



UNIVERSITI PUTRA MALAYSIA

***EFFECTS OF FOOD LABELS ON CONSUMERS PURCHASING BEHAVIOUR IN
MALAYSIA***

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**DOCTOR OF PHILOSOPHY
UNIVERSITI PUTRA MALAYSIA**

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By

ZUL ARIFF BIN ABDUL LATIFF

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

November 2013

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Dedication

To

Hajjah Raudzah, your doa as a mother has fulfilled my dream.



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

EFFECTS OF FOOD LABELS ON CONSUMERS PURCHASING BEHAVIOUR IN MALAYSIA

By

ZUL ARIFF BIN ABDUL LATIFF

November 2013

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Faculty : Agriculture

Changes in the food environment, including the convenience foods, frozen foods and fast foods high in energy and fat content, has affected the views of the health conscious consumers in Malaysia. One approach to measure the health and safety consciousness among Malaysians is to measure the effect of food labeling on the public decision when purchasing food products. Food labeling offers a great deal of information on most packaged foods. This thesis examines both theoretical and practical use of food labeling for consumer products in Malaysia and tries to validate an extended theory of planned behavior (TPB) model on the data derived from the consumers in Malaysia. Today consumers are exposed to many labels in the food market. Therefore for Malaysian consumers, the existence of labels on food products has become a subject of interest. Some labels are misleading and can create confusion for consumers. Despite increasing the awareness among consumers, still many of them have problems with the understanding of scientific terms and concepts of food labels. The design of some labels is not consumer friendly or well-known by consumers. Therefore there is a need to explore if food labeling is an effective way of giving information regarding the food making process to consumers or how

influential food labels are on the consumer purchasing choice. How consumer attitude, subjective and perceived behavior control will influence their intention to purchase food products based on labels. If the main concern of labeling is to convey the producer's message to consumers; which of group consumers are willing to spend more time and pay higher prices for food products to receive the producers' message.

The main objective of the study is to investigate the effect of food labels on Malaysian consumer purchasing behavior base on their intention. The specific objectives are to identify the level of importance of food labels on food products. Secondly to determine factors influencing consumer purchasing intention based on food labels. To examine the relationship between the influencing factors (such as attitude, subjective norm and perceived behavior control) on consumer purchasing intention based on food labels.

The data is collected by stratified random sampling method from a self reported questionnaire administered to two thousand and fourteen (2014) consumers representing the entire races in Malaysia from May to September 2011. The consumer was interviewed in order to obtain their confidence on food label products. The questions asked include subjects based on awareness and knowledge, attitude toward food label, subjective norm, perceived behavior control, and intention toward food label. A Likert scale of one to 7 (1 representing strongly disagree and seven representing strongly agree) is used to measure consumer confidence on the statements formulated in relation to food label. In this study, the descriptive analysis, factor analysis, and structural equation model is applied to analyze the information.

The findings indicate that the majority of the Malaysian consumers are aware of food labels on food products. Even though the results show that consumers do not always refer to a label on food product, but there is still enough proof to support that they are more careful in evaluating the food label of all types of food product by relating to the list of ingredients, nutrition, safety, price, halal and the food brand. Nevertheless, most consumers are able to differentiate the label on food products. Based on the factor analysis, the following four factors influence the purchase of food products with a label: attitude, subjective norm, perceived behavior control and intention toward food label. In general, various socio-economic factors significantly influence the probability of consumer confidence on the food labels.

Misuses, modification to food label on food products have an adverse effect on a privately assured intention and overall business trading. The Malaysian government, policy makers, food manufacturers and related establishments ought to fulfill the needs of consumers to restore any lost confidence. There ought to be an economic coordination from the government to producers to promote and offer trustworthy and reliable food labeled food products.

Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia sebagai memenuhi keperluan untuk ijazah Doktor Falsafah

KESAN LABEL MAKANAN ATAS PENGGUNA PEMBELIAN PERLAKUAN DI MALAYSIA

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Perubahan dalam persekitaran makanan, termasuk kemudahan makanan seperti makanan beku dan makanan segera yang tinggi dalam tenaga dan kandungan lemak, telah menjejaskan pandangan pengguna yang mementingkan kesihatan di Malaysia. Salah satu pendekatan untuk mengukur kesedaran kesihatan dan keselamatan di kalangan rakyat Malaysia adalah untuk mengukur kesan pelabelan makanan di atas keputusan orang ramai apabila membeli produk makanan. Pelabelan makanan menawarkan banyak maklumat mengenai makanan yang paling dibungkus.

Tesis ini mengkaji penggunaan secara teori dan praktikal pelabelan makanan bagi produk pengguna di Malaysia dan cuba untuk mengesahkan teori panjang tingkah laku yang dirancang (TPB) model data yang diperolehi daripada pengguna di Malaysia. Pengguna hari ini terdedah kepada banyak label dalam pasaran makanan. Oleh itu untuk pengguna Malaysia, kewujudan label pada produk makanan telah menjadi subjek kepentingan. Beberapa label yang mengelirukan dan boleh menimbulkan kekeliruan kepada pengguna. Walaupun meningkatkan kesedaran di kalangan pengguna, masih ramai di antara mereka mempunyai masalah dengan

pemahaman istilah dan konsep label makanan saintifik. Reka bentuk beberapa label tidak mesra atau terkenal oleh pengguna pengguna.

