UNIVERSITI PUTRA MALAYSIA

CONSUMERS' CONFIDENCE IN HALAL LABELED MANUFACTURED FOOD IN MALAYSIA

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DOCTOR OF PHILOSOPHY
UNIVERSITI PUTRA MALAYSIA

2008

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By

GOLNAZ REZAI

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

September 2008

Dedication

To

Baba Shazdeh, I have always been proud to be your grand daughter.

Abstract of thesis presented to the Senate of Universiti Putra Malaysia in fulfillment of the requirement for the degree of Doctor of Philosophy

CONSUMERS' CONFIDENCE IN HALAL LABELED MANUFACTURED FOOD IN MALAYSIA

By

GOLNAZ REZAI

September 2008

Chairman: Associate Professor Zainal Abidin Mohamed, PhD

Faculty : Agriculture

The impending international challenges facing Malaysia will continue to be dominant and will affect its economic prospects considerably. With an increasing trend towards globalization, Malaysia will face sweeping technological changes in food manufacturing which require re-examining strategies of conducting their businesses. Currently, the key areas for growth and development in the food processing industry in Malaysia are functional and convenience foods, food ingredients and halal foods. Today, halal stands not only for the way of slaughter and preparation of food but also for animal welfare, social justice and sustainable environment. The lack of enforcement in monitoring the usage of certified halal food has caused the public to question the validity of some of the products that were claimed to be halal. The objective of this study is to gather information on consumers' confidence towards halal labeled food and to assess the level

of confidence of the halalness of food products which carry halal logo. This study used data collected from a consumers' survey via structured questionnaire. Eighteen hundred and sixty (1860) respondents were interviewed in order to obtain their confidence on halal food products. The questions asked included subjects such as confidence, perceptions and attitudes toward halal food, awareness and reasons for using Halal logo. A Likert scale of 1 to 5 (1 representing not confident and 5 representing very much confident) was used to measure consumer' confidence on the statements formulated in relation to Halal manufactured food products. In this study, the descriptive analysis, chi-square, factor analysis, and binary logistic and multinomial logit method were applied to analyze the data.

The findings indicate that the majority of the Muslim consumers are concerned about halal food and the Halal logos on food products. Even though it is shown that consumers react more positively to halal food with local halal logo, there is still enough evidence to support that consumers are more careful in evaluating the halalness of all kinds of food products by referring to the list of ingredients. Nevertheless, most consumers are able to differentiate Malaysian halal logo from others, regardless of the presence of products' brand on the food packaging. Based on factor analysis, six factors that influenced the purchase of food products on the basis of halal labeling were identified. These factors are; confidence with Halal logo, degree of awareness, trustworthiness, safety and health consciousness, governmental involvement and manufacturing practices. In general, various socio-economic and attitude factors significantly influenced the likelihood of consumers' confidence on JAKIM halal logo. Apparently, the consumption of halal food

for non-Muslims is different from the consumption of halal food for Muslims. The religious concern and safety concepts associated to halal foods probably make this decision more important for the consumers especially Muslims, and thereby lead to different decision-making processes. In addition it can be observed that consumers are very sensitive to halal information and any information or knowledge that might result in loss of their confidence level which might affect their intended purchasing decisions.

Misuse, modification or unauthorized access to halal logo on food products can adversely affect an individual's confident intention and overall business trading. As a matter of fact, Malaysian government, policy makers , food manufacturers and related institutions should fulfil the needs of consumers in order to restore any confidence lost. There should be an efficient coordination throughout all the marketing chain from government to producers in order to offer trustworthy and reliable halal labeled food products.

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

Penilaian Niat Keyakinan Pelanggan Terhadap Makanan Berlabel Halal di Malaysia

Oleh

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Cabaran-cabaran di arena antarabangsa yang dihadapi oleh Malaysia akan terus dominan dan mempengaruhi prospek ekonomi Malaysia. Dengan tren terkini kea rah globalisasi, Malaysia akan menghadapi perubahan teknologi yang akan mengubah cara dan kaedah pengendalian perniagaan. Kemunculan pesaing-pesaing baru dalam pemprosesan makanan, pembuatan makanan akan memperhebatkan persaingan, membuka pasaran-pasaran baru dan memperkembangkan pasaran-pasaran yang sedia ada, pentingnya pihak berkuasa Malaysia perlu memberi perhatian yang serius peraturan dalam makanan halal bagi tujuan bersaingan dengan pasaran global. Hari ini, halal bukan sahaja memberi tumpuan terhadap cara penyembilihan dan penyediaan bahan makanan malah memberi tumpuan dan kepentingnya dalam kebajikan haiwan, keadilan social dan alam sekitar mampan. Kekurangan penguatkuasaan dalam mengawal penggunaan sijil

makanan halal menyebabkan masyarakat awam menyol tentang kesahan sijil halal bagi sebahagian produk makanan.

Data kajian ini dikumpul daripada pelanggan dalam bulan Mei hingga Ogos 2008 di Semenanjung Malaysia. Sebanyak seribu lapan ratus enam puluh (1860) responden telah ditemuramah bagi tujuan mengenalpasti keyakinan pelanggan dalam penggunaan makanan halal. Soalan-soalan yang berkaitan dengan keyakinan, tangkapan dan sikap pelanggan terhadap makanan halal, kesedaran dan sebab penggunaan halal logo ditujukan kepada para pengguna semasa soal selidik. Skala Likert, satu hingga lima digunakan (1 mewakili tidak yakin dan 5 mewakili lebih yakin) bagi tujuan mengukur keyakinan pelanggan terhadap penggunaan halal logo dalam pembuatan barangan makanan. Kajian ini menggunakan analisis diskriptif, Chi-Square, analisis faktor, kaedah-kaedah binary logistic dan multinomial logit untuk menganalisa data yang dikumpul.

Kajian ini mendapati bahawa kebanyakan pelanggan Muslim memberi perhatian yang serius kepada makanan halal dan logo halal. Kajian juga menunjukkan bahawa para pelangan bukan sahaja peka terhadap halal logo malah mereka memberi tumpuan kepada label atau ramuan dalam sesuatu barangan makanan. Para pelanggan juga dapat membezakan logo halal Malaysia dengan halal logo yang lain dalam pembungkusan makanan dan jenama barangan. Berdasarkan analisis faktor, enam faktor telah dikenalpasti dalam pembelian barangan makanan pelangan berdasarkan halal logo. Faktor-faktor tersebut adalah: keyakinan dengan halal logo, darjah kesedaran, kebolehpercayaan, keselamatan dan kesedaran kesihatan, penglibatan kerajaan dan cara

pengendalian pengeluaran. Secara keseluruhan, pelbagai sosio-ekonomi dan faktor kelakuan mempengaruhi kemungkinan dalam keyakinan pelanggan dalam penggunaan halal logo JAKIM. Bagi golongan Muslim, keagamaan dan konsep keselamatan yang berkaitan dengan makanan halal menyebabkan faktor utama dalam membuat keputusan pembelian. Didapati para pelanggan memberikan tumpuan yang terperinci terhadap isu-isu yang berkaitan dengan halal dalam membuat keputusan pembelian.

Kerugian, penyalahgunaan, pengubahsuaian atau tidak dibenarkan akses dalam produk makanan halal boleh menjejaskan niat keyakinan seseorang individu dan uru niaga dagangan. Sebanarnya Kerajaan Malaysia, pembuat polisi dan pengeluar makanan dan institusi yang berkaitan perlu memenuhi keperluan pengguna dalam memulihkan kehilangan keyakinana mereka. Perlunya kordinasi yang cekap sepanjang rantaian pemasaran mula dari kerajaan sampai pengeluar bagi tujuan menawarkan sebuah logo halal yang boeh dipercayai serta diguna tanpa was-was.

ACKNOWLEDGEMENTS

To Associate Professor Dr. Zainal Abidin Mohamed, if I thanked you for each and everything you have taught me or have done for me since I have been your student, we would be here all day. I would just like you to know that you are an incredible mentor, from whom I have learned so much. I thank you for your constant "open door" policy, your readiness to sit and talk even during your busiest moments, your input on my research and your genuine concern for your students. Thank you for challenging me every step of the way.

Professor Dr. Mad Nasir Shamsudin and Associate Professor Dr. Eddie Chiew Fook Chong**,** thank you very much for being such an integral part of my doctoral program and sharing of your time and expertise. Prof. Nasir**,** I especially thank you for being one of the first to help me settle in UPM. My being up here today is because of your willingness to give your time and effort. Thank you Dr. Eddie, for your critical remarks and suggestions in writing this thesis and without your help the task would have been difficult. I am very lucky to have had such a strong committee to guide me along the way.

Thanks Lawal for your constant supports and calls, I can certainly say that you have left me with so many interesting memories that I will carry always. To Nalini and Abdullah: I do not think you could ask for better persons to have as friends. You both took me in 3 years ago and the rest is history. You have been a great source of comfort, kindness and humor, and have really made my time here even more enjoyable. Thank you Sue for

your special and loving support of me since we met, you were always there for me and still are.

To all of my friends and course mates (Aye Aye, John, Kobita, Ila, Intan, Zury), my job was a lot easier because of you. I thank you for your flexibility and your understanding. I wish you all the best of luck in your programs and life. Thanks Mehrnoosh, Mahkameh, Taha, Negar, Hamid and all my friends who have made my life and study memorable in Malaysia and have always stood beside me by extending their helping hands.

To all lecturers in the Department of Agribusiness and Information System (Prof. Ghazali, Prof. Ariff, Dr. Mansor, Dr. Amin, Dr. Alias, Dr. Norsida, Dr. Nitty and Mr. Ismail and Ms. Nolila). Every single one of you readily accepted me and immediately offered their assistance with whatever I was doing. Everyone should be so lucky as to have such a supportive, friendly, warm group of people to help them along in life.

It is not possible to thank everyone at the Department of Agribusiness and Information System, Faculty of Agriculture enough for all that they have done for me since I started here. Thank you very much for taking care of all of the work that would not have gotten done if it were not for all of you.

To my cousins Sima and Zamaneh, my uncle Bahman. There just are not words to thank you enough. You ALL have provided me with such support and guidance. Thank you for everything!

Thank you Sarvernaz, my little wise sister, for your unwavering support in every choice I have ever made.

And last but not least to my Mom and Dad: When I graduated from high school and said I was NOT going to college - you said NO; when I graduated from my undergraduate program and I said I was NOT going to get my master's - you said NO; and when I said that I am NOT staying for my PhD - you said STAY. Thank you for making me to understand the many wonderful adventures that lie ahead in the life! You made so many sacrifices so that I could have an amazing youth experiences with whatever I wanted and from that I have learned that I could make mistakes and still be worthy of love. I do not think I will ever be able to thank both of you enough!

I certify that an Examination Committee met on September 2008 to conduct the final examination of Golnaz Rezai on the Doctor of Philosophy thesis entitled "Consumers' Confidence on Halal Labeled Manufactured Food in Malaysia" in accordance with Universiti Pertanian Malaysia (Higher Degree) Act 1980 and Universiti Pertanian Malaysia (Higher Degree) Regulation 1981. The Committee recommends that the candidate be awarded the relevant degree. Members of the Examination Committee are as follows:

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This thesis submitted to the Senate of Universiti Putra Malaysia and has been accepted as fulfillment of the requirement for the degree of Doctor of Philosophy. The members of the Supervisory Committee are as follows:

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DECLARATION

I hereby declare that this thesis is based on my original work except for quotations and citations, which have been duly acknowledged. I also declare that it has not been previously or concurrently submitted for any other degree at UPM or other institutions.

_____

GOLNAZ REZAI

Date:

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LIST OF ABBREVIATIONS

APEC	Asia-Pacific Economic Cooperation
ASEAN	Association of Southeast Asian Nations
BSE	Bovine spongiform encephalitis
CIS	Commonwealth Independent States
FAO	Food and Agriculture Organization
FAOSTAT	Food and Agriculture Organization Corporate Statistical Database
FDA	Food & Drug Administration
FDI	Foreign Direct Investment
FMM	Federation of Malaysian Manufacturers
FOMCA	Federation of Malaysian Consumers Association
GDP	Gross Domestic Product
GHP	Good Hygiene Practices
GMP	Good Manufacturing Practice
HACCP	Hazards Analysis and Critical Control Point
HIDC	Halal Industry Development Corporation
IFANCA	The Islamic Food and Nutrition Council of America
IMP3	Third Industrial Master Plan
JAKIM	Department of Islamic Development Malaysia
KMO	Kaiser-Meyer-Olkin
MCB	Malaysia Cocoa Board

MIDA	Malaysian Industrial Development Authority
MITI	Ministry of International Trade and Industry
MNL	Multinomial Logit Model
MSA	Measure of Sampling Adequacy
NAP3	Third National Agricultural Policy
POP	Point-of- Purchase
SARS	Severe Acute Respiratory Syndrome
SIRIM	Standard and Industrial Research Institute of Malaysia
UNCTAD	United Nations Conference on Trade and Development
UNEP	United Nations Environment Program
UNESA	United Nations Population Division Department of Economic and Social Affairs

CHAPTER 1

INTRODUCTION

1.1 Malaysia and Halal Food

1.1.1 Economy of Malaysia

Malaysia is a multi-ethnic, multi-cultural and multilingual society. The population as of February 2007 is 26.6 million consisting of 62 percent Malays, 24 percent Chinese, 8 percent Indians, with other minorities and indigenous peoples (Department of Statistics 2007). Table 1.1 shows that Malaysia's population is young; 32.4 percent is under 15 years of age, 63.3 percent is of working age (15-64 years) and 4.3 percent is 65 years or older (UNESA, 2006). By 2002, 59 percent of the population lived in urban areas. Projections anticipate that 74 percent of the population will be living in urban areas by 2020 (FAO, 2005).

Table 1.1 Population Age Distribution Trends for 2002-2006

Year	< 15 Years (%)	15 - 64 Years (%)	> 64 Years (%)	Population (in millions)
2002	33.5	62.5	4.1	-
2003	33.2	62.7	4.1	-
2004	32.9	62.9	4.2	25.58
2005	32.6	63.1	4.3	26.13
2006	32.4	63.3	4.3	26.64

Source: UNESA, 2006

Malaysia is a multi-religious society and Islam is the official religion. According to the Population and Housing Census 2000 figures, approximately 60.4 percent of the population practiced Islam; 19.2 percent Buddhism; 9.1 percent Christianity; and 6.3 percent Hinduism. The remaining 5 percent was accounted for by other faiths, including

Animism, Shamanism, Sikhism, Bahá'í, Taoism, Confucianism, and other traditional Chinese religions.

Malaysia has made significant strides in nation-building, in developing its economy and in improving the quality of life of its people. Since Independence, real gross domestic product (GDP) has grown steadily. During 1957 to 2005, it grew by an average of 6.5 percent per annum, one of the highest growth rates achieved by sovereign nations of similar age and size. Within the same period, GDP per capita in current prices grew by 7.0 percent per annum, which has translated into substantial improvements in the people's quality of life. The Malaysian economy grew at an average rate of 6.2 percent per annum during the 1991-2005 period, as shown in Figure 1.1. This strong rate of growth was achieved despite the challenges faced from events such as the 1997-98 Asian financial crisis, the September 11 incident in 2001, wars in Afghanistan and Iraq, outbreaks of Severe Acute Respiratory Syndrome (SARS) and avian flu as well as increases in world oil prices.

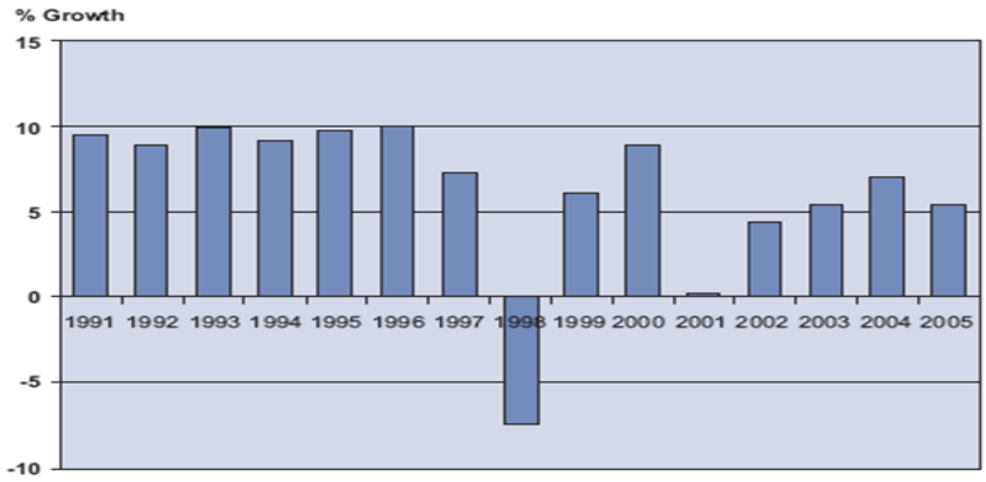

Figure 1.1 Real GDP Growths, 1991-2005
(Source: Department of Statistics)

Economic fundamentals remained strong. Growth was achieved with inflation averaging a low 2.9 percent per annum and similarly low unemployment averaging 3.1 percent over the period. The current account of the balance of payments and the consolidated public sector account registered twin surpluses by the end of the period. The level of savings and external reserves rebounded to healthy levels after the Asian financial crisis.

In the past 30 years, Malaysia has successfully sustained rapid economic growth, curtailed high poverty rates, and reduced income inequalities. Strongly committed to growth, this culturally diverse country has also prioritized more equitable distribution of wealth, and has promoted a conflict-free environment among its numerous ethnic groups. Malaysian economy is unique among the countries in South East Asia. Transformed from a raw material production economy to a multi-sector economy and electronics tycoon, Malaysia has become a high middle-income country over the last three decades. Its strong infrastructure, proficient administration and knowledgeable workforce make Malaysia a natural candidate for investment inflows and continued economic success. As a member of APEC and ASEAN, Malaysia enjoys a thriving economy that is expected to continue to flourish as the country signs an increasing number of bilateral trade agreements with other nations. Since 1991, the Malaysian government has been working toward its Vision 2020, a broad plan through which to achieve a developed economy status by 2020. Through five-year agendas, this framework combines both privatization and increased FDI (Foreign Direct Investment) initiatives to increase industrialization and development. The National Mission, which will govern the remaining thirteen years of the Vision 2020 plan, intends to raise educational standards, foster creativity and innovation, address socio-economic

inequalities, improve living standards, and strengthen institutional capacities. In 2006, the government initiated its Ninth Malaysia (five-year) Plan, with emphasis upon increasing human capital through education, improving public infrastructure, stimulating the agriculture sector and developing the manufacturing sector. This plan intends to raise development funds to RM 170 billion, a significant increase from the previous five-year plan. Measures undertaken to stimulate the economy along with a better external environment and favorable commodity prices contributed to improved sectoral performance during the Plan period, as shown in Table 1.2. The services sector was the major contributor to GDP growth, growing at an average annual rate of 6.1 percent.

Table 1.2 Gross Domestic by Industry of Origin (2000-2010)

Sector	RM million (in 1987 prices)			% of Total		
	2000	**2005**	**2010**	**2000**	**2005**	**2010***
Agriculture, Forestry, Livestock and Fishing	18,662	21,585	27,518	8.9	8.2	7.8
Mining and Quarrying	15,385	17,504	20,675	7.3	6.7	5.9
Manufacturing	67,250	82,394	113,717	31.9	31.4	32.4
Construction	6,964	7,133	8,451	3.3	2.7	2.4
Services	113,408	152,205	208,086	53.9	58.1	59.2
(-) Imputed Bank Services Charge	15,832	23,876	32,707	7.5	9.1	9.3
(+) Import Duties	4,721	5,083	5,556	2.2	1.9	1.6

Source: Economic Planning and Department Statistics (2006)
* Forecasting

The services' share of GDP increased to 58.1 percent in 2005. The finance, insurance, real estate and business services subsector recorded the highest growth at an average rate of 8.1 percent per annum. The transport, storage and communications subsector expanded at an average rate of 6.6 percent per annum in line with the rise in trade and

travel activities. The wholesale and retail trade, hotels and restaurants subsector recorded an average annual growth of 4.3 percent during the Plan period, supported by increased consumer and tourism activities, particularly during the 2004-2005 period. The manufacturing sector achieved a growth rate averaging 4.1 percent during the Plan period and its share to GDP increased to 31.4 percent in 2005. The capacity utilization rate in the manufacturing sector remained high averaging 80 percent per year. Growth was led by resource-based industries (food processing, beverages and tobacco, wood products, paper products, chemical products, petroleum products, rubber products and non-metallic mineral products), which recorded an average growth of 5.0 percent per annum. The main contributors to growth were the chemical products, food processing, rubber products and paper products subsectors. The non-resource-based industries (textiles and apparel, basic metal, metal products, machinery, electronics, electrical machinery, transport equipment and other manufactures) grew at an average rate of 3.5 percent per annum. Despite recording a moderate growth averaging 3.0 percent per annum, the electronics subsector remained the largest contributor, accounting for 28.0 percent of manufacturing value added in 2005.

The agriculture, forestry, livestock and fisheries sector recorded an average growth of 3.0 percent per annum. The growth was contributed by the agricultural industrial commodities and food subsectors, which grew at annual average rates of 3.8 percent and 1.7 percent, respectively. Palm oil value added increased by an average rate of 6.2 percent per annum to remain as the major contributor, accounting for 36.7 percent of total agriculture sector value added in 2005. In the food subsector, vegetable and fruit productions recorded average annual growths of 13.8 percent and 9.8 percent,

respectively. The livestock subsector grew at an average rate of 6.6 percent per annum while the fisheries subsector recorded a negative growth of 0.9 percent per annum.

1.1.2 Food Industries in Malaysia

During the last decade, the food manufacturing industry has been experiencing many significant changes. Shifts in demographic and economic structures influence the manufacturing industry directly or indirectly. Changes in consumer lifestyles, tastes and preferences along with technical advancements in agriculture and marketing have had a great impact on the demand for manufactured food.

This rapidly expanding industry has been adjusting in response to consumers' demands for convenience and nutrition. At the same time, more Malaysian women are entering the workforce and demanding easier and speedier ways to prepare meals. The changing lifestyles have led to an increasing number of consumers eating in restaurants and fast food establishments, as well as ready-made food products. Nutrition too, has become increasingly important to many individuals who are concerned about eating the "right" foods. The food manufacturing industry has been fast at work in an attempt to create new foods and new ways to present these products to consumers.

Given the changes in demand, there are great opportunities for significant growth of the food manufacturing in Malaysia. A growth in the food manufacturing would bring in revenue and also provide job opportunities for many people. The Third National Agricultural Policy (NAP3) has placed an emphasis on the production of food to meet

domestic and export demands due to the increasing population growth, higher incomes and nutritional deficiencies. Malaysia Industrial Development Authority (MIDA) has identified potentially food products such as cocoa, cereals and flour-based products, processed fish and seafood, processed livestock products, processed fruits and vegetables, sugar and sugar products, dairy products, coffee, tea and spices which serve the domestic and international markets. The food marketing system in Malaysia functions in a variety of distribution systems. Food manufacturing industries provide essential links between the farmers and consumers. Food manufacturing is an "industry that inherently increases the economic value of farm products. It combines labor, machinery, energy and technology to convert bulky farm products into packaged, palatable foodstuffs" (Connor, 1988).

Malaysian food processors are becoming increasingly more sophisticated in the types of products they offer and the way in which these products are marketed. The food processing industry (FPI) ranges from small medium enterprises (SMEs) to multinational corporations (MNCs). The Federation of Malaysian Manufacturers (FMM) and other related organizations such as Malaysian Industrial Development Authority (MIDA) are aggressively assisting Malaysian food manufacturers in marketing their products in domestic and foreign markets. Malaysian food industry is set to play a dominant role in the industrialization of Malaysian economy. With continued efforts from the food and beverage industry to improve its quantity and design through technology upgrading and with the commitment of the government, the potential for Malaysia's food industry to expand is tremendous.

The FPI accounted for 1.6 percent of Malaysian's total export of manufactured goods and about 10 percent of Malaysia's manufacturing output (Malaysia's Trade Performance Report 2006, 2007). Processed foods are exported to 80 countries, with annual export value of more than RM 5 billion (Food and Beverage FMM- MATRADE Industry Directory, 2005-2006). The FPI registered an output growth of 4.2 percent in 2004. As shown in Table 1.3, the highest growth was recorded in cocoa, chocolate and sugar confectionary (15.2 percent), followed by biscuits (11.5 percent) and other food products (11.4 percent) in response to increased domestic and external demand. Negative recorded in rice milling (-23.8 percent) due to demand being increasingly met by imports.

Table 1.3: Exports of Processed Food

Product	1996		2005		1996-2005
	Value (RM million)	Share (%)	Value (RM million)	Share (%)	Average Annual Growth Rate (%)
Total	2,753.8	100	7,821.9	100	11.3
Processed fish and seafood	674.3	24.5	2,059.7	26.3	11.1
Cocoa products	456.0	16.6	1,873.2	23.9	15.2
Edible products and preparations	426.6	15.5	1,249.1	16.0	11.9
Prepared cereals and flour preparations	381.3	13.8	902.9	11.5	9.9
Sugar and sugar confectionary	213.2	7.7	470.0	6.0	8.8
Dairy product	167.0	6.1	418.2	5.3	9.8
Coffee	45.5	1.7	277.0	3.5	21.6
Processed fruits and vegetables	158.8	5.8	262.7	3.4	4.5
Spices	138.9	5.0	188.3	2.4	5.6
Processed meat	84.4	3.1	86.6	1.1	2.0
Tea	7.8	0.3	34.2	0.4	24.6

Source: Third Industrial Master Plan (IMP3), 2006-2020

The exports of processed food escalated from RM2.8 billion in 1996 to RM7.8 billion in 2005, an average annual growth rate of 11.3 percent (Table 1.3). This increment was attributable to the expansion of food processing activities and the increasing acceptance of Malaysian's processed foods in the international market. The major exports of processed foods were processed seafood, cocoa and cocoa preparations and prepared cereal and flour preparations.

The total gross output of the FPI was about RM20 billion, in which the largest contributor was the cereal and flour-based products' segment, with a total contribution of approximately RM5 billion, followed by the other food products' segment with RM4 billion and dairy products' segment with RM2.2 billion (Table 1.4). (Industrial Master Plan 3, 2006-2020).

Table 1.4: Profile of Food Processing Industry, 2003

Food Segment	No of Establishment	Gross Output (RM million)	Value-added (RM million)	Employment
Total	2335	16,793.9	4,405.6	80,493
Manufacture of grain, starches, starches products	303	2,565.3	463.9	7,267
Manufacture of dairy product	41	2,185.3	563.2	4,109
Manufacture of cocoa and sugar confectionary	66	1,828.1	408.4	6,451
Manufacture of biscuit, bread, cakes and cookies	762	1,717.7	588.5	20,045
Manufacture of fish and fish products	131	1,447.3	320.7	8,879
Manufacture of poultry and poultry products	12	733.2	144.4	2,491
Production, processing other meat products	42	548.9	109.5	5,569
Manufacture of spices, curry powder and sauces	97	637.8	211.2	2,709
Manufacture of macaroni and noodles	258	574.2	167.6	4,684

Manufacture of coffee and tea	129	377	116.7	2,607
Canning of fruits and vegetables	54	271	67.6	1,919
Manufacture of sugar, nut, ice, snacks and crackers	440	3,807.5	1,238.5	15,63

Source: Third Industrial Master Plan (IMP3), 2006-2020

The two top food segments that contribute the highest in terms of value adding existing products were cereal and flour based products (grain mills, starch, bakery and noodles products) and followed by the other food products like nuts, snacks, crackers and chips amounting to about RM1.2 billion, respectively. These segments accounted for 56 percent of the total value adding for FPI. Dairy products' segment follows suit with RM563 million (Table 1.4), (Industrial Master Plan3, 2006-2020).

The findings of the Annual Survey of Manufacturing Industries, 2003 showed that there were more than 2,000 establishments involved in the food processing industry (Table 1.4). The growth rate of Malaysia's processed foods' exports has increased from RM 2754 million in 1996 to RM7822 million in 2005. Thus these figures can be an indication that the Malaysian food processing can be benefited from halal production and manufacturing. Currently, the key areas for growth and development in the food processing industry in Malaysia are functional, convenience, and halal food plus food ingredients. With the current concern on health and nutritional food, the demand for functional food, minimally processed fresh food and organic food is expected to increase. Besides organic products, health foods include low caloric, fiber/nutrient enriched products, fruits juices, herbal products and value-added palm oil-based product to cater the demand from health conscious and vegetarian consumers is also potential for

further development in Malaysia. With changing lifestyle, convenience foods continue to be the trend. In Malaysia, food manufacturers are introducing new convenience foods with Asian recipes to meet the additional interest in ethnic food. Convenient foods produced in Malaysia are in the form of chilled and frozen, home-meal replacements, ready-to-cook, ready-to-eat and ready-to-drink meal. Food flavors and seasonings, sweeteners and palm oil-based additives are some of the potential for further development in the food ingredients. Currently, Malaysia imports about 70 percent of its food ingredient requirement (Industrial Master Plan3, 2006-2020).

The global market value of halal food is estimated at about US$547 billion a year. Recognizing the importance and potential of the industry, Muslim and non-Muslim countries are undertaking various initiatives to capitalize on the growth prospects in the industry. Malaysia, as a modern Muslim nation, has the competitive edge and is well positioned to be the hub for the promotion, distribution and production of halal food Malaysia's Trade Performance Report 2006, 2007).

1.1.3 Third Industrial Master Plan and Halal Hub

As pointed out by the Third Industrial Master Plan 2006-2020 (IMP3), an important thrust for developing the manufacturing sector will be to identify new sources of growth, which will lead towards greater diversification of products and markets. The food processing industry will be expanded and diversified towards making Malaysia a regional halal food production and distribution hub. The fundamentals of this strategy

are to increase productivity, sustain agricultural output for integration with manufacturing and the development of domestic and export markets.

It is the government's objective to make Malaysia the global halal hub for production and trade in halal goods and services. It is envisaged that by 2008 Malaysia will be the centre for the production and distribution of halal products and service, the reference on the halal standard and research and development (R&D) base for halal matters (IMP3). The halal industry covers food, non-food products such as pharmaceuticals and cosmetics, as well as services, including logistics, tourism and marketing. To expand Malaysia's food processing industry, the government would also upgrade human resource and technology, enhance R&D, undertake the production and export of high-value added and niche products, and adopt quality standards. Targets have been set on investments with total of RM24.6 billion for the entire IMP3 period, or RM1.6 billion per annum. Meanwhile, exports are targeted to grow at an average annual rate of 7.8 percent to reach RM24.2 billion by 2020. It was stated that since the food industry was less vulnerable to economic changes, with global retail sales in food products expected to grow at an annual rate of 4.8 percent to RM 20.48 trillion in 2020, Malaysia will need to take advantage of this trend to become the regional food processing hub, especially for the global Muslim markets. Three main factors identified to drive the demands for food products are changes in disposable incomes, changes in consumer demand and global trade liberalization. Based on IMP3 growth areas that have been identified are convenience foods, functional foods, food ingredients and related Support services. As for halal food, global market value for trade in halal food and non-food products are estimated at RM6.72 trillion annually. Therefore strategic thrusts have been set for the

development and promotion of Malaysia as the global halal hub. These include enhancing awareness on Malaysia as the centre for halal products, managing the competition, leveraging upon outward investments to gain access to raw materials, enhancing R&D and developing halal services. Others are utilizing and leveraging Malaysian halal standard, ensuring quality and safety, undertaking systematic development of halal parks, harmonizing certification process, enhancing coordination and strengthening institutional capacity. However, there are several challenges that needed to be addressed in order for Malaysia to become a regional food production and distribution hub, such as insufficient supply of raw material, technology and product development, quality and safety and market access. To overcome this, the government has set seven strategic thrusts, which include ensuring availability of raw materials supply, expanding and diversifying food processing activities and promoting the growth of targeted areas. Others are enhancing sectorial linkages and support services, intensifying R&D, enhancing competitiveness overseas, and strengthening human resource development as well as institutional support and delivery systems.

1.1.4 Malaysia and Halal Food Production

The Malaysian Government has long recognized the importance of halal and has established mechanisms to secure the confidence of Muslim consumers in certifying products, food producers, abattoirs/slaughterhouses and food premises halal with several legislations in place for the protection of consumers of halal products. In 1982, the Malaysian Government established a “Committee on Evaluation of Food, Drinks and Goods utilized by Muslims” (“Committee”) under the Islamic Affairs Division under the

Prime Minister's Department ("Division") which now known as the Department of Islamic Development Malaysia ("JAKIM"). The main task of the Committee was to check and instil halal awareness amongst food producers, distributors and importers and the Division is responsible for the issuance of halal certificates. In 2003, the Malaysian Government set up the "Technical Committee on Developing Malaysia as the Regional Hub For halal Products" chaired by the Ministry of International Trade and Industry ("MITI") to stimulate the growth of the halal food industry and to make Malaysia a halal hub by year 2010. The Malaysian Industrial Development Authority ("MIDA"), a government agency under the purview of MITI, issued the Guidelines for Application of Incentives for Production of halal Food. Under these guidelines, companies that produce halal food are given Investment Tax Allowance of 100 percent of qualifying capital expenditure incurred within a period of 15 years. Such allowance may be set-off against 100% of the statutory income in each year of assessment. Companies that are eligible for such incentives are new companies undertaking halal food production, existing companies diversifying into halal food production and existing halal food companies undertaking upgrading/expansion of existing plants (MITI, 2005).

On 16th August 2004, the Malaysian Prime Minister Datuk Seri Abdullah Ahmad Badawi launched the 'Halal Food: Production, Preparation, Handling and Storage – General Guidelines (MS 1500:2004)' which was developed under the Malaysian Standard Development System by the Department of Standards Malaysia of the Ministry of Science, Technology and Innovation with the involvement and cooperation of JAKIM, relevant government agencies, non-governmental organizations, universities and industries.

MS 1500:2004 incorporates compliance with international standards of Good Manufacturing Practices and Good Hygiene Practices and prescribes practical guidelines for the food industry on the preparation and handling of halal food (including nutrient supplements) based on quality, sanitary and safety considerations and serves as a basic requirement for food products and food trade or business in Malaysia. In line with being the government agency responsible for the issuance of halal certificates, JAKIM published the Manual Procedure of Halal Certification Malaysia ("Manual") and Guidelines on the Appointment of Foreign Islamic Organization as halal Certification Body for Products to be exported to Malaysia. The Manual is a guideline to co-ordinate the implementation of halal certification activities in Malaysia at JAKIM's federal level and the State Department/Council of Islamic Affairs level ("JAIN"/"MAIN"). The Manual provides the basic principles to be adopted by every halal certificate holder in Malaysia and covers application procedure, inspection, monitoring and enforcement.

The Malaysian Government had allocated RM10 million in its 2005 budget specifically for purposes of promoting Malaysia as the world producer of halal products and services. Recognizing the need to prepare Malaysia for this new global market force, the government proposes to establish a halal Industry Development Board under the Ninth Malaysia Plan ("9MP") for 2006 – 2010, to develop the halal industry in a holistic and orderly manner. Further, the 9MP provides for the setting up of a specific fund for the halal products industry and the development of halal food parks to support the halal industry. "The 9MP will drive the sector's growth in making Malaysia an international hub for halal products and services" said the Malaysian Prime Minister when tabling the

9MP in March 2006. The Malaysian government has since announced the establishment of the Halal Industry Development Corporation ("HDC") to spur ahead the development of the halal industry in Malaysia and the international market. HDC will lead in the development of halal standards as well as audit and verification procedures, in order to protect the integrity of halal besides directing and coordinating the development of Malaysia's halal industry among all stakeholders. In March 2006 the Malaysian Prime Minister announced that all state governments in Malaysia are to use the standard halal logo issued by JAKIM thus making the logo the national halal logo of Malaysia. Previously, state governments in Malaysia were allowed to use their own "halal" logo.

In May 2006, a leading investment bank in Malaysia announced that it will allocate RM500 million in the form of loans to halal food producers. It is the world's first special halal package which offers good opportunities to businesses as they provide more depth and opportunities in the halal industry (The StarBiz, 10th May 2006). The halal industry in Malaysia has been given a further boost by a recent announcement that an international hypermarket chain has made a commitment to purchase RM1 billion Malaysian halal products for sale in Britain over the next 5 years (The StarBiz, 20th May 2006).

In April 2008, the Malaysian cabinet decided to streamline halal operations and Halal Industry Development Crop (HDC) is now the only body in the country authorized to issue halal certifications. Halal logo, certification, promotions, marketing and exhibitions which had been handled by two separate bodies (JAKIM and MITI) but now

HDC would be involved in certification and the government- owned corporation would continue to use Jakim logo (New Straits Times, 2008) .

