UNIVERSITI PUTRA MALAYSIA

AWARENESS AND PURCHASE INTENTION TOWARDS EDIBLE BIRD'S NEST PRODUCTS

LEELANAYAGI D/O RAMALINGAM

FP 2014 27

AWARENESS AND PURCHASE INTENTION TOWARDS EDIBLE BIRD'S NEST PRODUCTS

By

LEELANAYAGI D/O RAMALINGAM

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

February 2014

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DEDICATION

This is for both of you,

Mom
&
Dad.

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Abstract of thesis presented to the Senate of Universiti Putra Malaysia in fulfilment of the requirement for the degree of Master of Science

AWARENESS AND PURCHASE INTENTION TOWARDS EDIBLE BIRD'S NEST PRODUCTS

By

LEELANAYAGI D/O RAMALINGAM

February 2014

Chair: Juwaidah Binti Sharifuddin, PhD
Faculty: Agriculture

Edible bird's nest (swiftlet bird's nest) is one of the high value agricultural products which contributes about one percent to the gross domestic product. Being aware of the large role it plays in the economic growth of the country, the Malaysian government has started to give priority to the development of edible bird's nest industry in the Tenth Malaysia Plan, Economic Transformation Programme as well as The National Agro-Food Policy. The government's support has encouraged the private companies to develop the industry and make Malaysia become the world second largest producer of edible bird's nest. However, at this point of time, Malaysia is facing a problem in exporting its edible bird's nests to China due to the high levels of nitrate contain. This has caused a big loss for Malaysian edible bird's nest industry. The industry has been plagued by over production and this has led to a decline in the market price of edible bird's nest. To overcome the decline, the Malaysian government has decided to promote the edible bird's nest based products among the locals. Hence, there is a vital need for consumer orientated approach to understanding the market for edible bird's nest products in Malaysia.

Consequently, the objective of the study is to investigate the awareness and purchase intention of edible bird's nest products among Malaysian consumers. Data from 1361 respondents is used to achieve the objective of the study. The questionnaire of the survey includes seven sections which are socio demographic information, awareness and knowledge, perceived value, attitude, subjective norm, perceived behavioural control and intention.

The results of the study show that, respondents reveal positive attitudes and intentions towards purchasing edible bird's nest products. Structural equation modeling analysis indicates that there is a significant relationship between

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knowledge, perceived value and attitude. In addition, knowledge, perceived value, attitude, subjective norm and perceived behavioural control also positively and significantly influence consumer purchase intention towards edible bird's nest products. Test of mediation effect of attitude and moderation effect of awareness and socio demographic characteristics were positive. Implications for producers, marketers and policy makers are discussed and future research directions are recommended based on the research findings.

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

KESEDARAN DAN NIAT PEMBELIAN PRODUK SARANG BURUNG BOLEH DIMAKAN

Oleh

LEELANAYAGI A/P RAMALINGAM

Februari 2014

Pengerusi: Juwaidah Binti Sharifuddin, PhD
Fakulti: Pertanian

Sarang burung yang boleh dimakan (sarang burung walit) adalah salah satu produk pertanian bernilai tinggi yang menyumbang sebanyak satu peratus kepada keluaran dalam negara kasar. Atas kesedaran tentang peranan besar yang dimainkan dalam pertumbuhan ekonomi negara, kerajaan Malaysia telah mula memberi keutamaan terhadap pembangunan industri sarang burung yang boleh dimakan dalam Pelan Malaysia Ke-sepuluh, Program Transformasi Ekonomi dan Dasar Agro Makanan Negara. Sokongan kerajaan telah memberi galakkan kepada pihak swasta untuk membangunkan industri tersebut sehingga Malaysia menjadi pengeluar sarang burung yang boleh dimakan kedua terbesar di dunia. Walaubagaimanapun, pada masa kini, Malaysia sedang menghadapi masalah dalam mengeksport sarang burung yang boleh dimakan ke Negara China disebabkan oleh kandungan nitrat yang tinggi. Keadaan ini menjurus kepada kerugian yang besar untuk industri sarang burung yang boleh dimakan Malaysia. Industri tersebut telah dibelenggu dengan pengeluaran yang melebihi had dan menyebabkan harga pasaran bagi sarang burung yang boleh dimakan menurun. Sebagai langkah untuk mengatasi masalah ini, kerajaan Malaysia telah membuat keputusan untuk mempromosikan sarang burung yang boleh dimakan di kalangan penduduk Malaysia. Justeru itu, pendekatan yang berorientasikan pengguna adalah penting untuk memahami pasaran produk sarang burung yang boleh dimakan di Malaysia.

Oleh itu, objektif kajian ini adalah untuk mengkaji tahap kesedaran and penerimaan produk sarang burung yang boleh dimakan di kalangan pengguna Malaysia. Data daripada 1361 responden telah digunakan untuk mencapai objektif kajian. Soal selidik kajian ini mempunyai tujuh bahagian iaitu maklumat latar belakang, kesedaran and pengetahuan, nilai tanggapan, sikap, norma subjektif, persepsi kawalan tingkahlaku dan niat.

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Keputusan kajian menunjukkan responden mempunyai sikap dan niat positif terhadap pembelian produk sarang burung yang boleh dimakan. Analisis model persamaan struktur (SEM) menunjukkan bahawa pengetahuan dan nilai tanggapan mempengaruhi sikap pengguna. Di samping itu, pengetahuan, nilai tanggapan, sikap, norma subjektif dan kawalan tingkahlaku mempunyai pengaruh positif terhadap niat pengguna untuk membeli sarang burung walit. Kajian kesan pengantaraan bagi sikap dan kajian kesan sederhanaan bagi kesedaran dan ciri-ciri socio demografi menunjukkan keputusan positif. Implikasi untuk pengeluar, pemasar dan pembuat dasar telah dibincangkan dan hala tuju penyelidikan masa depan telah disyorkan berdasarkan penemuan kajian.

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Lastly, I offer my regards and blessings to all of those who supported me in any respect during the completion of this Master's studies. May God bless all of you.

THANK YOU.