Oleh itu terdapat keperluan untuk meneroka jika pelabelan makanan adalah cara yang berkesan untuk memberi maklumat mengenai proses membuat makanan kepada pengguna atau bagaimana berpengaruh label makanan adalah kepada pilihan membeli pengguna. Bagaimana sikap pengguna, kawalan tingkah laku subjektif dan dilihat akan mempengaruhi hasrat mereka untuk membeli produk makanan berasaskan label. Jika kebimbangan utama pelabelan adalah untuk menyampaikan mesej pengeluar kepada pengguna; yang pengguna kumpulan bersedia untuk menghabiskan lebih banyak masa dan membayar harga yang lebih tinggi bagi produk makanan untuk menerima urut pengeluar.

Objektif utama kajian ini adalah untuk mengkaji kesan label makanan pada pembelian asas tingkah laku pengguna Malaysia mengenai niat mereka. Objektif khusus kajian ialah untuk mengenal pasti tahap kepentingan label makanan pada produk makanan. Kedua untuk menentukan faktor-faktor yang mempengaruhi pengguna hasrat pembelian berdasarkan label makanan. Untuk mengkaji hubungan antara faktor-faktor yang mempengaruhi (seperti sikap, norma subjektif dan kawalan tingkah laku dilihat) pada pengguna hasrat pembelian berdasarkan label makanan.

Data dikumpul dengan persampelan rawak berstrata dari soal selidik diri dilaporkan diberikan kepada 2014 (2014) pengguna mewakili keseluruhan kaum di Malaysia dari bulan Mei hingga September 2011. Pengguna telah ditemuramah untuk mendapatkan keyakinan mereka untuk produk label makanan. Soalan yang ditanya merangkumi subjek berdasarkan kesedaran dan pengetahuan, sikap terhadap label makanan, norma subjektif, kawalan tingkah laku dilihat, dan niat ke arah label

makanan. Skala Likert satu hingga 7 (1 mewakili sangat tidak setuju dan tujuh mewakili sangat setuju) digunakan untuk mengukur keyakinan pengguna ke atas penyata dirumuskan berhubung dengan label makanan. Dalam kajian ini, analisis deskriptif, analisis faktor, dan model persamaan struktur digunakan untuk menganalisis maklumat.

Dapatan kajian menunjukkan bahawa majoriti pengguna Malaysia sedar label makanan pada produk makanan. Walaupun keputusan menunjukkan bahawa pengguna tidak sentiasa merujuk kepada label pada produk makanan, tetapi masih ada bukti yang cukup untuk menyokong bahawa mereka lebih berhati-hati dalam menilai label makanan semua jenis produk makanan dengan yang berkaitan dengan senarai bahan-bahan, pemakanan, keselamatan, harga, halal dan jenama makanan. Walau bagaimanapun, kebanyakan pengguna dapat membezakan label pada produk makanan. Berdasarkan analisis faktor, empat faktor mempengaruhi pembelian produk makanan dengan label: sikap, norma subjektif, kawalan tingkah laku dilihat dan niat ke arah label makanan. Secara umum, pelbagai faktor-faktor sosio-ekonomi dengan ketara mempengaruhi kebarangkalian keyakinan pengguna di label makanan.

Menyalahgunakan, pengubahsuaian kepada label makanan pada produk makanan mempunyai kesan yang buruk kepada niat persendirian terjamin dan perdagangan perniagaan secara keseluruhan. Kerajaan Malaysia, pembuat dasar, pengilang makanan dan pertubuhan yang berkaitan sepatutnya memenuhi keperluan pengguna untuk memulihkan apa-apa keyakinan yang hilang. Sepatutnya perlu ada satu penyelarasan ekonomi daripada kerajaan kepada pengeluar untuk mempromosi dan menawarkan produk-produk makanan dilabel makanan boleh dipercayai dan boleh dipercayai.

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I certify that a Thesis Examination Committee has met on July 2013 to conduct the final examination of Zul Ariff Bin Abdul Latiff on his thesis entitled “Assessment of the effect of food labels on consumer purchasing intention in Malaysia” in accordance with the Universities and University Colleges Act 1971 and the Constitution of the Universiti Putra Malaysia [P.U.(A) 106] 15 March 1998. The Committee recommends that the student be awarded the Doctor of Philosophy.

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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 Universiti Putra Malaysia or other institutions.