1.1.5 Malaysian Consumers

As one of the leading developing nations in the region, Malaysia is expected to be one of the crucial product development and marketing engines in Southeast Asia over the coming decade. With a population of approximately 26.6 million in 2007, Malaysia's citizens enjoy a growing per capita income with about 61 percent of the population making up the middle-to-upper-income consumer groups. As Malaysian consumer tastes and trends develop in much the same way as the rest of the developing world, fast-paced lifestyles have led to a growth in convenience foods, such as snack food, packaged food and takeout, while greater concerns over health and wellness have led to a growth in natural, organic and light products. With the number of single person households and young people on the rise, the demand for foods outside the home has intensified and has been accommodated by a growing food service industry. According to Federation of Malaysian Consumers Association (FOMCA) Malaysians' food and beverage expenditure represents roughly 25 percent of total consumer spending, and is expected to see 31 percent growth by 2015 as disposable incomes rise. On average, Malaysian households spend roughly 24 percent of household income on food consumption (FOMCA, 2007). Retailers reported an estimated RM 32.64 billion in earnings in 2005, with supermarkets and hypermarkets accounting for almost 40 percent of the total retail sales. These formats are becoming increasingly popular for their convenience and wide product range, especially in urban areas where 45 to 60 percent of households use them

as their main grocery purchasing outlet. This presents many opportunities for exporters in the area of packaged and processed foods, especially chilled and frozen foods, as new supermarkets are established throughout Malaysia. Nevertheless, traditional markets remain important for the purchase of fresh produce (FOMCA, 2007).

Eating is an important part of Malaysian culture and social life. Malaysian cuisine is adventurous, innovative and open to new flavors. As a result, international dishes are gaining popularity and the demand for Westernized specialties continues to grow. The typical Malaysian diet consists of breakfast, lunch, tea, dinner and a late supper, or many small meals throughout the day. The main meals of lunch and dinner usually consist of rice and meat or fish and vegetable dishes prepared according to one of Malaysia's many ethnicities. Religious orientation is also very important to food consumption in Malaysia, where the large Muslim population can only eat halal food (prepared according to Islamic law). Similarly, many Buddhists and Hindus do not consume beef and those of Indian decent are generally vegetarians. Concerning Muslims eating habits a few factors should be considered. Home made foods are very popular for Muslims consumers like other Muslim consumers especially in Middle East; Malaysian consumers are closely related to their families. Thus homemade foods are very popular food and are mainly consumed. Most of the Muslims have a middle purchasing power compared to the rest in Malaysia. Fifty five percent of Malay (Bumiputra) consumers belong to the medium income group while 47.3 percent of Chinese consumers are in high income group of consumers (Samsudin Hitam, 1999). The Malaysian cuisine is a melting pot of a variety of neighboring influences. It comprises three main groups: Malay, Chinese and Indian with each having its own distinct style of cooking. Coconut

and coconut milk are major ingredients in many Malay dishes, which are generally served with rice or noodles. Malay food must be halal and incredibly safe, with high standards of hygiene prevailing even on the street stalls. Enforcement officers from the JAKIM (Department of Islamic Development Malaysia) and Health Department and Municipal Councils also conduct regular checks on halalness, hygiene and cleanliness. Malaysians love to eat out. On weekends, families usually dine away from home and children often select restaurants such as McDonalds and KFC, which have children playhouse facilities within the restaurant premises. The trend is towards upgraded, comfortable eating establishments. This has led to other franchised restaurants such as Kenny Rogers' Roasters, TGI Fridays, Chili's and Roadhouse Grill. In addition, the number of family type restaurants serving Japanese, Italian, Mexican and Eastern foods has also increased.

Local franchised chains such as Marrybrown and Sugar Bun, which offer similar menus as the KFC and McDonald outlets, are also expanding to major cities. The expansion of the Malaysian food service sector will help fuel demand for high-quality food products. Since Malaysia has a large Muslim population, food such as beef and poultry products must also be certified as “halal”. In other words, the products must originate from slaughterhouses that follow Islamic slaughter practices. These facilities also must be inspected and approved by Malaysian religious authorities. Other food items, which contain any animal products, must be clearly marked. If these products cannot be certified as halal, Muslim consumers, which make up about 60 percent of the population, are unlikely to purchase them.

1.2 Halal World Market and Food Consumption

Food is viewed in a number of ways including health-promotion and nutrition. It plays important roles in the social, cultural and religious life of most communities. A major goal of religious education is that each person be adequately taught to meet both biological and social needs. However, this goal has ramifications for individuals throughout all stages of life. Suggestions for content in food purchasing can be obtained from the field of consumer religion. A variety of consumer skills needed to perform satisfactorily in the market place have been identified. Among the skills a consumer needs to have are: how to obtain and use information on the food packaging, how convenient the information provided on packages which contain consumers' desirable product is, and how to determine unit pricing. These skills are broadly based and therefore, they must be subdivided and sequenced. Subsequently, skills appropriate for Muslim consumers can be identified.

Food consumed by Muslims must meet the Islamic dietary code and is called halal. Halal is an Arabic word meaning lawful or permitted. Therefore halal foods are food permissible under Islamic law. The opposite of halal is haram, which means unlawful or prohibited. (Riaz and Chaudry, 2004). Islam is a systematic way of life and as with any religion, Islam comes with comprehensive standards and guidelines to be adhered to by Muslims. One of these standards is the concept of halal. Halal refers to that which is permitted by Shyariah (*Shyariah is the Arabic meaning for the code of life or law which regulates all aspects of a Muslim life*) and halal applies to every activity carried out by man. When used in relation to the economy, it refers to business conducted in a manner deemed

permissible in Islam. When used in relation to food, it refers to food which is in compliance with the laws of Islam. Muslims today lead challenging lives. They do not only face political and economic threats but are also affected by other socio-cultural aspects, including food and products commonly used every day. As a matter of fact this is unknowingly influencing the Islamic lifestyle. The issue of pureness of a product or service is something that is sensitive to Muslims. For a Muslim any issue that concerns the question of halal and haram should be taken seriously. As the beliefs of a Muslim are set by Islam, there is nothing that can be taken lightly. Muslims are always guided by the halal and haram status of the food. They are raised to eat foods that are classified as halal, hygienic and safe. Islamic leaders are increasing Muslims' awareness in regards to their obligation to consume foods based on Islamic dietary requirements worldwide.

In the Quran (*Quran is the holy book of Islam, the exact words of God [revelations]*), *God* commands Muslims to eat all that is *halal*. One of the many verses in the Quran which convey this command is as follows:

"O Mankind Eat of that which is halal (lawful) and tayyib (wholesome and pure) in the earth, and follow not the footsteps of the devil. He is an open enemy for you" (2:168)

Examples of halal food including its products and derivatives are milk (from cows, sheep, camels, and goats), honey, fish, plants which are not intoxicant, fresh or naturally frozen vegetables, fresh or dried fruits, legumes and nuts, and grains such as wheat and rice. Animals such as cows, sheep, goats, deer, moose, chicken, ducks and game birds

are halal. However, such animals need to be slaughtered according to Islamic rites for them to be suitable for consumption by Muslims.

The definition of halal is not complete without haram being mentioned. Haram, the opposite of halal, means unlawful or forbidden. Examples of haram food including its products and derivatives are pigs, boars, dogs, monkeys, blood, carnivorous animals with claws and fangs, almost all reptiles and insects, the bodies of dead animals, birds of prey with claws, pests such as rats, halal animals which are not slaughtered according to the Islamic rites, and wine, ethyl alcohol and spirits. Both concepts of halal and haram form the objectives of Syariah i.e. to preserve religion, life, property and progeny. Halal is not just about the slaughtering of animals, it is about standards and processes. It is about safety, reliability and quality assurance. Halal is about looking at the subject matter from all angles especially in the economic and scientific sense.

The international trade in halal foods is enormous. Global halal foods average about RM 1,856 billion per year in recent years (Abdul Ghani, 2004). As such, there exists a huge market and opportunities in the halal food business. The increasing awareness of Muslims worldwide to uphold the tenets of their religion has opened up the demand for halal foods in compliance with their religious requirements. This trend of increasing demand for halal foods is expected to continue in tandem with the increasing Muslim population. Furthermore, the Islamic awareness of halal food is expanding worldwide especially in the non-Muslim countries. This will create new markets for halal food products from time to time. The market for halal food products are from Muslim and non-Muslim countries. However, absolute demand comes from the almost 1.8 to 2.0

billion Muslims around the world who are consumers of halal foods. This number represents about 25 percent of the total world's population. The birth rate of Muslim population is the highest in the world; the world Muslim population is expected to grow at a rate of 3 percent annually (Che Man, 2004). The high density of Muslim population is located in the Middle East region, Indian subcontinent and ASEAN. There are approximately a total of 250 million Muslims in ASEAN countries alone (Che Man, 2004). ASEAN countries such as Malaysia, Indonesia, Singapore, Thailand and the Philippines which are considered as the developing countries, have the high potentials for the marketing of halal processed food products, not just because of its geographic location, but also due to the growing number of Muslim citizens. As the Muslim population continues to increase, the production of halal foods must be similarly increased to meet the global demand (Abdullah, 2006).

In Malaysia, the demand for halal foods comes from the Muslim population of more than 16 million people in the year 2006. However, the demand must also take into consideration the non-Muslims who have no problem eating halal foods. The growing purchasing power of Muslims, especially those living in developing countries, such as South Africa, China and the well-developed countries, such as the United States and the United Kingdom will surely increase the consumption of halal foods. In the UAE for example, as the population continues to grow, the import of food is expected to increase by 10 to 15 percent annually to meet the growing domestic market (Che Man, 2004). The market potential for halal food is very huge both domestically and internationally. Absolute demand of halal products comes from almost 1.8 to 2 billion Muslims spread over 112 countries around the world, representing about 25 percent of the world

population. The huge global halal food market estimated at USD 580 or RM 2207 billion a year, opens an enormous market opportunities and potentials in the halal food business, and promised a positive input to the national economy (Abdullah, 2006). Lately, the halal market surged with the increasing global awareness of the importance of food safety, after the recent outbreaks of BSE (*Bovine spongiform encephalitis*) food contamination in Europe, *Avian influenza A* (H5N2) or Bird Flu and *Severe Acute Respiratory Syndrome* (SARS) in Southeast Asia. In addition, the opening of the new Commonwealth Independent States (CIS) creates new markets for halal food products. The two strongest markets for halal food are South East Asia and the Middle East, which represent more than 400 million Muslim consumers (Riaz and Chaudry, 2004 and Abdullah, 2006). According to the United Nation statistics, Muslim has the highest birth rate in the world, and it is expected to grow at an average rate of 6.4 percent annually. The projected Muslim population will be 3.2 billion in 2010 and the potential for halal food is enormous (Idris, 2003).

In Asia, the food retail and food service sectors are estimated to be RM 6.4 trillion, accounted at more than 40 percent of the world's food trade (Asbi et al., 2004). Malaysia has a growing and impressive food processing industry which produces for the domestic and export markets. Despite the economic and financial crisis of the region in 1997 and the slow economic recovery in most of the Asian countries, Malaysia jotted the food imports and exports of RM 10.56 billion and RM 6.08 billion respectively in 2002, having an average annual rate of 8.7 percent in the food processing sector. With the strong economic growth and forecast of RM 11.84 billion in the food import bill for the year 2004, Malaysia has become one of the favored havens for food producers and

suppliers worldwide. The vision of the Malaysian Government to position Malaysia as an International halal Food Hub sets the country on a strategic route to be the main halal food supply base and global halal certification centre (Abdullah, 2006).

1.3 Halal Issues in Malaysia

1.3.1 Dilemma of Muslim Consumers in Malaysia

Malaysia is a multiracial country with various ethnic groups and religions. In view of this, the issue of halal/haram is of great importance, as many non-Muslims do not understand the Islamic dietary codes and rules. Determining the halal status of a product goes beyond ensuring that food is pork-free. For example, carnivorous animals, amphibians (frogs and mangrove crabs) and all insects except locusts and grasshoppers are not halal.

Malaysia also imports food and consumer products from non-Muslim countries whose halal status is unknown. Muslims around the world face the similar problem when they consume or import food from non-Muslim countries. These food and consumer products could contain haram substances, as the manufacturers in the foreign countries and importers/exporters may not understand the concept of halal/haram as required in the Muslim countries. Through developments in food technology, food processing has become more complex. Consumers also have a wider variety of processed food to choose from. This situation exposes consumers to various types of food that could contain haram substances. The situation is worsened when these substances cannot be

detected even by using scientific methods. For example, in the case of gelatin in food, even if it could be detected from which animal it is sourced, it is almost impossible to determine if the animal was slaughtered according to Muslim rites. The following are some issues that are of great concern to Muslim consumers in Malaysia.

1.3.2 Doubts and Uncertainties Surrounding the Halal Logo

Lately, Muslim consumers have become more concerned about choosing products that are halal. As such, the word "halal" in whatever form, whether in Arabic or Roman alphabets, displayed on products and premises has a special attraction to Muslim consumers. This preference for the halal sign has, however, been exploited by some retailers who put up the sign at their premises even when the items sold there are not halal. Because of their commercial value, such signs have been proliferating in many business outlets, whether they are exclusive restaurants or street food stalls. Due to the lack of proper legislation on the halal/ haram issue and poor enforcement of the Trade Descriptions Act 1972, unscrupulous businessmen are abusing the halal logo to promote their business.

In May 2004, the local media reported on the widespread use of fake halal logos – halal logos not endorsed by JAKIM. Among the tactics used by the food outlets include obtaining chicken slaughtered by Muslims and displaying certificates showing that some religious authorities have certified the food halal (Berita Harian, 2004). This is despite the lack of guarantee that they used utensils, crockery and kitchens that have not been contaminated with haram products. Therefore the halal status of the food produced by

these outlets remains doubtful. It was revealed that an exclusive restaurant famous for its western cuisine had misled consumers by displaying a fake halal logo supposedly issued by JAKIM. It was also serving liquor, which is prohibited in Islam. There are also food outlets that use words such as “Bismillah” (in the name of God) to indicate that the food is halal (Berita Harian, 2004).

In addition, there are many supermarkets that have halal logos at the section selling chicken and meat. There are no doubts about their logos as the certificates from the issuing authorities are also displayed. However, they may also be selling meat that is not halal and even though the non- halal food is placed in another department, there may be no special trolley used to carry the non halal food. One can imagine a situation where a trolley that has been used previously for non- halal products is later used by a Muslim for halal meat. Then there is also the possibility that there are no separate refrigeration and storage facilities to cater for non- halal products.

In 2003, it was reported that a four-star hotel in Penang was found to be roasting pork even though it had a halal certificate from the State Religious Department. Before this, there were cases of liquor-selling restaurants which displayed the halal logo (Berita Harian, 2003).

1.3.3 Cases of Abuse of Halal Logo

The frequent cases of abuse of halal logos have made consumers more cautious in trusting products and halal logos. This has created a trend in consumers’ behaviors that

are concerned with halal products to read the label of every product. Some of most famous cases could report as follows:

24th December 1997

Officers from the Ministry of Domestic Trade and Consumer Affairs confiscated 24.3 metric tonnes of cooking oil worth RM 45,000 in Batu Berendam, Malacca. The cooking oil was confiscated from a factory, as the owner did not have a valid permit to use the halal sign (Halal Haram Book, 2006).

20th February 2004

Officers from the Ministry of Domestic Trade and Consumer Affairs raided a factory that packed instant noodles in Taman Sri Bahtera, Cheras, and Kuala Lumpur as it did not possess a genuine halal certificate from JAKIM. In the raid more than 1,000 boxes of instant noodles of various brands and flavors worth more than RM 37,000 were confiscated (Halal Haram Book, 2006).

16th May 2004

A famous restaurant at USJ 9, Subang Jaya, Selangor was found to be cheating Muslim consumers by having displayed a fake halal logo that was supposedly issued by JAKIM since it started operation six years ago. This restaurant, which served western food, also sold various types of liquor but was patronized by Muslims as they were misled by the presence of the halal sign (Harian Metro, 2004).

22nd June 2004

The enforcement division of the Ministry of Domestic Trade and Consumer Affairs from the Kajang branch raided the premises of a company importing milk from Australia as it was found to be using a fake halal logo to cheat consumers (Halal Haram Book, 2006).

8th July 2004

JAKIM confiscated, from a warehouse at Hicom Glenmarie in Subang, Selangor, two containers of a famous brand of chewing gum worth RM 2.3 million believed to be using a fake halal logo (Harian Metro, 2004).

12th July 2004

More than 255,000 cans of Tongkat Ali drinks worth about RM 500,000 distributed by a company in Taman Perindustrian Selesa in Serdang, Selangor were confiscated as the company was using a fake halal logo. The company, which was the main distributor of the herbal drink in the country, was found to have printed the fake halal sign on the can (Berita Harin, 2004).

1st October 2004

A company producing moon cakes used a JAKIM halal logo on a moon cake that contained pork floss and lard. This angered Muslim consumers. Following this incident, JAKIM revoked the halal certificate that had been given to Kam Lun Tai Cake House Sdn Bhd operating in Kajang, Selangor (Harian Metro, 2004).

20th December 2004

A factory distributing food products at Taman Pinggiran Putra, Seri Kembangan was found to import drinks that displayed the halal logo from JAKIM. The labels had been printed in China by the factory producing the drinks before they were exported to Malaysia (Harian Metro, 2004).

2nd February 2005

The owner of a wholesale warehouse was found to store food products that had the halal logo alongside hundreds of tins that contained pork and pork products. Among the halal products that were contaminated included bottled sesame seed oil, peas, chilli sauce, biscuits, canned sardines and various other food products that had been previously certified halal by JAKIM (Harian Metro, 2005).

9th February 2005

A food processing company used a halal label on cans containing raw escargot (edible snails), which is Haram for Muslims. The escargot was believed to have been imported by the company from a neighboring country and canned in a factory in Batu Caves industrial estate. The owner of the factory was found to have copied and printed the halal logo of JAKIM on five of its products without the relevant approval (Harian Metro, 2006).

14th February 2005

A Muslim man nearly ate smoked pork that had been packed together with chicken by the producers in a plastic bag that had the halal logo from JAKIM. The company had

roasted the pork and chicken in the same roasting pit (Harian Metro, 2005).

20th January 2006

Dindings poultry also was sued for not ensuring that its products were halal, and this suit was settled for RM100 million (New Straits Times, 2006).

14th September 2006

High 5 stated that the bakery products were cooked in 100 percent halal oil which in fact originated from Israel or Germany, which was in doubt about being halal (Malay Mail, 2006).

20th February 2008

A civil servant filed a RM5 million negligence suit against two companies and a hypermarket after discovering two out of three black chickens he bought were not halal (New Straits Times, 2008).

1.3.4 Action Taken by Government on the Halal Logo Issues

In 1994, a standardized halal logo was introduced by the Islamic Affairs Division in the Prime Minister's Department, now known as JAKIM (Department of Islamic Development Malaysia). The approval of certificate and logo is done under the strict supervision of JAKIM with the cooperation of academicians. This is to ensure that the foods, drinks, pharmaceutical products, cosmetics and other products that use the halal logo meet the requirements of Islamic laws. The procedure involved in obtaining the

certificate and logo from JAKIM is rather difficult and takes a long time, sometimes up to two years. Consequently some people have resorted to using fake halal logos. In May 2004, in view of the rampant usage of fake or uncertified halal logos, JAKIM announced the use of a new logo that was supposed to come into effect soon. It was announced that the whole country would be using the halal with the code of the state similar to the one used by the Registration Department. However, this proposal has not yet been implemented.

The abuse of the halal logo is aggravated by the poor enforcement the existing laws. For example, persons who misuse halal logos can be prosecuted under Section 3 (1) (b) of the Trade Descriptions Act 1972, which carries a fine of not more than RM 250,000 or jail term of 3 years or both. However, enforcement of this law is limited and insufficient to curb the abuses. The issue of halal food has now found a place in our national agenda. The authorities have come under strong criticism for their failure to adequate enforce laws and take action on the misuse of the halal logo when the food and products concerned do not conform to Syariah laws. Following the widespread misuse of halal logo, the Minister of Domestic Trade and Consumers Affairs announced on 16th March 2005 that it is equipped with more stringent safety features that will be introduced to prevent retailers from cheating consumers.

The national standards organization SIRIM has come out with the halal Food Standard: Production, Preparation and Storage General Guidelines (MS 1500:2004). This standard, which governs the production, handling and storage process for halal food, is supposed to be based on the Islamic Syariah. If so, JAKIM and the state religious departments

should adhere to the standard in issuing halal logo. This standard needs to be used with two others standards, MS 1480: Hazards Analysis and Critical Control Point (HACCP) and MS 1514: General Principal of Good Hygiene.

1.4 Problem Statement

Religion is a system of beliefs and practices by which groups of people interpret and responds to what they feel is supernatural and sacred. Most religion prescribes or prohibits certain behavior including consumption of certain food products. Thus, the members of different religious groups are likely to make purchase decisions which are influenced by their religious belief. Such phenomenon is widely acknowledged in international business and marketing strategies. This represents an opportunity for food producers to explore the needs and demand of consumers' niche market.

A majority of Malaysian, where Muslims make up of 60.4 percent of the population, is concerned with the food contents in terms of its halalness. This is indicated by the fact that 424 food producing companies practice halal labeling during the food manufacturing process (MIDA, 2006). Companies can increase public trust and confidence in their brands and heighten consumer loyalty through halal labeling, commonly known as declaration. The health benefits of improved food labels are obvious, but the economic benefits are just as significant. Due to the associated links between dietary choices and halal products, changes resulting in the selection of more

halal food products by consumers potentially have important implications for their food purchasing choice.

One aspect that must be considered is that how halal the deceptively labeled halal foods are. In many cases these products that are advertised as being halal cheat people both financially and nutritionally, and may be suspect to litigation. Convenience, freshness, and sophistication have been identified as the principal trends in consumer food demand shaping new food product development. Muslim consumers in general are found to be very particular about the halalness of the foods they consume. They believe that the halal issue is not just the logo that is being used by the food producers but it is the total quality control measures involved in the monitoring of the slaughtering, handling, and storage processes as well as all the ingredients used in processing the food products. Muslim consumers are therefore more concerned about the halalness of food, more discriminating about food supply, desiring more transparency in the production process and distribution channels and with adverse publicity.

The introduction of halal logo by JAKIM has generated more awareness among the Muslims of the importance of consuming products or engaging in services that follow Islamic guidelines and principles. Halal logo also certifies food outlets which are permissible to be patronized by Muslims. The aim of this endorsement is to indicate to their target consumers that their products meet the Islamic standards. This definitely will create significant advantages to the particular manufacturers versus its competitors that do not have halal certification. However the lack of enforcement and

monitoring in the usage of certified halal logo has caused the public to question the validity of halal logo on some of the products or services. This is true also for the halal labeled food from different countries and origins carrying different halal logos. As consumers are not in a position to accurately assess halal monitoring, they rely on the food manufacturing industry and government to build the confident for them.

In case of non-Muslim consumers, the halal concept is not unfamiliar to them, especially those in Muslim countries including Malaysia. However, the concept has not been a major element in the fabric of life of the predominantly non-Muslim consumers. A lot of them still perceive the halal labeled food products from a religious perspective. They have yet to appreciate the underlying advantages that come with halal food products which include a hygienic process before reaching the market. Thus halal values can be very popular among non-Muslim consumers if the society is made to be more aware of issues concerning health, animal rights and safety, the environment, social justice and welfare.

The halal vision is a reality and needs to be more functionally understood in order to allow marketing strategies to capture the evolving consumer's mental frame. The apparent growth of halal consumerism in Malaysia has made local and international manufacturers and marketers aware of the possible halal advantages they could avail by way of halal processes, halal packaging and halal products. In addition these products would highlight religious benefits and create a niche market. Especially, in the case of the first time buyer, consumers attempt to read the list of ingredients and the country of

origin of the products to make a correct choice; hence identifying these segments appropriately is the starting point in exploring how effectively halal food products can be positioned.

While much of the literature on food consumption has focused on the introduction of nutritional fact panels, the impact of halal labeling on consumers' confidence level is yet to be uncovered. Thus it is hoped that this study will fill the gap of confidence and awareness level on halal labeled food products among Muslim and non-Muslim consumers in the existing literatures. Conducting an empirical research on consumers' confident behavior is necessary to better understand the trustworthiness of halal labeled food that are produced either locally or internationally and also the circumstances under which consumers might change their confident intention on halal processing.

1.5 Research Objectives

The general objective of this study is to assess the Malaysian consumers' confidence on halal labeled food products.

The Specific objectives are:

i. to determine the relationship between socio-economic factors and consumers' confidence level on halal labeled food;

ii. to determine the factors that influence and are associated with food

consumption behavior amongst consumers based on the halal logo on food products;

iii. to examine the extent of Muslim consumers' confidence level and non-Muslim consumers' awareness towards halal manufactured food products; and

iv. to examine consumers' confidence level with halal labeled food, when consumers are exposed to halal information.

1.6 Significance of the Study

The study would be able to demonstrate the effectiveness of halal label on influencing food selections of consumers. The aim of this study is to reveal ways and methods to improve or enhance halal labeling benefits of all consumers. It can contribute knowledge to find out how halal labeling can impact consumers purchasing intentions. This study will be significant to the following groups;

1.6.1 The Consumers

Consumers want to make an informed decision regarding quality and health. Some also want to make choices that support religious lifestyle and philosophy. Consumer appeal is increased when the information extends beyond basic to consumer basic needs and responds to the consumer's religious lifestyle and philosophy. This study will likely aid them in making wiser decision.

1.6.2 The Producers and Marketers

The manufacturers are ultimately responsible for the design and content of a halal logo. This might encouraged them to produce innovative products that are truly halal. Knowing and understanding the need of consumers towards halal food can boost the profit of the producers and marketers. This study will be able to guide them in formulating effective marketing strategies. With this knowledge, they are capable of creating competitive advantage in the market place.

1.6.3 The Academicians and Researchers

This study can be a platform to many other studies in the same area, especially those that are focusing on the nation's interest in learning and understanding halal labeling and production.

1.6.4 The Legislators

The legislator has to provide for the needs of society. Food legislation represents the minimum standard laid down by government to ensure that the needs of the population for halal food, information and protection from unfair trade practices are met. The legislator has to protect consumers from misleading or false claims and make this achievable with out increasing the costs.

1.7 Organization of the Thesis

This section will deal with how the thesis is organized. This study consists of five chapters covering different areas of the study. The introduction in chapter I, gives wider knowledge of the halal food and logos and a clear picture of the issues involved in conducting the study. It contains the introduction, problem statement, objectives and the significant of the study. Chapter II provides a literature review of the most recent and relevant studies in this field. The dimensions involved in the study are also discussed in detail. The methodology adopted in this study and the statistical analysis techniques employed in the analysis of the data is presented in detail in Chapter III. Chapter IV presents a descriptive analysis of the survey data for the level of confidence, awareness and attitude. Chapter V presents and elaborates on the results and the analysis of the study. Chapter VI summarizes major findings, contribution of the thesis and suggestions for the future direction of research in this area.

CHAPTER II

LITERATURE REVIEW

The purpose of this chapter is to review previous studies as well as empirical findings of studies that are relevant to the objectives of this study in order to gain some insight on the model specifications and methodology of halal logos in guiding consumers in making decision for purchasing manufactured food products.

Introduction

During the first half of the 20th century, the focus of food research was on identification, prevention and correction of nutrient-deficient diseases; whereas during the second half of the century, the focus switched to the role of diet in maintaining health. Concerns about dietary inadequacy were largely overshadowed by concerns about excess consumption of fats, cholesterol, and calories. Scientific accounts linking diet and beliefs first appeared in the early 1960s and since then, evidence associating particular foods and dietary components with specific health consequences has expanded rapidly (Variyam and Golan, 2002). As advancements in scientific research increased, the understanding of the link between diet and beliefs have been translated and disseminated to consumers as practical advice regarding food choices and diet. Besides word of mouth and personal physicians, consumer beliefs have very important roles on their daily diet (Dinkins, 2000).

According to Ababou (2005), diet has a strong relationship with food culture and religion. Religion seeks its expression in diet, and for many individuals dietary practices reflect religious persuasion. Most religions have dietary norms or instructions. For some religions these precepts are very specific about what, how and when to eat or avoidance of certain foods. Blix, (2001) has noted; since the dawn of civilization, there has been an inexorable intertwining of food and religion. The plethora of cultures with their divergent practices and behaviors still share this one commonality, for humans seem incapable of separating nourishment of the body from sustenance for the soul. The connection between diet and religion remains present among many large segments of the populations of developed as well as developing countries. Religion is a system of beliefs and practices by which group of people interprets and responds to what they feel is supernatural and sacred (Johnstone, 1975). Most religions prescribe or prohibit certain behaviors including consumption behaviors. Schiffman and Kanuk (1997) assert that members of different religious groups are likely to make purchase decisions influenced by their religious identity. Such a phenomenon is widely acknowledged in international business and marketing textbooks.

2.1 Religion and Diet Practices

Ample evidence has been provided that religion can influence consumer attitudes and behaviors in general (Pettinger *et al.*, 2004), and food purchasing decisions and eating habits in particular (Blackwell *et al.,* 2001). In many societies, religion plays one of the most influential roles in shaping food choice (Dindyal, 2003). Many definitions of

religion exist. In this anthropological view, religion is an institution consisting of culturally patterned interaction with culturally postulated superhuman beings (Spiro, 1973). This viewpoint on religion explains the influences of culture on religious expression. Although religion has been a significant force in the lives of many individuals, its exact role in consumer food choice is rather unclear (Delener, 1994). However, most religious dietary precepts fall into two general categories: (1) a temporal abstinence from all or certain foods (fasting); (2) stable and distinctive dietary habits that differ from the general population. Most, but not all, religious diets proscribe a variety of foods on a temporal or permanent basis, and thus those diets become restrictive in nature. In the context of a specific religious diet, a series of sequential questions need to be addressed. Questions such as; how nutritionally adequate is a religious diet? Is it healthy? also; does following a particular religious dietary pattern lead to better health? In the case of a seemingly affirmative answer, how should the purported health effect of the diet be disentangled from other healthful habits of the religious group? The scientific scrutiny of religious diets is relevant to nutritionists, because it helps optimize nutrition for those who choose to follow such diets and improves overall understanding of diet and health (Akanji *et al.* 2000*)*.

The practice of going without food at certain times is called fasting, from the Anglo-Saxon fasten or to hold oneself from food. Fasting is defined as abstinence from food, partial or total, or from proscribed foods. Ancient Chinese and Hindu writings contemplate this practice; Jews, Christians and Muslims have observed fasting rituals for millennia. However, little is known of their nutritional and health effects. Muslims practice diurnal fasting, refraining from all food and drink in the light hours of the day

during the month of Ramadan. Some Christians practice a modified fast, refraining from a variety of foods, many of animal origin, on certain days of the week or for longer periods. Sarri *et al* (2004) assessed the nutritional characteristics and adequacy of Greek Orthodox Christian diets during the annual fasting seasons. The Orthodox Church specifies avoidance of meats, dairy products and eggs during their three fasting seasons, which total more than 180 days per year. Compared with their regular diet, during the fasting periods, the absence of meats, dairy and eggs in the diet was compensated by a fourfold increase in the intake of legumes and moderate increases of fruits and vegetables, potatoes and cereals. In addition, the intakes of pastries and alcohol decreased. The direction of all these changes in food intake is in accordance with current dietary guidelines for chronic disease prevention (Potter, 1997; Nutrition Committee, 2000).

Within a given society, the contrast of dietary habits between certain religious groups and the general population offers research opportunities. Indeed, some religious groups have been considered ‘a natural experiment,’ a place to test the relationship between particular dietary habits and health–disease outcomes. The Seventh-Day Adventists, a widely studied religious group with distinctive diet and lifestyle, are perhaps the best example. More than 300 reports have been published in the scientific literature describing their diet and health effects (Sabaté, 2004). The Adventist Church proscribes the use of tobacco and alcohol and the consumption of biblically unclean foods, such as pork and shellfish (Mills *et al,* 1989). In addition, the church recommends consumption of fruits, vegetables, wholegrain cereals, legumes and nuts, and avoidance of meats, heavy desserts, condiments and stimulant drinks (White, 1938). In light of these

recommendations, about half of the Adventists in the USA are vegetarian or eat meat less than once per week. However, the proportion of vegetarian Adventists in other countries is less than 50 percent. Adventists follow other food recommendations to varying degrees. Vegetables, nuts, fruits and legumes are, on average, eaten more often than in the general population.

The wide range of dietary habits coupled with no use of tobacco or alcohol make Adventists and Muslims very attractive populations to study (Willett, 2003). Early studies of Adventists in several countries documented the distinct diets of this religious group and the differences in disease rates compared with the general population of the respective countries (Phillips *et al*. 1980; Fraser, 2003). In general, overall mortality, CVD (Cardiovascular disease) and cancer rates were substantially lower among Adventists, which may be because of their diet or other lifestyle factors. Subsequent studies have revealed that vegetarian Adventists have lower rates of hypertension, diabetes, heart diseases and some cancers, and have greater longevity than non-vegetarian Adventists (Sabaté, 2001 and Fraser, 2003). Beyond establishing the adequacy and health benefits of some vegetarian diets, conducting research in this religious group has proven to be a fruitful field of nutritional investigation. A central rationale in the scientific inquiry of religious diets is that the biological and metabolic mechanisms of diet and health–disease associations in religious people are the same as those in non-religious ones; thus, much of what is learned in this area of research should be applicable to the general population. A survey conducted by Bergeaud-Blackler *et., al.* (2005) shows that the halal meet products are chosen by French Muslim not because

of religious obligation only, consumers also believe that halal products are tastier, healthier and the Islamic slaughter method is less painful for the animal.

Religion as a social institution encompasses a multifaceted set of social organizations, norms, values and experiences that defines group members and their relationship to the larger society (Shatenstein, 1998). Religious groups use health behaviors as identifiers to distinguish their community from others. Judaism has kosher food regulations, Islam uses halal food guidelines and Seventh-Day Adventists encourage a lacto-ovo vegetarian diet. A study conducted by Hye -cheon *et al* (2004), shows that there is a relationship between religion and fat intake in women, since for women, religious commitment is associated with greater moderate and vigorous physical activity. Few studies have examined general religiosity's relationship with dietary intake. Among religious samples, religiosity was associated with 'healthful nutrition'. In other samples, religion was related to healthier eating practice, food choice and nutrient intake (Neumark *et al* 1999). The scarce literature suggests a tentative relationship between religion, diet and nutrition. However, the measurements of religion also do not fully conceptualize different aspects of religion that may work concurrently in relationship with diet.

The impact of religion on food consumption depends on the religion itself and on the extent to which individuals interpret and follow the teachings of their religion. Most religions forbid certain foods (for example pork in Judaism and Islam, or pork and beef in Hinduism and Buddhism) except for Christianity that has no food taboos (Sack, 2001). The consumption of animal products, and more specifically meat and meat

products is most strictly regulated in cases where religious considerations prevail (Shatenstein and Ghadirian, 1997). One of those religions with food prohibitions is Islam. It is a religion governed by rules and customs built on five pillars, which every Muslim has to observe: shahadah or witnessing; salat or prayer; zakah or charity; sawm or fasting and hajj or pilgrimage. In addition to these, Muslims have to follow a set of dietary prescriptions intended to advance their well being. The halal dietary laws determine which foods are “lawful” or permitted and which foods are “unlawful” or not permitted. These laws are found in the Quran and in the Sunna, the practice of the Prophet Muhammad (Peace be upon him), as recorded in the books of hadith. Islam prohibits the consumption of alcohol, pork, blood, dead meat and meat that has not been slaughtered according to Islamic rulings. In reference to Islam, halal is an Arabic word meaning lawful or that what is permitted and allowed by the lawgiver (Allah), whereas Haram means unlawful or prohibited (Regenstein *et al*., 2003).

Although religions may impose strict dietary laws, the amount of people following them may vary considerably. Hussaini (1993) states that 75 percent of Muslims in the US follow these above-mentioned dietary rules in contrast with only 16 percent of Jews. Factors explaining differences in adherence to religious dietary prescriptions pertain among others to social structures, e.g. origin, immigration, and generation differences (Bergeaud-Blackler and Bonne, 2006).

2.2 Muslim and Halal Principles

2.2.1 Why Halal Food?

Broadly speaking, religious food practices vary widely, even within a particular faith or in a specific community of a nation where the population is multiracial and multicultural. At a closer look, eating in Islam is a matter of faith where Muslims eat only halal food for good health and overindulgence is discouraged. Fasting is required during the month of *Ramadhan* and feast days include *Eid-il-Fitr, Eid-il-Adha* and *Maulud Nabi* (Hussaini and Sakr, 1984). Similarly, Jews follow a dietary code specified under the Torah. The food described by the Torah must be kosher foods, which are clean and fit to be eaten. Some individuals assume kosher is similar to halal. Most consumers believe that kosher and halal food products follow stricter quality standards than non- halal and non-kosher products in the same category. Since safety is a real priority for consumers, regulator practices from HACCP (Hazard Analysis Critical Control Points) to the Bioterrorism Act to lot traceability, food manufacturers are responding (Cutler,2007).

Evan Garber, President of Escape Velocity Systems [1]suggested, "Any technology solution must indicate whether a formula is Kosher or halal. Oxigen is one of the few batch or recipe process manufacturing enterprise resource planning systems which

[1] Escape Velocity was formed in 2002 to combine specific industry knowledge related to process manufacturing, distribution and Enterprise Resource Planning implementations with cutting edge software development.

allow a user to indicate formulas that are kosher or halal. Whether Muslim in the case of halal certification or a Rabbi in the case of kosher certification, both will typically review formulations as well as historical production to verify that kosher products have been used. The ability to print and view all formulas and ingredients that have a designation (kosher or halal) is vital and must be true of historical production batches." The requirement of "status of production equipment" which is part of Enterprise Resource Planning relates to machines that only run kosher or halal items (given the cleaning specification of both food designations).