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I certify that a Thesis Examination Committee has met on 28 February 2014 to conduct the final examination of Leelanayagi D/O Ramalingam on her thesis entitled "Awareness and Purchase Intention Towards Edible Bird's Nest Products" 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 ABBREVIATIONS

ABC	Affective, Behavioural and Cognitive
AGFI	Adjusted Goodness of Fit
AIC	Akaike Information Correlation
AIDS	Acquired Immunodeficiency Syndrome
AVE	Average Variance Extracted
BOs	Business Opportunities
CFA	Confirmatory Factor Analysis
CFI	Comparative Fit Index
CR	Construct Reliability
CSR	Corporate Social Responsibility
EBN	Edible Bird's Nest
EPPs	Entry Points Projects
ETP	Economic Transformation Programme
GDP	Gross Domestic Product
GFI	Goodness of Fit Index
GM	Genetically Modified
GMF	Genetically Modified Food
GMR	Genetically Modified Rice
GNI	Gross National Income
MAHA	Malaysia Agriculture, Horticulture and Agrotourism
MI	Modification Index
NAFP	National Agro-Food Policy
NFI	Normed Fit Index

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NKEAs	National Key Economic Areas
PNFI	Parsimony Normed Fit Index
RMSEA	Root Mean Square of Error Approximation
RTE	Ready to Eat
SBN	Swiftlet Bird's Nest
SEM	Structural Equation Modeling
TLI	Tucker-Lewis index
TPB	Theory of Planned Behaviour
TRA	Theory of Reasoned Action
VAB	Value-Attitude-Behaviour
WHO	World Health Organization's
WTA	Willingness to Accept
WTP	Willingness to Pay

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CHAPTER 1

INTRODUCTION

1.0 Introduction

Chapter one will give an introduction to the background of agriculture and agricultural policies. Then it is followed by the background of the edible bird's nest (EBN) industry in Malaysia where the developments, trends and current situation of the industry will be discussed. Next problem statement of the study will be highlighted and discussed. Finally this chapter will discuss the study objectives and the significance of the study to the stakeholder.

1.1 Background of Study

1.1.1 Agriculture Sector in Malaysia

Historically the agriculture sector plays an important role in the economic growth of the country. During the pre and post independence periods of early 1800-1957 and 1957-1970, the agriculture sectors contributed more than 25 percent to the Gross Domestic Product (GDP). Rubber and tin were the main commodities, making Malaysia the world's largest producer of rubber.

By 1970's oil palm became the alternative commodity and Malaysia once again became the largest producer of palm oil in the world. The development of these 3 commodities has significantly contributed to the export earnings and the development of the country's economy (Rahim, 2012).

Table 1.1 shows the contribution of agricultural sector to GDP from the year 1970 to 2010 versus other sectors of the economy. As can be seen in Table 1.1 in 1970 the contribution of agriculture sector was 28.8 percent compared to 6.9 percent by mining and quarrying, 14.6 percent manufacturing, 3.7 percent construction and 42.6 percent services. However, the GDP contribution of agriculture sector starts to decline from 22.9 percent in 1980 to 16.3 percent in 1990. Then it continue to decline gradually from 8.6 percent (2000) to 7.3 percent (2010) (DOS, 2011).

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Table 1.1. GDP percentage share by kind of economic activity at constant prices, Malaysia, 1970, 1980, 1990, 2000, 2006-2010

Year	GDP (%)				
	Agriculture	Mining and quarrying	Manufacturing	Construction	Services
1970	28.8	6.9	14.6	3.7	42.6
1980	22.9	10.1	19.6	4.6	40.1
1990	16.3	9.4	24.6	3.5	46.8
2000	8.6	10.6	30.9	3.9	49.3
2006	7.9	8.8	30.9	3.1	52.0
2007	7.5	8.5	29.9	3.1	53.8
2008	7.5	7.9	28.8	3.1	55.2
2009	7.7	7.5	26.6	3.3	57.9
2010	7.3	7.0	27.6	3.3	57.7

(Source: DOS, 2011)

During the New Economic Policy period (1970-1984) together with rubber and oil palm, a program to improve productivity of paddy was also carried out. However, the declining GDP contribution by agriculture in the early 1980s led to the introduction of a long-term policy to revitalized the agricultural sector under the First National Agricultural Policy in 1984. This was followed by the Second National Agricultural Policy (1992-1998) to put emphasis on productivity, efficiency and competitiveness issues in the context of sustainable development (Murad et al., 2008; Barrett, 2007; Rahim, 2012).

After the 1997 financial crisis, the Third National Agricultural policy (1998-2010) was introduced and implemented to enhance food security, increase productivity and competitiveness in agriculture. The Eighth Malaysia Plan (2001-2005) was introduced based on the Third National Agricultural Policy. The objective was to increase food production to fulfil the demand, decrease importation and increase exportation at the same time. Oil palm, timber, rubber, floriculture and ornamental fish were given emphasis in this plan (Murad et al., 2008). During the Ninth Malaysia Plan (2006-2010), it was estimated that the agriculture sector will become the third engine of growth. Emphasis was given to New Agriculture which involves large-scale commercial farming, wider application of modern technology, production of high quality and value-added products. The plan gave emphasis to palm oil, rubber, cocoa, pepper, tobacco, sawlogs, paddy, fruits, vegetables, fish, livestock, tuna ornamental fish and plants, floriculture, herbs and seaweed (EPU, 2012).

In the Tenth Malaysia Plan (2011-2015) twelve NKEAs were recognized and one was the agriculture sector. It mentions that in 2009, high value agriculture included swiftlet farming, aquaculture, seaweed, sago, ornamental fish, herbs and spices, organic fruits and vegetables, mushroom and floriculture contributed about 1 percent to the GDP. Therefore, the Tenth Plan focuses on these high value agriculture activities and products to gain a 2 percent increase in GDP contribution by 2015 (10th Malaysia Plan, 2010).

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Hence, the ETP focuses on the 12 NKEAs. As mentioned above, agriculture is one of the areas which has mapped out 16 Entry Points Projects (EPPs) and 11 Business Opportunities (BOs). The top five EPPs were namely EBN swiftlet farming, high value herbal products, premium fruits and vegetables, mini estate seaweed and integrated cage farming. It is expected to generate RM28.9 billion in incremental Gross National Income (GNI) and 74,600 jobs by 2020 (ETP, 2011).

In addition to the Tenth Malaysia Plan (2011-2015), the NAFP (2011-2020) was introduced to replace the Third National Agricultural Policy which ended in 2010. This was a specific policy for Agro-Food industry to ensure that the industry remained a significant contributor to the country's economic growth. The objectives were to ensure adequate food security, make agro-food industry a competitive and sustainable industry and increase agro-based entrepreneur's income level. Specific agro-food industries that were the focus in the NAFP were paddy rice, captured fisheries, livestock, vegetables, fruits, edible bird nest (swiftlet), aquaculture, ornamental fishes, seaweed, herbs and spices, floriculture and mushroom (NAFP, 2011).