ZUL ARIFF ABDUL LATIFF

Date: 29 November 2013



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LIST OF ABBREVIATIONS

AFIC	Asian Food Information Centre
ANOVA	Analysis of Variance
ASEAN	Association of Southeast Asian Nations
CFA	Confirmatory Factor Analysis
CFI	Comparative Fit Indices
CR	Critical Ratio
E321	Food Additives
FAC	Food Advisory Committee
FDA	Food & Drug Administration
FSANZ	Food Standards Australia New Zealand
FSQD	Food Safety and Quality Division
GDP	Gross Domestic Product
HACCP	Hazard Analysis and Critical Control Point
IFI	Incremental fit index
IMP	Industrial Master Plan
JAKIM	Department of Islamic Development
MAFF	Ministry of Agriculture, Fisheries and Food
MSA	Measure of Sampling Adequacy
MSG	Monosodium Glutamate
MOH	Ministry of Health
NAP	National Agricultural Policy
NKEA	National Key Economic Areas
NLEA	Nutrition Labeling and Education Act
OIC	Organization of Islamic Conference

RMSEA	Root Mean Square Error of Approximation
SEM	Structural Equation Modeling
SPSS	Social Science Software
TORA	Theory of Reasoned Action
TPB	Theory of Planned Behavior
UNESA	United Nation World Population
USD	United Sates Dollar
USDA	United State Department of Agriculture
WHO	World Health Organization
WTO	World Trade Organization
WTP	Willingness to pay

CHAPTER 1

INTRODUCTION

This chapter will discuss the background of the study by considering the Malaysian food label, the food industry and the issues surrounding the attitude of consumers regarding the labeling on food products. It also contains the statement of the research problem, research objectives, significance of the study, and organization of the study.

1.1 Food Labeling

In this modern age of consumerism, people are becoming more aware of what they eat by showing greater concern for the way they shop and consume food. Another issue is that even though decisions and behaviors of consumers have been broadly studied but the understanding of what constitutes their purchase decision and behavior is still not clear. There are emerging concerns on the reasons behind consumers' need to see what they eat or drink on a product's label.

A food label is a piece of printed paper attached to a food package. The label provides the essential means of informed choice when purchasing, the means of identification of what is in the package, what quantity, how long it last are part of the information require for consumers in making their purchasing. Food labeling is the primary means of communication between the producer of food on the one hand, and the purchaser and consumer on the other (WHO/FAO 2007). Food labels bridge the information gap between producers and consumers and are designed to aid in consumers' dietary choices (Vijayakumar, 2013). Furthermore food labels provide consumers with information about the products were produced, as well as the health and safety aspects of food products. Government authorities must ensure the

information in food package is useful and clear and does not deceive the consumers, since consumer and industry growing interest pertaining to labels. As more food are trading globally and labeling must meet the need of consumers in different countries, hence the process to establish a specific labeling standard become a very important task. Information which will enable consumer to select a safe and nutritious diet constitutes basic consumer needs.

In order to capture consumer attention the listing of ingredient and net weight, the quantity provide as an indication of quality of the food product. Information on calorie, fat, and sugar are the main interest of consumers. In addition the information about the health impact of specific nutrients would be helpful to consumers.

Malaysia is one of the fastest growing economies with a population that is becoming more aware of safer and healthier foods. Thus, there is the possibility that Malaysians are showing greater interest in purchasing and consuming healthier and more hygienic foods. For this reason food labeling is an important indicator or means to communicate the information of a product to meet consumers' intention.

1.1.1 History of Food Labeling

Today, the food manufacturing industries produce a wide range of food items for consumers through various methods of refining and processing; which are standardized, quick, easy to prepare and with attractive packaging, health claim, list of nutrients, country of origin and expiry date. Beside this, there may be the approval stamp of different certification bodies such as Halal, safety, environmentally friendly, conservation, sustainability displayed on the packaging. These labeling give

a lot of information to the consumers and may influence the purchasing decision. One of the main issues in food manufacturing industry is how important food labeling is in providing sufficient information such as nutritional content of the food to consumers. The concern about the relationship between sufficient nutritional content of food and health has existed for more than two decades. The US was one of the first countries to take a step toward food safety in 1913. In the US there are two main bodies, as the third is only an Act (legislation), giving power to FDA. The 1990 Federal Nutrition Labeling and Education Act (NLEA) gives the FDA the power to require nutrition labeling for most foods, including calorie, fat and others.

In 1973 the Food & Drug Administration (FDA) took the first step to establish the current U.S. framework for labeling of food for most packed foods. FDA's regulations allowed information on food content to be provided voluntarily, but prescribed a standard format. Food labeling was made mandatory, on any food to which a nutrient was added or a nutrition claim was made. Not long after, the U.S. Department of Agriculture (USDA) issued similar policy guidance for nutrition labeling on meat and poultry products. By November 1990, over half of all processed packed foods sold in U.S. bore some type of food labeling. The changes in food labels began in 1970s when there was a fundamental shift in regulatory philosophy and a major advance in consumer information, but from the perspective of 1990s, it seemed modest, incomplete, and outdated.