Although the rituals of Jewish people resemble those of Muslims, kosher and halal are two different entities carrying separate meanings. According to Islamic jurisprudence, no one except God can change forbidden foods (haram) into lawful foods (halal). Halal is a unique Islamic concept and is a distinguishing part of a Muslim's identity. Table 2.1 shows some salient differences between kosher and halal. Christians also follow dietary codes. Devout Catholics observe several feasts such as Christmas and Easter and fasting during Lent and on Good Friday. In addition, Hindus avoid all foods that are thought to inhibit physical and spiritual development. Although eating meat is not explicitly prohibited, many Hindus are vegetarian because they adhere to the concept of ahimsa (non-violence as applied to foods). If meat is eaten, beef is never in the menu because the cow is considered sacred, and pork is often avoided. They celebrate Divali, Holi and Pongal and fasting is common. As for Buddhists, their dietary customs vary with religious sects (Theravada, Mahayana, Zen) and on country base. Many Buddhists subscribe to ahimsa and they are lacto-ovo-vegetarian. Devout Jains (a group of strict

Hindus) in India are complete vegetarian who may avoid blood-colored foods such as tomatoes.

Table2.1. Salient Differences between Kosher and Halal Foods

Islamic Regulations	Jewish Regulations	Explanation
All intoxicating alcohol, liquors, wines and drugs are prohibited.	All wines are permitted.	Hence, food items and drinks showing the kosher symbol containing alcohol are not halal.
If gelatin is prepared from swine, it is prohibited.	Gelatin is permitted.	Hence, food items such as marshmallows and yoghurt showing kosher symbols are not halal.
Muslim must look for the source of enzyme in cheese making. If it is coming from swine, it is prohibited.	All cheeses are permitted.	Hence, cheeses showing kosher symbols may not be halal.
Must pronounce the name of God repetitively during the slaughter.	Do not pronounce the name of God on each animal while slaughtering.	Hence, the slaughtering process is slightly different. Kosher is therefore not similar to halal.

Source: Eliasi *et al* 2002

The lives of Muslims are guided by the Islamic or Shariah Law. The Shariah Law is based on the Quran (the Holy Book of Islam), AI-Hadith and AI-Sunnah actions, habits and approval of Prophet Muhammad, Ijma' (consensus Ulama) and Qiyas (deduction or analogy) according to various Islamic Schools of Thought (Mazhab) or fatwa approved by the relevant Islamic Authority (Che Man and Abdul Latif, 2002). A particular food becomes halal or haram if it is considered so, through anyone of these sources. Halal is a Qur'anic term meaning lawful or permitted while haram has the opposite meaning. Other related terms are mashbooh or syubhah, which means suspected, doubtful or questionable. If one does not know the halal or haram status of a particular food or

drink, such a food or drink is doubtful or mashbooh and should be avoided. Najs is another term, which refers to things that are themselves not permissible, such pork and all its derivatives, alcoholic drinks, and halal foods that are contaminated or come into direct contact with things that are not permissible. Najs is also meant religiously as unclean (dirty). It is obligatory for every Muslim to consume only halal food and avoid foods that haram or foods that fit under the category of najs.

In modern times, with the advent of science and technology, food has undergone many processes and has been transported to different parts of the world. This trend has raised concerns among Muslim consumers because there is a possibility that the processed foods contain haram substances. In the past, many Muslims have consumed food claimed to be halal, however, some of these foods were adulterated with pork, alcohol and non- halal ingredients and additives. With the increasing awareness of their Islamic dietary requirements, Muslim consumers now demand more information on food sources and its processing. Consequently this obliged food industries to label food properly and the regulatory bodies to continue to monitor the authenticity of halal.

2.2.2 Why Muslims Should Avoid Harmful and Doubtful Things

Today's marketplace is flooded with a wide range of food and other consumer products. Some of these are harmful to health and some are prohibited under Islamic law. For example, many processed foods, besides containing high levels of sugar and salt, also contain various types of food additives whose halal (lawful or permitted in Islam) or

haram (unlawful or prohibited in Islam) status is unknown. Apart from this, such additives could also contain chemicals that are harmful to health.

2.2.2.1 Rule of the Shyariah

The issue of consuming food and drinks that can endanger health should be of concern to Muslims. This is because Islam expects its followers to be vigilant about the food that enters the stomach. This has been clearly expressed by a famous Islamic scholar that the consumption of harmful things is haram.

“A general rule of the Islamic Shari' ah [the code of law derived from the Quran and the teachings and examples set by Prophet Muhammad (peace be upon him)] is that it is haram for the Muslim to eat or drink anything which may cause his death, either quickly or gradually, such as poisons, or substances which are injurious to health or harmful to his body. It is haram to eat or drink large quantities of a substance if large quantities of it cause illness”. Based on the above, many of the modern processed foods which are harmful to health would be haram. It is compulsory for every Muslim individual to examine and be concerned about the harmful effects of any food that is to be eaten. It must also be remembered that various types of food in the marketplace could influence our akidah (faith) as they may contain harmful elements.

2.2.2.2 Use Clean and Wholesome Products

Islam is a religion concerned with cleanliness, in both the physical and spiritual aspects. What is haram is unclean. In the Quran, Allah almighty commends those who are accustomed to cleanliness: “Allah loves those who turn to Him constantly and He loves those who keep themselves pure and clean”. (AI Baqarah: 22) The Prophet Muhammad (peace be upon him) also stressed the importance of cleanliness. This can be seen in some of his sayings: “Cleanse yourself, for Islam is cleanliness” and “Cleanliness invites towards faith and faith leads its possessor to the Gardens (Heaven)”. From the hadiths [sayings and deeds of Prophet Muhammad (peace be upon him)] narrated by Muslim and At Tirmidzi, “The Holy Prophet once related a story of a man, who having journeyed far, is disheveled and dusty and who spreads out his hands to the sky (saying) a Lord - while his food is unlawful, his drink is unlawful, his clothing unlawful and he is nourished unlawfully, so how can he be answered.”

Based on the above hadith, we can conclude that Allah almighty answers our prayers if what we consume or do is lawful. In Islam, *doa* is the essence of man’s worship to Allah almighty. His fate in this world and in the afterworld depends on the blessings from Allah almighty. Therefore we need His guidance and protection. If the food that we eat is obtained from haram sources, then our relationship with Allah almighty will be severed. In this situation it is impossible for us to get any blessings from Allah. Once, a follower of Prophet Muhammad (peace be upon him), Saad bin Waqas, asked the Prophet (peace be upon him) how it is possible for our *doa* to be answered by Allah almighty. The Prophet then narrated: “Eat what is wholesome (halal), your *doa* will be

answered". Thus, it is clear that if our body is fed with food that is halal, Allah will answer our prayers, no matter what difficulties we are in. On the other hand, our *doa* would be useless even if we pray, fast and practice other obligations but our stomach is fed with haram food. Imam AI Ghazali once said this about the effect of haram food on our offspring: "If we want our children to be pious, intelligent and useful, give them food from halal provisions from birth. halal food, besides making our children useful, would make their mind alert and active. On the other hand, our children will betray us if we had given them food that is haram and dirty". Human flesh and blood is formed from the food and the drinks that we consume. If one ingests food and drinks that are haram, this means that flesh and blood will be formed from haram substances, which are then interrelated with our roh (spirit).

2.2.2.3 The Spiritual Aspect of Food

Islam is a practical religion with rules and principles governing every aspect of the life of an individual Muslim. This code of conduct, however, is not to be viewed as restrictions per se nor a matter of mere social courtesy. Rather, it is derived from the broad objectives of the religion and hence is a reflection of its ideas and values. Here, we examine the relationship between the food that we consume and our physical as well as spiritual health. A Muslim eats to maintain a strong and healthy body and mind in order to be able to perform acts of worship (ibadah), but also to contribute his knowledge and efforts for the welfare of society. In the Islamic context therefore, it is important to understand and appreciate the concepts of halal and haram. Halal food and drink is that which is permitted for Muslims.

An item of food is halal if:

It does not harm or interfere with the normal functioning of the body and mind

It is free of najis (filth) and of products derived from carrion or from dead animals that have not been properly slaughtered or hunted

It is free of products derived from pigs or dogs or other haram animals.

Conversely, a food item is haram if:

It harms or negatively interferes with physical or mental functions

It contains najis or products derived from carrion, animals that have died of natural causes, from pigs or other haram animals

It is derived from a permitted animal that was nevertheless not slaughtered in an acceptable way or if it was not prepared properly.

The saying “You are what you eat” is well-recognized in Islam. Food that is eaten does not merely become excreta, but it is also absorbed and metabolized into the system and circulated to all parts of the body, including the brain and the heart. Hence the cleanliness of the body, mind and soul literally depends on the cleanliness of the food we consume.

For instance, in the Quran, on each occasion when the word halal is mentioned with food, the word Thoyyiban is also mentioned:

"*O ye people halal Eat of what is on earth, lawful and good" (AI Baqarah:* 168)

"So eat of the sustenance which God has provided for you, lawful and good" (An Nahl: 114)

Therefore, before deciding which food is fit for consumption, there is more to consider than just whether it is halal or haram. The word Thoyyiban means good, which includes

the meaning that the food must be wholesome and pure from its source. From the physical aspect, dietary restrictions are necessary to ensure that a Muslim takes care to eat only that which is pure so as to avoid diseases which result from the consumption of filthy food. Clean food leads to a healthy body and this will enable a Muslim to increase his Ibadah and perform them more properly. The relationship between food and health can be extended even further in that a clean body creates healthy progeny. Indeed, outward cleanliness is the first step to purity of the soul often both go together. So in Islam cleanliness is part of faith. From the spiritual aspect then, a Muslim has to keep himself pure by consuming only clean food because Allah is pure and loves purity of men. It was narrated on the authority of Abu Hurayrah that the Prophet (peace be upon him) said, “Truly Allah almighty is pure. He does not accept but what is pure”. Allah commands the believers with what he has commanded the Messengers. He has said:

" *O you Messengers, eat of the good things and act righteously" (AIMu'minun:* 51);

and He has also said:

" *O you who believe, eat of the good things which We have provided for you" (AI Baqarah:* 168).

2.2.2.4 Present Dietary Culture

From the above verses in the Quran we can see clearly that Muslims should give due regard to the food that they consume which would later be part of the body and soul. In this context Muslims should also pay attention to the pureness (Thoyyiban) of the food. For example, in the case of meat we should not just take for granted that if the animal is slaughtered according to Islamic rites it is halal. It is also important that Muslims consider how the animals were reared and transported to the abattoirs. If the animals

were reared in cruel conditions then the food derived from such animals is haram. Furthermore one should consider the possibility that products such as eggs and milk could also be Haram if the animals that produced them were kept in unhealthy and unhygienic conditions. Sad to say, however, this is precisely the reality of modern farming. Many chickens are kept in cages and their sole purpose of living is just to lay eggs. These animals are not allowed to roam freely, which goes against their very nature. Dairy cattle are fed with hormones, antibiotics and other chemicals in order to increase milk production, resulting in the animals becoming overweight. As such, they are too heavy to move about and spend their lives in milking sheds. The sad and grim conditions in which these farm animals are raised are against the teaching of Islam. For example in the Quran, Allah said:

"There is not an animal on earth, nor bird that flies on its wings, but they are communities like you ..."(AiAn'aam: 38)

Another important issue in our dietary practices is eating in stalls and restaurants. Although the food served at these places may itself come from halal sources, it could have been prepared in unhygienic conditions. Time and again we hear of people suffering from food poisoning after consuming food from such places. Furthermore the media too has published news of food stalls and restaurants being ordered to close down by the authorities as they were operating in filthy conditions. Tests conducted on ready to eat food from these places found the food to contain high levels of *E.coli and staphylococcus* bacteria, indicating that the food was prepared in unsanitary conditions. The present trend of eating at fast food restaurants and buffets is also popular in our modem society. The food served at these places is unhealthy as it contains high levels of fat, sugar, salt and food additives, substances which can cause obesity and diseases such

as high blood pressure, diabetes and cancer. Besides, eating at buffets also encourages gluttony, which is frowned upon in Islam. Healthy nutrition means having a balanced diet, in order to maintain the balance that Allah has established in all matters, and to which reference is made in the Quran:

"And He enforced the balance. That you exceed not the bounds; but observe the balance strictly, and fall not short thereof"(Ar Rahman: 7-9)

A balanced diet should be balanced in terms of quantity. Eating too much is contrary to Islamic teachings. In the Quran we read:

"Eat and drink, but avoid excess. . . "(Taha: 81)

The Prophet (peace be upon him) is reported to have said: "When filled with food, the belly becomes the worst container for the son of Adam. It is sufficient for a human being to have a few bites to keep himself fit (which means that it is sufficient to have only what one needs to maintain strength and well-being). If one must eat, then let him use one-third for food, one-third for drink and one third for breathing" (Reported by At Tirmidzi). In another authentic hadith, the Prophet (peace be upon him), is also quoted as saying: “The food of one person will be sufficient for two, and the food of two people will be sufficient for four, and the food of four will be sufficient for eight” (Reported by Muslim). Healthy nutrition also means a diet that is balanced in its contents. This means that it must have a mixture of the different types of food which Allah has graciously provided for His Creation, in the sense that it satisfies all the bodily needs in terms of proteins, fat, carbohydrates, salts and vitamins. Most of these are mentioned in the Quran. For example, Allah says:

"He created cattle which give you warmth, benefits and food to eat..." (An Nahl: 5)

He also says:

"It is He who subdued the seas, from which you eat fresh fish..." (An Nahk 14)

Referring to vegetarian food, Allah says:

"It is He who sends down water from the sky with which He brings up corn, olives, dates and grapes and other fruit." (An Nahl: 116)

Milk and honey are also mentioned:

"In cattle too you have a worthy lesson. We give you to drink of that which is in their bellies, between the chyle and the blood: pure milk, a pleasant beverage for those who drink it." (An Nahl: 66)

Allah also says:

"From within their (i.e. the bees) bellies come forth a fluid of many hues, that provides people with a cure (of illnesses)." (An Nahl: 69)

Islam prefers wholesome food. An example is the Prophet's preference for whole meal bread, dates, honey and milk. He, peace and blessings be upon him, used to drink milk and eat dates. Given the above situation, Muslims should follow the commands of Allah and the advice and Hadith of the Prophet (peace be upon him) in our dietary habits with sincerity so that we will find our actions to be in accord with human nature. It is then that we will reap great health benefits for ourselves, both physically and spiritually.

2.2.3 Definitions of Halal and Haram

"And eat of the things which Allah has provided for you, lawful and good, but fear Allah in whom alone you believe." (AI Maaidah: 88)

From the above Quranic verse, we can see that Allah emphasizes the intake by Muslims of foods that are wholesome and halal. In addition to the basic duties required of Muslims, there is a set of guidelines that direct the daily life of a Muslim. These

guidelines include dietary laws based on the concepts of halal, haram, mashbooh (questionable), makrooh (detested or discouraged) and mubah (neutral).

2.2.3.1 Halal

Halal means lawful or permitted for Muslims. According to the Quran, all good and clean foods are halal consequently almost all foods from the sea, plants and animals are considered halal except those that have been specifically prohibited. Nowadays, halal, in its fullest definition, is “Religious, healthy, organic, environmentally friendly, animal welfare, ethnic and fair trade”, When used in relation to the economy, it refers to business conducted in a manner deemed permissible in Islam. When used in relation to food, it refers to food which is in compliance with the laws of Islam (Prime minster speech, May 2005).

2.2.3.2 Haram

Haram means unlawful or prohibited for consumption. The prohibited categories mentioned in the Quran include the following:

Carrion or the meat of dead (un-slaughtered) animals, Blood, Swine

Animals dedicated to anything other than Allah (e.g., to idols)

Intoxicants, including alcoholic drinks

In addition, carnivorous animals, birds of prey and land animals without external ears are prohibited to Muslims. Any product contaminated with haram items also becomes

haram.

2.2.3.3 Mashbooh

Mashbooh means suspect, in doubt or questionable. If the origin of a certain food item is in doubt, or there is uncertainty about whether it is prohibited under Islamic laws, then the product is considered mashbooh. A wide range of products in today's marketplace falls under this category, which forms the grey area between what is permitted and what is prohibited.

2.2.3.4 Makrooh

Makrooh means detested or discouraged. Products that are discouraged by Allah or His messenger, that are offensive to one's psycho, or that may otherwise be harmful, fall under this category.

2.2.3.5 Mubah

Mubah (Harus) means neither forbidden nor commended. However, certain conditions could change that status of mubah; for example, any mubah food product becomes Haram if it is proven harmful.

2.2.4 Guidelines for Consuming Halal labeled Food

The Quran has numerous injunctions that instruct Muslims to choose and consume good and wholesome foodstuffs. In choosing food and drinks, Muslims must consider some very important guidelines, namely:

Whether Allah has prohibited the consumption of the food/drink concerned;

Whether it is obtained through halal or haram means; and

Whether it is harmful to health

Consumption of haram food and drinks would have undesirable effects on the health, spiritual and physical development of the individual. There are several factors that determine the halal and haram status of a particular foodstuff. These include the nature of the foodstuff itself, how it is produced, processed, distributed and how it is acquired. For example, any product from pigs would be considered haram because the material itself is Haram. Similarly, meat from animals which are not slaughtered according to Islamic rites would be haram. Stolen foodstuff or foodstuff that is acquired through means that are incompatible with Islamic teaching would also be haram. Food and drinks that are poisonous or intoxicating are obviously haram because they are harmful to health.

Islam has laid down general guidelines to determine the halal and haram status of foodstuffs and other materials. They are:

All raw materials and ingredients must be halal

halal animals such as chickens, cattle, goats, etc must be slaughtered according to

Islamic rites. The ritual specifies that the act be performed by a mentally sound Muslim to sever the blood and respiratory channel of the animal using a sharp cutting tool, such as a knife. The name of Allah must be mentioned at the time of slaughtering by saying: "*Bismillah; wa Allahu akbar.* (In the name of Allah; Allah is the Greatest.)"

The halal ingredients must not be mixed or even come into contact with haram materials, such as products from pigs or dogs, during storage, transportation, cooking and serving. Meanwhile consumers will be able to make confident and informed selections among alternative halal labeled food products if they guide in an appropriate way. A special panel is set up for the consumers to select halal food products during food purchasing (The Islamic Food and Nutritional Council of America, 2003). There are a few steps to estimate the halalness of food products:

1) Check for a halal logo on the food package.
   - If a halal logo issued by an established Islamic council is present, then the food can be consumed.
   - If a halal logo is unknown or absent, then proceed to Step 2.
2) Read the ingredient listing on the label. Identify the halal/haram/mashbuh status of each ingredient.
3) If all ingredients of the product are halal, the product is fit for Muslim consumption.
4) If any of the ingredients is haram, the product should not be consumed.
5) If any ingredient falls under the mashbuh category, avoid this product. To find out the status of ingredients, write in or call up the manufacturer. The product can be consumed only if the manufacturer claims that the ingredient is of halal source. Figure 2.1 shows these steps briefly.

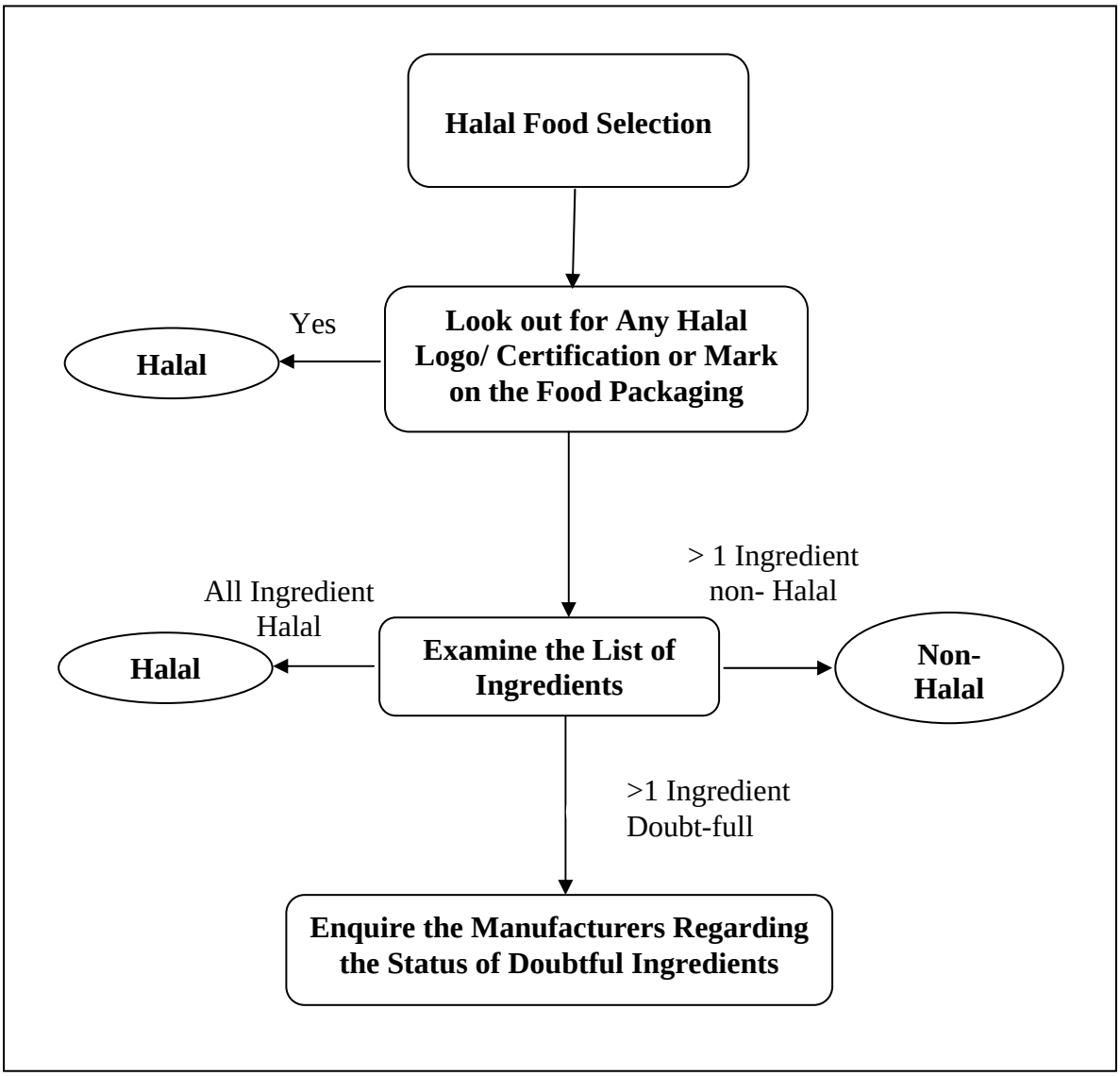

Figure 2.1: A Guide to Halal Food Selection

(Source: IFANCA 2003)

2.3 World Perspective and Halal Food

The claim that Islam is the fastest growing religion and second largest religion in the world is based on the increase of Muslim population by over 23.5 percent in the last fifty years (Abdul Latif, 2003). The comparison of total Muslim population with the world

population indicated that among every four humans in the world, one of them is a Muslim. To the Muslims, food must not only be of good quality, safety and hygienic but must also be halal (Saleh, 1998). All foods are halal except those that are specifically mentioned in the Quran as haram. Islam only permits its followers the lawful, hygiene, safe and good food as stated in the Holy Quran and Shariah. Thus halal food industry must in full commitment to produce and serve clean, safe and wholesome food to consumers. In other words, the halal product should be recognized as a symbol of cleanliness, safety and high quality (Merican, 1995). As a highly reputed and recognized Islamic country, Malaysia is one of the pioneers in promoting halal food throughout the world and is well poised to play a leading role in boosting the halal food market. The vision of the Malaysian Government to position Malaysia as an International halal food centre sets the country on a strategic route to be the main halal food supply base and global halal certification center.

Malaysia's expertise gained worldwide recognition and was cited by the United Nation' Codex Alimentarius Commission as the best global example where halal food is concerned. The Codex General Guidelines for the Use of the Term "halal" were adopted by the Codex Alimentarius Commission at its 22nd Session, 1997. The halal food should be continuously monitored and certified in order to protect Muslim consumers, to facilitate trade demand and increase non- Muslim recognition on halal food as a high quality food as well. To capitalize on this lucrative market, both domestically and internationally, Malaysia should strengthen the halal food industry trend, awareness, perception and its grant/ incentives scheme in a positive way. This is a factor that should be considered by Malaysian food manufacturers in order to put the halal food industry in

a position to meet the requirements of Muslim communities and become one of the leading suppliers of halal food products throughout the world. Plenty of tourist attractions scattered throughout the world have boosted global tourism activities and hotel trade. In 2003, the total number of tourists in the world was 703 million people, which generated revenue of RM 1517 billion (World Tourism Organization Website, 2003). The total number of tourists that arrived in Malaysia in 2003 was 10.6 million, which generated revenue of RM 21,291.1 million (Ministry of Culture, Arts and Tourism of Malaysia, 2004).

Malaysia's vision to become a developed and industrialized nation in 2020 and robust progress of current economic development are leading Malaysians to have busier schedule. Hence, fast food and quick meals are becoming a solution and trend of Malaysian populace due to hectic working environment. According to Asia Inc. Magazine (2005), Malaysia is the second ranking in top 10 markets for weekly fast-food consumption after Hong Kong with 59 percent of adults who eat at fast-food outlets at least once a week. Hence, all fast food outlets in Malaysia are obtaining halal certification from JAKIM in order to fulfill Malaysian Muslim consumers' requirement.

Realizing the huge and lucrative trade of halal food, many food companies are interested in gaining a market share in this business. According to Yip, (1999), the number of companies applying for halal certification in Malaysia increased from 280 companies in 1998 to 562 companies in 2001, which was a 90 percent increase (Mohd Salleh, 2003). In 2003, the number of products with halal labeling was 628, which rose to 930 companies in 2004 (Abdul Latif, 2005).

The active shifting demographic activities and Muslims high growth rate have contributed to higher demands and positive trends on halal food in non-Muslim countries. Countries such as United Kingdom and United States of America have large distributions of Muslim communities consisting mainly of people of Pakistani and Indian origin. In addition, the growing purchasing power of Muslims, especially those living in developing and well-developed countries, is another potential factor that will surely increase the consumption trend of halal food.

In 2002, Australian food exports to Muslim countries were valued at RM10.24 billion. Each year, Australia exports a variety of halal food types to more than 70 countries throughout the world. The Canadian domestic halal meat market value is estimated to be RM 684.8 million with an average annual household expenditure of RM 5193.6. Muslims are ardent consumers of meat and meat products, with feast days and celebrations that often include several different meat dishes. On average, Muslim households spend RM 99.5 per week on halal meat products. This is almost double the Canadian household meat expenditure of RM 54.4 per week. (Statistics Canada, 2003). This difference in weekly household expenditures may partially be explained by the difference in average household size. The survey respondents' average household size was 4.4 people per household where as the Canadian Food Expenditure study's average household size is 2.6 people per household (CMHC, 2004 Canadian Housing Observer).

2.4 Consumers and Reading Food Labels

According to Liebman (2001), the labeling strategies used by food manufacturing companies made information on products difficult to assess. The Food Marketing Institute's (FMI) 1990 Trends survey revealed that 72 percent of consumers read labels for expiration dates, while 36percent always read labels for information about product ingredients or nutrition. Women were found to read labels for nutritional information more often than men (38 percent and 29 percent, respectively). Consumers aged 50 years or above read ingredients more often than 18-to-24 year olds (48 percent and 31percent, respectively) (Mueller, 1991). From their 1996 Trends survey, the FMI found that consumers relied on nutrition claims when making purchasing decisions. Consumers specifically looked for and purchased products labeled as low fat and low cholesterol (81percent and 68percent, respectively). The United Soybean Board's (USB) eighth annual nationwide survey conducted in 2001 examined consumer attitudes and perceptions on health and nutrition issues impacting the food and healthcare industries. Consumers were found to be very concerned about the foods they consumed. Since 1997, the percentage of consumers concerned with the content of food has remained relatively constant, ranging from 86 to 89 percent. Further USB findings suggested that 88percent of consumers were concerned about their foods' nutritional content. When selecting groceries, 9 out of 10 consumers considered nutrition to be an important factor, and 7 out of 10 were willing to pay more for a healthier version of a food item. Nine out of 10 consumers found health and nutrition information helpful when trying to find healthy foods and agreed that the nutrition facts label was an important factor in

their decision to buy food products. Currently, ingredients on labels must be listed in descending order of their proportion by weight in the food item.

However, this requirement does not provide consumers with complete information about the composition of the food, nor does it enable consumers to compare directly the quality of different food products (FAO, 2007). Improved labeling is necessary for increasing the accuracy and completeness of label information describing the composition of food products thereby allowing consumers to assess the quality, and in some cases, the healthfulness of foods and prevent consumer deception regarding the composition of processed food products. halal certification, also referred to as food labeling, requires the religious obligation of each major ingredient to be disclosed on a food product's list. The Islamic Food and Nutrition Council of America (IFANCA) 2003 report stated that in order to qualify for halal certification: the production facilities must be approved, procedures must be put in place to ensure that halal production process is followed, all components of the manufacturing must be certified halal, halal certification listing the certified products and maintain proper records and inventory of halal products. Without a halal label, it is often difficult, if not impossible, for consumers to determine whether the food product is processed based on religious and Islamic obligation.

Food-related choice is commonly regarded as being affected by factors relating to the product and the socio-economic and the demographic profile of consumers. According to Choo *et al* (2004) residential areas have a positive effect on consumers' food purchasing behavior. Consumers from urban area seem to be more careful and

conscious about what they purchase and consume. Moreover Race has a major influence on eating and dietary behavior (Singleton, 2006). According to Dimara and Skuras, 2003, marital status influence consumers' evaluations towards food quality control and products' certification traceability. Furthermore there is no doubt that religion is significantly related to dietary and food choice behavior (Kim, 2007). It is well known that how level of religiosity (self- identity) directly impacts dietary and eating behaviors for all religion groups (Heiman *et. al.*, 2005) yet the observance of religious more varies among groups. Understanding food labels is vital to all consumers. However, many consumers found that food product labels are confusing and often difficult to read (Foxman, 1990 and Bhaskaran 2006). Halal certification would allow consumers to determine the amount of religious or non-religious ingredients in food products and to compare the quality of competing brands to achieve greater value.

2.5 Consumers and Perception of Food Labels

Consumer beliefs and attitudes were found to be highly subjective notions (Fishbein and Ajzen, 1975) especially when judging food quality or value. Beliefs were defined as consumer perception of present reality and founded upon consumers' information or knowledge. Food quality is a complex concept that is quantifiable in terms of objective indices. However, Cardello (1995) contended that food quality was a consumer-based perceptual/evaluative construct in which measurements moved from the physical to the psychological realm. His argument followed a definition of sensory quality proposed by

Galvez and Resurreccion (1992) that used the consumer as the referent and shifted the focus from the inherent characteristics of the food. According to Cardello (1995) food quality was therefore intrinsically entwined in the psychological processes of consumer perception. Past studies on diet-health relationships indicated difficulties in developing reliable and valid measurements for these constructs (Bhaskaran and Hardely, 2002). Researchers have found that consumer perceptions of price, quality, and value have strongly influenced purchasing behavior and product choice. However, the concepts quality and value were not easily differentiated from each other nor were they easily differentiated from similar constructs such as perceived worth or utility (Zeithaml, 1988). It has been pointed out that although consumer perception of price, quality and value were considered vital determinates of shopping behavior (Lee and Lou, 1995) and product choice (Jacoby and Olson, 1985), research into these concepts and their connections has furnished few conclusive findings (Busier, 2002).

Quality, according to Wadman (2000), was defined as the characteristics, properties, and attributes of a product that influenced consumer perception to a degree or grade of excellence. He concluded that consumer perception of quality reflected consumer expectation and consumption experience. Being individually experienced, learned, and derived from the consumption of a product (or service); consumption experience would be uniquely interpreted by each consumer within the framework of that person's self-image and expectation of quality. In general, it was found that consumer expectations of quality were based on reactions to stimuli which were received by consumers via various methods, most notably through information supplied by advertising (Busier, 2002).

According to Nelson (1974), goods were classified into two categories: search and experience goods. Search goods were those in which product quality could be assessed before purchase; such examples included jewelry, furniture, clothing, footwear, and bicycles. Experience goods were those goods for which the quality could not be determined until the product was consumed; such examples included food products and many services like plumbing or electrical contractors, travel services and cleaners. A third class of goods called credence goods were those goods for which the quality may never be fully determined (Darby and Karni, 1973). Examples included many services like marriage counseling, surgery, optometrists, and other medical services. Consumers purchased products that satisfied their needs. It was assumed that a rational consumer would purchase foods that maximized satisfaction, and the goods that maximize satisfaction are those that perform optimally and are perceived to be of the highest quality. For experience goods, where consumers were unable to determine quality prior to purchase, information must be obtained (in this case, from the food label) to enable them to form a perception of the product's quality. Leszinski and Marn (1997) concluded that the real essence of value revolved around the tradeoff between the benefits a customer received from a product and the price paid for it. Consumers did not buy products solely based on low price. They bought according to customer value, defined as the difference between the benefits that a product provides and the price that is charged for the product.

Another way to view customer value is that it equals customer-perceived benefits minus customer-perceived price. In other words, the higher the perceived benefit and/or the

lower the price of a product, the higher the customer value and the greater the likelihood that customers will choose that product (Leszinski and Mara, 1997). Often, remarkably similar products sold for different prices reflecting that the utility maximizing consumer has differentiated the products and would pay different prices based on the perception of how well that person's needs would be satisfied by the product (Busier, 2002). However, consumers often used price to infer product quality when they had inadequate information about its intrinsic attributes. Brand name also served as an indicator of quality (Jacoby *et.al.*, 1977). Skifflet and Bhaita (1997) noted that the perception of value often had a great impact on brand loyalty and followed the assumption that strong value would lead to high consumer loyalty and more purchases. Special deals have been viewed as an effective alternative to increasing consumer perception of value.

Unfortunately, much of the labeling information is inconsistent and misleading for many consumers. Food labeling surveys conducted in 1978 and 1982 revealed that consumers believed that the current labeling system was too complex and difficult for the average shopper to understand (FDA, 1990). A recent survey questioned consumers on their awareness and understanding of food label information (Just *et al*, 2006). Although the attitudes of the consumers towards messages on food labels was positive, results of the study indicated that only 45 percent of the consumers actually understood the messages that food manufacturers were conveying.

Several food-related lawsuits have made media headlines recently. McDonald's stated that fries were cooked in 100 percent vegetable oil that in fact contained beef flavoring;

this suit was settled for $32 million with another $ 8 million paid in lawyer fees. McDonald's also was sued for contributing to consumer obesity, and although this suit was dismissed, the judge provided suggestions for strengthening the claim (Jacobson, 2003a). Jacobson (2003a) has further contended that litigation is not the only means for solving food deception problems, but if other means fail, there is good reason for it. Because conscious consumers are seeking more nutritious meals and the increase of the threat of obesity lawsuits, fast-food industries are beginning to offer healthy menu options. Moreover, consumer loyalty or satisfaction is worth pursuing because of: (a) the cost-effectiveness of keeping existing customers rather than trying to get new ones; (b) increased product sales to the current customer base; (c) new customer attraction; (d) less potential for negative word of mouth communication; (e) and the ability to listen to customers for new product ideas and valuable marketing information. Food manufacturers are listening to consumer demands, and if consumers are in favor of halal label on the food products they purchase, then manufacturers will be compelled to offer it. One example of manufacturer responsiveness to consumer demands is seen in the greater array of convenient and healthy food products produced (Davis and Stewart, 2002). In one study, food product manufacturers were found to be responsive to 81.2 percent of researcher-generated complaint and praise letters sent to them regarding food items. The most common recommendation consumers provided for various manufacturing operations (food operations included) was to urge them to promise to take action to remedy consumer complaints (Lee *et al*, 2007).

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The lack of confident inhibits consumers from making proper food choices. Halal labeling, in particular, has lead to confusion among consumers. Some of the foods on the market that use the halal label may be processed in an incorrect way or may contain significant amounts of non-halal ingredients. This type of claim can be misleading for consumers. It is important, therefore, for consumers to read the ingredients on the food label to avoid making unwise food selections.

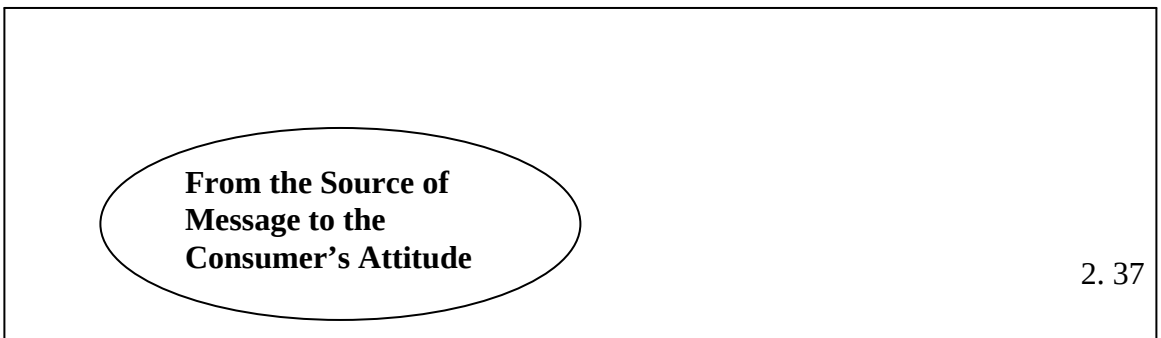
From a methodology perspective, Han and Harrison (2004) employed a multinomial logit analysis to analyze consumers' perceptions about purchasing biotech foods and their preferences for mandatory and voluntary labeling. Results show that purchase

intentions for consumers willing to buy biotech crops and foods are primarily affected by their belief that these foods are safe. On the other hand, intentions of consumers who are uncertain to buy biotech foods are affected by ethical concerns and the belief that the production of genetically biotech foods is harmful to wildlife and the environment. Consumers are less likely to purchase biotech foods under a mandatory labeling policy. By using probit and logit models Lin *et., al.* (2006) was able to estimate the effects of various variables on the likelihood of biotech food acceptance and confidence in China. Although the majority of surveyed consumers reported that they had little or no knowledge of biotechnology, their attitudes toward biotech food was generally positive, especially for GM foods with product-enhancing attributes. Using dichotomous choice contingent valuation methodology (logit), Chinese consumers' willingness to pay (WTP) for biotech rice and biotech soybean oil in our sample was positively affected by respondents' positive opinion toward biotech foods for both products and by higher levels of self-reported knowledge for soybean oil. In 2007, Bonne *et., al*. employed logit models and Chi-square to investigate the determinants of halal meat consumption within a Muslim migration population in France. They found a positive personal attitude towards the consumption of halal meat among the Muslim consumers in France. Moreover the influence of level of religiosity, age and individual characteristics such as trust and religion obligation predict the intention to eat halal meat among Muslims.