In searching for alternative agribusiness opportunities for Malaysian agribusiness firm, both NAFP and NKEA had identified swiftlet EBN as a high value product to focus on and improve its productivity.

1.1.2 Edible Bird's Nest Industry in Malaysia

The distribution of swiftlets is rather restricted to the tropical and sub-tropical regions extending from the western Indian Ocean through southern continental Asia, Indonesia, Palawan in the Philippines, northern Australia, New Guinea and the island in the south-west of Pacific. However, the swiftlet that is able to produce EBN are mainly limited to the South-East Asian countries. The main producers of EBN which can be commercialized include Indonesia, Thailand, Malaysia, Vietnam and Myanmar (Figure 1.1). Even though the edible nest swiftlets colonies are available in Hainan Island of China and Andaman and Nicobar Island in the Indian Ocean, the production of EBN is very small and insignificant compare to the Asian countries (Lim, 2011; Ma and Liu, 2012).

Hence, about 95 percent of the world production of EBN is by countries in the South-East Asia including Indonesia, Malaysia and Thailand (Swiftlet Eco Park, 2012). Thus, Malaysia was positioned in strategic geographical regions of swiftlets distribution. This is because, Malaysia is covered with large tracks of greens, such as forest, paddy fields, farmland, and plantations which can provide plenty of food for the swiftlet birds (Lim, 2011). The forest fire in Indonesia, back in the 1990's was a golden opportunity for Malaysia. This is because; the haze caused by the forest fire drove away millions more of swiftlet birds to West Malaysia (Swiftlet Eco Park, 2012).

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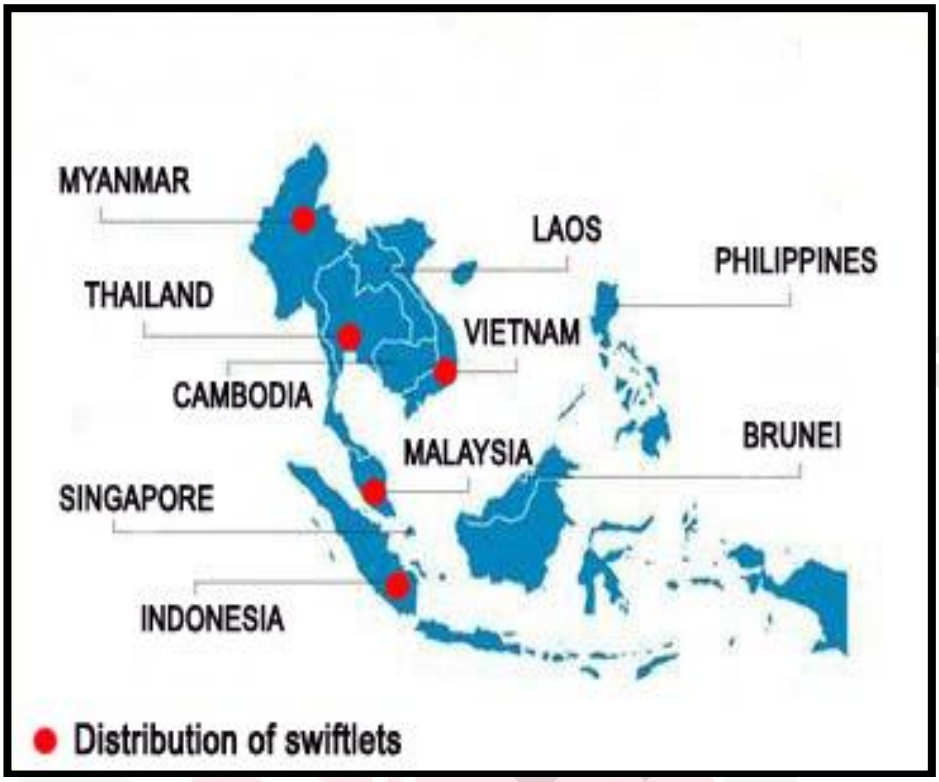

Figure 1.1. Distribution of swiftlets in South-East Asian countries
(Source: Lim, 2011)

However, the Malaysia swiftlet farming industry only started to develop after the Asian Economic Crisis of 1997-1998. This is because, many small to medium sized businesses closed down their business due to the hard times. Therefore, rather than leave the shop lots idle, the owners decided to convert their premises into swiftlet farms (Hameed, 2007; Ibrahim et al., 2009). During that time, there was only one company which was specialized in research and development of swiftlet farms. The company helped the industry to grow until it reached present day levels. Since then there has been a growing number of swiftlet farming companies being established all over the country as the industry continues to expand. Before 1998, the total number of swiftlet farms was about 900. However, in 2006, the number of swiftlet farms were 36 000 units with an average annual growth rate of 35 percent. The tremendous growth rate of the industry was due to the profitability and the ex-farm price of edible bird nest was attractive at RM3000.00 per kilogram on average in 2006.

Nevertheless, the swiftlet farming industry is considered new compared to other fundamental and long-standing industries such as rubber, palm oil, timber and oil and gas (Hameed, 2007). There were three phases in the development of Malaysia's swiftlet farming industry, which were the passive farming period, the semi-intensive phase and the modern era (Lim, 2011).

Ninety nine percent of the swiftlet farms in Malaysia produce white EBN which is high in quality and highly demanded especially by the market in China (Hameed,

2007). Besides, Malaysia has become the preferred source of edible bird's nests due to its favourable government policy that supports the healthy growth of this industry. Consequently, the expansion of the industry has gathered speed in the last few years and it is predicted that the future trend will not slow down at any moment (Hameed, 2007; Lim, 2011). This is because, consumption of edible bird's nest is associated with a symbol of status, health benefits from the consumption of edible bird's nest, sturdy economic growth in China, Hong Kong and Taiwan and the potential of bird's nest as an ingredient in herbal and vitamin supplements (Hameed, 2007; Ma and Liu, 2012).

Now, Malaysia is not only competing with Indonesia and Thailand, but it also faces emerging competition from neighbouring countries such as Vietnam, Myanmar and Cambodia (Lim, 2011). According to Hameed (2007), Malaysia is the third largest producer of EBN (7 percent of gross supply value) in the world, behind Indonesia (60 percent) and Thailand (20 percent). However, currently Malaysia is the second largest producer of edible bird's nest in the world, behind Indonesia. Malaysia edible bird's nest is high in quality and free from Avian Influenza epidemic compare to Indonesia EBN (ETP, 2011; Ma and Liu, 2012).