Under the Malaysian provision of the Food Act 1983 (Ministry of Health, 1983) it was mandatory for all food companies to use the new food and nutrition label. A key element of the new label was the "Labeling Facts" panel that gives consumers significant information about the content of foods. The FDA designed nutrition facts

were easy to read and use by the average consumers without the need for calculators to figure out what consumers were getting in a product. It was also intended that the buyers did not need to understand grams and calories. The Percentage Daily Value column tells consumers in bold print whether the food is low or high in key nutrients, fat, saturated fat, cholesterol, sodium and carbohydrates.

The Food Act 1983 and the Food Regulations 1985 of Malaysia govern the various aspects of food safety and quality control including food standards, food hygiene, food import and export, food advertisement and accreditation of laboratories. The Food Safety and Quality Division (FSQD) of the Ministry of Health (MOH) is charged with the implementation and enforcement of the law.

The government intervention in labeling in the United States has served three main purposes: to ensure fair competition among producers, to increase consumers' access to information, and reduce risks to individual consumer's safety and health.

After the US many countries have pursued programs in labeling information. At first it was introduced to food producers as a voluntary program. But with the growth of technology, mandatory food labeling was enforced in many advanced countries like Canada where a new published regulation in January 2003, made food labeling mandatory for most processed food products.

In 1996 the Food Advisory Committee (FAC) in the United Kingdom completed its review of the British market for functional foods and the control of health claims. The scope of this was that the study was applied to all food and drinks, including food supplements. A food claim is defined in the draft as any statement, suggestion or implication in food labeling or advertising that food is beneficial to health.

Because of the integral relation between food, health and the capacity of food labeling to convey information to consumers, the Food Standards Australia New Zealand (FSANZ) has reviewed its food regulatory. FSANZ's primary objectives in developing food regulations are: the protection of public health and safety; the provision of adequate information relating to food to enable consumers to make informed choices; and the prevention of misleading or deceptive conduct. Asian countries are likely to embrace higher labeling standards. For example additional labeling laws may require for open dating (to describe product freshness), unit pricing (to state the product cost in standard measurement unit), and percentage labeling (to show the percentage of each important ingredient). It is possible to consider the last point as the labeling facts. But still this program is only voluntary in most countries. Hong Kong specifies that manufactured food "shall be marked or labeled with a list of the food labels.

In order to secure customers against being infected with drugs and drug residues, The Ministry of Health of Malaysia is implementing Health Certificate requirement for all importation of beef, chicken, and imported shrimps and prawns, Malaysia requires these labels only on manufactured food.

Labeling Requirement in Malaysia

A. General Requirement

- i. Language to be used
- ii. Particulars in labeling
- iii. Form and manner of labeling
- iv. Date marking

B. Requirements Specific to Nutritional Labeling

- i. Nutrient content claim
- ii. Nutrient comparative claims
- iii. Nutrient function claim

Food Legislation for control and inspection of food in Malaysia is provided by:

- (1) Food Act 1983 (Act 281)
- (2) Food Regulations 1985
- (3) Food Hygiene Regulations 2009

Provisions on importation of food into Malaysia are stated in Section 29 of the Food Act 1983. The importation of any food which does not comply with the provisions of this act and other regulations is prohibited.

Food Groups That Require Health Certificate Label

- a. All types of fresh, chilled or frozen meat of bovine animals, including buffalo meat.
- b. All types of fresh, chilled or frozen meat of swine.
- c. All types of fresh, chilled or frozen meat of lamb, goat and sheep.
- d. All types of fresh, chilled or frozen poultry meat
- e. Fresh, chilled or frozen edible offal of bovine animals, swine, sheep, goat
- f. Fresh, chilled or frozen edible offal of poultry.
- g. Other meat and edible offal, fresh, chilled or frozen.
- h. All types of fresh, chilled or frozen prawns and shrimps (including peeled).
- i. All types of semi processed shrimps and prawns.

All commercially cleaned, prepared, processed meat products including all types in sealed containers are free from this requirement.

1.1.2 Food Policy

Food Act is to safeguard the general public against health hazards and fraud in the preparation, sale and use of food, and for matters incidental there to or connected therewith (Food Act, 1983). The increase in food prices and therefore the shortage of food offers at international level have caused a food shortage crisis in several countries. Since 2008 the world food prices are rising and the Government has taken rapid measures to guarantee that the food supply remains at sufficient levels and reasonable prices for consumers at all times. To fulfill this objective, the government has approved the Food Security Plan (DJBM) in May 2008 in order to:-

1. Increase production and productivity of the agro food sector to meet subsistence levels;
2. Ensure acceptable income for agriculture producers and assurance that the number of the country's food providers will not decrease.
3. Ensure food supply that's sufficient, of quality and safe for consumption.

To make sure that the DJBM objectives are fulfilled, the Ministry of Agriculture has arranged seven (7) main projects which can be implemented within the 2008-2010

Period through the various branches of the Department Agencies of the Ministry.

For 2008, the program aimed at the following:

1. Increase of paddy production.
2. Creation of paddy buffer stock.
3. Increase of production and productivity for agriculture, fisheries and livestock program.