2.6 Model of Consumer Behavior and Decision Process

The complexity inherent in understanding consumer behavior has led some researchers

to construct models of buying process which indicate the stages through which the consumer passes from the time he or she first becomes aware of the need for a product or service to the time when a product has been purchased, a brand selected, and the consumer is evaluating the success of his purchase and deciding whether he will buy that particular product and/or brand again (Gordon, 1980). At the same time, such models usually indicate the social and psychological forces, which shape the potential buyer's actions at each stage in the process. The more comprehensive models of the buying process are useful in specifying possible relationships between variables and in suggesting hypotheses, which can be empirically tested. Nicosia (1969) considers the manner in which a consumer reacts to the introduction of a new product by depicting the sequence of decisions involved in the potential buyer's becoming aware of the novel good, searching for alternative means of satisfying his wants and evaluating them, together with the newly introduced item. The model is also included the act of purchase itself, the consumer's experience of using the product and the feedback which the firm receives as a result of its monitoring purchase behavior in the market place (Figure 2.2).



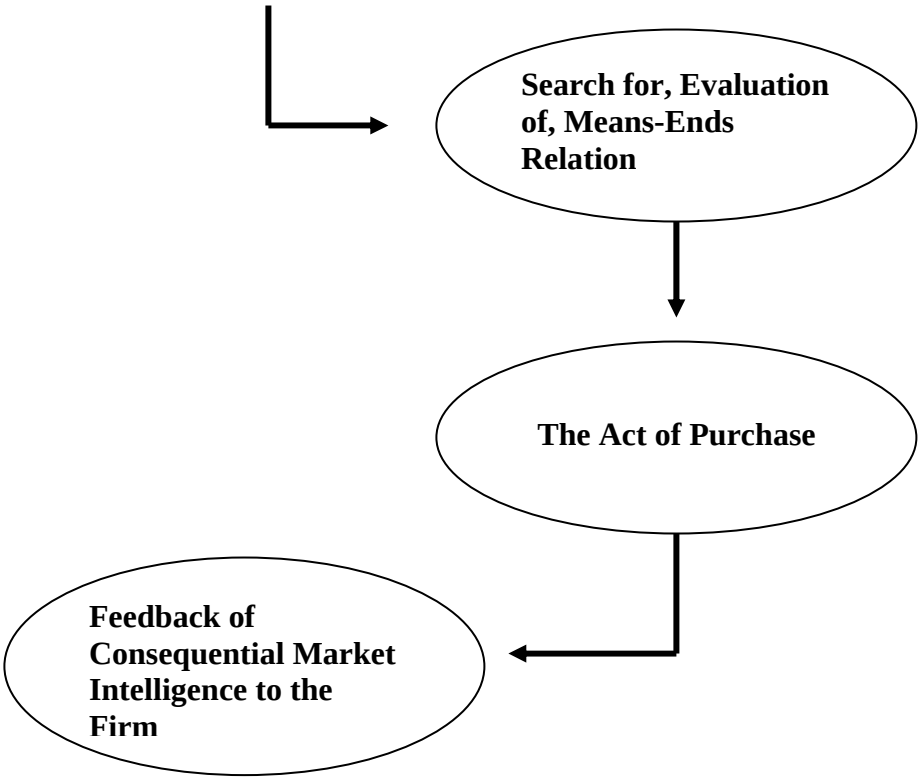


Figure 2.2: Consumers' Behavior and Decision Making

(Source: Nicosia 1969)

Another model is buying process was introduced by Gorden. Consumption is a process, which begins well before a product is purchased and which extents well beyond it. The Gorden model (1980) can be recognized into four stages: 1) the development and perception of want or need; 2) pre-purchase planning and decision making; 3) the purchase act itself; 4) post-purchase behavior which may lead to repeat buying. Naturally, the consumer who becomes aware of a need may not follow all these procedures and make a purchase. But, if he does go through the stages of the buying process described above, it is certain that his precise behavior will be modified and shaped by his attitudes, his self-concept, his general motivation and personality, and

often by his social class, his stage in the family cycle and the groups to which he belongs.

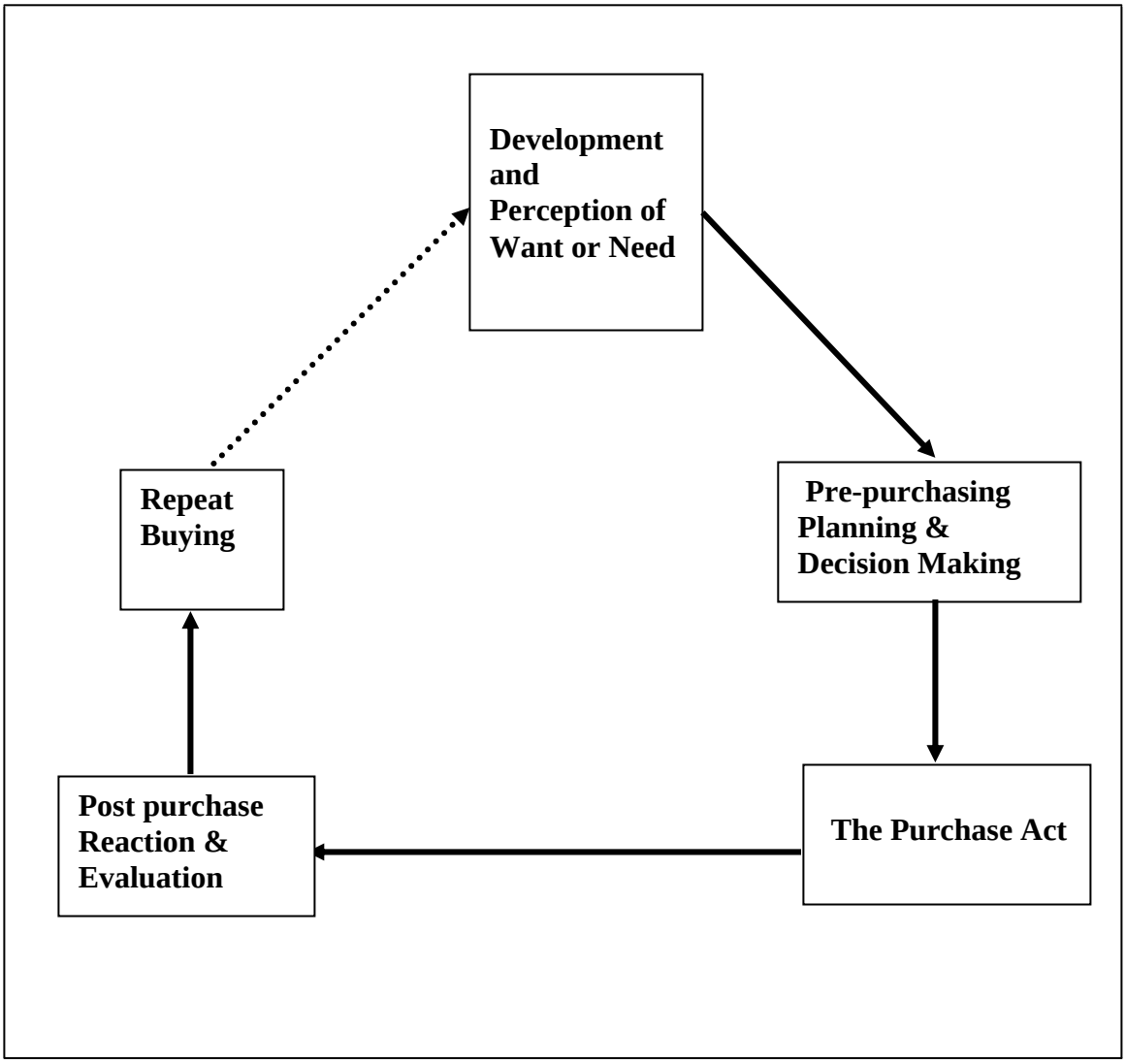
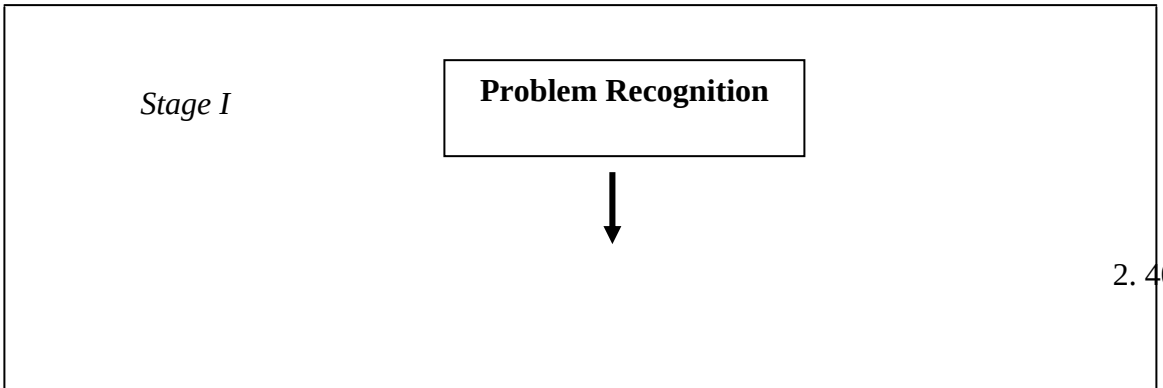


Figure 2.3 : The Buying Process-A Basic Representation

(Source: Gorden, 1980)

"Stage model", by Owen (1999) is typical buying or purchasing process or model that consists of the following sequence of events: *problem recognition, information search, and evaluation of alternatives, purchase decision /choice, and post-purchase behavior.*

These stages are shown as, the problem recognition stage; consumers recognize that they have a need for something. For example, a consumer buys a food product when they feel hungry. If it is sufficiently strong, the need may motivate the person to enter the second stage of the stage model, the search for information. The consumer will search for information that is relevant to the food that he needs such as where to buy and how to buy. The search for information can be either extensive or limited, depending on the involvement level of the consumer (Figure 2.4). In the third sate, consumers evaluate the alternatives they have identified for solving their problem. In the fourth stage; choice, consumers decide which alternative action to select (e.g., which brand to choose, which store to purchase the product). Finally, in the post acquisition stage consumers consume and use the product or service that they have acquired. They also evaluate the outcomes of the consequences of their behavior. Clearly, the buying process starts long before the actual purchase and has consequences long after the purchase (Owen, 1999).



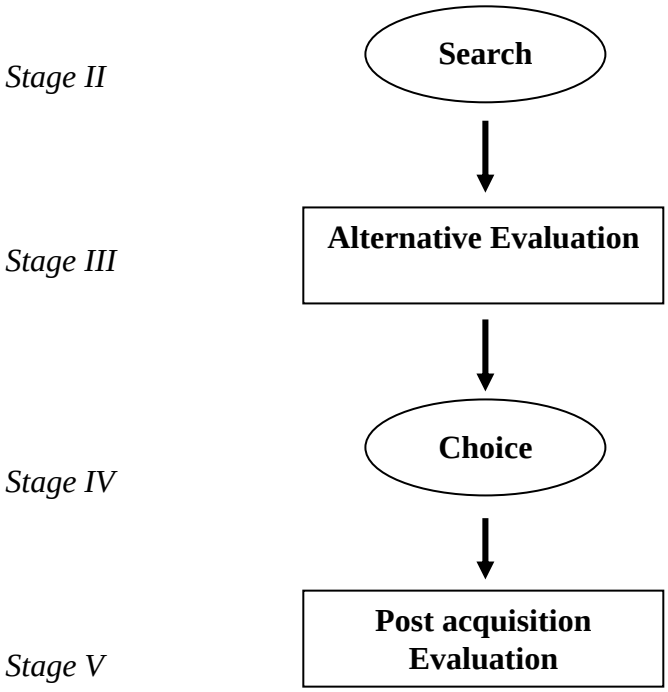


Figure 2.4: Stage Model - Typical Purchasing Process
(Source: Owen, 1999)

This model implies that consumers pass through all five stages in buying a product but this is not always the case, especially in low-involvement purchase. The high involvement purchasers are more inclined to search for more information before making a buying decision. Consumers are highly involved when the product is expensive, brought infrequently, risky, and highly self-expressive. Typically the consumer does not know much about the product category and has much to learn. An aroused consumer will be inclined to search for more information from various sources. How many searches that he undertakes depend on his drive, the amount of information he initially has, the ease of obtaining additional information, the value he places on additional information, and the satisfaction he gets from the search. The marketer of a high-involvement product must understand the information-gathering and evaluation behavior of high-involvement consumers. Applying this model in labeling, the marketer needs to

develop strategies that assist the buyer to obtain relevant information about the product he interested in buying.

According to Kotler (2003) the starting point for understanding behavior is the stimulus-response. Marketing and environmental stimuli enter the buyer's consciousness. The buyer's characteristics and decision processes lead to certain purchase decisions. The marketer's task is to understand what happens in the buyer's consciousness between the arrival of outside stimuli and the purchase decisions. A consumer's buying behavior is influenced by cultural, social, personal, and psychological factors. Cultural factors exert the broadcast and deepest influence. The influence of culture cannot be underestimated in the buying behavior process. A person acquires a set of values, perception and behaviors since from young his external-family, friends and society. Cultures and sub-cultures forms specialized preferences and sometimes this is exhibited in the form of social stratification. Social stratification or social class infiltrates deeply into buying behavior in societies as can be seen in the buying pattern of things like houses, cars, clothes and even educations. Social factors consist of reference groups, family, social rules and social statuses. In references groups, a person may be directly or indirectly influenced into buying a product. Membership group consisting family, friends, neighbors, co- workers, religious advisors, lecturers, etc exerts direct influence. Advertisements use opinion leaders to market their products as in sports product promoted by sportsmen and sportswomen. Family members offer the most direct influence on consumers' choice. One simple reason for this is family member aspires great confidence in their advice and they would never intentionally offer '"bad" advice.

Personal characteristics like age, stage in life cycle, occupation, economic circumstances, life-style, personality and self-concept all influence buying decision of an individual. Age and stage in life cycle exerts tremendous pressure on a person's consideration to pursue the purchasing. Occupation and economic status have great bearing on borrowing and spending power, and the ability to save. An individual buying choice can be influenced by personality and self-concept. Personal traits like ambition, confidence, adaptability and sociability can strongly drive a person to decide the purchasing.

Four types of psychological factors influence a person's buying choices - motivation, perception, learning and beliefs and attitudes. Motivation has since long been established as the need that drives a person to act. Various aspects of a product create that need. Goods' content may relevance to a person's job knowledge; the brands offer convenience to purchase. These elements in the product create various needs, which turn cause, the buyers to decide. Apart from motivation, perception also, influence decisions. Perception is dependent on internal (experience, values, beliefs, education, prior knowledge, etc.) and external (external stimuli - advertising, message) factors. Perception plays a huge role in the consumer's behavior because what a person perceives is ultimately, what he/she wants to perceive. Many decisions are made based on perception, everyday buying a property or even buying items through mail order delivery. Every decision made will result in a learning process, which leads to experience. Decision can be made because of learning derived from experience. The experience could be their own or someone else. Beliefs and attitudes are equally

important as people decide what they actually believe in. Similarly, attitude puts a person into a frame of mind of liking and disliking what is before him/her (Kotler, 2003).

After the evaluation process, buyers form an intention to purchase. After deciding whether or not to purchase, consumers move through two phases. In the first phase, consumers choose one or over another retailer (or some other form of retailing such as catalogues, electronic sale with the aid of TV or PC, or direct sales). The second phase involves in store choices, influenced by sales people, product displays, electronic media and point of purchase (POP) advertising (Blackwell *et. al.,* 2001). In the end Post-purchasing Behavior is demonstrated in the form of either satisfaction or dissatisfaction. Satisfaction occurs when consumers' expectations are matched by perceived performance; when experiences and performance fall short of expectations, dissatisfactions occur.

The Theory of Reasoned Action (TORA) was developed in 1967. During the early 1970s the theory was revised and expanded by Ajzen and Fishbein. This theory provides a framework to study attitudes toward behaviors. According to the theory, the most important determinant of a person's performance is behavioral intent. The individual's intention to perform behavior is a combination of attitude toward performing the behavior and subjective norm. The individual's attitude toward the behavior includes; behavioral belief, evaluations of behavioral outcome, subjective norm, normative beliefs, and the motivation to comply. In basic terms, the Theory of Reasoned Action says that a person's behavior is determined by their attitude towards the outcome of that

action and by the beliefs and opinions of the person's social environment. According to this theory, an individual or person's intention is a function of two basic determinants: personal beliefs and social factors. Personal beliefs can be a positive or negative evaluation of performing a behavior or their attitude towards the behavior. While social influence is the person's perception of the social pressures around an individual or person who are performing or not performing a certain behavior. This is called subjective norm or normative. Ajzen and Fishbein (1980) proposed that a person's behavior is determined by his intention to perform the behavior and that this intention is, in turn, a function of his attitude toward the behavior and his subjective norm.

If a person perceives that the outcome from performing a behavior is positive, she/he will have a positive attitude toward performing that behavior. The opposite can also be stated if the behavior is thought to be negative. If relevant others see performing the behavior as positive and the individual is motivated to meet the expectations of relevant others, then a positive subjective norm is expected. If relevant others see the behavior as negative and the individual wants to meet the expectations of these "others", then the experience is likely to be a negative subjective norm for the individual. Attitudes and subjective norm are measured on scales (as an example the Likert Scale) using phrases or terms such as like/unlike, good/bad, and agree/disagree. The intent to perform a behavior depends up on the product of the measures of attitude and subjective norm. A positive product indicates behavioral intent (Glanz, *et al.*1997).

TORA works most successfully when applied to behaviors that are under a person's beliefs or religions control. If behaviors are not fully under religion or belief control, even though a person may be highly motivated by her own attitudes and subjective norm, s/he may not actually perform the behavior due to intervening environmental conditions.

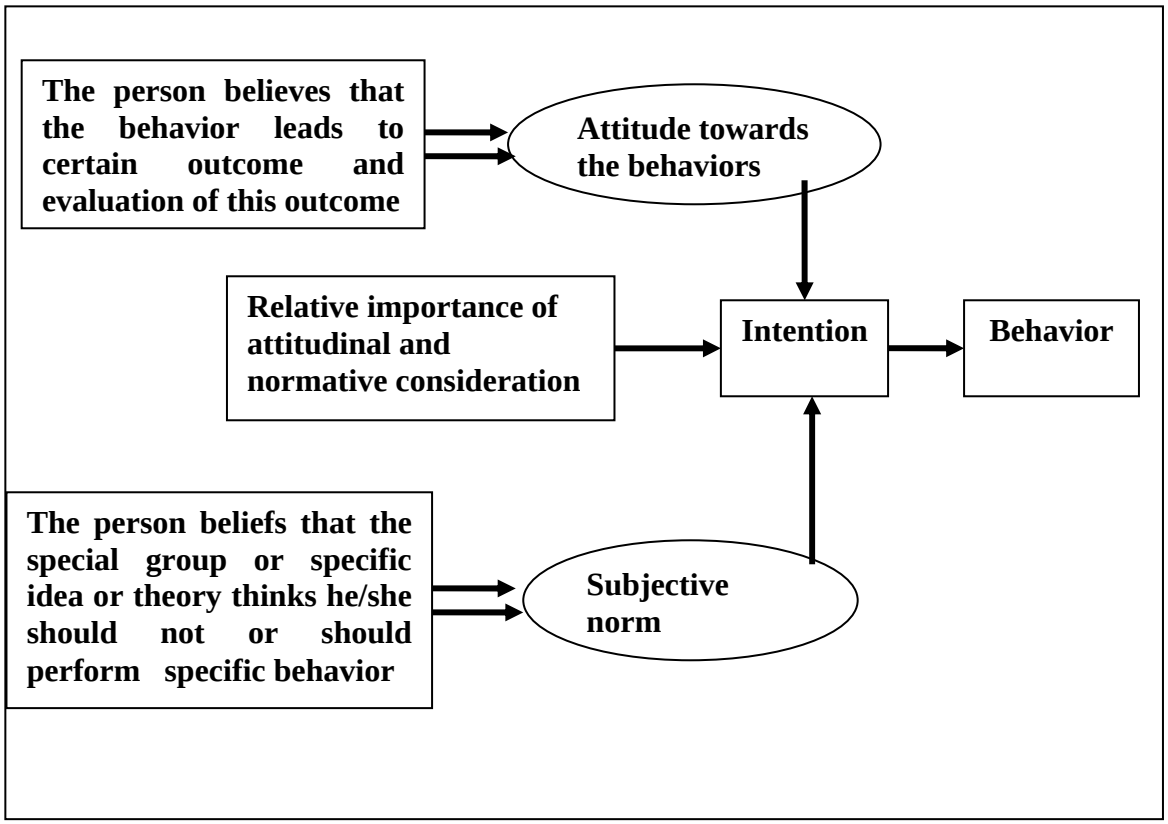


Figure 2.5: Reasoned Action Model

(Source: Azjen and Fishbein, 1975)

Attitudes are made up of the beliefs that a person accumulates over their lifetime. Some beliefs are formed from direct experience, some are from outside information like religion and others are inferred or self generated. However, only a few of these beliefs actually work to influence attitude. These beliefs are called salient beliefs and they are

said to be the “immediate determinants of a person’s attitude” (Ajzen and Fishbein, 1980). An attitude, then, is a person's salient belief about whether the outcome of his action will be positive or negative. If the person has positive salient beliefs about the outcome of his behavior then he is said to have a positive attitude about the behavior. And, vice-versa, if the person has a negative salient belief about the outcome of his behavior he is said to have a negative attitude. The beliefs are rated for the probability that engaging in the behavior will produce the believed outcome. This is called the belief strength. Next the perception of whether this outcome is positive or negative is evaluated using a Likert, or similar, scale. These two factors, belief strength and evaluation, are then multiplied to give the attitude. Subjective Norms are beliefs about what others will think about the behavior. They are perceptions about how family and friends will perceive the outcome of the behavior (normative belief) and the degree to which this influences whether the behavior is carried out (motivation to comply).

These two factors are multiplied to give the subjective norm. It is important to note that subjective norms are formed only in relation to the opinions of persons considered to be significant or important. Intention(s) are the probability, as rated by the subject, that he will perform the behavior. This intention is made up of the attitudes and subjective norms previously discussed. Fishbein proposed that variables not included in the model can affect intention and, consequently, behavior. However, these variables must significantly affect the attitude or normative belief component and their weights. These factors include demographic variables and personality traits. Behavior, then, is the transmission of intention into action.

The theory is represented symbolically as follows:

$BI = (Aact)\ w_1 + (SN)\ w_2$

Where;

BI= the direct antecedent of behavior (B = Behavior, I = Intention)

Aact = the person's attitude towards the behavior

SN = the influence of the person's Subjective Norms

w_is = the empirically determined regression weights

According to Ajzen 2002, in the theory of planned behavior, human action is guided by three kinds of considerations: beliefs about the likely outcomes of the behavior and the evaluations of these outcomes (behavioral beliefs), beliefs about the normative expectations of others and motivation to comply with these expectations (normative beliefs), and beliefs about the presence of factors that may facilitate or impede performance of the behavior and the perceived power of these factors (control beliefs). In their respective aggregates, behavioral beliefs produce a favorable or unfavorable attitude toward the behavior; normative beliefs result in perceived social pressure or subjective norm; and control beliefs give rise to perceived behavioral control. In combination, attitude toward the behavior, subjective norm, and perception of behavioral control lead to the formation of a behavioral intention. As a general rule, the more favorable the attitude and subjective norm, and the greater the perceived control, the stronger should be the person's intention to perform the behavior in question. Finally,

given a sufficient degree of actual control over the behavior, people are expected to carry out their intentions when the opportunity arises. Intention is thus assumed to be the immediate antecedent of behavior. However, because much behavior pose difficulties of execution that may limit volitional control, it is useful to consider perceived behavioral control in addition to intention. To the extent that perceived behavioral control is veridical, it can serve as a proxy for actual control and contribute to the prediction of the behavior in question. The following figure is a schematic representation of the theory.

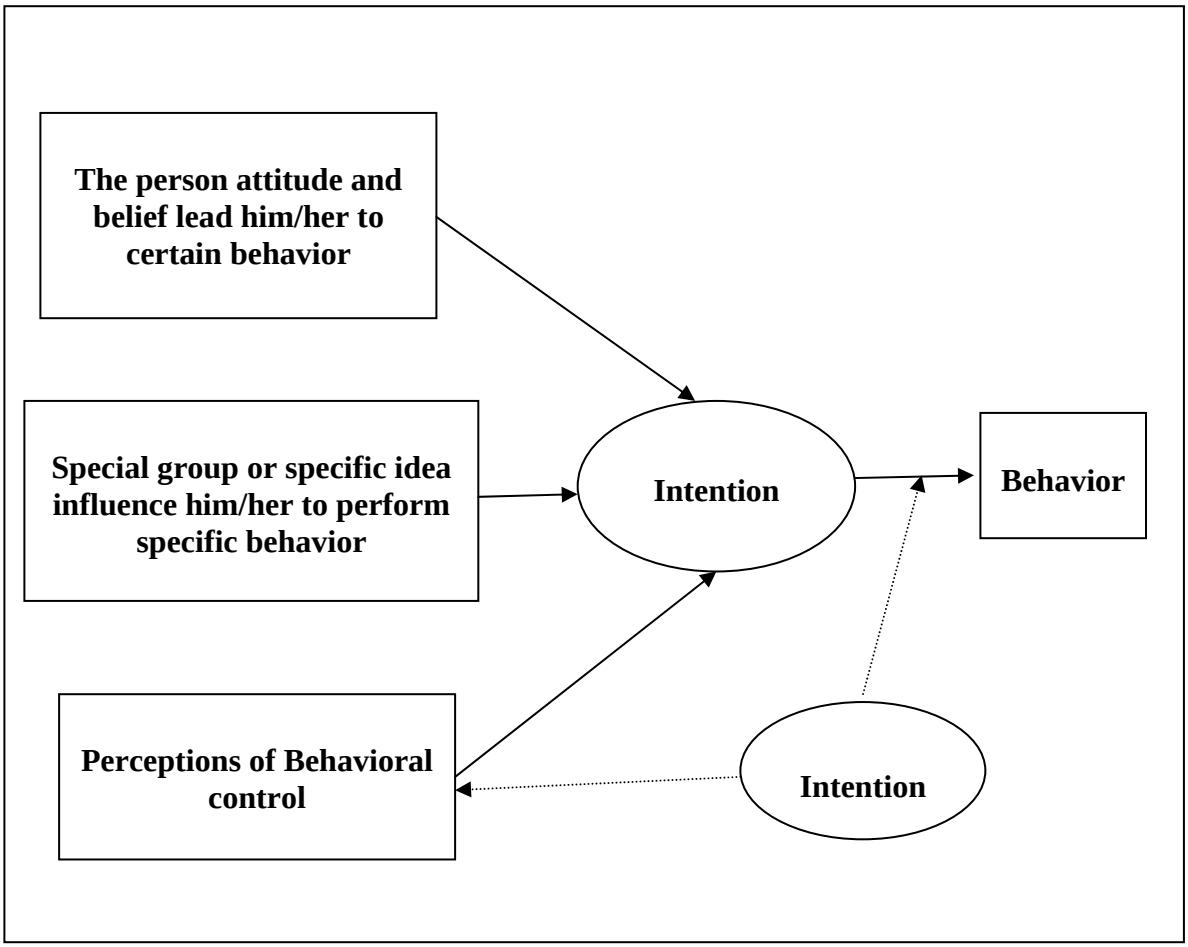


Figure 2.6: Theory of Planned Behavior

(Source: Azjen, 2002)

This study will attempt to answer research questions regarding halal labeling using the Theory of Reasoned Action (TORA) and planned behavior. TORA will be used to find what factors make Muslim consumers confident in regards to halal labeling on manufactured food products meanwhile Theory of Planned Behavior will be applied to reveal the perceived controls which encouraged non-Muslim consumers to purchase halal labeled food products.

CHAPTER III

METHODOLOGY

This chapter describes the methodology used to fulfill the objectives of the study. The methodology used consisted of data collection procedures, theoretical consideration for model development and estimation, and the conceptual and analytical framework of the study. Finally, the focus was on the determination of influential variables and the required data collection efforts, followed by topics related to the selection of study area, sampling procedures and data collection. Subsequently, the analytical framework of the study that included model construction, estimation, specification and statistical considerations are stated. The discussion on model development and methodological framework has been divided into following major sections: Factor analysis and the Logit and Multinomial logit model.

3.1 Conceptual Framework

As mentioned earlier, the Theory of Reasoned Action (TORA) may be sufficient to adequately explain the relationship between Muslim consumers' confidence, behavioral intention and choosing behavior. The modified TORA model based on the research question may be a better model in terms of a better predictive power for consumers' confidence behavior.

The attitudes of consumers purchasing halal labeled food products are made up of the beliefs they accumulate over their lifetime based on their socio economic profiles and background like age, gender, education and residential area. These beliefs are also formed from their religion, or some outside information like knowledge, information and advertisement are inferred or self generated. These items build up a person's trust, confidence and perception which lead him to a positive attitude. A person has a positive attitude about this behavior when he is able to purchase the food product that follows his beliefs and confidence. He is then said to have a positive attitude about the behavior, in this case the purchasing of a food product. In addition subjective norms can be JAKIM logo and Shariya approval which are some motivations from others' beliefs or feelings about confidence on Halal logo. They are perceptions on how others will influence the outcome of the behavior for example how food manufacturers are able to convince or motivate consumers into purchasing halal labeled food while the food products are carrying JAKIM halal logo or the halalness approved by Shariya. It is important to note that subjective norms are formed only in relation to give significant or confident opinions of buyer behavior. In context of TORA, purchasing behavior based on halal labeling is determined by behavioral intention to purchase halal food, which is verified by attitude and subjective norm. Attitude is determined by personal belief about the consequence and evaluations. The consequence and subjective norm is determined by the motivation and confident of the individual to visibly comply with group behavior respectively.

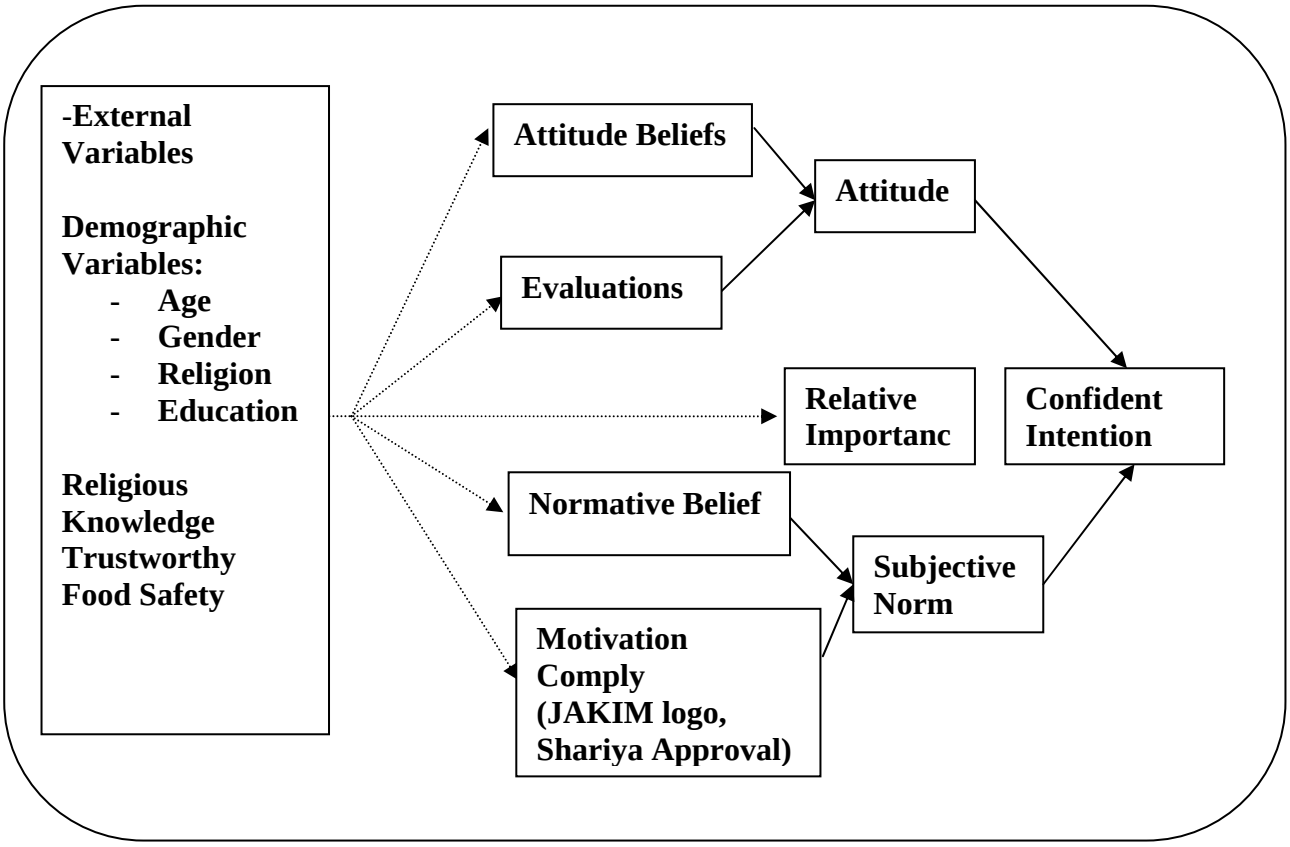


Figure 3.1: Adapted and Modified Model of Theory of Research Action with Application to Halal Food Confident Intention
Source: Adapted model from Ajzen (2002)

The Theory of Planned Behavior (TPB; Ajzen, 1985, 1991) postulates three conceptually independent determinants of non-Muslim consumers' behavioral intention: attitude, subjective norm and perceived behavioral control. Attitude is the psychological tendency that is expressed by evaluating a particular entity with some degree of favor or disfavor. Subjective norm assesses the social pressure on individuals to perform or not to perform certain behavior i.e. the motivation to comply with others' views. In case of non-Muslim consumers, living in a Muslim country like Malaysia and also mixing with Muslim either at work place or society (visiting each other house and meeting in social clubs), can be pointed out as a strong motivations and subjective norms to be aware of halal concept. Perceived behavioral control is described as people's behavior that they are capable of performing particular behavior. It assesses the degree to which people perceive that they actually

have control over enacting the behavior of interest. The link between perceived behavioral control and behavior suggests that consumers are more likely to engage in behaviors they feel to have control over and are prevented from carrying out behaviors over which they feel to have no control. Control factors such as perceived availability may facilitate or inhibit the performance of behavior (Vermeir and Verbeke, 2004). For example hygiene and clean concept of halal food, food safety and environmentally friendly can be high perceived availability of halal food in Malaysia that may hinder someone from other food consumption. In the present study, the influence of the classical components of the Theory of Planned Behavior on intention to consume halal food is measured within a population of non- Muslims in Malaysia. The resulting framework is presented in Figure 3.2.