In 2006, the market price of a kilogram of the unprocessed white EBN is RM4500 to RM6000 whereas, a kilogram of processed white EBN priced RM15000 to RM25000 in China and Hong Kong (Hameed, 2007). Currently the raw cleaned bird's nest is priced RM7000 per kilogram (ETP, 2011). The sustainable development of the swiftlets farming industry in Malaysia ensured by the Department of Veterinary, the Department of Wildlife and National Parks and local councils (Lim, 2011).

In 1999, the main site of EBN industry in Malaysia is Gomantong Caves which is the complex cave in the Sabah, with approximately 1.5 million swifltets (Thompkins, 1999). In 2006, the swiftlet farms were located at Kampong Tebing, Kampong Tasoh, Kampong Banat Bawah, Kampong Bakan, Kuala Nerang, Pokok Sena, Kampong Tanjung Radin, Kuala Ketil, Lunas, Kulim, Sungai Petani, Jitra, Bukit Mertajam, Nibong Tebal, Kepala Batas, Cangkat Kledang, Legong, Jelai, Cangkat Jering, Bruas, Pantai Remis, Lumut, Teluk Intan, Setiawan, Bagan Serai, Parit Buntar, Selama, Tanjung Malim, Kuala Kubu Bahru, Rawang, Kepong, Cheras, Slim River, Kulai, Kampong Bahru Paroi, Alor Gajah, Ayer Pasir, Durian Tunggal, Tangkok, Pagoh, Bukit Pasir, Kampong Machap, Ulu Tiram, Tai Hong Village, Senai, Pontian Kecil, Jemaluang, Kampong Seri Pantai, Mersing, Kampong Sawah Datuk, Kampong Air Papan, Kuala Besut, Tok Soboh, Kampong Pinang, Rompin, Pekan, Kuala Terengganu and Pasir Mas (Hameed, 2007) (Figure 1.2).

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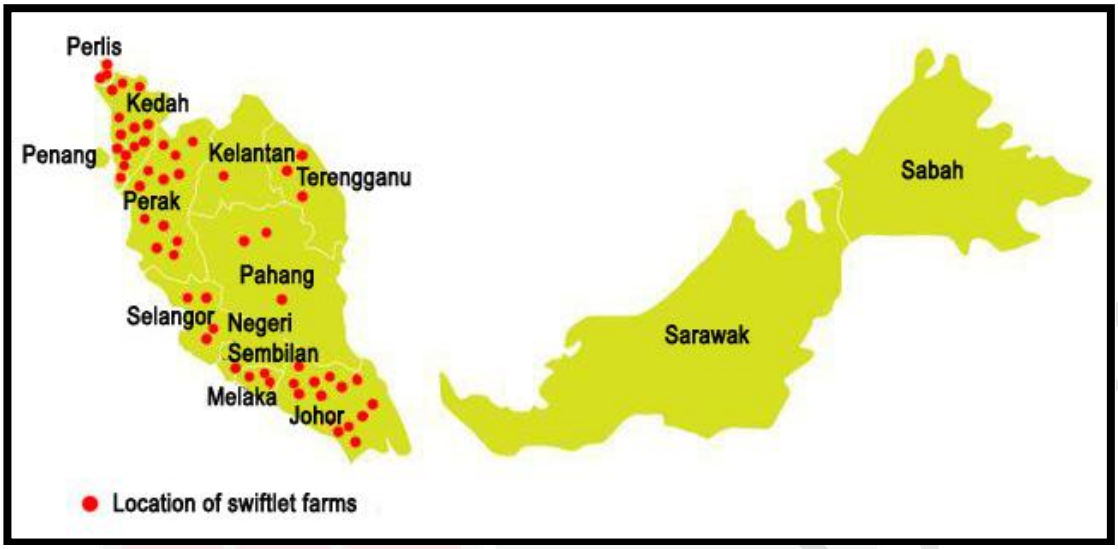

Figure 1.2. Location of swiftlet farm in 2006
(Source: Hameed, 2007)

The main export markets for our EBN are Hong Kong (50 percent of world trade), China (8 percent), Taiwan (4 percent) and Macau (3 percent) with the total consumption approximately 160 tons in 2006. The value of total consumption of edible bird's nest throughout the world was estimated about RM8 billion to RM12 billion in 2006 (Hameed, 2007). Now China is the main market of Malaysia for edible bird's nest. In 2010, the total production of edible bird's nest in Malaysia was 275 tonnes which was worth about RM1.5 billion. Current demand of edible bird's nest from China, Hong Kong, Taiwan, Japan, South Korea, India and Middle Eastern countries is rising. Presently the bird's nest production has reached 375 tons (ETP, 2011; Swiftlet Eco Park, 2012).

Hong Kong is considered as world's largest importer and consumer, with the ethnic Chinese of North America being the second largest market of the processed nests. In 1989, the world trade figures estimate that about 162,896 kg of the bird's nests were exported and it amounting to a value of $130,000,000 Hong Kong dollars (Goh et al., 2001; Marcone, 2005). From 1989 to 2004 trade value rose from HK$1.3 billion to HK$3 billion in Hong Kong area. However, the tension between supply and demand exists because of world low production level which is about 2000 t per year (Wu et al., 2010). Some more the market for bottled bird's nest is also huge. The demand in China alone is estimated to be about 140 million bottles per year, with a retailed value of about SGD4 billion, requiring about 140 tonnes of EBN per year, and the value added there can be higher. Today Hong Kong is the biggest official consumer of bird's nests, importing about 100 tons (grossing about $250 million) annually. The China market is believed to be more than 15 times that of Hong Kong, with Guangdong, Fujian, Zhejiang, Hainan (the southern and eastern coastal regions) including Shanghai and Beijing showing the greatest demands. Except for Hainan where inferior quality types could be found in small amounts, other parts of China do not produce edible bird's nests as the climate there does not favour this genus of birds to populate (Jordan, 2004).

In 2009, the Malaysian government realized the golden opportunity of the edible bird's nest industry. Therefore, they plan to develop the industry in a systematic manner. Thus, under the 10th Malaysia Plan, the government hopes to achieve a target of 100000 swiftlet bird's houses by 2015 with total production edible bird's nest worth RM5 billion. This venture will be headed by both the public and private sectors (10th Malaysia Plan, 2010; Swiftlet Eco Park, 2012).