4. Provision of incentives for Agriculture Entrepreneurs.
5. Strengthening of FAMA to ensure optimum marketing and distribution of agricultural products.
6. Implementation of the Green Earth Program.
7. Development of abandoned land and pond areas to increase productivity.

b) The Tenth Malaysian Plan (2011-2015) (10MP)

The 10MP has focused on improving the farming participation to GDP by 2% by 2015. Programs to accomplish this include the setting up of farming consortiums and cooperatives to make use of scale, encourage adoption of approved methods by farm owners, fishers and agro-preneurs, and enhanced marketing through contract farming and strategic alliances.

It also aims at providing sufficient and specific features and strategies to support value addition activities based on accessibility and vicinity of resources, particularly in the specific long lasting Food Development Recreational areas and Aquaculture Commercial Areas. It further intends to intensify collaborative R&D with established farming research institutions to leapfrog advancement in the growth procedures, disease management, safety and quality control such as growth of new high-value added products. No new places will be developed for paddy farming and local development of paddy and rice industry will be set to satisfy a 70% level of self-sufficiency. (10th Malaysian Plan 2011-2015).

1.1.3 Benefit of Food Labeling

Food labelling is a way for the consumers to obtain information that may not be provided by food industries for their products. Food labeling offers a great deal of information on most packaged foods. In addition it is a source of information about the food the consumer is considering to purchase.

There are many pieces of information which are standard on most food labels, including serving size, number of calories, grams of fat, nutrients, and a list of ingredients. This information helps people who are trying to restrict their intake of fat, sodium, sugar, or other ingredients, and those individuals who are trying to get enough of the healthy nutrients such as minerals, vitamins and other supplements. Food labels thus provide information from the manufacturer to the consumer. It also provides information about the product so that the consumer knows exactly what they are buying and ultimately they allow consumers to compare food products for the value they get for their money.

Food generally contains a variety of nourishments that are highly necessary for optimal body functioning; and it is mentioned that the decision consumers make before purchasing or consuming any food product is a function of the quality of food, price, packaging, and labeling. Consequently, labeling is an essential medium through which customers get to know what is contained in the food and it assists them to take proper decisions as well as providing the necessary information about how healthy and hygienic the nature of the food product is. Most developed countries have labeling requirements covering these content areas.

Due to the recent development in food industries in Malaysia and the increased dependency on packaged foods, there is a rising need to provide labeling information on packaged food. However, labels do not show, all the information needed to make wise decisions about food. Moreover, only a small number of people are well informed to make relevant decisions as some of these food labels are very scientific in nature.

The nutrition labeling requirement is compulsory in Malaysia (MOH, 1985). Rules were presented to allow producers to explain the healthy features of a meal product factually and informatively, thereby helping customers with advice and options on meals when planning their daily diets. Due to regulations the nutrition labeling could be voluntary on all foods, but if the manufacturer wants to develop the product, producer must give careful attention to the following information:

- a. When a claim is made for food product or if nutrients are added to the food.
- b. Quantities of all nutrient except fibre (percentage declaration of major ingredients)
- c. The function of one or more nutrients in the human body
- d. The food label should emphasize nutrients such as calories, fat, saturated fat, cholesterol, sodium, etc (Ministry of Health, 1985)

The increasing interest by consumers in the relationship between diet and wellness has led to a demand for clearer information on the health factors associated with food. As the society is becoming more educated and health-conscious it is demanding better balanced diet plans. Customers are spending relatively more money on food than on any other item. Food companies are being inspired by greater

success resulting from those companies which are providing quality-differentiated items.

Since Malaysia has a large Muslim population, meals such as meat and chicken products must also be qualified as “halal”. In other terms, the products must come through slaughterhouses that adhere to the Islamic slaughter methods. These features must be examined and accepted by the Malaysian spiritual regulators. Other foods, which contain any animal products, must be clearly marked to reflect the information. If these products cannot be qualified as halal, Muslim customers, which make up about 60 % of the consumers, are unlikely to buy them.

Customers want to create an advised decision regarding meal quality and wellness. They are progressively aware that they have to take highly nutritive meals and they want to know what constitutes the meals that they buy. So far the details which will allow the customer to decide on a safe and proper diet comprise of primary customer needs. Therefore labeling details is the main interaction between the customer and producers. There is now more attention being put on the interrelationship between nourishment and wellness especially since there is greater reliance on produced foods. This has given rise to more interest in labeling of nourishment details by the producers of such foods which meets the experts and consumers demand to a certain degree. Nutrition labeling means any detail on the brand, which represents the energy value of the meals’ proteins, carbohydrates, body fat, natural vitamins, nutrients, and water that must be understandable, honest, and not deceiving or inaccurate. The brand should provide the customer with adequate details about the material of the package to allow him/her to create the right and advised food purchase choices that will fulfill their wellness and physical needs. Customers can find such details under: nourishment information, nourishment details or content.

