Birdnest Import Export Bilateral with China Delegate.
2014-2015	Setup of Farm Direct 4 U Ptd Ltd, an organic vegetable & fruits plantation, retail and distribution company. Studying Master of Science Agribusiness in University Putra Malaysia. Thesis study on Impact of Contract farming upon Organic Practice in Malaysia.

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