In addition, the government has also given emphasis to the industry in the ETP where the programme will bring a total of RM2.27 billion in investment, gross national income (GNI) impact of RM18.67 billion and create 36, 595 jobs by 2020. There are nine new initiatives under the ETP (2011) and under the ETP Progress Update Six, the Agriculture NKEAs initiatives will feature two star products which include edible bird's nests. The Agriculture (NKEA) is given a mission to transform small-scale sector into large scale agribusiness industry which contributes to economic growth. The target of the programme is to increase revenue from USD0.5 billion to USD3.6 billion by 2020 through cleaning the nests locally and development of downstream products. Figure 1.3 shows that EBN swiftlet farming is the highest contributor to the GNI from top 10 EPPs whereas Figure 1.4 shows a significant jump in export quantity since 2009 (ETP, 2011).

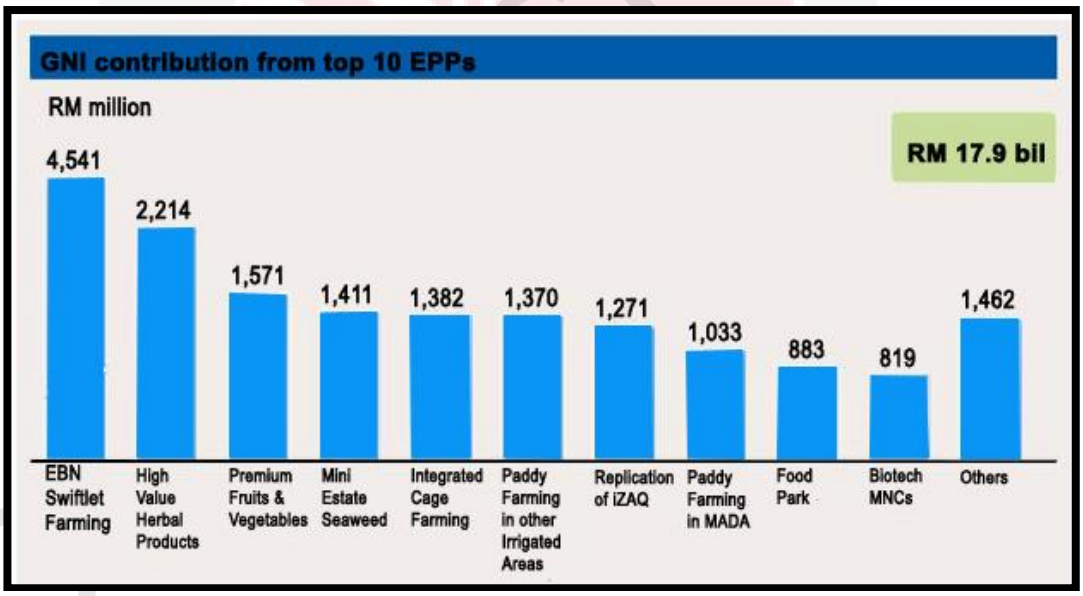

Figure 1.3. GNI contribution from top 10 EPPs
(Source: ETP, 2011)

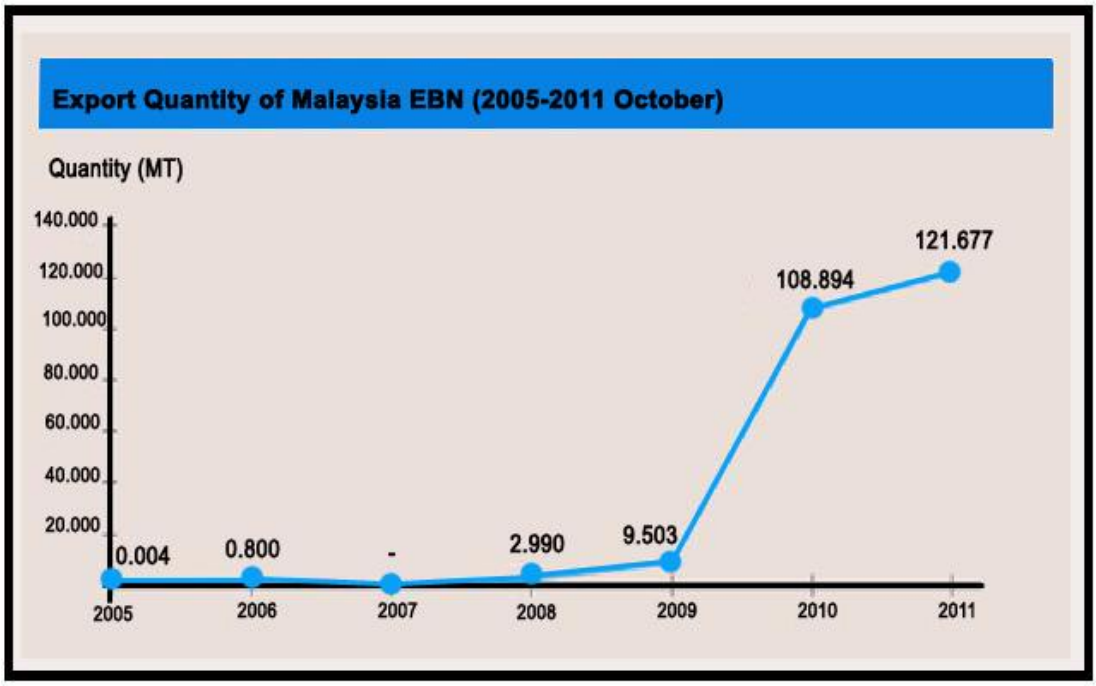

Figure 1.4. Export quantity of Malaysia EBN (2005-2011 October)
(Source: ETP, 2011)

Edible bird's nest also mentioned in the NAFP (2011-2020) under high value agriculture products category. It is estimated that total farm sales of edible bird's nest will increase from year 2010 to 2020 (Figure 1.5). In addition it is also estimated that an increase in total export and total domestic retail sales will trigger an increase in the total sales of edible bird's nest (Figure 1.6).