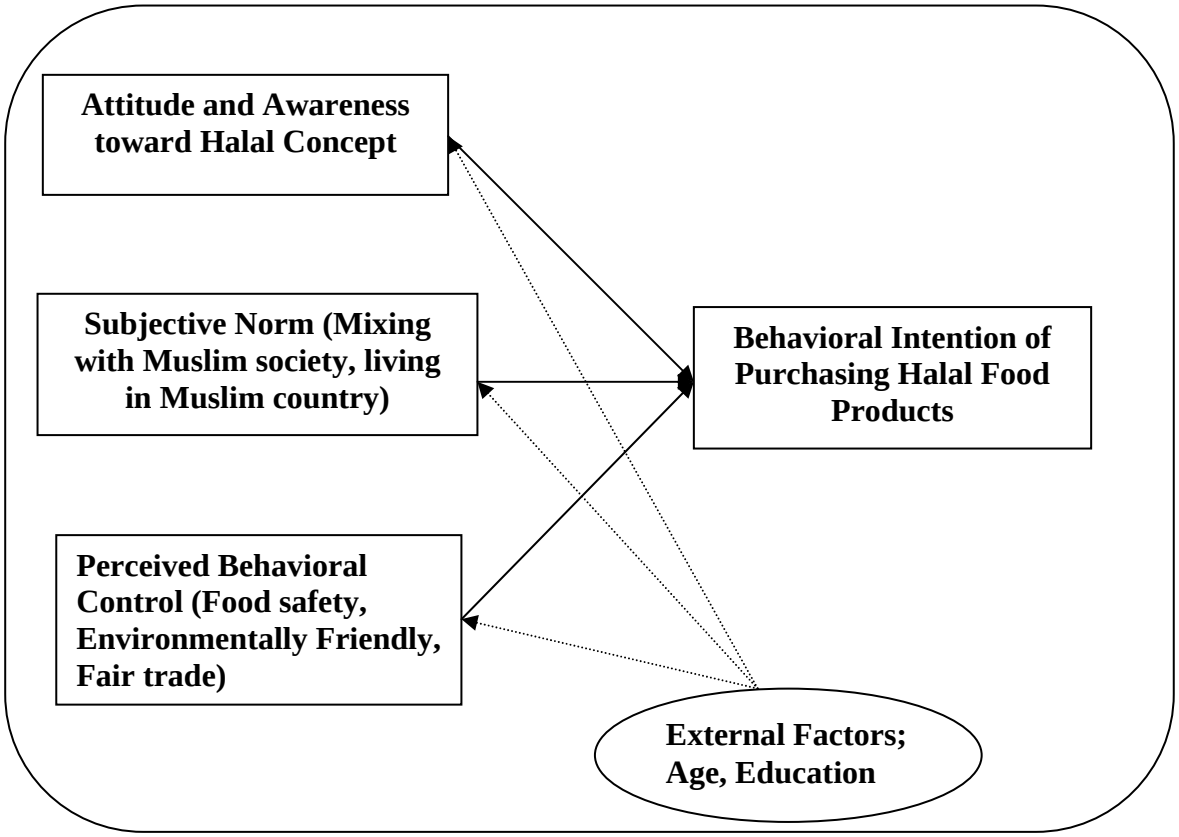


Figure 3.2 Conceptual framework: Theory of Planned Behavior with application to Halal food consumption
Source: Adapted model from Ajzen (2002)

3.2 Data Collection

It is well known that the type of research method to be selected on the basis of the type of information required, availably of resources, the degree of control the researcher has over the selection and assignment of subjects and the ability to manipulate variables of interest. The objective of the research, the location of subject, the nature of data required and the availability of resources were the factors that contributed to choosing the survey as research method for this study. In this research the population is the consumers resident in Malaysia and desired the characteristics for population of interest in this research are individual who might or might not have used or how confident with halal labels on food manufactured products.

3.2.1 Sampling Frame and Techniques

The study targeted consumers who check halal labels when purchasing the products. Due to limited resources a sample of Malaysia population was randomly surveyed out of the total population 26.6 million. The samples for national studies are approximately ranging 1500-2500 in order to obtain the adequate acceptability (Sudman, 1976). The sample size taken is 2000, representing a crude yardstick to achieve the aim of this study. The demographics details include religious level, income, age, gender, and educational level and attendance at religious school. Primary data were collected using a pre-designed questionnaire for the study to ensure that the questionnaire was acceptable and easy to answer by a wide range of

respondents. Full data collection was subsequently carried out from 17 May to 20 August, 2007.

Sampling from both Muslim and non-Muslim consumers was conducted at the supermarkets in each major town of the states (states' capital city) from every fifth Muslim consumer and every tenth non-Muslim consumers who entered the supermarkets. Supermarkets were chosen via a list of Giant, Carrefour and Tesco stores and for each major town, one of each supermarket was selected randomly, which means respondents were selected from 3 department stores in each major town. Due to the fact that most manufactured halal food products are widely available there and consumers from different walks of life do their shopping, supermarkets are an appropriate place to collect data. It was expected to interview 140-145 Muslims respondents and 25 non-Muslims, one in each state in Peninsular Malaysia. The sample size represents the returned questionnaires collected after the sampling procedures.

3.2.2 Source of Data

3.2.2.1 Primary Data

The study used mostly primary data, which were supplement by secondary data. The primary data were gathered directly from interview respondents in face-to-face sitting. The interview was conducted based on self-administered questionnaire. Around 2000 respondents were asked to complete the questionnaire regarding their awareness and confidence towards halal labeled food products. The questionnaire contains pre-defined factors or variables, which were derived from pervious

researches discussed in the literature review. Additional factors were included to suit the current marketing environment in Malaysia.

3.2.2.2 Secondary Source

Secondary data were obtained from various sources of information, which are available in library. Statistical data were gathered from government departments. Relevant information about concept and food buying behavior based on halal logo were reviewed from magazines, articles, journals, pervious reports and seminars, textbooks and past-related study. Other information was gathered through discussion and observation.

3.2.3 The Questionnaire

In order to address the objectives of this study, survey questionnaires were designed for both groups of consumers, namely Muslims and non-Muslims. The questionnaire was developed based on literature and. The questions addressing consumers were contained socio-economic characteristics of individuals, and confidence, attitudes and perceptions on halal foods, logos and policy measures. The respondents were asked to identify five main factors which influenced their level of confidence during purchasing halal food products. The selected_factors were halal logo, trustworthy, health and safe conscious, government and industry involvement, and environmentally friendly. Determining the selected factors is important to evaluate consumers' confidence in making decisions during halal food purchasing.

The respondents were requested to report their level of confidence by answering a set of questions. These questions were categorized into:

1. Questions on respondent's confident level and associated attributes such as local and international food products, JAKIM halal logo, food safety, and environmentally friendly.

2. The respondents were also encouraged to report information on other attribute values in order to find out their attitude and awareness.

3. The respondents were also asked to rank the most well-known halal logos on the manufactured food products based on their level of confidence.

4. Consumers' personal information relating to halal food purchasing behavior such as age, income, gender, occupation, religion, education, level of religiosity, and having religious study background. Some of the questions in this section were categorized. For instance, five income levels with equal intervals were stated.

5. The aim of last section of questionnaire was to evaluate the effect of information about halal and halalness of products on Muslim consumer's confidence. The respondents received the information via an informative book after and before being interviewed. The book is called "*Halal Haram*" published by Consumer Association of Penang as a guide for consumers in 2006.

For questions related to the attitudes and preferences, the respondents were asked to rate attitudinal statements with the objective of including their confidence and attitudes toward every attribute of halal. A five-point Likert-scale ranking from 'Strongly Disagree/ Not Confident' to 'Strongly Agree/ Very Much Confident' was used to indicate the level of agreement with several statements that reflected these factors. A Likert scale measures the extent to which a person agrees or disagrees with the statement where; 1= Strongly Disagree/ Not Confident, 2=Disagree/ Little Confident, 3=Not Sure/ Some Confident, 4=Agree/ Much Confident, And 5=Strongly Agree/ Very Much Confident.

These statements were classified into three major categories:

1. Statements that reveal the level of confidence on halal labeled food products among the Muslim consumers;
2. Statements that reveal factors influencing halal labeled food purchasing;
3. Statements that reveal factors encouraging non-Muslim consumers' use of halal logo on the food products and
4. Statements that reveal the effect of halal information on consumers' confidence.

Finally a set of questions addressed policy measures such as JAKIM monitoring, advertisement, non- Muslims food premises with halal logo and government traceability. The stated preference approach was considered in this section. The stated preference approach involves asking respondents to express their preferences or responses to hypothetical scenarios that have been characterized in terms of attributes.

These hypothesis measures considered in the survey were:

1. Consumers' confidence level with non-Muslim food premises and restaurants which displayed halal logo.
2. The relationship between advertisements on halal labeled food and level of confidence among consumers.
3. Consumers' confidence level and the products with halal logo.
4. Consumers' confidence level and the frequency of checking halal logo.

3.2.4 Pilot Study

A pilot survey was carried out to ensure that the questionnaire was acceptable and easy to answer by a wide range of respondents. A sample size of 200 was used as this was essentially intended to be a fairly exploratory research exercise to establish the general viability of the survey questionnaires.

Pre-testing was carried out to refine and focus the policy tools and questions for inclusion in the final survey. It also aimed at identifying the relevant alternatives, their attributes and realistic attribute levels required to create the profiles. The questions in their final form are found in Appendix A.

3.3 Data Processing and Analysis

The data collected from the survey were checked and verified for their correctness. Data cleaning was carried out by checking the frequency and descriptive statistics as well as coding and data entry. The survey data were cleaned for possible inconsistencies and errors and adjusted for missing data and outliers. The cleaned data were then further analyzed by using a reliability test.

3.3.1 Reliability Analysis

Reliability analysis was carried out to determine the extent to which the items in the questionnaires were related to each other. It is also used to provide an overall index of the repeatability or internal consistency of the scale as a whole, and identify the problem items that should be excluded from the scale.

The reliability procedure calculates a number of commonly used measures of scale reliability and also provides information on the relationships between individual items in the scale. The Cronbach alpha method was computed to assess the model for internal consistency, based on the average inter-item correlation used to determine the homogeneity of items. Cronbach alpha is also used to estimate the proportion of variance that is systematic or consistent in a set of test scores. It can range from 00.0 (if no variance is consistent) to 1.00 (if all variance is consistent) with all values between 00.0 and 1.00 also being possible. If Cronbach's alpha is below 0.5, it implies low correlation**.**

3.3.2 Descriptive Analysis

Descriptive analysis is the transformation of the row data in the form that will make easy to understand and interpret. Frequency distribution was drawn to view how frequently each category in demographic and socioeconomic affect the variables in this research. Descriptive statistics involves the measurements of mean on the nominal data obtained from the research. Nominal data refers to the data, which each individual was simply been categorized in aspect of demographic and socioeconomic. This test would aid in the comparison among the variables.

3.3.3Chi- Square Analysis

The focus of this study was to find relationship between variables which influenced consumers' confidence on halal labeled food products and the circumstances that might change their level of confidence. The following hypotheses were formulated based on the literature review to identify the relationship between demographic factors and halal labelled food in the different aspects, this study will test the following hypothesis:

The null hypothesis $H_0 : \beta_0 = \beta_1 = \beta_2 = ... = \beta_p = 0$

The alternative hypothesis $H_1 : \beta_i \neq 0$ for at least one i

$$i = 1,2,..... , p$$

The null hypothesis (H_0) states that no impact of the dependent variable (confidence level) to the independent variables (age, gender, being at religious school, education level, religious level), where as the alternative hypothesis (H_1) states that there is an impact of the dependent variable on the independent variables.

1. There is no relationship between consumer's confidence on halalness of fast food restaurants and socioeconomic profile of consumers
2. There is no relationship between consumer's confidence on advertisement and demographic factor of consumers
3. There is no relationship between consumer's confidence on non-Muslim manufacturers with halal logo and socioeconomic profile of consumers

3.3.4 Factor Analysis

Factor analysis is used to uncover the latent structure (dimensions) of a set of variables. It reduces attribute space from a larger number of variables to a smaller number of factors and as such is a "non-dependent" procedure (that is, it does not assume a dependent variable is specified). With factor analysis, the small numbers of factors from a large number of variables are capable to explain the observed variance in the large number of variables. In this study the factor analysis is used to reduce the number of 36 variables to a controllable set of items so that the latent and underlying factors are extracted. This type of procedure groups the variables into independent factors in which factor represents a scale measure of some dimensions. The basic form of the factor analysis involves four steps. In the first step, the correlation matrix is generated for all the variables. Variables that do not appear to be related to the other variable can be identified from the matrix and associated statistics. A correlation matrix is a rectangular array of the correlation coefficients of the variables with each other. The second step is to extract a set of initial factors from the correlation matrix that developed in first step. Principle component analysis will

be used to extract factors and produces one component for each variable. Although the analysis will yield as many factors as variables, the smaller factors, in terms of accounted variable variance are dropped if the value is less than or equal to 0.5, Thus, a set of factors is formed as a linear combination of the variables in correlation matrix. The first factor would be the best linear combination of variables that it would be counted for more the variance in the data as a whole. The third step is rotated in order to maximize the relationship between the variables and some of the factors. At last the scores for each factor will be computed and then used in a variety of other analysis.

The factors are inferred from the observed variables and estimated as linear combinations. The general estimation of j^{th} factor F_j can be written as:

$$F_j = \sum_{i=1}^{\rho} W_{ji} X_i = W_{j1} X_1 + W_{j2} X_2 + \ldots + W_j \rho X \rho \qquad (1)$$

Where,

W_j = factor score coefficients

ρ = number of variables

Furthermore factor loading analysis; other suitable techniques for analyzing have been used in this study, which included reliability test, extent to which variables or set of variables is consistent in what it is intended measure. To ensure that the sample was suitable for factor analysis the measure of sampling adequacy (MSA) Test, Kaiser–Meyer–Olkin (KMO) test and the Bartlett test of sphericity will run. Next the eigenvalue criteria was utilized to represents the amount of variance accounted for by a factor, besides the communality was applied to find the total amount of variance an

original variables shares with all other variables included in the analysis. Furthermore variance explained and varimax normalization had been used.

3.3.5 Logit Regression Model

After the determination of latent factors which influenced consumers' halal food purchasing behavior, next step was the process of model establishment to examine how much purchasing behavior can be explained by socio-economic characteristics and variables such as JAKIM halal logo and Shariyah approval. To accomplish this goal, Logit and Multinomial Logit models were developed to estimate factors influencing choice (Choice Models). Logit models were employed in the form of a binary logit, when there were only two choices and a Multinomial Logit (MNL) was used when there were more than two choices (Figures 3.3 and 3.4).

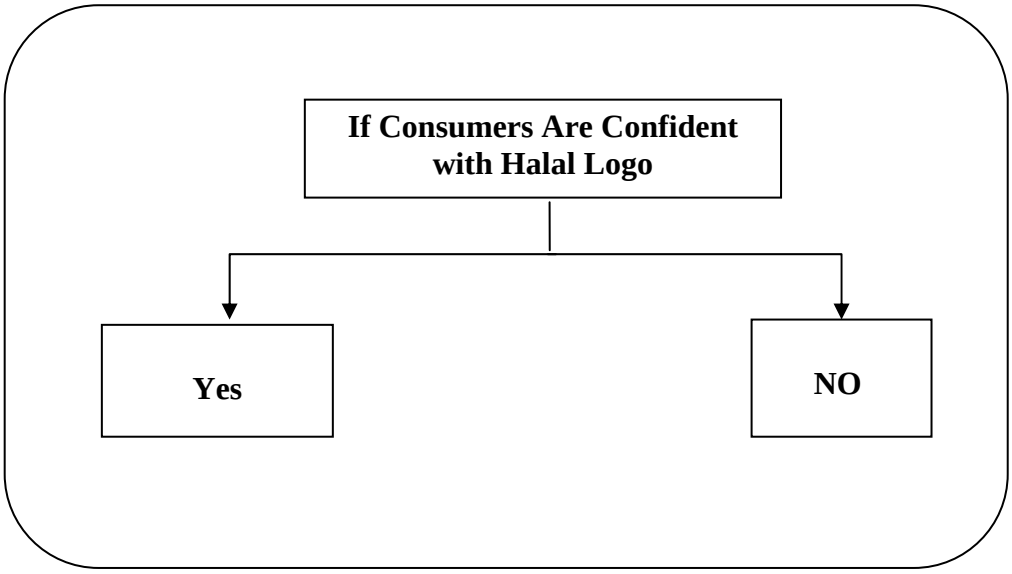


Figure 3.3: Binary Logit Model

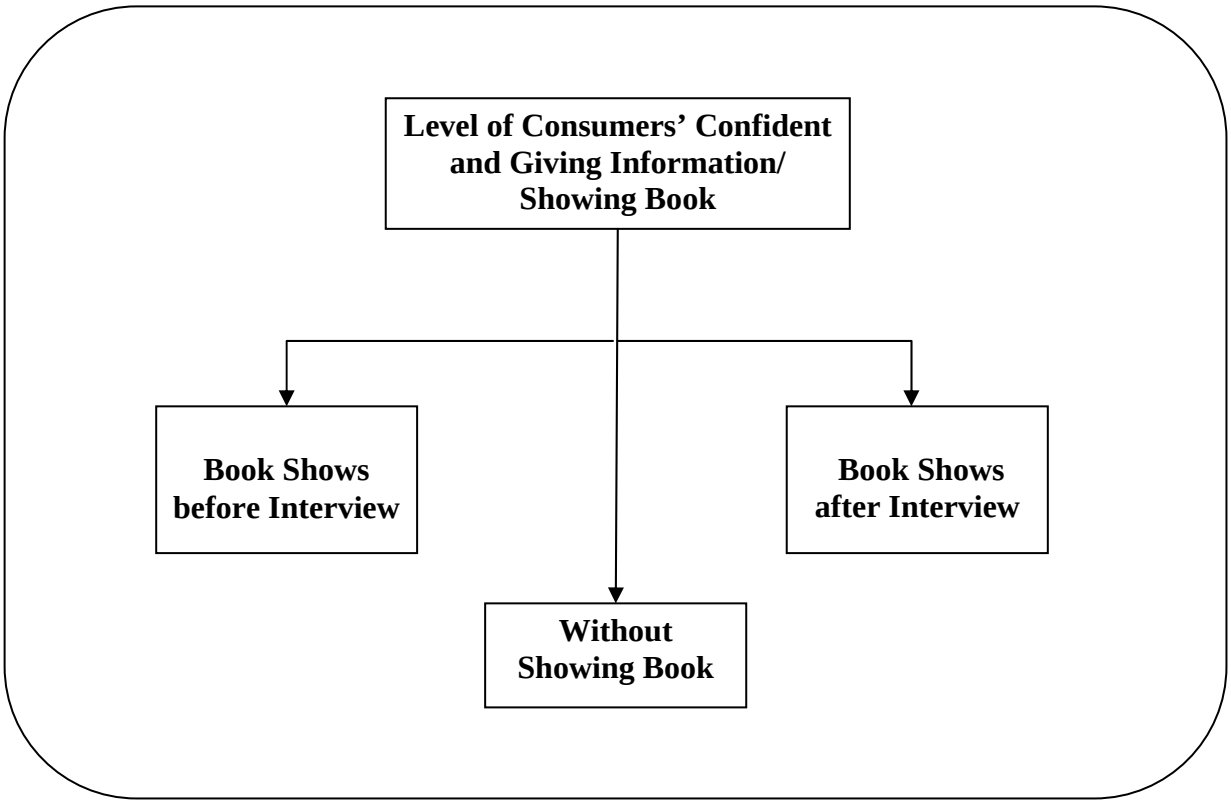


Figure 3.4: Multinomial Logit Model

3.3.5.1 Binary Logit Model

Logit models were employed to do the regression analysis because of their ability to represent the complex aspects of the decisions made by individuals and to incorporate important demographic and policy-sensitive explanatory variables. It does not assume linearity of relationship between the independent variables and the dependent, and does not require normally distributed variables. It is assumed that the decision-maker chooses the alternative with the highest utility among two sets of alternatives; 0 and 1. The event X = 1 is considered a success and the event X = 0 is considered a failure. The utility of an alternative is determined by a utility function, which consists of independent attributes of the alternative concerned and the irrelevant parameters. In random utility theory the true utilities of the alternatives are considered to be random variables, i.e. (MacFadden, 1981)

$$U_{in}=f(X_{i,s})+\varepsilon_{in}, \qquad (2)$$

where

U_{in} = the utility of alternative i for individual n;

$f(X_{i,s})$ = a function of attributes s related to alternative i;

ε_{in} = a random disturbance term.

By maximizing then the stochastic utility, the probability that an alternative is chosen is defined as the probability that it has the highest utility among all relevant alternatives (Cramer, 1991). In a logit approach the following assumption is made concerning the random term (Gumbel distribution):

$$F(\varepsilon_n) = \frac{1}{1 + e^{-\mu_N}} \qquad \mu > 0 \qquad -\infty < \varepsilon_n < \infty \qquad (3)$$

$$f(\varepsilon_n) = \frac{\mu e^{-\mu\varepsilon_N}}{\left(1 + e^{-\mu\varepsilon_N}\right)^2} \qquad (4)$$

Since the rescaling of μ does not change the calculated probabilities, μ is usually chosen to be equal to 1. The logit model has become in the mean time a standard analytical tool in discrete choice modeling. In fact, at present the logit model has become a widely adopted approach for modal split analysis of multiple choices. The logistic regression procedure estimates the probability of a certain event occurring on the basis of independent variables.

For the study, results are interpreted using the odds ratio, which is the exponentiated coefficient. The odds ratio is calculated by contrasting each category with the reference category. The odds ratio shows a multiplicative change in the odds for a unit change in an independent variable. For the binary logit model,

$$\log\left(\frac{P}{1 - P}\right) = x\beta \qquad (5)$$

where *xß* is vector of independent variables and the estimated parameters. This ratio is called the odds, thus the left-hand side of equation is referred to the log of odds or *logit*. The logistic coefficient is interpreted as the change in the logit associated with a one unit change in the independent variable, holding all other variables constant. The exponential of the logistic coefficient is the effects on the odds rather than probability. It is interpreted as for a one unit change in the independent variable; the odds are expected to change by a factor of exp(ß) when other things are equal. For this study, the following binary logit models were developed

Model 1: Effect of halal logo on food products on Muslim consumers' confident

Model 2: Determinants of non- Muslim consumers' awareness of halal food products;

For this study, the dependent variable represents the probability of consumers' confident and awareness towards halal labeled food products. The variable is coded as 1 if the consumers are confident with or aware of halal labeled food products and 0 and otherwise coded as zero. Independent variables in the choice model represent the factors that may have an influence on consumers' choice behavior. The explanatory variables were: age, gender, income, level of education, religiosity and area. The independent variables included in the models would depend on the extent of data details that we have and the significance of the variables on explaining choice behavior. Detailed description of the models and calibration results are presented in the next chapter. A summary of explanatory variables (independent variables) included in the models and their coding systems are presented in Tables 3.1 and 3.2.

Model 1: was used to determine the extent to which selected socio-economic/demographic characteristics and attitudes influenced the respondents' confidence on halal logo. Where, dependent variable "Being Confident with halal logo" that had two categories such as "consumers are confident with halal logo" coded as one and otherwise coded as zero. The equation of the logit model is shown in equation below.

$$\log(\frac{P}{1-P}) = \beta_0 + \beta_1 x_{age} + \beta_2 x_{gender} + \beta_3 x_{reliogiousity} + \beta_4 x_{JAKIM\ \log o} + \beta_5 x_{shaiyaapproval} + \varepsilon_i \qquad (6)$$

Where; $\beta_0 = cons\tan t$

$\beta_i = \text{coeficient of } x_i$

The independent variable represents the different attributes affecting the representative consumer's confidence on halal logo (Table 3.1).

Table 3.1: Explanatory Variables to Measure Consumers' Confidence on Halal Logo

Variables	Design value (Coding system)
Residential Area	0. Rural/Suburb
	1. Urban
Gender	0. Female
	1. Male
Level of Religiosity	0. Lower Level
	1. Higher Level
Education Level	0. Secondary school
	1. Tertiary
Marital Status	0. Single
	1. Married
JAKIM halal Logo	0. Not displaying JAKIM logo
	1. Displaying JAKIM logo
Shariyah Approval	0. Without Shariya Approval
	1. With Shariya Approval
Country of Origin	0. Foreign Products
	1. Domestic products
List of Ingredients	0. Not refer to list of Ingredient
	1. Refer to list of Ingredient

Model 2 was used to determine the extent to which selected socio-economic/demographic characteristics and attitudes influenced the respondents' awareness on halal food. Where the dependent variable "Being aware of underlying advantage of halal foods" that had two categories such as "non- Muslim consumers

are aware of halal food advantages" coded as one and otherwise coded as zero. The equation of the logit model is shown in equation below.

$$\log(\frac{P}{1-P}) = \beta_0 + \beta_1 x_{age} + \beta_2 x_{gender} + \beta_3 x_{religiousbelife} + \beta_4 x_{environmentallyfriendlly} + \beta_5 x_{foodsaftey} + \varepsilon_i \quad (7)$$

Where; $\beta_0 = cons\tan t$

$\beta_i = \text{coeficient of } x_i$

Table 3.2 shows the independent variables which determined non- Muslim consumer's awareness on halal food.

Table 3.2: Explanatory Variables to Measure Consumers' Awareness on Halal Logo

Variables	Design value (Coding system)
Residential Area	0. Rural/Suburb
	1. Urban
Gender	0. Female
	1. Male
Age	0. Above 40
	1. Below 40
Education Level	0. Secondary school
	1. Tertiary
Level of Religiosity	0. Lower Level
	1. Higher Level
Food Safety	0. Not Concern about Food Safety
	1. Concern about Food Safety
Environmentally Friendly	0. Not Concern about Environment-ally Friendly
	1. Concern about Environment-ally Friendly
Animal Welfare	0. Not Concern about Animal
	1. Concern about Anima Welfare

3.3.5.2The Multinomial Logit Model (MLM)

The multinomial logit model is used to model relationships between a polytomous (more than two) response variable and a set of regressor variables where where the dependent variable in question consists of a set number (more than two) of categories

which can be ordered in a meaningful way. The basic framework for analysis is provided by the random utility model where consumers are assumed to choose among a range of discrete number of alternatives to maximize their utility. Random utility theory states that a consumer's utility can be decomposed into a systematic and random component of utility. That is, total utility is the sum of observable and unobservable components,

$$U_{ij} \text{ (choice } j \text{ for individual } i \text{)} = V_{ij} + e_{ij} \qquad (8)$$

The utility level $U_{ij,}$ which is individual i's utility from choosing alternative j, is determined by the systematic component of utility of V_{ij} and random components, e_{ij}, which is assumed to be independently and identically distributed with type I extreme value (Gumbel) distribution (Greene,2003). The random component represents the unknown components the consumers' utility function. Consumer i chooses alternative j if

$$U_{ij} > U_{ik} \text{ for all } k \neq j \qquad (9)$$

The probability of individual i choosing alternative j is equal to the probability that the utility of alternative j is greater than the utilities of all other alternatives in the choice set (Greene 2003).

$$P_{ij} = \Pr (U_{ij} > U_{ik}) \quad k \neq j \qquad (10)$$

The general form of the MLM model is described as

$$P_{ij} = \frac{\exp \left(x_i \beta_j\right)}{1 + \sum_{k=1}^{J} \exp \left(x_i \beta_k\right)} \qquad (11)$$

where P_{ij} is the probability that individual i chooses alternative j. The x_i is a vector of characteristics of individual i, J is the number of unordered alternatives, β_j measures the contribution of personal characteristic i to the probability of choosing alternative j, and β_k measures the contribution of personal characteristic i to the probability of selecting alternative k.

The log- likelihood function for the multinomial logit model is given by

$$\ln L = \sum_{i=1}^{n} \sum_{j=0}^{J} d_{ij} \ln \frac{\exp(x_i \beta_j)}{\sum_{k=1}^{J} \exp(x_i \beta_k)} \qquad (12)$$

where d_{ij}=1 if individual chooses i chooses alternative j and dij=0 otherwise (Greene, 2003).

The multinomial logit model was used when there were more than two choices as a final model to investigate confidence level among 3 groups of consumers and to determine the confident level among them. First group respondents were not exposed to any halal information (halal information was about halal and non halal products that seem to be halal in Malaysian market). Second group, the information had been given before filling up the questioner and third group of the respondents received the information after filling up the questionnaire.

The proposed model that contained all terms was

$$V_{NOINFO} = \beta_{0\,NOINFO} + \beta_{1\,NOINFO} X_{IF\ NOINFO} + \beta_2 X_{CA\ NOINFO} + \beta_3 X_{RC\ NOINFO} + \beta_4 X_{G\ NOINFO} + \beta_5 X_{R\ NOINFO} + + \varepsilon_i \qquad (13)$$

$$V_{BEFOREQ} = \beta_{0\,BEFOREQ} + \beta_1 X_{IF\ BEFOREQ} + \beta_2 X_{CA\ BEFOREQ} + \beta_3 X_{RC\ BEFOREQ} + \beta_4 X_{G\ BEFOREQ} + \beta_5 x_{R\ BEFOREQ} + \varepsilon_i \quad (14)$$

$$V_{AFTERQ} = \beta_{0\ AFTERQ} + \beta_1 X_{IF\ AFTERQ} + \beta_2 X_{CA\ AFTERQ} + \beta_3 X_{RC\ AFTERQ} + \beta_4 X_{G\ AFTERQ} + \beta_5 X_{R\ AFTERQ} + \varepsilon_i \quad (15)$$

Where;

NOINFO	denotes for not giving information
BEFOREQ	Info had been given before filling the questionnaire
AFTERQ	Info had been given after filling the questionnaire
IF	denotes if the respondents are influenced by info
CA	denotes if they will to change their answers
RC	denotes how they rate their level of confidence
G	denotes Age
R	denotes level of religiosity

This model formulation implies that the probability of being confident increases monotonically with an increase in the systematic utility of that alternative. Similarly, the probability decreases with increases in the systematic utility of each of the other alternatives. The multinomial logit model of measuring confidence level was developed in order to assess the relative importance of demographic, socio-economic and other attributes that influence consumers' confidence level.

Table 3.3: Explanatory Variables Included in the MNL Model

Attributes Variables	Definition
The respondents are influenced by info	0. No 1. Yes
They will to change their answers	0. No 1. Yes
How they rate their level of confidence	0. Low 1. Very Low 2. Not Changed
Demographic and socio-economic variables	
Level of Religiosity	0. Not Religious 1. Somewhat Religious 2. Very Religious
Age	0. 50<AGE 1 1. 26< AGE2< 50 2. AGE3<25

3.3.6 Model Calibration and Validation Process

3.3.6.1 Estimation Using the Maximum Likelihood Method

The process of developing choice models is commonly called "calibration." Given the basic form of a travel forecasting model, such as a gravity model or a logit model, calibration involves estimating the values of various constants and parameters in the model structure. Model development consists of estimating the numerical values of the models' coefficients, by fitting the models to the available data. Maximum Likelihood Estimation Method is the fitting technique that is usually used in practice. This consists of choosing the values of the coefficients so as to maximize the likelihood (or probability) according to the model being developed, of observing

the choices made by individuals in the estimation sample. It can be shown that the maximum likelihood method yields an estimate of the coefficients and predictions of choice probabilities that have great possibility accuracy.

3.3.6.2 Identifying the Statistically Significant Predictor Variables

There are two outputs related to the statistical significance of individual prediction variables: the likelihood ratio test and parameter estimates. The likelihood ratio tests indicate the contribution of the variable to the overall relationship between the dependent variable and the individual independent variables. The parameter estimates focus on the role of each independent variable in differentiating between the groups specified by the dependent variable**.** The likelihood ratio tests are a hypothesis test that the variable contributes to the reduction in error measure to the -2 log likelihood statistics.

3.3.6.3 Measures Analogous to R^2

The R^2 indicates the strength of the relationship between the dependent variable and the independent variable, analogous to the R^2 measures in multiple regressions. The Cox and Snell measure operates R^2, with higher values indicating greater model fit. However, this measure is limited in that it cannot reach the maximum value of 1, so Negelkerke (1991) proposed a modification that had a range from 0 to 1. In this study Negelkerke's measure indicating the strength of the relationship was used.

3.3.6.3 Odds Ratio (Direction of relationship and contribution to a dependent variable)

An interpretation of the logit coefficient which is usually more intuitive (especially for dummy independent variables) is the "odds ratio" $\exp(\beta)$ which is the effect of the independent variable on the odds ratio. In other words, the odds ratio is the probability of the event divided by the probability of the nonevent.

or example, if $\exp(\beta_3) = 2$, then a one unit change in X3 would make the event twice as likely (.67/.33) to occur. Odds ratios equal to 1 mean that there is a 50/50 chance that the event will occur with a small change in the independent variable. Negative coefficients lead to odds ratios of less than one: if $\exp(\beta_2) = 77$, then a one unit change in X2 leads to the event being less likely (.40/.60) to occur. Odds ratios less than 1 (negative coefficients) tend to be harder to interpret than odds ratios greater than one (positive coefficients). Note that odds ratios for continuous independent variables tend to be close to one, but this does not suggest that the coefficients are insignificant.

3.4 Summary

This chapter explained how this research was carried out and the types of analysis applied to obtain the findings**.** The three main methods of analysis used were outlined and factor analysis, binary and multinomial logit model were developed. The Binary Logit model was used for two alternatives, Being Confident/ Aware and Not Being Confident/ Aware as to identify the determinants that influence consumers' confidence and awareness. The multinomial logit model was used when

there were more than two choices as a final model to investigate the effect of information and book on consumers' confidence.

CHAPTER IV

RESULTS AND DISCUSSION

4.1 Analysis of Socioeconomic Profile of Respondents

This section presents a descriptive analysis the respondents' socio-economic/demographic characteristics and level of confidence, attitude and awareness of consumers toward halal labeled food products. Out of 2000, Eighteen hundred and sixty questionnaires, included 1560 for Muslims and 300 for non-Muslims, were returned with a response rate of 93%. The questions asked included subjects such as confidence, perception and attitude towards halal food and the awareness and reasons for using halal logo. A Likert scale of 1 to 5 was used to measure consumers' confidence on the statements formulated in relation to halal manufactured food products. Consumers' demographic and socio-economic background and value characteristics were also collected. A random sampling method was used in the study to obtain information from groups of people who could provide the desired information. Supermarkets were chosen due to the fact that most manufactured food products are sold there and consumers from different walks of life do their shopping at the supermarkets.

4.1.1 Socio-economic Profile of Respondents

Descriptive analysis was used to discuss the results of the socio-economics profile of the respondents such as residential area, state of origin, gender, race, religion, age, education level and income level to name a few. This data provides a snap shot of the situation of the samples under study. Table 4.1 reports the demographic and socio-economic profile of the sample of consumers.

Table 4.1: Demographic Profile of Respondents

Characteristics	Number	Percentage
Residential area		
Urban	1143	61.45
Suburb	717	38.55
Gender		
Female	905	48.66
Male	955	49.7
Race		
Malay	1521	81.77
Chinese	186	10.00
Indian	119	6.40
Others	34	1.83
Religion		
Muslims	1560	83.87
Christians	75	4.03
Buddhists	157	8.44
Hindus	68	3.66
Age		
Below 25	279	15.02
26-40	1020	54.83
41-60	502	26.98
Above 61	59	3.17

Characteristics	Number	Percentage
Education Level		
Never been at school	18	0.97
Primary school	130	6.99
Secondary school	428	23.01
Tertiary	1284	69.03
Marital status		
Single	818	43.98
Married	1020	54.84
Widow	22	1.18
Occupation		
Government Sector	597	32.10
Privet Sector	760	40.86
Self-employed	149	8.01
Unemployed	57	3.06
Student	165	8.87
Others	132	7.1
Monthly income		
Below 1500	279	15.00
1501-3000	726	39.04
3001-6000	705	37.90
Above 6001	150	8.06

(Source: Survey, 2007)

Table 4.1 shows that the numbers of respondents from urban and suburb were 1143 (61.5 percent) and 717 (38.5 percent) respectively. Purchasing, eating and branding behavior is regulated by gender-specific factors. In this study most of the respondents were males 955 (51.3 percent) as compared to females 579 (48.7 percent). Malaysia's ethnically diverse population of around 26 million consists of three major races: Malay, Chinese and Indian as well as other citizens. Table 4.1 shows that the majority of the respondents were Malays (1521 persons, 81.8 percent), followed by Chinese (186

persons, 10.0 percent), Indians 119 (6.4 percent) and others 34 (1.8 percent). Since Muslims are the largest group of consumers in Malaysia, the importance of halal products is an enormous issue. In this study (Table 4.1) for religion, the compositions are as follows; Muslims 1560 (83.9 percent), Christians75 (4.0 percent), Buddhists 157 (8.4 percent) and Hindus 68 (3.7 percent). Food choices and food consumption are also driven by age. As such, most of the survey respondents (1020, 54.8 percent) were between 26 to 40 years, while 26.9 percent (502) was between 41 to 60 years. The smaller groups of age belonged to below 25 years (279, 15.0 percent) and above 60 years (59, 3.2 percent). Table 4.1 shows the results in a greater depth. In relation to educational level of respondents, 1284 (69.0 percent) of the respondents had tertiary level, 428 (23.0 percent) were secondary school graduates, 130 (7.0 percent) had completed primary school and 18 (1.0 percent) had never been to school (Table 4.1). In addition marital status of the respondents is one of the major characteristic that determines the choice of food and dietary behavior. Of the 1860 respondents, 818 (44.0 percent) were single, 1020 (54.8 percent) were married, while 22 (1.2 percent) were widows, widowers and divorces or divorcées. Table 4.1 also shows that the occupations of the respondents which were categorized into six levels. The majority respondents had working experiences in various positions such as working for government sector 32.1 percent (597), private sector 40.9 percent (760), self-employed 8.0 percent (149) and students 8.9 percent (165). The reminders fell into the unemployed 3.1 percent (57) and the ‘others’ category (7.1 percent, 132) which included retirees and housewives. In terms of income distribution, the study found that 726 of the respondents (39.0 percent) earned between RM 1501-3000 thousand per month while about the same number of them (705, 37.9 percent) earned between RM 3001-6000 monthly. The monthly average income for

15 percent (279) of respondents was less than RM 1500 and a smaller percentage of respondents (8.1 percent, 150) had monthly incomes above RM 6000.

4.1.2 Distribution of Consumers Based on State of Origin

Table 4.2 presents the distribution of respondents based on their location of states. The data shows that the each district collected a total of 120 to 140 Muslim respondents and 19 to 30 non-Muslim respondents to find their levels of confidence and awareness towards halal food and logos in Malaysian market. Eighteen hundred and sixty questionnaires included 1560 for Muslims and 300 for non-Muslims were returned.