The implementation of Hazard Analysis and Critical Control Point (HACCP) system in meal sector is in range with international styles in meal safety. The Ministry of Health (MOH), needs the meal property to be set up and apply a HACCP program that fits the requirements, followed by a program which would allow qualification. The qualifications procedure contains adequacy, conformity and any follow-up audits by hired of qualified auditors. Hence it is important for restaurants to have HACCP certification, in order to avoid certain illnesses related to consumption of foods. Food safety strategies for hawkers (e.g. food safety regulations, licensing, food safety training and relocation to designated sites) have been implemented in Malaysia (Economic Research Service/USDA, 2002).

Expiry date provides useful information to customers on the quality of the item they are buying. It gives realistic information to consumers on an approximate time period during which an item will maintain certain expected features with regards to freshness. Many markets these days guarantee clean foods to their consumers who choose to go in these stores as they anticipate this and not just look for use-by schedules. A review by the Australia Government Department of Health and Aging (2003) verifies that customers are not only sighting expiration schedules, but are indeed looking for more comprehensive information from brands (directions, information of product, and composition) to make informed and healthier options.

Food labeling also enables the customers to fulfill their religious principles. More so, nutrition labeling can serve as a means through which consumers can make informed decisions and choice of purchase, promote competition on food quality, thus leading to improved nutritional properties in food production (Daud, et al., 2011). This, coupled with adequate labeling, provides manufacturers and marketers in Malaysia

and elsewhere with a comprehensive understanding of consumers' beliefs, thoughts, emotional states, and behavior to properly interpret the purchasing decisions of their products.

The growing economy, increasing consumer population with a higher purchasing power and a higher number of people concerned with the safety and quality of food within the Malaysian community have impelled the current study.

Many shoppers look at food labels for information about content and preparation, reflecting both the growing interest in healthy eating, as well as concerns about what ingredients are in the foods they eat. An important objective of nourishment and component details is to help customers make healthy nutritional choices.

Consumers are searching for more information about food products. Food labeling is adequate in expressing the major content needed by the consumers. For food labeling to be useful, it must follow consumers' concerns. The information must deal with those aspects which consumers are looking for. The food labeling should give the consumers information about all the main ingredients which were put into the food, as well as additives and condiments.

Consumers today understand the importance of health and they search for food that can keep them healthy, prevent diseases and improve their mental state and quality of life. Malaysia is a fast growing economy with a substantial part of its population becoming more aware of safe and healthy foods. Thus, more Malaysians are showing greater interest in purchasing and consuming healthier and more hygienic foods.

1.1.4 Food Labeling in Malaysia

In the year 1983 the Food Act was introduced in Malaysia. The Act is to protect the public against health hazards and fraud in the preparation, sale and use of food; and for matters incidental thereto or connected therewith.

Later the Food Regulations of 1985; were developed and amended by the Food Safety and Quality Division (FSQD) of the Malaysian Ministry of Health (MOH). Labelling of *mandatory* nutrients must declare energy, protein, carbohydrate and fat, and total amount of sugar is required for ready-to-drink beverages. *Optional* nutrients include vitamins and minerals (if they meet the criteria), dietary fibre, sodium, cholesterol and fatty acids.

The Government of Malaysia is fully committed to ensure food safety and quality for exports and the domestic market. The Hazard Analysis and Critical Control Point (HACCP) system is used for this purpose. The HACCP certification scheme was established to give official recognition to food industries which have implemented HACCP system since 1996 to meet the requirements for the export of marine products especially to the European Union and the U.S.A. The HACCP certification for the processed food is controlled by the Ministry of Health while the HACCP certification for the raw material is controlled by the Ministry of Agriculture Malaysia. The role of Malaysian government agencies in assessing HACCP is based on the norms, labeling regulations and nutrition composition requirements

The authorities recognized that a comprehensive education initiative will be necessary to support the appropriate use of food labels and maximize its potential to assist Malaysians in making informed food choices. According to the government

Act the food labeling is voluntary for manufactured food products but if a health claim is made or additives are used, food label accommodation is mandatory on the manufactured food packages. This would enable people to choose the best food items with a good knowledge of the quality of the food they are buying. The food labeling has become the most widely available source of food content information used today. However, there is the likelihood of the information on the food label to be confusing or even false or misleading. Problems like misbranding, illegal adulteration and false claims in food markets have become the important challenges to consumers. These problems are solved through the knowledge of laws that protect the quality of food supply as well as the requirement that advertisers make no false claims that could be detrimental to their product.

1.1.5 Available food labels in Malaysia

The development of food labeling in Malaysia, has led to important developments in food analysis. Depending on the extent of the labeling scheme, the type of label to be analyzed can be extensive and complicated thus there is a need to employ a wide range of analytical methods. Moreover, expertise is already available in the country for the analysis of the major nutrients with nutritional significance.