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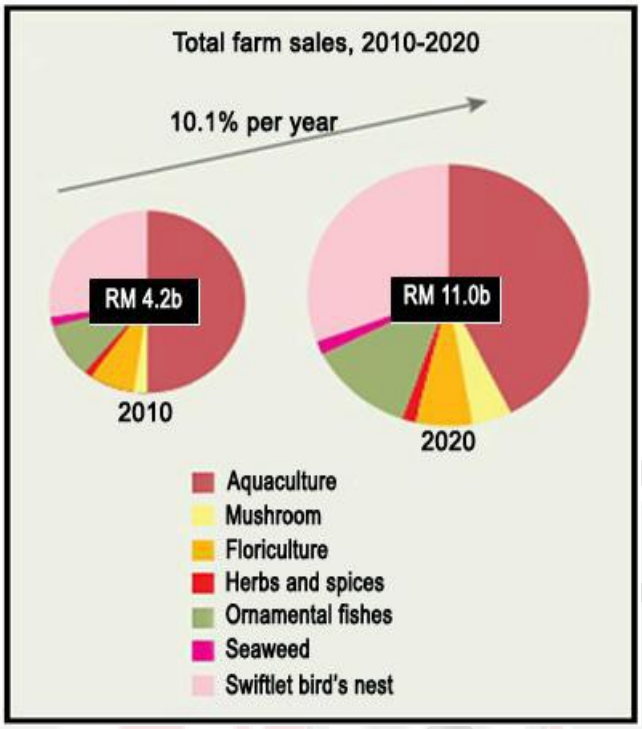

Figure 1.5. Projection of total farm sales, 2010-2020
(Source: NAFP, 2011)

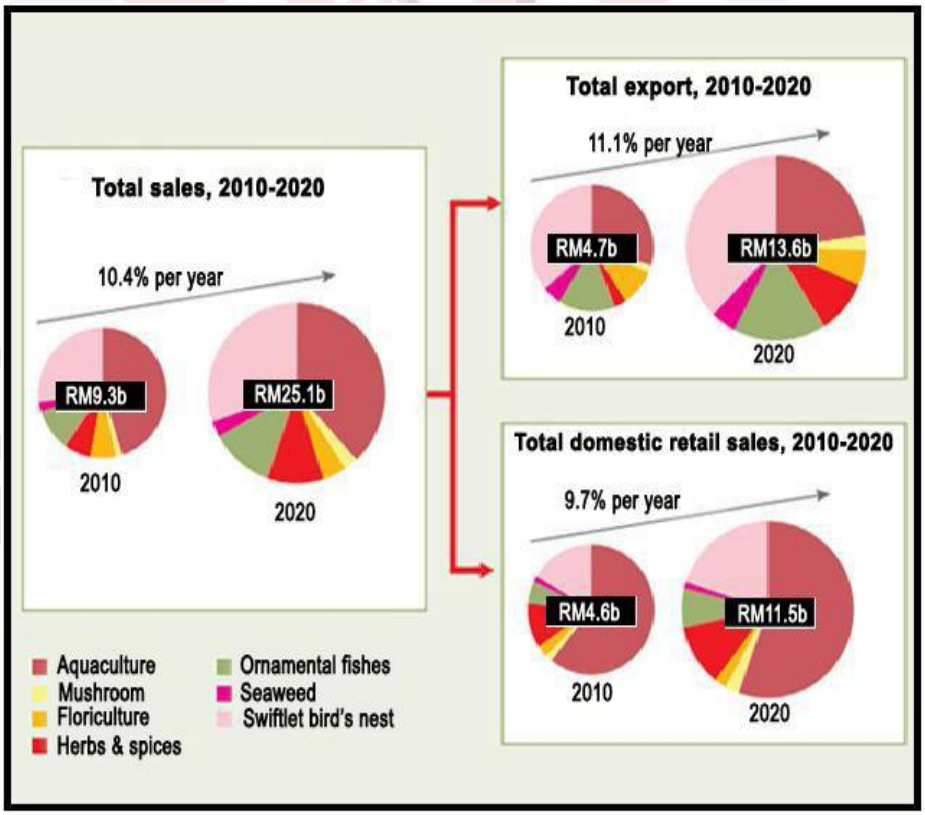

Figure 1.6. Projection of total sales, total export, total domestic retail sales, 2010-2020
(Source: NAFP, 2011)

1.1.3 Edible Bird's Nest

The "swiftlet" is the name which was used to describe a group of small-sized swifts (Apodidae) of the Indo-Pacific region of the world. The swiftlet also characterized by birds that settle and form nests in caves. Swiftlet birds are insectivorous which means that they catch their prey using their wings while flying with the help of a superb eyesight (Lim, 2011). Even though swiftlet is similar as house swiftlet, swallow and sparrow; they are not related to each other. Swiftlets have short and soft legs. Therefore they cannot settle on the ground.

In the world, there are 24 recorded species of swiftlets (Ibrahim et al., 2009). Swiftlets are classified into three genera which are *Collocalia*, *Aerodramus* and *Hydrochous*. *Collocalia* is the glossy-plumage swiftlets. *Aerodramus* is the echolocating blackish brown non-glossy plumage swiftlets whereas *Hydrochous* is the monotypic genus where the member is Waterfall Swift (*H. gigas*) only (Lim, 2011). The five most common species of swiftlets in Malaysia and Borneo Island are *H. Gigas*, *C. Esculent*, *C. Balasiensis*, *A. Maximu* and *A. Fuciphagus* (Ibrahim et al., 2009).

"Edible nest swiftlets" name refer to some of the swiftlets species which can produce nests that can be commercialized and consumed by the humans. Among the 24 species of the swiftlets only few can produce the nest with a commercial value. The swiftlet bird's nest (SBN) or edible bird's nest (EBN) which is traded worldwide mainly comes from *Aerodramus Fuciphagus* (White-nest Swiftlet) and *Aerodramus maximus* (Black-nest Swiftlet). In addition, *Collocalia esculenta* also provides nests which are mixed with mosses to be trade at worldwide market. Nevertheless, the high quality white EBN is produced by *Aerodramus Fuciphagus* species (Lim, 2011; Ibrahim et al., 2011). This type of edible bird's nest could be selling at tremendously high price due to its high quality and demand (Ibrahim et al., 2011; Ibrahim et al., 2009). This type of edible bird nest is only available in the South East Asia region. Ninety to ninety five (90-95) percent of the bird nest consists of edible nest and 5-10 percent consists of feathers and purities (Ibrahim et al., 2009; Ma and Liu, 2012).

The edible swiftlet bird's nest is formed from the swiftlet's hardened saliva secretions (Thompkins, 1999; Guo et al., 2006; Wu et al., 2010; Ma and Liu, 2012). Consumption of this bird's nest has been symbol of wealth, power and prestige as well as medicine (Marcone, 2005). The elements of edible bird's nest are water-soluble protein, 18 types of amino acids, carbohydrate and trace elements of calcium, sodium, phosphorus, iron, potassium and iodine (Amy et al., 1994; Wu et al., 2010; Ma and Liu, 2012).