Table 4.2: Distribution of Respondents Based on Location

States	Muslim		Non- Muslim	
	Number	%	Number	%
Johor	137	8.79	27	9.00
Melaka	124	7.94	28	9.33
Negri Sembilan	129	8.30	22	7.33
Federal Territory	140	8.97	30	10.00
Selangor	136	8.71	30	10.00
Pahang	120	7.68	24	8.00
Perak	124	7.94	23	7.67
Terengganu	133	8.53	21	7.00
Kelantan	132	8.46	19	6.33
P. Pinang	123	7.88	27	9.00
Kedah	134	8.59	26	8.67
Perlis	128	8.21	23	7.67
Total	1560	100	300	100

(Source: Survey, 2007)

4.1.3 Muslim Respondents

In order to obtain the particular characteristics among Muslim consumers, a few Muslim- specific questions were asked. This part intends to find out how the religious background of respondents influenced their confident purchasing behavior towards halal labeled food products. Table 4.3 shows the details of Muslim respondents' characteristics.

Table 4.3: Muslim Consumers' Characteristics

Characteristics	Number	Percentage
Attending in religious school		
Yes	917	58.78
No	643	41.22
Being a member of association		
JIM	112	7.28
ABIM	97	6.22
Any association	513	32.88
None	838	53.62
Level of religiosity		
Very religious	270	17.31
Religious	826	52.95
Somewhat religious	432	27.69
Not religious	32	2.05

(Source: Survey, 2007)

Attending to religious schools can influence human life in different ways and dietary behavior might be one of them. Table 4.3 shows that the majority of respondents 917 (58.8 percent) have attended religious schools while 643 (41.2 percent) did not. Membership in community associations can often be beneficial to a person. It can provide a forum for support in professional, personal and spiritual growth (Rippentrop

et. al., 2005). The findings of this study indicate that almost half of the respondents were involved in community associations. About 7.3 percent (112) of the respondents were members of JIM (Pertubuhan Jamaah Islah), while 6.2 percent (97) belonged to ABIM (Angkatan Bella Islam Malaysia). Both of these organizations are non-profitable and Islamic based that founded to propagate information on Islam and matters relating to Islam and combat misinformation and misconceptions about Islam. Meanwhile a number of respondents 513 (32.9 percent) were members of other consumers associations in Malaysia. These associations are mostly independent, non-profit organization working on behalf of Malaysian consumers and inform them about products and services available on the Malaysian market and comment on consumer rights in general. The rest of respondents 838 (53.62 percent) did not belong to any associations (Table 4.3). In this survey, 17.3 percent (270) of those surveyed identified themselves as very religious, 52.9 percent (826) claimed to be religious and 27.7 percent (432) as somewhat religious. Only 2.1 percent (32) of respondents claimed to be not religious (Table 4.3).

4.1.4 Non- Muslim Respondents

In Malaysia the food choices of the non- Muslims and their behaviors are likely to be affected by social and cultural factors. In addition, Islamic principles have a major influence over food consumption and purchasing behavior. Therefore it is very important to discover to what extant non-Muslims mix with Muslim communities and

how aware they are of halal principles. Table 4.4 presents some of the non-Muslim characteristics.

Table 4.4: Non- Muslim Consumers' Characteristics

Characteristics	Number	Percentage
Level of religiosity		
Very religious	51	17.00
Religious	151	50.33
Somewhat religious	73	24.33
Not religious	25	8.34
Understanding halal concept		
Fully understand	37	12.33
Understand	138	46.00
Somewhat understand	97	32.23
Not understand	28	9.43
Mix with Muslims at work place		
Always	229	76.33
Often	38	12.67
Seldom	15	5.00
Never	18	6.00
Mix Socially with Muslims		
Always	183	61.00
Often	40	13.33
Seldom	35	11.67
Never	42	14.00

(Source: Survey, 2007)

Non-Muslims were also asked about their religious level or self-identity word. To identify the level of religiosity, the respondents were asked a single question in which they were to identify their religious level by selecting one of the four levels mentioned. Of 300 of respondents, 17.0 percent (51) indentified themselves as very religious (Table 4.4). The majority of respondents were religious category (151, 50.3 percent) while the rest fell in to somewhat religious (73, 24.3 percent) and not religious (25, 8.3 percent). It

is important to be aware of the halal concept in order to consume halal products among non-Muslim consumers. The respondents were asked to identify their level of halal understanding by selecting one of the four levels mentioned. Table 4.4 also shows that 37 of the respondents (12.3 percent) fully understood the meaning of halal. While a large number of them (138, 46.0 percent) were only familiar with this concept. For 32.3 percent (97) of the respondents, halal concept was quite meaningful and understanding and only 28 of respondents (9.4 percent) were not totally familiar with halal concept.

The majority in Malaysia are Muslims; therefore the choices of much of the population may be affected by Muslims belief systems which influence food consumption patterns. A vast opportunity to socialize between Muslims and non- Muslims consumers can create a suitable environment to make non- Muslims aware of halal principle. Table 4.4 shows that 76.33 percent (229) of respondents always mixed with Muslims at their work. However a social communication with Muslim (visiting each other house or meeting at the house clubs) is less at 61 percent (183). Only 6 percent (18) and 14 percent (42) of respondents mixed neither with Muslims at working place nor socially.

4.1.5 Confidence with Halal Food and Logo among Muslim Respondents

Confidence is defined as the degree of optimism that is affected by external stimuli such as economic, social, and cultural factors. The confidence among consumers often affects their decision-making during purchasing behavior (Kucuk, 2005). Fifteen hundred and sixty Muslim respondents were asked in different stages to determine their level of confidence towards halal labeled food. The frequency analysis results of respondents' confidence towards halal labeled food products are presented in Table 4.5.

Table 4.5: Muslim Respondent's Confidence with Halal Food and Halal Logo

	Statement	Percentage					Mean
		1*	2*	3*	4*	5*	
1.	How confident are you with your religious knowledge towards halal foods which you eat	1.34	4.14	14.52	38.76	41.24	4.17
2.	I am confident that locally manufactured halal foods are more trustworthy	1.99	5.81	26.34	44.30	21.56	3.87
3.	I am confident that halal foods promote safety or disease-fighting benefits beyond basic requirement of Islamic principle	1.23	4.30	19.35	36.83	38.28	4.08
4.	I am confident that halal certification logo shows the hygienic process, that product has to undergo before reaching the market	1.34	4.73	23.13	42.20	28.60	3.95
5.	How confident are you that foods with halal logos are safer to consume	2.26	6.67	19.19	41.45	30.43	3.90
6.	All kinds of halal logos from different countries are trustworthy	6.88	21.40	45.32	18.99	7.41	2.98
7.	I am confident with products' brands that are sufficient for me to indicate the halalness of products	9.46	19.57	41.29	23.07	6.61	2.93
8.	I am confident that with purchasing local food products, the halalness of food is ensured	4.78	15.00	37.47	31.46	11.23	3.2
9.	How confident you are about the people awareness towards halal food compare to 10 years ago	1.34	2.90	17.96	44.78	33.02	4.08
10.	How confident are you that halal logo shows that the products are promoted by Islamic authorities and have safe manufacturing process	1.51	3.06	19.78	41.08	34.57	4.04
11.	By introducing the international standard for halal logo in the local market, I am confident that the halal food products will be more trustable	1.18	2.74	16.18	42.16	37.74	4.19
12.	I am confident that halal logo forces food producers to be transparent on food ingredients	1.40	6.89	23.06	44.46	24.19	3.87
13.	When you find the halal logo on food product, are you confident the product is being produced under the "halalness" requirement by Islamic law	1.72	5.60	29.19	42.15	21.34	3.77

Table 4.5: Respondent's Confidence in halal Food and Logo (Continued)

	Statement	Percentage					Mean
		1*	2*	3*	4*	5*	
14.	How confident are that the halal logo gives assurance that food ingredients and additives used are halal and the food premises serve only halal food	5.05	10.22	36.45	31.99	16.29	3.84
15.	How confident are you with the food that being served at international fast food restaurants	5.10	10.27	36.45	32.10	16.08	3.42
16.	One standard of halal logo in all Muslims world, make me more confident about the validity of halal logo	1.13	3.01	12.26	39.35	44.25	4.25
17.	Putting halal logo is a way to practice food processing, which is Islamic, hygienic and environmentally friendly	1.50	3.71	15.48	42.21	37.10	4.12
18.	Although halalness of food products has been certified by the authority of the religious department, they sometimes can't fulfill my needs and requirements	6.72	11.55	37.80	30.11	13.82	3.38
19.	Non-Muslim food manufacturers are really concerned about the halalness of their manufactured food products	10.87	23.50	37.61	20.16	8.05	2.91
20.	There is a need for an institute or agency to approve the halalness of all the halal food products in Malaysia by doing traceability study	1.83	3.87	14.41	37.31	42.58	4.17
21.	How confident are you with the food that is being served in non-Muslim premises and restaurants which display halal logo	16.40	24.35	32.69	17.58	8.98	2.76
22.	Under the government's control, all kind of halal logos are trustworthy	3.44	10.05	27.37	37.23	21.88	3.66

*Indicator

1. Not Confident 2. Little Confident 3. Some What Confident 4. Confident 5. Much Confident

(Source: Survey, 2007)

A total of 41.2 percent of respondents stated that they are very confident with their religious knowledge while purchasing halal food products. The results of this study also show that 44.3 percent of respondents indicated that locally manufactured and processed halal foods are more trustworthy. Around 38.3 percent of respondents were very confident in promoting food safety with halal food. Nearly 42.2 percent of respondents reported that halal logo is good way to determine the hygienic processing of food products. About 42.3 percent of respondents stated that food with halal logo are healthier compared to others while 41.5 percent of them reported the halal logo on manufactured food do support the safety of food. A very small group of respondents (7.4 percent) were very much confident with all the halal logos from different countries. Almost half of respondents (41.3 percent) declared that products' brand is not a very confidence indicator of the halalness of products. In general, 37.5 percent respondents were not very confident with the statement of "in purchasing local food products, the halalness is ensured.

More than half of the respondents (59.3 percent) stated that halal food preparation can be environmentally friendly; however 50.5 percent of respondents believed that environmental protection laws are stricter compared to halal processes. Majority of consumers (77.8 percent) indicated that halal products are more well-known now than 10 years ago. A total of 75.3 percent of respondents confirmed that halal foods are safer to consume as compared to conventional food products. The survey found that 75.7 percent of consumers were very confident with the Islamic and safe manufacturing processes that products undergo. Around 79.9 percent of respondents believed that an

international standard of halal logo is more trustworthy and confidential but 31.8 percent of them stated that halal logo can not show the contamination of food products. Majority of consumers (63.5 percent) were confident that halal logo shows Islamic processing of food products. From these results it can be concluded that around 36.5 percent of respondents were somewhat confident in the halalness of the ingredients and additives in food products which come with halal logo. Around 48.2 percent of them were very confident with the halalness of international fast food restaurants. Majority of consumers (83.6 percent) believed that there is a need for one standard halal logo for all Muslims country. Of the total number who answered the survey, 79.3 percent indicated that the halal logo is a confident way to prove that the food products are Islamic, safe and environmentally friendly. However, 43.9 percent of them stated that halal logos can not fulfill their needs and expectation.

Nearly 34.4 percent of the respondents were not confident in non-Muslim manufacturers regarding the halalness of their products. Moreover 79.9 percent of respondents confirmed a need of agency to approve the halalness of food products by performing traceability studies. Only 26.6 percent of them were very confident with non-Muslim restaurants with halal logo. However the majority of respondents (59.1 percent) believed that a governmental control system can make all kinds of halal logo trustworthy.

These results show that although some of respondents are not that confident with halal logo, the majority of them are aware of the importance of halal logo and the advantages which come with it.

Table 4.5 (by referring to the mean) shows that most of the respondents are confident with their religious knowledge towards halal food (mean 4.17), this followed by locally grown and processed halal food products (3.87) and the safety aspects of halal foods (4.08). The results of the survey show that consumers' confidence in the hygienic process of halal food products is quite high (3.95). It might be due to that one of the main principles of halal is being clean and hygiene; therefore consumers perceived that wholesomeness and purity must also come with halal foods.

Moreover, the study shows that most of the respondents were confident with the health aspects of halal food (3.97) followed by safety (3.90). However, they do not consider all the halal logos in the Malaysian market to be reliable and trustworthy (2.98). It seems that the product's brands are insufficient indicators of halalness of products. Most of the respondents believed halal processing can be environmentally friendly (3.68) though environmental protection laws are yet stricter compared to halal preparation (3.52). The results of the survey show that consumers were not very confident with non-Muslim manufacturers (2.91) and non-Muslim food premises and restaurants (276) even with halal logo. It might be because they assumed that non-Muslims are not well aware of halal manufacturing and processing. It seems that they are concerned about the government's roles in two ways. First by monitoring the producers, all kinds of halal logo can be trustworthy (3.66) and on the other hand, by doing traceability study, the government could make producers to become transparent on the food ingredients they use (4.17). Most of the respondents believed in existence of one international standard halal logo in all Muslim countries (4.25).

From the results, it can be concluded the government can increase the determination pattern of halal logo by controlling, ruling and conducting a campaign at the national and international level to encourage consumers to consume food which is healthy, environmentally friendly and safe to consume. If the halal logo on food product is well known and recognizable, even the trustworthiness may be increased; because the confidence level depends on knowledge, familiarity and policy makers' consideration.

4.1.6 Attitudes and Perceptions toward Halal Food

Attitude is the psychological tendency that is expressed by evaluating a particular entity with some degree of favor or disfavor and perception is the process of acquiring, interpreting, selecting, and organizing sensory information for that item (Eagly *et. al* 1995). These two can express the mental awareness of a person towards the performance of a particular behavior. Therefore it is important to measure respondents' perceptions and attitudes towards halal food products in order to achieve this study's objectives. The frequency analysis results of the consumers' perceptions and attitudes toward halal labeled food products are presented in Table 4.6.

Table 4.6: Muslim Respondent's Perceptions and Attitudes on Halal Food and Logo

	Statement	Percentage					Mean
		1*	2*	3*	4*	5*	
1.	Religious obligation is a major concern of mine when purchasing food products.	2.90	3.82	9.30	31.08	52.90	4.27
2.	Knowing how halal food is grown and processed is very important to me.	2.80	3.39	8.49	36.77	48.55	4.27
3.	Most of halalness problems are with food products with animal origin.	2.20	4.67	18.03	41.88	33.22	3.98
4.	I don't really care about existence of halal logo on food products.	49.89	27.85	9.09	6.99	6.18	1.89
5.	I always look for halal label when I buy any kinds of food products.	4.62	3.71	12.32	36.02	43.33	4.09
6.	Using halal logos will help my family and me to choose food products based on our beliefs (religion).	2.53	3.98	9.30	36.18	48.01	4.22
7.	The country of origin of the products makes me to refer to the food ingredients.	2.20	3.83	21.29	47.80	24.89	3.89
8.	Halal food helps to maintain good health.	2.52	4.64	13.92	37.31	41.61	4.10
9.	Advertisements on halalness of food products influence my purchasing behavior.	2.69	3.98	21.29	40.91	31.13	3.93
10.	I am more confident with halalness of those food products which carry halal logo compared to those without the halal logo.	1.51	2.69	13.49	40.48	41.83	4.18
11.	Halalness is not only confined to the way the Muslim slaughter the animals but also the ethic and act of doing the slaughtering.	0.7	3.12	11.51	35.48	49.19	4.29
12.	The scientific name of certain ingredients in a halal food sometimes makes me doubtful about the halalness of product.	1.88	6.51	25.38	40.22	26.01	3.84
13.	Monitoring the halalness of the manufactured food products is one the JAKIM's main problems after issuing halal logo.	0.32	2.52	17.37	45.11	34.68	4.13
14.	Advertisements on halalness make me aware of existence of the halal food products in the market.	1.13	3.61	15	47.20	33.06	4.07
15.	I have full confidence in the halal food products and my mind is at rest by using it.	1.88	4.78	15.91	47.1	30.33	3.98
16.	Crop-based food products seldom have halalness problems.	0.97	6.02	31.08	42.85	19.08	3.73

*Indicator

1. Strongly Disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly Agree

(Source: Survey, 2007)

The results show that, the majority of consumers (52.9 percent) were very concerned about religious obligations when purchasing food products and also aware that halal food processing is an important factor for most of them (48.6 percent). However about 75.1 percent of them did not find any halalness problems with non-animal origin products. Near half of the respondents (49.9 percent) stated that they did check the existence of halal logo on food products. Moreover most of them (79.4 percent) always looked for halal logo during buying any kind of halal food. Around 84.2 percent considered halal logo as a way to purchase food products based on their belief. Nearly 72.7 percent of respondents indicated that they referred to the list of ingredients based on country of origin of products. A large proportion (78.9 percent) believed in health benefits of halal food.

A small group of the respondents (27.9 percent) were not influenced by advertisement on halalness of food products and the majority of them (84.7 percent) perceived that halal is not only confined to the slaughtering of animal. The results of the survey show that 78.8 percent of consumers agreed with weakness of JAKIM monitoring after issuing halal logo and finally most of them (77.4 percent) were confident will halal food after purchasing it.

From these results, it can be concluded that the respondents' attitudes and perceptions toward halal foods and logos are mainly positive, although there are still some lack of confidence with JAKIM monitoring and international halal logos. These issues will be discussed in more details with further analysis.

The next step in measuring the attitudes and perceptions among Muslim respondents, was to ask them about the frequency of their checking halal logos and list of ingredients on food manufactured products. The results are presented in Table 4.7.

Table 4.7: The Frequency of Checking Halal Logo and List of Ingredients

Statement	Percentage					
	1*	2*	3*	4*	5*	Mean
How often checking halal label (Logo)	5.38	4.10	13.08	33.91	43.53	4.05
How often examining list of ingredients	5.78	12.88	37.69	30.00	13.65	3.32
How often trust on halal logo	2.5	4.10	26.28	41.29	25.83	3.85

*Indicator
1.Never 2. Rarely 3. Sometimes 4. Often 5. Always
(Source: Survey, 2007)

The first statement in Table 4.7 reveals how often the Muslim respondents check halal logos on food products. The frequency of checking this label indicates that a large proportion of the respondents (43.5 percent) always checked the halal label and 33.9 percent of them often looked at it. About 13.1 percent of the respondents sometimes checked the logos and 4.10 percent look at it once a while. Only 5.4 percent stated they never checked the halal logos on the manufactured product. The results of the study show that 13.7 percent of Muslim consumers always referred to the list of ingredients after checking halal logo and 30.0 percent of the respondents considered it as a rather often checking factor. The largest group of Muslim consumers (37.7 percent) sometimes examined the ingredients label after the halal one. However, 18.7 percent of Muslim respondents seldom or never referred to the ingredients list. The frequency analysis results of Muslim respondents' trustworthy on the halal labels on manufactured food indicate that only 25.8 percent of respondents always found halal logos trustworthy,

while the majority of consumers (67.6 percent) often or sometimes could trust on the halal claims which are made by food manufacturers.

By referring to the mean, it is found that, halal logo was mostly checked by the respondents and it was also one the main factor in order to ensure the halalness of the products to the Muslim respondents (4.05). List of ingredients was not very well known among the Muslim consumers (3.32) and it might be due to scientific and technical words which respondents are not very familiar with. The level of trustworthy among Muslim respondents was in the moderate level (3.85) and the majority of them often trusted the reliability and validity of halal logos.

Muslim respondents were asked seven questions in order to determine their attitudes towards some aspects of halal foods and logos (Table 4.8).

Table 4.8: Muslim Respondents' attitudes and Halal

Statement	Yes		No		Mean
	Number	%	Number	%	
JAKIM logo is trustworthy only	1325	85.10	235	14.90	1.15
Confident with any kind of halal logo	673	45.77	887	54.23	1.55
Stopped buying halal food because of halal concern	903	59.40	657	40.60	1.40
Purchasing non-animal food products without Logo	635	40.15	925	59.85	1.60
Other race or religious background get benefit of halal food products	724	45.47	835	54.53	1.55
Confident with JAKIM procedure in certifying halal Logo	1394	88.45	166	11.55	1.10

(Source: Survey, 2007)

In the first statement, out of 1560 Muslim respondents, 85.10 percent of the respondents demonstrated positive attitude towards JAKIM logo and claimed it is the only trustworthy halal logo in the Malaysian food market. Moreover about 45.77 percent of respondents did not find all kinds of the halal logo trustworthy. More than half of the respondents 903 (59.40 percent) indicated that; they stopped buying claimed halal food product because of halal concern. Seven hundred and twenty four consumers (45.47 percent) stated that other religious background could also benefit from halal products. The majority of respondents (88.45 percent) were confident with JAKIM procedure in certifying halal logo.

Another step toward determining respondents' perceptions and attitude was to find how aware they are of halal concept. Halal, in its full definition, as defined by Malaysian Prime Minister, Datuk Abdullah Ahmad Badawi, during "World halal Forum" May 2006 in Malaysia, is "Religious, healthy, environmentally friendly, animal welfare and fair trade". Table 4.9 shows how far those stated issues were considered to be important by consumers during purchasing halal manufactured food products. By referring to the mean, the overall majority of respondents were familiar with the religious (4.63) and safety aspects (4.37) of the halal concept. The results of this study show that most of the respondents believed that halal is concerned about Environment (3.88) and fair trade (3.72). Apparently animal welfare has the lowest mean that might indicate the negative impression about Islamic slaughtering (this will be discussed later).

Table 4.9: Muslim Respondents' Awareness towards Halal Concept (Percentage)

Statement	Not Very Concerned	Not Concerned	Neutral	Concerned	Very Concerned	Mean
Religious Belief	0.81	0.48	4.52	22.31	71.88	4.63
Food Safety	0.32	1.5	8.22	40.82	49.14	4.37
Environmentally Friendly	0.81	3.82	24.41	47.42	23.54	3.88
Animal Welfare	1.93	7.15	34.14	39.68	17.1	3.53
Fair Trade	1.99	7.42	29.41	38.11	23.06	3.72

(Source: Survey, 2007)

4.1.7 Effect of Information on Consumers' Confidence Level

The aim of this section of questionnaire was to evaluate the effect of information about halal and halalness of products on Malaysian consumer's confidence. The respondents received the information via a book (Figure 4.1) after and before being interviewed. The book is called "*Halal Haram*" and published by Consumer Association of Penang as a guide for consumers in 2006. The book intends to clarify whatever doubts are in Muslims' mind by pointing halal, safety, hygiene and environmentally aspects of halal products in Malaysia.

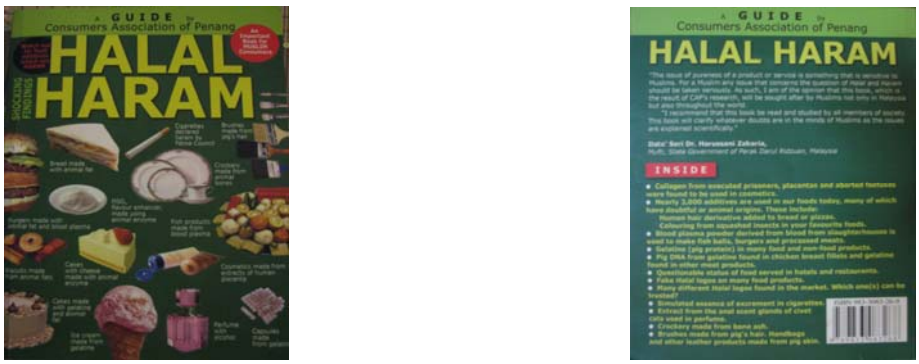


Figure 4.1: Halal and Haram Book

The survey involved 1530 Muslim respondents to complete this part of the questionnaire. The respondents were categorized in 3 different groups. Group 1, which includes all Muslim respondents, had been given the booklet containing the information about the halal and halalness of the products and their relative logos, before they were asked to filling in the questionnaire. Group 2, includes Muslim respondents as well, who were asked to participate in the survey without providing them with any initial information in the form of a booklet. However, after completing the survey, they were provided with the informative booklet and asked to read it well before they proceed to answer the final 3 questions. Group 3, includes the respondents, who had not been provided with the booklet neither prior nor after the survey.

1- Have they been influenced by the information and knowledge provided to them prior or after the survey?
2- Have their confidence level on their halal labeled food been changed or affected by the given information?
3- Are they willing to change their answers after being educated by the information provided in the book?

Table 4.10: Consumers' Confidence Level and Effect of Information

Characteristics	Number	Percentage
Presenting book and information		
Did not receive any information	491	31.47
Received information before interview	543	34.81
Received information after interview	526	33.27
Being influenced by book (before/after)		
Yes	766	71.66
No	303	28.34
Will to change the responds (before/after)		
Yes	406	37.98
No	663	62.02
Rate level of confidence (before/after)		
Not changed	91	8.51
Lower than before	807	75.49
Very much lower than before	171	16.00

(Source: Survey, 2007)

Summary statistics and frequency distribution are presented in Table 4.10. Out of 1560 Muslim respondents, 31.34 percent (491) were not provided with any information neither prior nor after conducting the survey. About 34.81 percent (543) of them received information before being interviewed while 33.27 percent (526) of respondents were exposed to the book after being interviewed. The majority of respondents had been influenced by informative booklet (71.66 percent, 303) however only 37.98 percent (406) will to change their answers after being educated by booklet. This might happen because some of the respondents had been exposed to information before filling up the questionnaire therefore they did not intent to change their answer. In term of confidence level, about 8.51 percent (8.51) of respondents stated their confidence level had not been

changed and 75.49 percent (807) of them found their confidence level lower than before. Around 16.00 percent (171) indicated that their level of confidence had changed to the lowest level because of being exposed to the informative booklet.

In summary, consumers who were attempting to modify their religious beliefs were more attentive to the halalness of food products and also the higher frequency of checking halal logo in the respondents, suggests that these consumers are looking for halal logo as a result of an increased concern about their religious beliefs and obligations. Based on the responses, it appears that the respondents had an adequate level of knowledge and awareness of the identification of halal food. However consumers' perception on halalness and halal logo (especially for international products) lies in the lack of confidence.

4.2 Analysis of Malaysian Consumers' Confidence on Halal Labeled Food

This section presents the estimation results of study on consumers' confidence and awareness with a comprehensive statistical analysis on the statistical evaluating the appropriateness of the model parameters and the overall statistics of the model. Results are presented in four parts. In part 1, ranking logo and chi-square analysis were established on hypothetical choices and preferences to find the relationship between respondents' demographic factors and selected dependent variables. In part 2, the factor analysis was proceeded to extract and identify the latent factors which influenced consumers' confidence during purchasing halal labeled food products. Part 3 presents the Binary Logit model for both Muslim and non-Muslim respondents to determine the relationship of these two groups and the determinants that influence their confidence level and awareness with halal labeled food products. In addition, the study examined the impact of the determinants on Muslim respondents' confidence and non- Muslim respondents' awareness probability. Finally, part 4 describes the Multinomial Logit model for the three approaches. This part of the study attempted to construct confident behavior of respondents of three approaches namely after giving information, before giving information and without information to predict the effect of information on consumers' confidence in purchasing manufactured foods with halal logo.

4.2.1 Ranking Halal Logos

The rank is a statement describing the "level of confidence" among consumers. The overall purpose of ranking was to find out the most trustworthy halal logo in the Malaysian food market. In order to measure the level of confidence, respondents were asked two questions, first, regarding the country of origin of the products and second, their corresponding logos. They were to rank from scale 1 (most confident) to 8 (least confident). The degree of confidence in accepting or rejecting logos was measured by computing average scores for each logo. As expected in both questions, the Malaysian halal logo, which is approved by JAKIM, shows the highest level of confidence. Table 4.11 gives a visual quick view of ranked logo based on country of origin among the consumers.

Table 4.11: The Percentage of Trustworthiness of Consumers on Halal Logo

Country of Origin of Logo	Percentage
Malaysian Halal Logo	91.6
Indonesian Halal Logo	3.0
Indian Halal Logo	1.4
Australian Halal Logo	1.3
Singaporean Halal Logo	1.1
Thailand Halal Logo	0.9
Chinese Halal Logo	0.4
American Halal Logo	0.3

(Source: Survey, 2007)

Consumers were asked to rank the most confident halal logo in the Malaysian market. Nearly 92 percent ranked Malaysian halal logo as the number one (Table 4.12). This is followed by other Asian country like Indonesia and India. Australia is ranked in the 4th place. This result suggests that consumers are likely to be more sensitive to country of origin of logos and it plays an important role in choosing food products with consumers.

With regards to corresponding halal logos from different countries, the Malaysian halal logo still shows the highest score of ranked (81.6 percent). This however does correspond with unrecognized halal logo in the third rank (Table 4.12). Table 4.12 shows that Malaysian halal logo leads the category with 81.6 percent ranked score followed by Singapore halal logo with 4.2 percent. The unrecognized logo, which is not from any Asian or Muslim countries, shows the third score of ranking. This may be because people are quite familiar with this halal logo in the Malaysian food market especially in Carrefour imported food products.

Table 4.12: Ranking Halal Logos

Halal Logo	Country of origin	Percentage
	Malaysia (JAKIM)	81.6
	Singapore	4.2
	Unrecognized Logo	3.8
	Thailand	3.2
	Australia	2.6
	Indonesia	1.9
	China	1.4
	U.S.A (IFANCA)	1.3

(Source: Survey, 2007)

4.2.2 Cross-Tabulation with Chi-Square Analysis

The Chi-square statistic is the primary statistic used for computing the statistical significance of the cross-tabulation table. Chi-square is used to test for statistical independence. As mentioned earlier, in order to determine the statistical differences of respondents' confidence level and some demographic factor, a few hypotheses have been tested in this study. If the variables are independent (have no relationship), then the results of the statistical test will be "non-significant" and "not able to reject the null hypothesis", meaning that there is no statistical relationship between respondents' confidence level and demographic factors. If the variables are found to be related, then the results of the statistical test will be "significant" and "able to reject the null hypothesis", meaning that can be state that there is some statistical relationship between the variables.

4.2.2.1 Testing Relationship between Demographic Factors and Confident with Fast Food and International Food Premises

Table 4.13 shows the summary of Chi-square test results between respondent demographic factors and their confidence level with international fast food restaurants which display halal logo. The results indicate that most of the variables of demographic factors such as state of origin of respondents, level of religiosity and education level have significant different with consumers' confidence towards the international fast food premises. Appendix B.1 views the summary of Chi-square test, which shows the

consumers who live in southern (15.8 percent from Johor and Malacca) and central part of the country (16.4 percent Selangor, Federal Territory and Negeri Sembilan) are more confident with the fast food restaurants compared to the others. While respondents from East coast (9.8 percent) are significantly least likely to be confident with the international fast food restaurants with halal logo. Significant interactions were found between level of religiosity and confidence level of fast food restaurants; the religious and moderate religious groups of respondents are less likely to be confident with the fast food restaurants which display halal logo. Moreover there is a significant relationship between education levels and confident with halalness of fast food restaurants. Overall higher educated respondents are less likely to be confident with the fast food premises which display halal logo.

Table 4.13: Relationship between Respondent Demographic Factors and Confident with Fast Food and International Food Premises

Variables	Chi-square	df	Significant	Decision
State of origin	27.341	12	.007	Reject H_0
Level of religiosity	40.495	16	.001	Reject H_0
Being at religious school	9.435	12	.665	Accept H_0
Education level	36.123	28	.003	Reject H_0
Occupation	28.583	20	.096	Accept H_0

(Source: Survey, 2007)

4.2.2.2 Testing Relationship between Demographic Factors and Confident with non-Muslim Food Premises which Display Halal Logo

Table 4.14 summarized the result of Chi-square test between demographic factors and the confidence with non Muslim restaurants with halal logo. The Table shows that there is a significant relationship between the state of origin, being at religious school, level of religiosity and occupation with non-Muslim food premises which display halal logo. Referring to Appendix B.2, it is concluded that the respondents from southern (Johor and Malacca) and central part of the country (Selangor, Federal Territory and Negeri Sembilan) are more likely to be confident with non-Muslims restaurants which display halal logo. However respondents from east coat are were least likely to be confident with non-Muslim food premises with halal logo. Attending to religious school is also significantly associated with the respondents' confidence level. Only 23.2 percent of the respondents who have religious school experience are likely to be confident with non-Muslim food premises. In terms of the level of religiosity, the results show that the very religious consumers (23.0 percent) are least likely to be confident with non-Muslim food restaurants with halal logo. Table 4.14 shows that there is no significant relationship between education level and the confidence level with non-Muslim food premises which display halal logs among the respondents. Nevertheless respondents with working experience either governmental 21.7 percent or private sector 23.8 percent are less likely to be confident with non-Muslim restaurants with halal logo.

Table 4.14: Testing Relationship between Demographic Factors and Confident with non-Muslim Food Premises which Display Halal Logo

Variables	Chi-square	df	Significant	Decision
State of origin	25.2274	15	.001	Reject H_0
Level of religiosity	1.162E2	20	.000	Reject H_0
Being at religious school	54.324	15	.000	Reject H_0
Education level	28.287	20	.103	Accept H_0
Occupation	45.117	25	.008	Reject H_0

(Source: Survey, 2007)

4.2.2.3 Relationship between Demographic Factors and Always Looking for Halal Logo

The result of relationship between demographic factors and always looking for halal logo during purchasing behavior were shown as Table 4.15. It presents that state of origin, level of religiosity, being at religious school, education level and occupation have significant different relationship with looking for halal logo during purchasing food products. Appendix B.3 shows that 45.4 percent of the respondents from east coast (Kelantan, Terengganu and Pahang) are significantly most likely to be frequent consumers looking for halal logo on food products. Looking for halal logo is also associated with some related demographic factor such as level of religiosity and attending religious school. Respondents with the higher level of religious self- identify significantly more likely to look for halal logo on manufactured food products. The results show that 50.5 percent of respondents with religious school background are mainly looking for halal logo during purchasing behavior. Meanwhile significant

interactions were found between education level and looking for halal logo on food products. Educational level difference in checking halal logo is greatest among respondents at tertiary level and least among illiterate respondents. Occupation differences in unemployed groups were least and the results show that they are less likely to be conscious of existing halal logo on the food products.

Table 4.15: Relationship between Demographic Factors and Looking always for Halal Logo

Variables	Chi-square	df	Significant	Decision
State of origin	32.424	12	.001	Reject H_0
Level of religiosity	1.094E3	16	.000	Reject H_0
Being at religious school	54.324	15	.000	Reject H_0
Education level	29.231	16	.022	Reject H_0
Occupation	80.491	20	.000	Reject H_0

(Source: Survey, 2007)

4.2.2.4 Testing Relationship between Demographic Factors and Advertisement on Halal Food

Table 4.16 presents the relationship between demographic factors and whether the halal advertisements can influence consumers' purchasing behavior. According to the results state of origin, level of religiosity, being at religious school, education level and occupation show the significant different with advertisements on halal food. Appendix B.4 indicates that most of respondents are significantly more likely to be influenced by halal advertisement and significant interactions were found between state of origin of the respondents and advertisement on halalness of food products. Furthermore higher

religious believes leads consumer to be more influenced by halal advertisements (40.4 percent). Advertisement on halalness of food products is significantly related to religious school background of respondents. Results show that the respondents without religious school experience (21.6 percent) are significantly less likely to be influenced by halal advertisements. In addition, advertisement on halalness of food products is significantly associated with educational level. The lower level of education is statistically related to lower influential level by halal advertisements.

Table 4.16: Testing Relationship between Demographic Factors and Advertisement on Halal Food

Variables	Chi-square	Df	Significant	Decision
State of origin	18.781	12	.001	Reject H_0
Level of religiosity	6.09E2	16	.000	Reject H_0
Being at religious school	5.998E2	12	.000	Reject H_0
Education level	41.139	16	.001	Reject H_0
Occupation	54.116	20	.000	Reject H_0

(Source: Survey, 2007)

4.2.2.5 Relationship between Demographic Factors and Confident with Products with Halal Logo

Table 4.17 summarized the result of Chi-square test between respondents' demographic factors and their confidence level with the products that carry halal logos. Table 4.17 indicates that there is a significant relationship between demographic factors such as state of origin, level of religiosity, being at religious school and occupation with confidence in products with halal logo. Appendix B.5 summarized the results of cross-

tabulations. The results show that 50.3 percent of respondents from east coast (Kelantan, Terengganu and Pahang) followed by 44.1 percent from north (Perlis, Kedah, Penang and Perak) are more likely to be confident food products with halal logo compared to the products without halal logo. In addition, there is statistically significant relationship between products with halal logo and level of religiosity of respondents. The more religious respondents are, the likelihood of being confident with the product with halal logo will increase. Significant interactions were found between religious school background and halalness of product with halal logo. Respondents without religious school experience are less likely to be confident with food products with halal logo (Appendix B.5). Confidence in the products with halal logo is also significantly associated with occupation.