In the case of the Malaysian food industry, food label has become an important feature of every packaged product. As a Muslim country, the *halal* logo has become a must feature on packages in order to ease sales in the Malaysian market. Malaysia is in a better position in becoming the regional food processing hub, and the global market value for trade in *halal* food and non-food products is estimated at RM6.72

trillion annually according to the IMP3 from the year 2006-2020 plan. According to the IMP3, growth areas that have been identified are convenience foods, functional foods, food ingredients and related support services. Thus, this growing trend and trade opportunities have paved the way for an incorporated *halal* standard to improve the food trade in Malaysia.

Food that we eat generally contains a variety of nourishments that help body function at an optimum level. The decision consumers make before purchasing or consuming any food product is based on the quality of food, price, packaging, and labeling. Consequently, labeling, is a significant medium through which customers get to know what the food contains and helps them to make proper decisions by providing all necessary information about the health and hygiene nature of the food product. Kotler (2006) postulate that labeling represents consumers' perception and feeling towards the product; and what the product entails could be meaningful to the consumer. Figure 1.3 shows the mandatory labels used in the packaging of food products in Malaysia. It gives details of the type of information the label contains such as Halal, expiry date, nutrition and ingredient


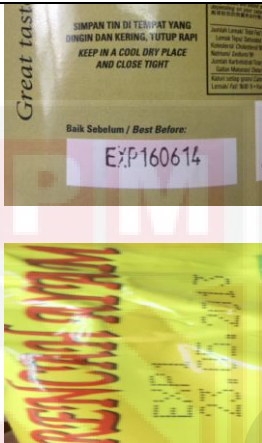


Type of Label	Picture	Statement
Halal		A food label is stamped halal if the contents of the food conform to Muslim dietary laws. A halal label acts as an assurance that the contents of the food are not haram; or forbidden.
Expiry Date		Open Date on a food product is a date stamped on a product's package to help the store determine how long to display the product for sale. It can also help the purchaser to know the time limit to purchase or use the product at its best quality.
Nutrition		Find the information they need to make healthy food choices. Nutrient reference values, expressed as % Daily Values; that help consumers see how a food fits into an overall daily diet.
Ingredient		Malaysia's food industry is as diverse as the multi-cultures of Malaysia; with a wide range of processed foods with Asian tastes.

Figure 1.1: Mandatory Food Labels in Malaysia

Most food labeling is divided into three categories. These include the *halal* logo, ingredients labeling and nutrition labeling. Part of the effects of the halal logo is that it helps consumers to evaluate and acknowledge which product is *halal* (lawful) or *haram* (unlawful), as it enables them to fulfill their religious principles. More so, nutrition labeling can serve as means through which consumers can make informed decisions and choice of purchase and producers can promote competition on food

quality, thus leading to improved nutritional properties in food production. So, coupled with adequate labeling, manufacturers and marketers in Malaysia and elsewhere need to have a comprehensive understanding of consumers' beliefs, thoughts, emotional states, and behavioral outcomes to arrive at the spotlight where they make the purchasing decision of their products.

It is important to understand the meaning of '*halal*'. Halal is described as a "permissible" or "allowed" concept that is ordained by Allah. To gain a meaningful life, a Muslim needs to consume food that is accepted in Islam. The *Halal* logo is a symbol of permissible products for consumption and commonly appears on most food products. Any food labelling without the *halal* logo is considered impermissible for Muslims. Today, the *halal* logo is no longer a mere religious obligation or observance but through constant campaigns by the Malaysian certification body it is well identified with the importance of consuming healthy food products.

Food labelling is a medium of information for the Malaysian consumers and the ingredients which have significant values in consumer purchasing behavior are considered important. Attitudes and purchase behavior come from an adequate knowledge of food labeling. Ingredients added to food products may have different names thus making the terminology of additive inputs difficult for the consumers to understand. This may have a definite effect on the Malaysian consumers purchasing behavior of products. Consumers in Malaysia might also need full information about ingredients in food products that fit their purchasing opinions.

1.1.6 Nutritional Labeling and Food Ingredients

Almost all food producers make use of food labeling to offer consumers information that may influence their purchasing decision and behavior. Food label can be referred to as all the necessary information on food packaging, including claims, nutritional information, list of the product's ingredients, production and expiry dates. This is to say that consumers will like to get information about the food nutrients, and all other relevant information that may help them make precise decisions related to their health, religious concerns and safety. Thus, according to Food Safety Authority of Ireland (2009), the information placed on food products should be meticulous, honest and accurate as it is highly important to explain to the consumer about the nature and features of the food product and to assist them in making an informed purchase decision. The Malaysian Food Act of 1983 has stated that when a standard is prescribed for any food, any person who prepares, packages, labels or advertises such food but does not comply with that standard, in such a manner that it could be mistaken for food of the prescribed standard, commits an offence and is liable on conviction to imprisonment for a term not exceeding three years or to a fine or to both.