The water soluble protein is able to aid growth, stimulate cell division, development and reconstruction of the tissues, bring nourishing effects which aid healing, boosts the immune system, and protect the body against diseases (Suriya et al., 2004; Guo et

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al., 2006; Lin et al., 2009; Wu et al., 2010; Swiftlet Eco Park, 2012). Carbohydrate in edible bird's nest is considered as a source of energy. When carbohydrate is combined with protein, it enables properties of carbohydrate to function well. Moreover, it builds up health; aid metabolism, digestion and absorption of nutrients (Amy et al., 1994). In addition, EBN also nourishes blood, reinforce body fluids, moisten the skin and respiratory tract, treat coughs, strengthen the lungs, heal asthma and control body imbalances (Thompkins, 1999). Other than that, researchers also have revealed that edible bird's nest slows down ageing process and prolongs life expectancy (Wu et al., 2010; Swiftlet Eco Park, 2012). It is also mentioned that the bird's nests are beneficial in the treatment of pulmonary diseases, cancers, and even acquired immunodeficiency syndrome (AIDS) and are believed to aid recuperation of patients who are receiving radiation treatment (Amy et al., 1994; Wu et al., 2010; Swiftlet Eco Park, 2012; Ma and Liu, 2012).

As the edible bird's nest is immense with its nutritional and health benefits, it is suitable for consumption by both genders and with all age groups. For women, it makes their skin smoother and firmer. Whereas, consumption of edible bird's nest in men will boost immunity, rejuvenate and restore energy and develop strength. Further, consumption of edible bird's nest during pregnancy will make the baby stronger by boost its immunity system. For old folks, the consumption will aid them in term of digestion, osteoporosis and arthritis. Besides, children, people who are sick and working continuously for long hours can consume bird's nest as one of the best natural health supplements (Swiftlet Eco Park, 2012). Current scientific studies found that edible bird's nest is able to inhibit the infection of influenza viruses (Guo et al., 2006; Yagi et al., 2008; Wu et al., 2010).

1.1.4 Problem Encountered by the Industry

The role of edible bird's nests in providing high income to Malaysia is gaining wider recognition (Kamal et al., 2009). At this point of time, Malaysia is facing a problem in exporting the edible bird's nests to China. This is due to a high level of nitrate in the edible bird's nests sent to China in July 2011. China is the Malaysia's biggest importer of edible bird's nests. During the inspection it was found that Malaysian bird's nest samples contained 200 parts per million (ppm) of nitrate which is considered very high according to most recommended doses (NST, 2012). The World Health Organization's (WHO) recommended level of nitrate is only 34 ppm. However, China is hoping for zero level of nitrates in the edible bird's nests because high nitrate levels can lead to health problems. This had caused the Chinese government to enforce a ban on imports of Malaysian local bird's nests. In addition, the Chinese government has also banned its citizens from bringing the edible bird's nests and its related products back after visiting Malaysia (Ramli and Azmi, 2012). This incident led to a big loss within the Malaysian EBN industry. First of all, the industry has been plagued by over-production and this had led to a decline in price of harvested bird's nests by 50 percent when the market price of edible bird's nest plunged from RM4000 and RM5000 to only RM1500 per kilograms (The Borneo Post, 2012). As a result, many farmers were affected especially when they had to pay

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back their bank loans. The situation was a great challenge to the Malaysia bird's nest industry and to overcome the decline, the Malaysia government searched for new markets and began promoting the edible bird's nest-based products among the locals (10th Malaysia Plan, 2010; NST, 2012). In order to promote EBN products among Malaysian consumers the industry participated in the Malaysia Agriculture, Horticulture and Agrotourism (MAHA) agro-exposition in 2010 and has continued its presence well into 2012. Figure 1.7 shows the edible bird's nest industry exhibition during MAHA, 2010.

Figure 1.7. An exhibition by companies and organizations involved in the edible bird's nest industry at the 2010 MAHA exhibition
(Source: MAHA, 2010)

1.1.5 Edible Bird's Nest Products

The rapid emergence of edible bird's nest based products in the Malaysia market has taken consumer by surprise. This is because; the manufacturers who are alert with the Malaysian government policy, starts to produce EBN products which are varying in term of price and form. Usage of high concentrated bird's nest in producing the EBN products has always resulted in expensive products and vice versa. Table 1.2 shows some examples of EBN products that are currently available in the market.

Table 1.2. Examples of edible bird's nest products available in the market

Company name	Products
AG Walit	- Mix sauce of bird nest and honey - Bird nest drink
Algaprima	- Regular bird nest collagen - Bird nest extra collagen - Bird nest collagen drink - Bird nest cordyseps

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Company name	Products
Angkasaa	- Bird's nest drinks
Banyan Bird Nest	- Ginseng rock sugar bird nest drinks
Betamusifa Trading	- Concentrated bottled bird's nest drinks
	- Bird's nest with ginseng & rock sugar drinks
Bio-essence	- Bird's nest Nutri-Collagen – Whitening Cleanser
	- Bird's nest Nutri-Collagen – Whitening Advancer
	- Bird's nest Nutri-Collagen – Whitening Essence
	- Bird's nest Nutri-Collagen – Whitening Cream
Brand's	- Brand's Bird's Nest Drink with Rock Sugar
	- Brand's Bird's Nest Drink, Sugar Free
	- Brand's Bird's Nest Drink with Rock Sugar 1.4 fl.oz.
Cahya Walet	- Collagen soap
Ecolite	- ECOLITE Bird's Nest of Rock Sugar
	- ECOLITE Collagen Bird's Nest Drink
Eu Yang Sang	- Bottled bird's nest series • With rock sugar • With rock sugar (reduced sugar) • With wild American ginseng • With pearl powder & collagen (reduced sugar)
Ginvera	- Bird's nest shower milk with royal jelly
Jastech Creative	- Walit junior – flavor apple
	- Walit junior – flavor strawberry
	- Walit junior – flavor lychee
	- Collocalia bird nest drink
Ketella	- Bird nest drink
	- Bnest beauty soap
	- Bird's nest shampoo
Misha	- Bird nest juice plus aloe vera
My Scheming	- My Scheming Bird's Nest Collagen Mask
Persada	- Walit Plus M7
	- Walit Plus W
	- Walit Plus Series – Walit Plus IQ
	- Walit Plus M
	- Bird's Nest Plus with Hydrolyzed Collagen & Pearl
Polleney	- Bird's nest drinks with rock sugar
	- Bird's nest drink with American ginseng & rock sugar
	- Bird's nest with collagen
Saffya Pearl	- Bird's Nest Collagen Drink
	- Bird's Nest Energy Drink
	- Bird's Nest Collagen Pearl Soap
Walit Gold	- Double Red Nest
	- Coenzyme Q10
	- WalitGold Plus