Table 4.17: Relationship between Demographic Factors and Confident with Products with Halal Logo

Variables	Chi-square	df	Significant	Decision
State of origin	21.752	12	.000	Reject H_0
Level of religiosity	24.476	16	.000	Reject H_0
Being at religious school	38.950	12	.000	Reject H_0
Education level	10.516	16	.838	Accept H_0
Occupation	55.81	20	.000	Reject H_0

(Source: Survey, 2007)

4.2.2.6 Testing Relationship between Demographic Factors and Frequency of Checking Halal label

Table 4.18 summarized the result of relationship between respondents' demographics factors and the frequency of checking halal logo during purchasing behavior. The results show that state of origin, level of religiosity, being at religious school, education level and occupation have significant different with the frequency of checking halal logo among the consumers. Appendix B.6 shows the cross- tabulation results which indicate that the respondents from east coast (Kelantan, Terengganu and Pahang, 56.0 percent) are significantly more likely to be frequent of checking halal logo. However the respondents with lower level of religious self-identity (10.8 percent) are least likely to be concerned about the existence of halal logo. Being at religious school is also significantly interacted with the frequency of checking halal logo while purchasing food products. Respondents with religious school experience (50.8 percent) are more likely to be frequent of checking halal logo. Education level differences show statistically significant with the frequency of checking halal logo. The results show that 52.6 percent of consumers at tertiary level always check halal logo on food products. Occupation also shows significant relationship with frequency of checking halal logo. Results indicate that 52.4 percent of respondents from governmental sectors always check the halal logo on food products.

Table 4.18: Relationship between Demographic Factors and Frequency of Checking Halal label

Variables	Chi-square	Df	Significant	Decision
State of origin	51.575	12	.000	Reject H_0
Level of religiosity	13.513	16	.000	Reject H_0
Being at religious school	26.351	12	.000	Reject H_0
Education level	39.481	16	.001	Reject H_0
Occupation	11.728	20	.000	Reject H_0

(Source: Survey, 2007)

Theory of reasoned action indicating hypothesized role of external variables such as some demographic factors like education level, occupation and the state of origin as well as subjective norms like level of religiosity and having religious school experience which directly have positive effect on Muslim consumers' confidence level towards purchasing manufactured food products with halal logo.

4.3 Factor Analysis

An exploratory factor analysis was carried out to define the underlying structure in the data matrix. Respondents faced 39 questions on a five-point Likert scale about their attitudes, perceptions, awareness and confidence level towards manufactured food products with halal logo.

4.3.1 Measure of Sampling Adequacy

The Keiser-Meyer-Olkin (KMO) sampling adequacy test and Bartlett's test of Sphericity were used to measure sampling adequacy and the presence of correlation among the variables. The KMO test is a measure of the proportion of total variation in the dependent variable that is explained by independent variables. Interpretive adjectives for the KMO measure of sampling adequacy are: marvelous (in the 0.90's), meritorious (in the 0.80's), middling (in the 0.70's), mediocre (in the 0.60's), and unacceptable (in the 0.50's). Bartlett's test of sphericity and KMO test of sampling adequacy were initially performed on the data to confirm the appropriateness of conducting factor analysis (Tabachnick, 2001). KMO test for the set of predetermined variables reached values of at least 0.901. Once the sampling adequacy was confirmed, factor analysis can be carried out as a proper analysis.

Table 4.19: KMO and Bartlett Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy	.901
Bartlett's Test of Sphericity	2084.250
Significance	.000

The Bartlett's test for sphericity showed that the correlation matrix was at an appropriate level to perform factor analysis on the data for each scale, with all scales reaching a significance level of $p < 0.000$. The KMO measure provides a value between 0 and 1. Small values for the KMO indicate that a factor analysis of the variables may not be appropriate, since the correlations between variables cannot be explained by the other variables (Norusis, 1993). Values higher than 0.6 are considered satisfactory for factor analysis.

(Source: Survey, 2007)

4.3.2 Communality

Communality is the mount of variance an original variable hares with all other variables included in the analysis. According to Aaker *et. al.* (1998), communality is the percentage of a variable's variance that contributes to the correlation with other variables or is "common" to other variables. The results obtained for communalities range from 0.239 to 0.897. In Table 4.20 the first variables have higher communalities, which mean that their variations are represented fairly by all factors, whereby other variables are represented lower communality.

Table 4.20: Communalities

Variables	Communalities
1. I always check halal logo	.816
2. I am confident to choose products based on belief	.789
3. Confidence on halal food to maintain good health	.758
4. Confidence on country of origin to check ingredients	.615
5. Full confidence with halal logo and my mind at rest	.662
6. Food with halal logo are safer to consume	.781
7. Make healthier choice purchasing halal food	.703
8. Halal logo shows food is hygienic and not contaminated	.698
9. Halal food safer than conventional food	.687
10. Under government control all logos are trustworthy	.541
11. Government need to regulate the food manufacturer in terms of using halal ingredients and additives (Traceability)	.549
12. Religious knowledge and safe halal food consumption	.679
13. Awareness of halal food compared to 10 years ago	.715
14. Products' brand indicates the halalness of products	.671
15. Locally grown products are trustworthy	.680
16. Halalness is ensured more in local products	.686
17. Good and safe manufacturing practices	.669
18. Good Hygienic practices	.722
19. Approved By Shariyah	.505
20. JAKIM monitoring	.504

(Source: Survey, 2007)

4.3.3 Varimax Normalization

The variables considered in this study were rotated using the orthogonal (varimax) rotation method. This way method better was used to redistribute the variance in the right way to get a clearer separation of factors. According to Kaiser's experiments (1974), it could be indicated that the factor pattern obtained by varimax rotation tends to be more invariant. The major advantage of varimax normalization is that the mathematical relationship of the key factors remains stable, which means that the total eigenvalue and the percentage of total variance of the principle dimensions have not been affected because the rotation does not change the angle of each factor. The varimax method has approved very successful as an analytic approach to obtaining an orthogonal rotation of factors.

From the results of the rotated factor matrix, only items with a factor loading of 0.5 and above, except to one factor which is considered with factor loading 0.4 , were considered as a significance items. The only reason that the factor was still remained is that the represented factor in this criteria is quit reasonable. The factor loading for six factors is from 0.441 to 0.857. The factors were named based on the sub-variables, which found in the each factor.

4.3.4 Eigenvalue Criteria

The principal components analysis in data extraction performed six factors namely; confidence on halal logo, food safety and health conscious, government involvement,

degree of awareness, trustworthy, and manufacturing practiced with eigenvalue of above 1.0 and total variance explained 65.038 percent. Eigenvalue is the column sum of squares for a factor; it also presents the mount of variance accounted for by a factor (Hair *et. al.,* 1992). Hence, eigenvalues greater than 1.0 are considered significant and a total variance greater than 60 percent is also considered to be satisfactory. The above shows that the extracted factors explain a specified amount of variance.

4.3.5 Dimensions of Public Confidence on Halal Logo

The factor loadings from the principal component factor analysis obtained after a varimax rotation of consumers' responses to the 39 questions relating to their views about consumer confidence and attitudes towards halal logo on food products are presented in Table 4.21. The factor analysis of the 18 attitudinal statements was conducted and the factors are ranked according to the proportion of variance explained and are named to reflect the latent stimuli underlying consumers' views about halal logos on the manufactured food products. The analysis identifies six latent factors influencing Malaysian opinions about halal labeled food products. These six factors, which account for about 65.038 percent of the total variance, are summarized as follows.

The **consumers' confidence on halal logo** is recognized as a first factor. This factor consists of 5 sub-variables and has a total variance of 17.44 percent; *I always check halal logo on the package during food purchasing* has the highest factor loading (0.857). This is followed by *I am confident with halal logo and it helps me to choose products*

based on my belief (0.787), *I am confident with halal food to maintain good health* (0.737) , *my confidence on country of origin makes me to check the ingredients* (0.731) and *having full confidence with halal logo and my mind is at rest* (0.645). The result of this factor suggests that consumers pay attention to halal logo from different aspects and they are generally positive towards halal logo on food products.

The second factor is **food safety and health consciousness,** which has a total variance of 11.695 percent and comprises of four sub-variables; *halal food are safer to consume* is the highest factor loading (0.781). This is followed by *make healthier choice by purchasing halal food* (0.706), *halal logo shows the products are clean and safe to consume* (0.621) and *halal logo is one of the most convenient logos of food safety* (0.605). The results indicate that apart from the religious obligation of consuming halal food, consumers are aware of the underlying advantages that come with halal products.

Government involvement is the third factor which has a total variance of 10.086 percent and comprises of two sub-variables: *under government control, all kinds of halal logos are trustable,* (0.669), followed by *government needs to regulate the food manufacturers in terms of using halal ingredients and additives* (0.636). The results show that consumers want government to play important roles in ensuring that halal logo on food products can be trusted and truthful, and they are more confident in the products that have been approved by the government.

Degree of awareness is the fourth factor which has a variance of 9.854 percent and consists of 2 sub-variables. *Religious knowledge and halal food consumption* has the

highest factor loading (0.813) followed *by increasing the awareness towards halal food products compared to 10 years ago* (0.624). For most food products in the market, the awareness among consumers could be a major determinant factor in purchasing decision process. The results present a fairly strong influence in the consumer's decision making process.

Trustworthiness is the fifth factor, which has a total variance of 8.137 percent. The factor *products' brand indicates the halalness of food products* has the highest loading factor (0.786). This is followed by *locally grown products are trustworthy* (0.729) and *halalness is more ensured in local products* (0.671). Consumer trustworthy on what has been claimed on the food package should be one of the main concerns of the food manufacturers. Once the halal logo does not confirm to what is being claimed on the product, the product will be perceived as not trustworthy and this will have a negative impact on consumers purchasing behavior.

The **manufacturing practice** is recognized as the last factor, with a total variance of 4.171 percent and includes two sub-variables: *Good manufacturing practices* has the highest factor loading (0.612), followed by *Good hygienic practices* (0.612). However, halal logo itself does not mean good manufacturing practice. The majority of the respondents believe that it is a way to promote the sanitary and hygienic aspects of manufactured food products.

Table 4.21: Summary of Factor Analysis Results

Items	Factor Loading					
	F1	F2	F3	F4	F5	F6
Confidence on Halal Logo						
• I always check halal logo	0.857					
• I am confident to choose products based on belief	0.787					
• Confidence on halal food to maintain good health	0.737					
• Confidence on country of origin to check ingredients	0.731					
• Full confidence with halal logo and my mind at rest	0.645					
Variance (percent of explained)	**17.443**					
Safety and Health Conscious						
• Food with halal logo are safer to consume		0.781				
• Make healthier choice purchasing halal food		0.706				
• Halal logo shows food is hygienic and not contaminated		0.621				
• Halal food safer than conventional food		0.605				
Variance (percent of explained)		**11.695**				
Government Involvement						
• Under government control all logos are trustable			0.669			
• Government need to regulate the food manufacturer in terms of using halal ingredients and additives (Traceability)			0.636			
Variance (percent of explained)			**10.086**			
Degree of Awareness						
• Religious knowledge and safe halal food consumption				0.813		
• Awareness of halal food compared to 10 years ago				0.624		
Variance (percent of explained)				**9.854**		
Trustworthy						
• Products' brand indicates the halalness of products					0.786	
• Locally grown products are trustworthy					0.729	
• Halalness is ensured more in local products					0.671	
Variance (percent of explained)					**8.137**	
Manufacturing practice						
• Good and safe manufacturing practices						0.612
• Good Hygienic practices						0.612
Variance (percent of explained)						**4.171**
Total percentage of variance:						**65.038**

(Source: Survey, 2007)

4.3.6 Variance Explained

The percentage of variance explained is measure the number of factors to retain is to consider the total variance accounted for, or explained by the factors. According to Aaker *et. al.* (1998) the variance explained is a summary measure indicating how much of the total original variance of all the variables the factor represents and the percentage-of-variance-explained statistics can be useful in evaluating and interpreting a factor. The total cumulative variance is 65.038. Thus, the "confidence on halal logo" as the first factor explains 17.443 percent of the total variance of 18 variables and the "manufacturing practiced" factor accounts for 7.823 percent more variance.

Table 4.22: Results of Variance Explained

Dimensions (Factors)	Variance (percent of Explained)
Confidence on Halal Logo	17.443
Food Safety and Health Conscious	11.695
Government Involvement	10.086
Degree of Awareness	9.854
Trustworthy	8.137
Manufacturing practice	7.823

(Source: Survey, 2007)

4.3.7 Reliability Test

Reliability is an assessment of the degree of consistency between multiple measurements of variables. According of Hair, *et. al.* (1991), two forms of reliability tests exist. One form is test-rested, by which consistency is measured between the responses for an individual in two points in time. A second and more commonly used measure of reliability is internal consistency which applies to consistency among the variables. Because no single item is a perfect measure of reliability, a series of diagnostic measures

are relied on to assess the internal consistency. In this study, the Cronbach's Alpha was used to measure the reliability of 18 relevant variables that are being used in factor analysis. The reliability of the resulting factors was tested by Cronbach's Alpha score, a measure of internal reliability consistency significant. Six latent factors are indentified and have sufficient internal reliability consistency as indicated by Cronbach's Alpha score (Table 4.23). Thus, there is consistency between the multiple factors in factor analysis.

Table 4.23: The Results of Reliability Test

	Cronbach Alpha Scores	Number of Item
Confidence on Halal Logo	0.8913	5
Food Safety and Health Conscious	0.8597	4
Government Involvement	0.8303	2
Degree of Awareness	0.7652	2
Trustworthy	0.7435	3
Manufacturing practice	0.6582	2

(Source: Survey, 2007)

From the factor analysis, it can be found the results of this study are relatively consistent with Theory of Reasoned Action (TORA). The Theory of Reasoned Action has supplied theoretical insights into consumers' choice and purchasing behavior, and has provided clear guidance for food manufacturers. In this particular application, the attitude of being confident and subjective norm (especially normative believes) jointly account for about 65.038 percent of the variance in the criterion variable confident intention towards purchasing manufactured food products with halal logo. This means that normative factor like manufacturing practiced and government involvement and consumers' attitude towards halal food and logo significantly determined their confidence level and the intention to purchase halal labeled food products.

4.4 Binary Logit Model

The binary logit procedure was used to determine the extent to which selected socio-economic/demographic characteristics and attitudes influenced the respondents' confidence/ awareness on halal logo. The Binary Logit model was used for both Muslim and non-Muslim respondents to evaluate the general effect of different variables on their confidence and awareness. The first model was applied for Muslim consumers to estimate the determinants which influenced their confidence level on halal labeled food products. In the second model which used for non-Muslim respondents, the effective determinants on their awareness were measured.

4.4.1 Muslim Respondents' Confidence in Halal Logo

The binary logit analysis was used to estimate, the extent to which selected socio-economic/demographic characteristics and attitudes influenced the respondents' confidence on halal logo. The dependent variable "being confident with JAKIM halal logo" that had two categories such as "consumers are confident with JAKIM halal logo" coded as one and otherwise coded as zero as a proxy to unobservable dependent variable. The independent variables that can affect consumers' confidence level like the country of the origin of food product, reading the list of the ingredients, Shariya approval on the halalness of the products and products brand were used in a binary logic analysis along with selected socioeconomic factors, such as place of residence, gender, education, level of religiosity and marital status (Table 4.24). The estimated logit model was statistically significant with a Likelihood Ratio Test Probability of <0.0001, which

indicates joint significance of all coefficient estimates. The estimated coefficients are tested by using standard errors, *t*-ratios and *p*-values. A positive sign on the statistically significant parameter estimates of one variable indicates the likelihood of the response increasing, holding other variables constant, and *vice versa*. Five variables were all positive and statistically significant, suggesting that response categories are indeed ordered properly. Thus, the socio-economic/demographic factors and consumers' attitudes variables in the ordered model equation are relevant in explaining consumers' confidence on halal logos on food products. The results indicated that, the socio-economic variables such as residential area, education level, level of religiosity and marital status play an important role when explaining the consumer confidence behavior of JAKIM Halal logo.

Based on the statistically significant coefficients, displaying JAKIM HALAL LOGO on food products is an important determinant for consumer's confidence, and the effect is positive (Table 4.24).This finding indicates an increasing likelihood to be confident with manufactured food products with JAKIM halal LOGO rather than others. According to the results, halal foods with JAKIM logo are more likely to be trustworthy by consumers compared to others. Table 4.24 also presents the estimate of odds ratio. The odds ratios are calculated by the binary logit coefficients $[\log(\frac{p_i}{1-p_i})]$ and it indicates the level of confidence on JAKIM HALAL LOGO is 3.321 times higher than other halal logos in Malaysian food markets. Meanwhile reading or looking for the LIST of INGREDIENTS would be less likely to be trusted by consumers while JAKIM HALAL LOGO would be more likely trusted (1.379 times less than JAKIM logo). It can be concluded that it

would be more trustworthy to judge the halalness of food products based on JAKIM logo which is local and reliable than the list of ingredients which is too scientific in nature.

Table 4.24: Estimates Logit model for JAKIM Halal Logo and Consumers' Confidence

Variables	Estimated Coefficients	Standard Error	Ratio	*P*-value
JAKIM logo displays on food products	1.200***	0.376	3.321	0.0014
Country of origin of products	0.321	0.302	0.623	0.2873
List of Ingredients	-0.472*	0.273	-1.379	0.0831
SHARIYA Approval	0.342**	0.349	1.408	0.0274
Products' Brands	0.298	0.312	1.348	0.3391
Brand Loyalty	-0.235	0.249	-0.791	0.3465
Residential Area	0.383**	0.162	2.36	0.018
Gender	0.8488	0.518	2.337	0.1019
Education Level	0.0002*	0.0001	1.71	0.0766
Level of Religiosity	0.750*	0.409	2.117	0.0668
Marital Status	0.878*	0.532	2.405	0.0994
C	-0.861	2.788	-0.308	0.7575

McFadden R-squared	0.334	Log likelihood	-60.932
S.D. dependent var	0.337	Restr. log likelihood	-91.496
P-value for the Goodness of Fit test	0.0000	Avg. log likelihood	-0.429

*** Statistically significant at the 0.01-level, ** at the 0.05 level, and * at the 0.10 level.

(Source: Survey, 2007)

SHARIYA APPROVAL positively influences the probability of consumers' confidence on JAKIM halal logo 1.408 times more. One aspect which should be stressed is the role played by SHARIYA approval of JAKIM procedure, given the high positive effect happens as confidence level increases. Estimated coefficient for LEVEL RELIGIOSITY is positive and significant at the 90 percent level of confidence. This shows that a high positive effect will emerge as religious level increases and as level of religiosity advances, the likelihood of level of confidence will increase 2.117 respectively. The impact of EDUCATION LEVEL has also significant implication for the frequencies of JAKIM halal logo consumption. Respondents from urban area are 2.36 times more likely to be confident with JAKIM halal logo as compared to consumers from rural areas. Results of logit model indicate a positive relationship between the trustworthiness of JAKIM halal logo and level of education among consumers. Estimated coefficient for educated consumers is positive and statistically significant at 90 percent level of confidence. Educated consumers trust JAKIM logo 1.7 more than those with a lower level of education. It is generally believed that educated people are more discriminating in using information and data as compared to less educated consumers. Respondents with family are 2.405 times more likely to put their trust on JAKIM halal logo than the single group of consumers.

In order to assess how well the model fits the data, Goodness-of-Fit test statistic was developed and a chi-square test from observed and expected frequencies was computed. As shown in Table 4.24, the model for has a P-value of 0.000, which confirms that the fit of the models is good. The results also show there is a positive confident attitude towards halal labeled foods and the encouraging influence of subjective norms (JAKIM

logo, Shariyah approval) predict the confident intention to purchase halal labeled food among Muslim consumers.

4.4.2 Non Muslims Respondents' Awareness of Halal Logo

As indicated the binary logit analysis was used to estimate the extent to which selected socio-economic/demographic characteristics and attitudes influenced the non-Muslim respondents' awareness on halal food products. The estimated parameters and their statistical significance levels are presented in Table 4.25. The dependent variable "being aware of underlying advantage or benefits of halal foods" had two categories namely "non- Muslim consumers are aware of halal food advantages" was coded as one and otherwise coded as zero. Five of the variables were all positive and statistically significant, suggesting that response categories are indeed ordered properly. Thus, the socio-economic/demographic factors and consumers' attitudes variables in the ordered model equation are relevant in explaining consumers' awareness and attitudes on halal food products. The results indicated that, the socio-economic variables play an important role when explaining the consumers' attitude toward halal food products.

Based on the statistically significant coefficients, LEVEL of RELIGIOSITY is an important determinant for consumer attitudes, and the effect is positive (Table 4.25).This finding indicates that an increasing level of religiosity is one of the main intention determinants in non-Muslim consumers' awareness towards halal labeled food. According to the results, the probability of being aware of advantages halal labeled food products among non-Muslim consumers with higher level of religiosity is 1.937 times

more than others. Table 4.25 also presents the estimate of odds ratio and it means that non-Muslim consumers' intention of purchasing halal food products for the consumers with religious belief is 1.937 higher than others.

Table 4.25: Estimated Logit Model for Non-Muslim Consumers' Awareness of Halal Food

Variables	Estimated Coefficients	Standard Error	Ratio	*P*-value
C	-1.390340	2.073119	0.248	0.5024
Level of Religiosity	0.661114	0.147818	1.937	0.0000***
Food Safety	0.343800	0.175864	1.410	0.0506*
Animal Welfare	-0.630527	0.250050	1.879	0.0296**
Fair Trade	0.037437	0.183785	1.038	0.8386
Environmentally Friendly	0.462645	0.202236	1.588	0.0222**
Age	-0.996635	0.444055	2.709	0.0248**
Education level	0.599553	0.191878	1.821	0.0283**
Gender	0.023121	0.336011	1.023	0.9451
Area	0.756512	0.361608	2.130	0.0364**
Marital Status	-0.265080	0.213624	0.767	0.2147
Occupation	0.447580	0.309007	1.564	0.1475
McFadden R-squared	0.265406		-115.3987	
S.D. dependent var	0.500352	Restr. log likelihood	-138.2692	
Probability	0.0004	Avg. log likelihood	-0.576993	

*** Statistically significant at the 0.01-level, ** at the 0.05 level, and * at the 0.10 level.

(Source: Survey, 2007)

FOOD SAFETY positively influences the probability of consumers' awareness on halal food products by 1.410 more. From this, we can highlight the role played by food safety and hygiene; a high positive value would increase as consumer confidence. The odd ratio for ANIMAL WELFARE is minus 1.879, indicating that non-Muslim consumers are less likely to purchase halal food products. This could likely be due to the argument that non-Muslims most likely view Islamic slaughtering as undue cruelty to animals. The estimated coefficient for ENVIROMENTALLY FRIENDLY is positive and significant

at the 95 percent level of confidence. This shows that the effect is positive as halal food product become friendlier to environment and the likelihood of awareness 2.117 times more for the consumers who are concerned about environment. The result of AGE after it has been classified into two groups (40 years and above, less than 40 years) shows that as the respondents grow older; their level of awareness towards the advantages of consuming halal food products becomes 2.709 times less compared to the younger group of the respondents. This may imply that younger consumers are well informed about these advantages because they are more exposed to the media and advertisements. Possible differential predictive value of the theory of perceived behavior components based on the EDUCATION LEVEL also has a significant implication on attitudes towards halal foods consumption. Respondents from urban area are 2.130 times more likely to be aware of halal food benefits as compared to consumers from rural areas.

The logit model is regressed with the three classical determinants of intention, subjective norm (distinguishing between motivation to comply and personal conviction) and perceived behavioral control. For the total sample, attitude towards halal food, motivation to comply (religious belief) and perceived control (food safety and environmentally friendly) are the significant predictors of intention. In addition, animal welfare seems to have no positive influence on intention to eat halal food to which we will return later. Thus, perceived control does not turn out to be a barrier to consume halal food for non- Muslims living in Malaysia. As shown in Table 4.26, the model has a P-value of 0.000, which confirms that the fit of the models is good.

4.5 Multinomial Logit Model

In order to test the significance of the contribution of demographic, socio-economic, and the affect of information and knowledge in explaining confident behavior, the multinomial logit was applied. The model constituted demographic and attitudinal attributes. Influenced by information, willing to change their respond and their confidence level after being exposed by halal knowledge and information was specified as generic variables in the confidence specification. Level of religiosity and age are represented as demographic variables.

As mentioned earlier the analysis concentrated on confidence level for people who are exposed to halal information before and after filling the questionnaire as well as those who did not receive the information neither prior nor end of interview . The information was disclosed through the book which is published by the Consumers' Association of Penang and entitled "HALAL HARAM" in year 2006. The result of the multinomial logit is shown in Table 4.26. The coefficients were estimated using the maximum likelihood method.

Table 4.26: Estimated Multinomial Logit Model and Effect of Information

Independent Variables	Book was shown before filling the questionnaire			Book was shown after filling the questionnaire		
	Without book is set as the base alternative			Without book is set as the base alternative		
	Coefficient	P-value	Ratio	Coefficient	P-value	Ratio
Constant	2.546	0.000	12.755	1.019	0.000	2.770
If the respondents were influenced by book						
YES =1	1.686	0.000***	5.397	1.941	0.000***	6.965
NO =0	0	.	.	.	.	.
If they will to change their responds						
YES =1	-5.317	0.000***	.005	1.243	0.002***	3.467
NO =0	0	.	.	.	.	.
How they rate their level of confidence						
NOT CHANGED = 0	0	.	.	.	.	.
LOW = 1	1.215	0.012**	3.370	.922	0.044**	2.514
VERY LOW = 2	.390	.411	1.476	.603	.141	1.828
Level of Religiosity						
NOT RELIGIOUS = 0	0	.	.	.	.	.
SOMEWHAT RELIGIOUS = 1	2.141	0.000***	8.507	1.520	.0000***	4.572
VERY RELIGIOUS = 2	1.3251	0.001***	3.764	0.985	.012**	2.677
Age						
AGE2> 50	0	.	.	.	.	.
25<AGE 1 <50	0.451	0.000***	1.570	0.214	0.001***	1.238
AGE 0<25	-.342	.357	.710	-.194	.299	.733
P- Value Goodness of Fit Test Statistic				0.000***		
Cox & Snell- R^2				0.705		
Nagelkerke				.795		
McFadden				.560		

*** Statistically significant at the 0.01-level, ** at the 0.05 level, and * at the 0.10 level. 0 is set as a basic alternative.

(Source: Survey, 2007)

As stated in the previous sections, the basic idea behind Multinomial logit model estimation was to identify the basis on which the Malaysian people rate their confidence level especially when they received halal information and knowledge that can influence their halal labeled food purchasing behavior. The basic test of the estimation results is to inspect the signs of the estimated parameters and compare the impact of the corresponding variables (Han and Harrison, 2004). The model examined the influential attributes for Muslim respondents before and after seeing the halal book and without book (who had not been provided with the book neither prior nor after the survey) relative to after seeing the halal book. In this case, the second group (without book) had been set to zero as the base alternative. The estimated results are shown in Table 4.26. The estimated coefficients on "being influenced by book", "changing their confidence level" and their responds were found to be significant.

4.5.1 Providing Information before Being Interviewed

The results show that the Muslim respondents who, had been exposed to the information before filling up the questionnaire, were influenced by the book 5.397 times more than the group who did not see the book, which is consistent with our expectation. The coefficient on second statement (willing to change the response) is significant and negative which suggests that as consumers considered the knowledge before being interviewed, they were less likely to change their response. The estimated coefficient on the third statement (rating their confidence level) is positive and significant at the 0.01 significance level. The odd ratio indicates that the respondents' confidence level was

3.370 times lower compared to the reference group of consumers (without receiving any knowledge). The results from Table 4.26 show that the very religious and somewhat religious consumers were more influenced by book. This suggests that the consumers with higher level of religiosity are more likely to be sensitive towards information and more careful about the halalness of the products that they consume. The estimated coefficient on age group between 25- 50 is positive and significant at the 0.000 significance level. This group of consumers was 1.570 times more likely to be influenced by book compared to the group who had not received any information on halalness of halal product.

4.5.2 Providing Information after Being Interviewed

It is expected that the second group of consumers (who had seen the book after being interviewed) were also influenced by halal information as well as the first group. A coefficient on the first statement is positive and significant at the 0.000 level of significance, implying the odd ratio that consumers who had been exposed to the information after filling the questionnaire were 6.965 times more likely to be influenced by the book. The second variable turned out to be positive and significant for this group of consumers. It is anticipated that the more the respondents know about halal products in the market, the more they are willing to change their response. As consumers exposed to the information, negative impact on their confidence level towards halal labeled products is expected. Results show that the estimated odd for the consumers who seen the informative booklet after being interviewed is 2.514 times lower to the reference group. The estimated coefficients on religious and somewhat religious consumers are

positive and significant at the 0.000 and 0.05 significance level respectively. This suggests that halal principle plays an important role in the fabric of life of the predominantly consumers with religious belief. Consumers with ages between 25 to 50, 1.238 times more than others were more likely to be influenced by information. This may imply that these age groups are more interested in knowledge and information compared to the two other groups and they often welcome opportunities to gain the information where people have strong views.

The model has R^2 values of 0.7 which indicates that the independent variables explain about 70 percent of the amount of the variation in the dependent variable. A well-fitting model ("goodness of fit") will show a large observed significance level (0.000), which confirms that the fit of the model is good.

4.6 Summary

The study attempted to construct theory of reasoned behavior and planned behavior of consumers' confidence and awareness and determine the effects of information on their halal confidential purchasing behavior. Normative belief and perceived control are fundamental factors to determine the important reasons behind the choice of a particular halal logo or halal product and the circumstances which might cause consumers to change their choice and confidence level. The latent factors which extracted from factor analysis were part of motivation comply with that can affect consumers' confident intention in the TORA model.

The relationship between the selected socio-economic/demographic profile such as level of religiosity, being at religious school, state of origin of the respondents, education level and several attitudinal characteristics of consumers was examined. Results suggest that these variables significantly associated with Muslim respondents' confidence level towards fast food restaurants, non-Muslim food premises and manufacturers, halal advertisement and frequency of checking halal logo. In summary, the positive effect can be seen from demographic factors on Muslim consumers' confidence level towards purchasing manufactured food products with halal logo.

Of the six factors significantly associated with consumers' confidence on halal labeled food products, "confident with halal logo" had by far the largest effects. Followed by other external factors like "safety and health conscious", "government involvement", "degree of awareness", "trustworthy" and "manufacturing practiced" that build up individual attitudes to perform confidence behavior towards purchasing halal labeled food products in Malaysia.

The binary model examined the attitudinal characteristics of consumers such as JAKIM logo, Shariyah approval, environmentally friendly and demographic and socio-economic characteristics to determine the relative influence of demographic and socio-economic variables and other attributes on their confidential behavior. The findings revealed that these parameters were significant in explaining halal confident intention behavior. For the Muslim respondents, the results of model estimation revealed that JAKIM logo, Shariyah approval and list of ingredients are the major determinants of subjective norms in consumers' confidence towards purchasing halal labeled food. Therefore, the results

suggest that not only do not subjective norms turn to be the barriers in consumers' confident intention but they can also be great motivator to comply with halal food purchasing behavior.

Binary logit also examined non-Muslim consumers to find their level of awareness towards underlying advantages which come with halal consumption. In general, the results indicated that the Theory of Planned Behavior (TPA) determinants of awareness explain the intention to consume halal food among non-Muslim consumers. These determinants are food safety, environmentally friendly and animal welfare. In other words, there is an increasing trend in awareness of non-Muslim consumers towards halal labeled food.

A multinomial logit analysis was used to estimate the effects of halal information and knowledge on consumers' confidence level. The results show that, after being exposed to the information, the consumers were less likely to trust all halal labeled products.

Several factors have led to intensified public confidence on halal labeled manufactured foods in Malaysia. Consumer concerns for existence of halal logo especially JAKIM, Shariya approval, religious obligation, food safety, animal welfare, and the environmental and social impact of halal food production and halal processing have become increasingly important. These concerns have been exacerbated by several factors, including confidence with halal logo, degree of awareness, trustworthiness, safety and health consciousness, governmental involvement and manufacturing practices. As a consequence of these growing concerns, consumers and other

stakeholders in halal industry now demand transparency in the way food is grown and handled throughout the supply chain, resulting in the emergence of “traceability” as an important policy issue in halal food quality and production. Policy changes are necessary specifically to incorporate traceability, ingredients transparency and valid and accurate halal logo into existing halal food regulations. This will require further investments in food manufacture education, information technology for transparent ingredients, storage and retrieval.

New policies are needed to simultaneously promote environmental impact, food safety, and social and animal welfare of halal principles. Government and research policies could be modified to emphasize the development of halal industry for both groups of Muslim and non-Muslim consumers. Proper marketing strategy and international standards could be amended to increase the confidence level among the consumers. Coalitions like HIDC must be created to address these halal policy concerns at the local, and international level in order to turn Malaysia into a hub for halal foods and products.

CHAPTER V

CONCLUSION AND RECOMMENDATIONS

This chapter summarizes the factors and determinants found in this study that influence consumers' confidence and awareness towards purchasing halal labeled food products. It also concludes the predictions resulting from the binary logit models that were developed to estimate consumers' confidence and awareness. Moreover the multinomial logit model was applied to compare the effect of information on different groups of consumers in order to explain the sensitivity of their confidence level. The conclusion describes the most important variables that can help to modify Theory of Reasoned Action and Theory of Planned behavior to answer the research obligation. Finally, some recommendations are presented.

5.1 Summary and Conclusion

The purpose of this study was two fold. First, the Theory of Reasoned Behavior (TORA) and Theory of Planned Behavior (TPB) were used to investigate the Muslim consumers' confidence level and non-Muslim consumers' awareness towards manufactured food products with halal logo. Second purpose was also to measure the effects of information that are associated with food decisions within a religion context that could help to understand the concept of halal labeled food confident intention decisions. The study accomplished the main objectives and the following conclusions are drawn.

The study sought to estimate the level of confidence and identify factors that will influence consumers' confident intentions during purchasing behavior in order to formulate alternative policies in improving food industry in Malaysia. In this study, descriptive analysis, chi-square, factor analysis and logit binary and multinomial methods were applied. The descriptive analysis was used to describe the characteristics of variables in terms of frequencies distributions, mean, and percentages. Chi-square contingency test was applied to determine if consumers' confidence level and attitude are independent of the respondents' socio-economic characteristics. The factor analysis was used to reduce the number of variables to a convenient level and group the variables as items into independent dimensions which were represented by the factors. The logistic binary model was applied to forecast the extent to which selected socio-economic/demographic characteristics and attitudes influenced the respondents' confidence level and awareness on halal labeled food

products. Also multinomial logit was used to find the effect of information on consumers' confidence.

In this survey, 1860 respondents (1560 Muslim consumers and 300 non-Muslims) were interviewed via structured questionnaire to determine Muslim consumers' confidence level and non-Muslim consumers' awareness towards halal food products and logos. In general, the majority of respondents were from urban area and married. Most of the respondents were males, under 40 year old and educated more than tertiary level. In general, the findings indicate that consumers are very concerned about halal food and the logo on food products. Even though it is shown that consumers react more positively to halal labeled food with local halal logo, there is still enough evidence to support that consumers are more careful in evaluating the halalness of all kinds of food products by referring to the list of ingredients. Nevertheless, most consumers are able to distinguish Malaysian halal logo from others, regardless of the presence of products' brand on the food packaging. This may imply that consumers trust the halal logo rather than the brand of products when forming judgments about the halalness of food products quality.

The major concerns come from consumers' level of religiosity, their state of origin, being at religious school and education level encouraged consumers to be more confident about the validity of halal labeled food. Overall, for all the research hypotheses, the null hypothesis was rejected. The results suggest that consumers from East part of Malaysia, with higher level religiosity and also education level are more likely to be concerned about the halalness of fast food and non-Muslim food premises and restaurants. Moreover the same group of respondents are significantly

most likely to be frequent in checking halal logo on manufactured food products and more likely also to be influenced by advertisement on halalness of manufactured food products. Despite an increasing trend in attitude and purchase intention of halal labeled food products, there is no significant evidence that consumers are absolutely confident with halal JAKIM logo or others. From the public perspective, the results of this study can help to determine how consumers evaluate halal and health aspects of halal foods. It is shown that consumers do overlook information from other parts of halal concerns specifically those on food safety. Public concern and apprehension about the halal diet have increased. Due to a rise in the concerns for the religious, health, safety and environmental impacts of halal concept, food manufacturers have also become more conscious about their products. Apparently, the consumption of halal food for Muslims is quit different from non-Muslim consumers. The religious associations and beliefs attached to halal probably make the confident decision more important for Muslim consumers, which could lead them to different decision making processes, including a specific set of normative beliefs and motivation comply. The confident attitudes of consumers purchasing halal labeled food products are made up of beliefs accumulated over a lifetime. These beliefs are formed from their religion, or some outside information like others are inferred or self generated. Islam provides a set of values and guidelines for life. The importance of its impact on actual choices depends on the extent to which individuals adhere to religious more (normative believes). But the choices of much of the population may be affected by other belief systems that set food consumption norms and patterns (motivation comply). In context of TORA, confident behavior based on halal labeling is determined by behavioral intention to purchase halal food, which is verified by attitude and subjective norms. Figure 5.1 presents these steps in details.