(Sources: AG Walit, 2014; Algaprima, 2014; Angkasaa, 2014; Banyan Bird Nest, 2014; Betamusifa Trading, 2014; Bio-essence, 2013; Brands, 2013; Cahya Walet, 2014; Ecolite, 2013; Eu Yang Sang, 2013; Ginvera, 2014; Jastech Creative, 2014; Ketella, 2014; Misha, 2014; My Scheming, 2014; Persada, 2013; Polleney, 2013; Saffya Pearl, 2013; and Walit Gold, 2013)

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1.2 Problem Statement

Presently, edible bird's nest is one of the essential high value agriculture products which contribute about 1% to the GDP. Unfortunately, the industry is facing a problem in exporting the edible bird's nest to the China which is Malaysia' main export market due to high level of nitrate contain. Hence, it causes a big lost to the edible bird's nest industry and indirectly effect our country economy.

Therefore, the Malaysian government is supporting the development of the EBN industry while looking forward to promote EBN products among the Malaysian consumers, in order to reduce dependency on the export markets such as the ones to China, Hong Kong and Taiwan to avoid the same type of problem in the future. This creates an opportunity for the producers and manufacturer to explore the needs and demand of consumer's niche market. The golden opportunity was undertaken by the EBN product producers and manufacturers where they start to produce a lot of EBN products such as foods, drinks, cosmetics and supplements to be marketed in Malaysia. Since there is a force and support from the government and initiative from the producers and manufacturers to produce EBN products and bring it to the market, we need to analyse the Malaysian consumers' perception towards EBN products.

EBN is one of the widely used health foods in the Chinese communities, making them familiar with bird's nest. On the other hand, Malaysia consists of multi-racial consumers and only about 25 percent are Chinese. Hence, a consumer-orientated approach to assess the market for EBN products among Malaysian consumer is very important. It is necessary to interpret consumers' decision-making regarding EBN products and conceptualise some strategies on how consumption can be promoted.

Since EBN products are very new in the market, identify consumer awareness and knowledge on edible bird nest is very important. Moreover, it is also necessary to ascertain how they perceive the bird's nest value and their attitude towards EBN products. In addition, the role and influence of people and the perceived behavioural control of lead Malaysian consumer to purchase EBN products (purchase intention) also needs consideration. This is because production of products and strategies to market them depend on consumer beliefs, attitudes and responses to EBN products. Therefore, to uncover the factors which can define the purchase intention of EBN products among Malaysians is very important. In addition, demonstrate socio demographic characteristics' effect on purchase intention towards EBN products is vital.

Hence, the present study is focused on the awareness and purchase intention of Malaysian people towards EBN products. This consumer marketing research will propose the potential of edible bird's nests commercialization and identification of potential market opportunities in Malaysia.

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1.3 Study Objectives

The general objective of this study is to investigate the awareness and purchase intention of edible bird's nest products among Malaysian consumers. Specific objectives are:

1) To determine the level of attitude and purchase intention on edible bird's nest products.
2) To assess the factors encouraging consumers purchase intention towards edible bird's nest products.
3) To discover the effect of socio demographic characteristics in determining purchase intention.

To understand the respondents' awareness and purchase intention towards EBN products quantitative method was utilised. The study makes use of data collected from survey conducted in Klang Valley among multiracial Malaysian consumers. In term of sampling technique, the study uses simple random, stratified sampling and systematic sampling method to select 1361 respondents. Furthermore, to achieve the study objectives, well structured questionnaire was used as data gathering method.

1.4 Significance of Study

This study is unique and significant in many counts because it is generates some important information on Malaysian consumers' awareness and purchase intention towards EBN products. Moreover, the study will also give information in describing consumers' perception, knowledge and attitude towards EBN and its products. Hence, it is significant for the following group of people:

First of all, this study is a platform and guideline to the academicians and researchers. The study contributes to the existent purchase intention literature by determining purchase intention towards EBN products. Moreover, the study will be significance for theory development where it attempt to integrate consumer behaviour theories and models to determine the awareness and purchase intention towards edible bird's nest products among Malaysian. Next, testing of conceptual framework of the present study will identify the relative importance among the variables in determining purchasing intention. Therefore, the study facilitates approaches to various interest areas and elaborates on the consumers' attitude and purchase intention towards EBN products and gives hints for further research on other consumer related topics.

Moreover, this research gives some ideas to us concerning consumers and EBN products since the study is dealing with consumers' perception, attitude and purchase

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intention towards EBN products. Therefore, this study will help the producers and marketers to make products to cater to consumers' satisfaction. More directly it may be an initiative for the producers and marketers to create awareness of the EBN products and its benefits among some Malaysians who may not aware of EBN products. Therefore, it can increase the awareness of Malaysian people towards this while increasing the profit for the producers and marketers.

Lastly, policy makers also will be beneficial from the finding of the study. This is because; the study will determine the factors that influence Malaysian purchase intention of EBN products as well as the group of consumers with high purchase intention. Therefore, it will assist them in making policies which will be appropriate to the current situation of Malaysian edible bird's nest industry.

1.5 Organization of the Thesis

This section will describe on how the thesis is organized. There are five chapters which covering from introduction to conclusion of the study. The first chapter which is introduction gives clear picture on agriculture sector and EBN industry. Moreover, it describes problem statement, objectives and the importance of the study. Chapter two contains review of literature on consumer purchase intention studies. Then, conceptual framework, sampling techniques and statistical analysis methods which was adopted in order to achieve the study objectives is illustrated in chapter three. Next, chapter four presents the results of descriptive analysis and structural equation modeling analysis. Finally, chapter five summing up the findings, its contribution and put forward some suggestion for the future studies.

1.6 Chapter Summary

Chapter one discussed the background of the study which includes the agriculture sector, EBN industry, problems faced by the edible bird's nest industry and edible bird's nest products that are available in the market. The discussion veered to problem formulation, research purpose and significant of the research. Chapter two will reviews previous literature about consumer behaviour.

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