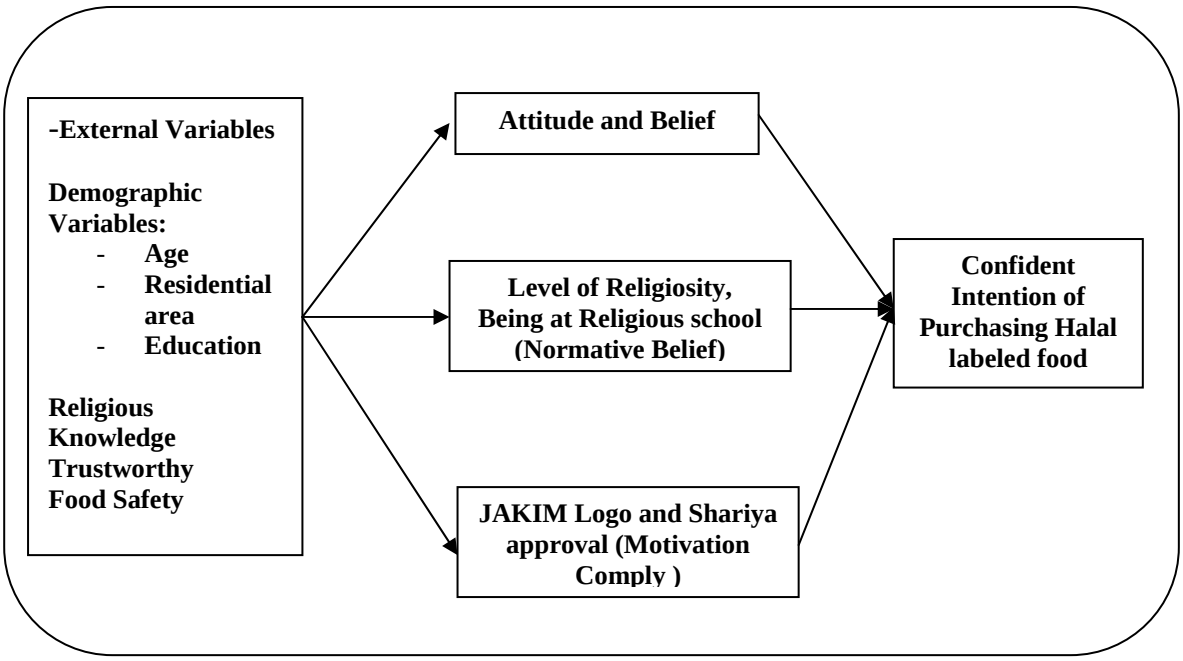


Figure 5.1 The Modified Model of the Theory of Reasoned Action

The results from the chi-square, factor and binary logit analysis reveal that demographic factor (education level, age, marital status and residential are), religious knowledge variables (level of religiosity and being at religious school) and each determinant of attitude and subjective norm (JAKIM logo, Shariya approval and list of ingredients) are included in the final predictive model and support for the Theory of Reasoned Action model. The results here indicate that the normative belief (confident with halal logo, safety and health conscious, government involvement, degree of awareness, trustworthy and manufacturing practiced), subjective norm (JAKIM logo, Shariya approval and list of ingredients), education level, religious level, being at religious school, residential area and income of Malaysian consumers are useful predictors of their confident intention to purchase manufactured food products with halal logos. This finding is consistent with Bonne and Verbeke (2006), which demonstrated that Muslim consumers are more likely to be confident with the halalness of meat products when they are aware of their safety, health and hygienic manufacturing practiced, carrying trustworthy halal logo.

In case of Non-Muslim respondents the perceived controls did not turn out to be the barriers to consume halal product for Malaysian non-Muslims. The link between the three classical determinants of intention, subjective norm (distinguishing between motivation to comply and personal conviction) and perceived behavioral control suggests that consumers are more or less likely to engage in behaviors. For the total sample, attitude towards halal food, motivation to comply (religious level) and perceived control (food safety and environmentally friendly) are the significant predictors of intention. Meanwhile some perceived control factors like animal welfare do influence halal food consumption negatively. Possibly, the importance or personal relevance attached to halal food (especially meat products) is that the non-Muslim consumers might find the idea of halal is more on how the animals are slaughtered. Non-Muslims would most likely think of it as cruelty to animals, believing the animals suffer for approximately two minutes prior to death, having allowed the slaughtered animals to bleed to death. However, the Islamic principles of slaughtering clearly state that the knife used for slaughter must be very sharp, to ensure a quick, deep and clean cut through the vital anatomy of the neck of an animal – mainly the trachea, esophagus and major blood vessels. Meanwhile some recent studies indicate that the "Direct Method" of slaughtering an animal, which is the Islamic method of Dhabh, is more merciful compared to the conventional method in the West, whereby the animal is stunned with a "captive bolt pistol" before being slaughtered. Efforts by the scientific community support that the halal slaughtering method initiates massive hemorrhaging, which induces anoxia – lack of oxygen – in the brain cells, acting as a powerful painkiller (Schulze, 2001). The item personal conviction was added to assess non- Muslim's personal choice for halal food consumption in contrast with peer's pressure or their motivation to comply with this

influence of their Muslim friends or colleagues (Figure 5.2).

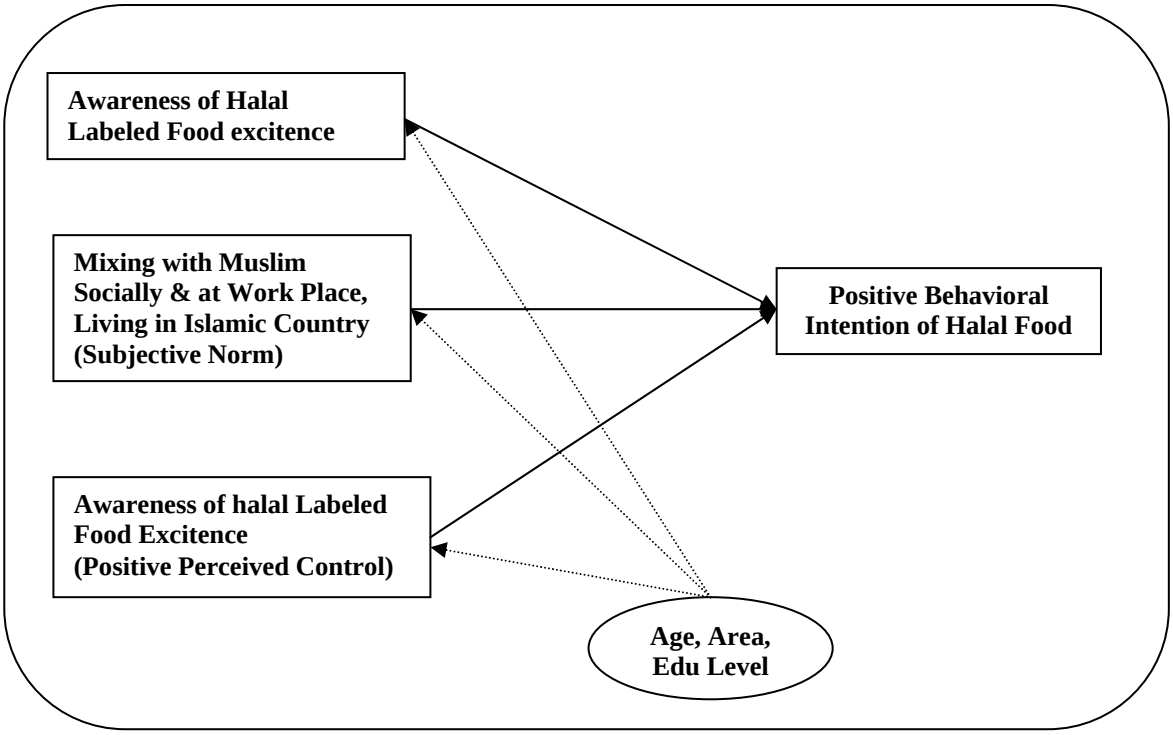


Figure 5.2 The Modified Model of the Theory of Planned Behavior

The results of Multinomial logit indicate that the consumers are very sensitive to halal information and any information or knowledge that might result in loss of their confidence level which might have low trustworthy and/or indeterminable intentions. Loss, misuse, modification or unauthorized access to halal logo on food products can adversely affect an individual confident intention and trade of a business. As a matter of fact, Malaysian government, policy makers, food manufacturers and related institutions should fulfill the needs of consumers in order to restore any confidence lost.

5.2 Policy Implications

Understanding consumer response to halal logo and halal information on product packages is necessary when designing food labeling regulations. Religious and very religious (very high Muslim identity) groups of consumers have expressed concerns that unknown halal logos will likely mislead consumers or cause more confusion. Their argument is that it is not accurate to focus on the halal aspect of any single food product outside of the context of the total processing. To them, halal is the total quality control measure involved in the monitoring of the food processing, handling, and storage processes as well as all the ingredients used in processing the food products. Muslim consumers increasingly expect assurance that food and beverages fully comply with Islamic preparation requirements from the very start of the manufacturing process, creating intense pressure to source ingredients from certified suppliers. Halal processing can only be improved through better total monitoring and exercise, not just through the printing of any single logo on food product.

Besides the question here is whether JAKIM or any other in charged institute, with a limited budget and staff, can adequately monitor all halal labels to ensure the truthfulness of these qualified claims. In addition, consumers may be confused by the ingredients or unable to correctly distinguish between the original logo and the fake one. For example as "rennet[1]" is used in the preparation of cheese, the big issue here is, if the animals have been slaughtered according to Islamic rites. As "whey[2]" is

[1] Rennet refers to any enzyme that is added to milk to help in the coagulating process in cheese-making. Animal-based rennet is obtained from the stomach of calves.

[2] Why is dairy based which is widely used in food industry to give cheesy taste to the foods. Also it can be used instead of skimmed milk or full cream milk in food manufacturing industry.

derived from the cheese - making process, it is already contaminated with rennet and is thus also a dubious ingredient where Muslims are concerned. Any food contains whey could be haram. Thus, it is important that JAKIM or HDC take these concerns into account to ensure that the new policy will achieve their goals. The key issue here that needs further investigation is how to effectively provide information on the halal logo to consumers. JAKIM's goal is to permit the use of more, better, easily understood, and up-to-date scientific information on halal logo which can positively affect consumers' confidence. Results presented here suggest that consumers are not yet able to totally trust halal logos even JAKIM ones. As a result, it is important to advertise and make JAKIM halal logo very well known to public therefore consumers can distinguish and understand differences among logos in terms of the evidence of product benefits. Moreover, JAKIM or HDC as the responsible agencies, need to monitor the halalness of the food products after issuing halal logo. The concept has also to become increasingly important for food producers to demonstrate that all ingredients are fully certified.

Besides halal values can be very popular among non-Muslim consumers if the society is made to be more aware of issues concerning health, animal rights and safety, the environment, social justice and welfare. Therefore improving the public awareness and developing the standard control measures to ensure correct labeling, which is intended on the producers, will increase confident intention purchasing behavior for halal food. In conclusion, the findings of this study suggest that confidence with halal labeled food is associated with some demographic factors and attitudinal characteristics which related to advertisement, environment, religious obligation and food industry thus, the combination of these issues need to be

considered by policy makers in order to make halal business and industry successful.

5.3 Marketing Implications

Recognized and certified halal logos like JAKIM are likely to have significant impacts on the market for foods with additional health benefits, the environment and social justice. Without halal logos, the market for halal food is limited because consumers can not differentiate the manufactured food product is halal or not. Thus, manufacturers have no incentive to develop and introduce halal foods. The policy should encourage manufacturers to market more halal products with qualified halal logos. In addition, the approval process under the new policy commits JAKIM to monitor every single stage of food processing. The policy therefore provides an opportunity for producers to communicate emerging evidence of the halalness of their foods to consumers. With more confidential information available and responsible monitoring, consumers should be able to make informed choices about the halalness of the food they eat and better understand how halal food can impact their health, trade and environment.

Halal has now become a universal concept. Halal stands not only for just and fair business transactions but also for animal welfare, social justice and sustainable environment. It is no longer a concept confined or restricted to the slaughtering of animals for the consumption of Muslims but encompasses products and services of the highest quality that meet the ever increasing awareness and needs of all consumers in a demanding global market. Food manufacturers are listening to

consumer demands, and if consumers are in favor of halal label on the food products they purchase, then manufacturers will be compelled to offer it. In Malaysia all age groups are affected by halal food labeling consumers are the most important segment of the food system and they ultimately determine the success or failure of products. Food manufacturers must therefore develop marketing strategies that serve consumer needs and wants. Many producer groups try to add value to their products by differentiating generic commodities or developing alternative products or services. Given limited resources and budgets, food manufacturers require assistance in setting optimal marketing plans based on their understanding of consumer behavior. Because halal foods are emerging products that often require extensive research and development using innovative technology, food manufacturers want to ensure sufficient demand exists and that their return on investment will be justified. Yet, such marketing decisions must be made under slight uncertainty.

Halal foods have become a topic of increasing importance for the food industry over the past decade, particularly in Malaysia. Some Malaysian consumers believe that halal certified food is healthier than food that is not halal certified. Assume a halal labeled food offers attributes (e.g., health benefits, food safety) not available in any existing products within the same product category. The local and international food manufacturer must examine how consumers decide, if they are likely to try this offer and how they will evaluate and select between conventional foods and halal labeled food. An important aspect in creating consumer belief in a product is providing the consumer with the appropriate information to help them make satisfactory food choices. The use of halal labels can be an effective vehicle to encourage Muslim-

consumers to purchase products based on their beliefs. The results of this study can help food manufacturers to understand and be sensitive to the needs of Muslim consumers to acquire their confident attention towards halal labeled food products. In addition, understanding the petitioning procedures for different halal logos, food manufacturers must determine which, how, and when consumers understand and use halal logo in order to find the most efficient marketing communication channels.

The halal confident intention of the population depends on the interaction of demand and supply conditions in the food market. On the demand side, consumers' knowledge of religious, safer, healthier diets and purchase of products with higher confidence level have a direct effect on their purchasing behavior. Consumers' ability to trust the halalness of food products depends in part on the quality of information provided to them, including the country of origin of the products. On the supply side, consumers' diets may be affected by changes in the composition of halal foods offered for sale. Here, too, changes in the information environment may interact with demand conditions to affect the mix and formulation of products available in the market. In this environment, the accurate and recognized halal logo has the potential to provide real benefits to consumers. However, the use of recognized halal logo for all the food items can require industry costs, government monitoring programs, and broad educational programs to encourage public awareness.

In conclusion, the government should make use of education as a medium to introduce accurate and valid halal logo launch promotions on health, safe, fair trade, animal welfare and environment aspects through mass media to improve the

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confidence and awareness of consumers. Other aspects to increase the confidence and awareness would be through the incorporation in to schools curriculum. The government has to control and monitor the producers who look at halal logo as solution for introducing demanding manufactured foods or developing the product at international level. The producers and processors should be provided with enough knowledge on how to proceed halal processing by following the rules and regulations of Islamic norms. The consumers also should express their need and expectations from what and how should be halal logos or how they think logos can be trustworthy.

5.4 Research Limitations

As with other research, the present study is also subjected to a number of limitations. It should be noted that this study is one of the first researchers studying halal confident behavior and focuses on a certain hypothetical food: halal labeled food with certain characteristics. Results may be limited and different from those for other foods with different benefits. In hindsight, because of the sensitive and religious nature of study, some questions like social or subjective norms, personal norms and personal relevance could have been asked more indirectly. Finally, there were some limitations during data collection. This was because this study attempted to capture the relative issues using the primary data, which was collected from respondents. Some of the weaknesses of the data collection were: hesitations in respondents to answer; long questionnaire; different interpretations among respondents and variation of queries. In addition, the study was related to their religious obligations and beliefs which depend on their honesty and cooperation in giving accurate

information. Each of these issues imposes limitations on generalizing our finding to the broader population living in Malaysia.

5.5 Further Study

Future studies should examine how consumers with different levels of motivation and halal knowledge respond to the halal labeled food products and whether targeted groups for this product (Muslims) react differently from other groups of consumers. It is also interesting to further examine how underlying advantages of halal food play a role in consumer product evaluations since the halal foods has become increasingly complex with multiple food attributes delivering a range of health benefits in a single food. By obtaining relevant information in regard to other aspects of halal labeled foods, it might be easier to program and plan for future halal hub agenda for the Malaysian food industry.

Appendix A

SURVEY ON THE ASSESMENT OF CONSUMERS' CONFIDENCE ON HALAL LABELING ON FOOD PRODUCTS IN MALAYSIA

Introduction

Food is viewed in a number of ways including health-promotion and nutrition. It plays an important role in the social, cultural and religious life of most communities. Food consumed by Muslims must meet the Islamic dietary code and is called Halal.

Halal is an Arabic word meaning lawful or permitted. In Malaysia all age groups are affected by Halal food labelling and consumers are found to be very concerned about the foods they consume. They believe that the Halal issue is not just the logo itself but it is a total quality control measures which involved monitoring the slaughtering process, the handling and transportation process and storage.

However several food-related lawsuits have made media headlines recently. High 5 stated that the bakery products were cooked in 100% Halal oil that in fact is from Israel or Germany which is doubted about its Halalness (The Malay Mail, 14 Sep 2006). Dindings poultry also was sued for not ensuring that its products were Halal, and this suit was settled for RM100 million (New Straits Times, 20 January 2006).

The Halal logo is a reality and needs to be more functionally understood in order to allow marketing strategies to capture the evolving consumer's mental frame. The apparent growth of Halal consumerism in Malaysia has made manufacturers and marketers aware of the possible Halal advantages they could avail by way of Halal processes, Halal packaging and Halal products.

Therefore this study may reveal the degree of confidence among consumers on food products with Halal logos and determine the factors which influence consumer purchasing behaviour with regards to Halal labelled food products.

Questionnaire Identification

Enumerator (Name): ----------

State: ----------

City: ----------

Date of Survey: ----------

Section A (Confidence towards Halal Food, Halal Logo, Industry, and Environment)

Using the scale below, please indicate your level of confidence with the following statements related to the purchase of Halal food products by writing the number that best describes your opinion:

Not Confident	Little Confident	Some Confident	Much Confident	Very much Confident
1	2	3	4	5

1. How confident are you of your religious knowledge towards foods which you eat.	
2. Locally grown foods of animals or plants origin are more trustworthy in their Halalness.	
3. Halal foods promote food safety that is beyond basic nutrition.	
4. Halal certification logo shows the hygienic process, that product has to undergo before reaching the market.	
5. I would be able to make healthier food choice by purchasing foods with Halal logos.	
6. Foods with Halal logos are safe to consume.	
7. All kinds of Halal logos from different countries are trustworthy.	
8. Product's brands are sufficient for me to indicate the Halalness of products.	
9. With purchasing local food products, the Halalness of food is ensured.	
10. Halal food preparation can be environmentally friendly.	
11. Environmental protection laws are more strict compared to Halal process.	
12. Today people are more aware of Halal food compare to 10 years ago.	
13. Halal foods are safer than conventional food products.	
14. Halal logo shows that the products are promoted by Islamic authorities and have safe manufacturing process.	
15. By introducing the international standard for Halal logo in the local market, naturally the Halal food products will be more trustable.	
16. Halal logo guarantees that food products are not contaminated.	
17. Halal logo forces food producers to be transparent on food ingredients.	
18. When you find the Halal logo on food product, are you confident the product is being produced under the "Halalness" requirement by Islamic law.	
19. The Halal logo gives assurance that food ingredients and additives used are Halal and the food premises serve only Halal food.	
20. How Confident are you with internatinal fast food premises and restaurants which display Halal logo.	
21. There is a necessity for one standard of Halal logo in all Muslims country.	
22. Putting Halal logo is a way to practice food processing, which is Islamic, hygienic and environmentally friendly.	

23. Although Halalness of food products has been certified by the authority of the religious department, they sometimes can't fulfil my needs and requirements.	
24. Non-Muslim food manufactures are really concerned about the Halalness of their manufactured food products.	
25. There is a need for an institute or agency to approve the Halalness of all the Halal food products in Malaysia by doing traceability study.	
26. How confident are you with Non-Muslim food premises and restaurants which display Halal logo.	
27. Under the government's control, all kind of Halal logos are trustworthy.	

For each phrase below, please indicate the amount of confidence that each subject has on your knowledge whether the food is Halal or not?

28. Halal label and certification of JAKIM	
29. Approved by Shariyah and Islamic authority	
30. The country of origin of Halal food products	
31. List of ingredients stated on food package	
32. Brand knowledge of food products	
33. Religious knowledge	
34. Brand loyalty	

Section B (Attitude and Perception towards Halal foods)

Using the scale below, please indicate your response to each of the item that follows, by writing the number that best describes your opinion:

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

35. Religious obligation is a major concern of mine when purchasing food products.	
36. Knowing how Halal food is grown and processed is very important to me.	
37. Most of Halalness problems are with food products with animal origin.	
38. I don't really care about existence of Halal logo on food products.	
39. I always look for Halal label when I buy any kinds of food products.	
40. Using Halal logos will help my family and me to choose food products based on our beliefs (religion).	
41. The country of origin of the products makes me to refer to the food ingredients.	
42. Halal food helps to maintain good health.	

43. Advertisements on Halalness of food products influence my purchasing behaviour.	
44. I am more confident with Halalness of those food products which carry Halal logo compare to without halal logo.	
45. Halalness is not only confined to the way the Muslim slaughter the animals but also the ethic and act of doing the slaughtering.	
46. The scientific name of certain ingredients in a Halal food sometimes makes me doubtful about the Halalness of product.	
47. Monitoring the Halalness of the manufactured food products is one the JAKIM's main problems after issuing Halal logo.	
48. Advertisements on Halalness make me aware of existence of the Halal food products in the market.	
49. I have full confidence in the Halal food products and my mind is at rest by using it.	
50. Crop-based food products seldom have Halalness problems.	

Using the scale below, please indicate your response to each of the item that follows, by writing the number that best describes your opinion:

Never	Rarely	Sometimes	Often	Always
1	2	3	4	5

51. How often do you check Halal logo (label) on food package?	
52. How often do you examine the list of ingredients (after Halal logo)?	
53. How often do you trust on Halal logo on food product?	

Please read the following statements. Mark (√) by the item that best describes your attitude.

54. **I trust JAKIM Halal certificates only.** **Yes -------** **No -------**

55. **Are you confident with any kind of Halal logo?** **Yes -------** **No -------**

56. **Have you ever stopped buying a Halal food product because of Halal concern?**

Yes ------- **No -------**

57. **Have you ever stopped buying a Halal food product because it was associated with animal welfare?**

Yes ------- **No -------**

58. **If non- animal based food products don't carry Halal logo, would you buy them?**

Yes ------- **No -------**

59. **Besides Muslim, do any individual of different race and religious background care about the Halaness of food products which they purchase?**

Yes ------- No -------

60. **Are you confident with JAKIM procedure in certifying of Halalness of products?**

Yes ------- No -------

Halal, in its fullest definition, as defined by PM during "World Halal Forum", May 2006, is "Religious, healthy, organic, environmentally friendly, animal welfare, ethnic and fair trade". We would like to know how concerned you are about the following issues. Using the scale below, please indicate your response to each of the items that follow, by writing the number that best describes your opinion:

Not very Concerned	Not Concerned	Neutral	Concerned	Very Concerned
1	2	3	4	5

61. Religious Belief	
62. Food Safety	
63. Environmentally Friendly	
64. Animal Welfare	
65. Fair Trade	

66. There are different kinds of Halal logos on the food packages, which one do you trust most (please rank them).

Malaysian Halal Logo	
Thailand Halal Logo	
Indonesian Halal Logo	
Singapore Halal Logo	
Republic of Chinese Halal Logo	
Australian Halal Logo	
American Halal Logo	
French Halal Logo	

67. Among these logos, could you please rank them based on your confidence level.

☐

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Section E (Consumers' Socioeconomic Profile)

68. Your residential area

a. Urban (Town or City)	
b. Suburb (Village or Kampung)	

69. Please state the state you are originally from.	

70. Gender

a. Male	
b. Female	

71. Race

a. Malay	
b. Chinese	
c. Indian	
d. Others (please state)	

72. Religion

A. Muslim ------

i. If you are Muslim, do you go to religious school?

Yes ------- No -------

ii. Are you a member of any Muslim community associations?

a) JIM (Jemaah Islamiah Malaysia) -------
b) ABIM (Angkatan Belia Islam Malaysia) -------
c) PAS (Parti Agama Islam Se-Malaysia) -------
d) Others (Please Specify) ----------

iii. How do you rate yourself in terms of your level of religiousity?

a) Very religious -------
b) Religious -------
c) Somewhat religious -------
d) Not religious -------

B. Christian ------
C. Buddhist ------
D. Hindu ------
E. Others (please state) ----------

iv. Do you mix with Muslim friends at your work place?

- **a) Always** ------
- **b) Often** ------
- **c) Seldom** ------
- **d) Never** ------

v. Do you socially mix with Muslim?

- **a) Always** ------
- **b) Often** ------
- **c) Seldom** ------
- **d) Never** ------

vi. Do you understand the concept of Halal?

- **a) Fully understand** ------
- **b) Understand** ------
- **c) Some what understand** ------
- **d) Don't understand** ------

73. Age ---------- Years

74. Education level

a. Never been to school	
b. Primary school	
c. Secondary school	
d. Tertiary	

75. Marital Status

a. Single	
b. Married	
c. Widow	

76. Occupation

a. Government servant	
b. Private sector	
c. Self-employed	
d. Unemployed	
e. Student	
f. Others (please state)	

77. Total monthly income RM ----------

Section D (Effect of Halal Knowledge on Consumers' Confidence)

78. Have you received any Halal knowledge during the interview?

Not at all	Yes, Received information before interview	Yes, Received information after interview

79. Have you been influenced by the Halal knowledge provided to you prior or after the interview?

Yes ------- No -------

80. After being exposed to Halal knowledge, do you want to change your responds?

Yes ------- No -------

81. How do you rate your confidence level towards Halal labeled food (after being provided Halal knowledge by book)?

Not changed	Lower than before	Very much lower than before

THANK YOU FOR YOUR CO-OPERATION.

Appendix B

B.1: Testing Relationship between Demographic Factors and Confident with Fast Food and International Food Premises

	Not Confident	Little Confident	Some Confident	Much Confident	Very Much Confident	Total
Count						
Center	4.3%	10.0%	37.9%	31.4%	16.4%	100.0%
South	3.7%	7.8%	34.8%	38.0%	15.8%	100.0%
East	5.2%	9.5%	41.3%	34.2%	9.8%	100.0%
North	6.6%	14.1%	35.9%	29.8%	13.5%	100.0%

	Not Confident	Little Confident	Some Confident	Much Confident	Very Much Confident	Total
Count						
Very religious	8.1%	13.7%	37.4%	25.9%	14.8%	100.0%
Religious	4.4%	10.4%	40.6%	33.4%	11.3%	100.0%
Somewhat religious	3.9%	9.0%	34.0%	36.3%	16.7%	100.0%
Not religious	10.8%	.0%	24.3%	40.5%	24.3%	100.0%

	Not Confident	Little Confident	Some Confident	Much Confident	Very Much Confident	Total
Count						
Never been to school	9.1%	13.6%	22.7%	40.9%	13.6%	100.0%
Primary school	1.3%	13.3%	28.0%	33.3%	24.0%	100.0%
Secondary school	2.7%	7.9%	40.0%	37.5%	12.0%	100.0%
tertiary	5.9%	10.8%	37.7%	31.5%	14.1%	100.0%

B2: Testing Relationship between Demographic Factors and Confident with non-Muslim Food Premises which Display Halal Logo

	Not Confident	Little Confident	Some Confident	Much Confident	Very Much Confident	Total
Count						
Center	19.6%	24.3%	33.7%	14.4%	8.0%	100.0%
South	14.4%	23.3%	31.6%	21.1%	9.7%	100.0%
East	20.2%	26.1%	32.0%	16.3%	5.4%	100.0%
North	17.0%	24.4%	33.6%	17.9%	7.1%	100.0%

	Not Confident	Little Confident	Some Confident	Much Confident	Very Much Confident	Total
Count						
Yes	19.2%	25.2%	32.4%	16.0%	7.2%	100.0%
No	3.3%	13.3%	44.0%	31.3%	8.1%	100.0%

	Not Confident	Little Confident	Some Confident	Much Confident	Very Much Confident	Total
Count						
Very religious	23.0%	24.1%	27.4%	17.4%	8.1%	100.0%
Religious	20.5%	26.6%	33.8%	13.1%	5.9%	100.0%
Somewhat religious	12.3%	25.2%	34.0%	21.5%	6.9%	100.0%
Not religious	8.1%	5.4%	27.0%	32.4%	27.1%	100.0%

	Not Confident	Little Confident	Some Confident	Much Confident	Very Much Confident	Total
Count						
Government Sector	21.7%	13.0%	39.1%	26.1%	.0%	100.0%
Privet Sector	23.8%	25.4%	36.5%	11.9%	2.4%	100.0%
Self employed	9.4%	26.5%	37.1%	17.1%	10.0%	100.0%
Un-employed	19.8%	24.2%	33.9%	15.7%	6.4%	100.0%
Students	17.3%	23.1%	30.1%	20.2%	9.2%	100.0%
Others	14.5%	24.4%	32.5%	20.8%	7.8%	100.0%

B.3: Relationship between Demographic Factors and Always Looking for Halal Logo

	Strongly Disagree	Disagree	Neutral	Agree	Strongly agree	Total
Count						
Center	7.2%	3.0%	10.5%	34.3%	45.0%	100.0%
South	3.5%	4.0%	13.9%	37.4%	41.2%	100.0%
East	2.4%	2.0%	13.6%	36.6%	45.4%	100.0%
North	5.9%	6.3%	10.0%	35.8%	42.0%	100.0%

	Strongly Disagree	Disagree	Neutral	Agree	Strongly agree	Total
Count						
Very religious	.7%	.4%	7.8%	35.9%	55.2%	100.0%
Religious	.6%	1.1%	9.1%	36.3%	52.9%	100.0%
Somewhat religious	.0%	2.3%	15.0%	46.8%	35.9%	100.0%
Not religious	.0%	16.2%	37.8%	35.1%	10.8%	100.0%

	Strongly Disagree	Disagree	Neutral	Agree	Strongly agree	Total
Count						
Yes	.0%	.6%	10.0%	38.9%	50.5%	100.0%
No	.3%	2.5%	12.8%	39.3%	45.1%	100.0%

	Strongly Disagree	Disagree	Neutral	Agree	Strongly agree	Total
Count						
Never been to school	.0%	8.0%	13.3%	50.7%	28.0%	100.0%
Primary school	4.7%	2.7%	9.5%	40.4%	42.7%	100.0%
Secondary school	4.9%	4.0%	13.0%	33.6%	44.5%	100.0%
tertiary	.0%	.0%	9.1%	36.4%	54.5%	100.0%

	Strongly Disagree	Disagree	Neutral	Agree	Strongly agree	Total
Count						
Government Sector	.9%	1.7%	10.8%	37.2%	49.3%	100.0%
Privet Sector	9.0%	5.3%	12.6%	35.1%	38.0%	100.0%
Self employed	3.5%	7.6%	12.9%	35.3%	40.6%	100.0%
Un-employed	.0%	8.7%	8.7%	47.8%	34.8%	100.0%
Students	4.0%	2.9%	15.0%	32.4%	45.7%	100.0%
Others	4.8%	2.4%	11.1%	39.7%	42.1%	100.0%

B.4 Testing Relationship between Demographic Factors and Advertisement on Halal Food

	Strongly Disagree	Disagree	Neutral	Agree	Strongly agree	Total
Count						
Center	5.0%	3.3%	22.9%	37.3%	31.5%	100.0%
South	1.3%	3.7%	19.3%	44.1%	31.6%	100.0%
East	1.5%	4.5%	20.8%	42.9%	30.3%	100.0%
North	3.6%	4.5%	21.5%	40.8%	29.5%	100.0%

	Strongly Disagree	Disagree	Neutral	Agree	Strongly agree	Total
Count						
Very religious	.0%	1.5%	17.0%	41.1%	40.4%	100.0%
Religious	.8%	1.9%	19.5%	43.7%	34.0%	100.0%
Somewhat religious	.7%	1.4%	22.2%	47.2%	28.5%	100.0%
Not religious	2.7%	2.7%	35.1%	32.4%	27.0%	100.0%

	Strongly Disagree	Disagree	Neutral	Agree	Strongly agree	Total
Count						
Yes	.7%	1.3%	19.2%	43.2%	35.7%	100.0%

No	.8%	2.3%	30.1%	45.1%	21.6%	100.0%

	Strongly Disagree	Disagree	Neutral	Agree	Strongly agree	Total
Count						
Never been to school	2.0%	5.6%	26.6%	44.0%	21.7%	100.0%
Primary school	.0%	.0%	18.2%	50.0%	31.8%	100.0%
Secondary school	3.2%	3.7%	18.6%	40.9%	33.5%	100.0%
tertiary	.0%	1.3%	28.0%	33.3%	37.3%	100.0%

	Strongly Disagree	Disagree	Neutral	Agree	Strongly agree	Total
Count						
Government Sector	8.7%	4.3%	13.0%	30.4%	43.5%	100.0%
Privet Sector	4.3%	5.5%	24.5%	38.8%	26.9%	100.0%
Self employed	1.8%	6.5%	23.5%	37.6%	30.6%	100.0%
Un-employed	1.3%	2.4%	19.6%	44.6%	32.2%	100.0%
Students	.6%	5.8%	16.8%	42.2%	34.7%	100.0%
Others	6.3%	.8%	16.7%	44.4%	31.7%	100.0%

B.5: Relationship between Demographic Factors and Confident with Products with Halal Logo

	Not Confident	Little Confident	Some Confident	Much Confident	Very Much Confident	Total
Count						
Center	1.4%	1.9%	13.8%	40.1%	42.8%	100.0%
South	2.1%	2.1%	11.8%	41.7%	42.2%	100.0%
East	.0%	3.0%	15.6%	31.1%	50.3%	100.0%
North	2.9%	1.6%	12.2%	39.2%	44.1%	100.0%

	Not Confident	Little Confident	Some Confident	Much Confident	Very Much Confident	Total
Count						
Yes	.3%	2.1%	11.3%	41.0%	45.3%	100.0%

No	5.0%	1.5%	16.4%	41.0%	36.1%	100.0%

	Not Confident	Little Confident	Some Confident	Much Confident	Very Much Confident	Total
Count						
Very religious	.0%	1.5%	17.0%	41.1%	40.4%	100.0%
Religious	.8%	1.9%	19.5%	43.7%	34.0%	100.0%
Somewhat religious	.7%	1.4%	22.2%	47.2%	28.5%	100.0%
Not religious	2.7%	2.7%	35.1%	32.4%	27.0%	100.0%

	Not Confident	Little Confident	Some Confident	Much Confident	Very Much Confident	Total
Count						
Government Sector	.6%	1.9%	11.3%	39.2%	46.9%	100.0%
Privet Sector	2.0%	3.6%	17.0%	42.1%	35.3%	100.0%
Self employed	3.5%	1.8%	18.8%	41.2%	34.7%	100.0%
Un-employed	.0%	4.3%	8.7%	56.5%	30.4%	100.0%
Students	.0%	4.0%	8.1%	36.4%	51.4%	100.0%
Others	3.2%	2.4%	9.5%	41.3%	43.7%	100.0%

B.6: Testing Relationship between Demographic Factors and Frequency of Checking Halal label

	Never	Rarely	Sometimes	Often	Always	Total
Count						
Center	8.0%	3.0%	9.7%	37.9%	41.4%	100.0%
South	4.3%	2.4%	16.8%	34.8%	41.7%	100.0%
East	2.7%	3.4%	7.8%	30.1%	56.0%	100.0%
North	8.2%	5.0%	9.3%	35.4%	42.2%	100.0%

	Not Confident	Little Confident	Some Confident	Much Confident	Very Much Confident	Total
Count						

Yes	.2%	1.9%	11.1%	36.0%	50.8%	100.0%
No	.2%	1.2%	16.8%	38.8%	43.0%	100.0%

	Never	Rarely	Sometimes	Often	Always	Total
Count						
Very religious	.0%	2.6%	9.6%	27.4%	60.4%	100.0%
Religious	.2%	1.1%	9.0%	37.4%	52.3%	100.0%
Somewhat religious	.0%	.7%	21.1%	44.7%	33.6%	100.0%
Not religious	2.7%	16.2%	56.8%	13.5%	10.8%	100.0%

	Never	Rarely	Sometimes	Often	Always	Total
Count						
Never been to school	9.0%	11.0%	4.5%	36.4%	39.1%	100.0%
Primary school	.0%	2.7%	14.7%	41.3%	41.3%	100.0%
Secondary school	4.1%	6.8%	8.1%	36.1%	44.9%	100.0%
tertiary	6.6%	3.3%	15.0%	22.4%	52.6%	100.0%

	Never	Rarely	Sometimes	Often	Always	Total
Count						
Government Sector	.3%	1.7%	10.5%	35.0%	52.4%	100.0%
Privet Sector	11.9%	8.2%	11.4%	32.9%	35.6%	100.0%
Self employed	6.5%	3.5%	24.1%	32.4%	33.5%	100.0%
Un-employed	8.7%	10.0%	20.0%	33.5%	27.8%	100.0%
Students	2.3%	2.9%	19.7%	35.8%	39.3%	100.0%
Others	5.6%	.8%	11.9%	30.2%	51.6%	100.0%

Typical Sample Sizes for Studies of Human and Institutional Populations (More the 20 Millions)

Number of Subgroup Analyses	People or Household National	People or Household Regional	Institutions National	Institution Regional
None or Few	1000-1500	200-500	200-500	50-200
Average	1500-2500	500-1000	500-1000	200-500
Many	2500+	1000+	1000+	500+

Source: Sudman, S. Applied Sampling. (New York: Academic Press, 1976), p.87.

BIODATA OF THE AUTHOR

The author, Golnaz Rezai was born on January 1st, 1979 in Iran. She attended her elementary school, middle and high school in the States and Iran. She obtained her undergraduate degree in Food Engineering from the Science and Research University (Azad- Tehran) in October 2002. She changed her major to Agribusiness in order to combine her study of food technology with business and marketing. In the early 2003, she pursued postgraduate studies in Agribusiness at the Universiti Putra Malaysia, where she received a Masters of Science degree. She is planning to work for 2 years, after completing her PhD, where she can earn some experience to run her own business in the future.