Generally, it is assumed that most consumers prefer food products that are enjoyable and help them to satiate hunger and taste, healthy in nature and well nourished after consumption. Thus, other external factors like the price and the product's brand determining purchase decisions and consumption tend to depend on the connections they have with the consumer's desired outcomes. It is further suggested that to fully understand the consumers' purchasing and consumption of a food product, there is a

need to focus on their desired outcome. Once this is done the relationship between internal drives and external factors on desired outcomes should be examined to see whether they are true measures for purchase and consumption. An important goal of nutrition and ingredient information is to help consumers make healthy dietary choices.

Consumers also obtain information about the nutritional properties of food, its health claims, dietary and health benefits or nutrients through labeling.

Table 1.1: Nutritional labeling regulations in some countries

Mandatory (date implemented)	Voluntary, unless a nutrition claim is made	Voluntary, except certain foods with special dietary uses	No regulations
Argentina (08/2006, currently voluntary)	Finland	China	Bangladesh
	Singapore	India	Jordan
Australia (12/2002)	France	Venezuela	Egypt
Brazil (9/2001)	Germany	Saudi Arabia	Kenya
Canada (1/2003)	Indonesia	Philippines	Netherlands
Malaysia (extensive food areas) (9/2003)	Italy	Poland	Honduras
	Japan	Qatar	Hong Kong
New Zealand, 12/2002)	United Kingdom	Morocco	El Salvador
	Switzerland	Nigeria	Guatemala
United States (1994)	Thailand	United Arab Emirates	Botswana

Source: Hawkes's (2004)

From the above table, it is evident that Malaysia is one of the countries which has a scheme for compulsory nutritional labeling. For over a decade, consumers in Malaysia have been exposed to nutritional information about food they consume and this gives them the opportunity to choose precisely what kind of products they want to consume. The question is, whether consumer attitude to nutritional messages on the labels determine their purchasing decisions. Furthermore, in making purchase

decisions, some consumers tend to take several options into consideration on relevant standards for evaluation including taking substantial time in evaluating available options, and making a comparison on selected measure before making the purchase decision.

It is possible that some consumers are motivated by the food label before the purchase as this assists them in making better and nutritious food choices while considering other health-related decisions. However, there are those consumers who may overlook label information on the food products because of insufficient knowledge. Another perceived constraint is that depending on time constraints, some consumers' find it difficult to assess the information, underestimating its perceived benefits, or there is the possibility of the information not being noticed due to its presentation. In addition, making a purchase decision becomes more difficult when the consumer cares about the choice due to the perception of various alternatives.

Previous findings have grossly highlighted the use of label information, name and price of the product, contents of the product as means of reducing time pressures on consumers and peril in purchase decisions. However the information on packages can only be effective when the food brand, producer, store, and the certifying bureau providing approval and certification are trusted and relied upon. Since various food product features serve as a medium through which consumers make choices based on religion, health, and other reasons, it can be said that the content of the food may be of relevance to consumers' knowledge and the brand name offers handiness to purchase, thus, making decisions easier for consumers.

In addition, a study from the Food Safety Authority of Ireland (2009) reveals that some features of food labeling are confusing for consumers. This calls for a need to

enlighten consumers on the different portions of food labelling to enable them to make more precise purchasing decisions. As mentioned earlier, this can be very disturbing to Muslim consumers in Malaysia where most of the food imports are from non-Muslim countries like the United States, Australia and Thailand. This trend can lead to a lack of confidence among Muslim consumers in particular when, making appropriate food choices. *Halal* labelling for instance has led to uncertainty and insecurity among consumers because food products with *halal* label may be processed or contain considerable amounts of non-halal ingredients. Another point is that correct labeling on halal food is essential for consumers as some may be misleading (Malaysian Halal Food Authority, 2002-2003).

An analysis of this quote reflects the socio-psychological construct of food and how a person's internal psychological state can determine what he consumes. Based on this study, consumers' attitudinal influence on food labels remains a focal objective. Because of both social and personal meaning associations, it is quite evident that food has a strong emotional meaning. Therefore, emotional reactions to food choices must be considered in any food study and in marketing campaigns aimed at affecting behavior. Manufacturers of successful branded products are well aware of the importance of emotional connections to brands. The most successful and enduring brands (product or place brands) have high emotional connections to their consumers.

Furthermore, due to changing lifestyles an increasing number of families and other consumers are eating out in restaurants and fast food joints. There is also an increase in the consumption of ready-made food products and an increase in consumers' concerns and perceptions about the nature of what they consume with regards to

nutritional, safety, and religious reasons. Therefore it should be noted that with the emerging economy and growing number of consumers who have a higher purchasing power and are better informed of safe and healthier foods in Malaysia the task of food labeling is a sensitive one.

1.1.7 Product Brand

The continued fulfillment of promises usually results in a long-term profitable relationship between the retailer, the consumer and the utilitarian benefits offered by the brand. Manufacturers can use it as a marketing tool to secure bigger market share as halal food is suitable for both Muslims and non-Muslims. At the international levels, it can enhance the marketability of products especially in the Muslim countries. A study found that consumers who shop more frequently are more store-brand prone. This comment signifies the importance and the impact of private label brands on customers, by developing consumer loyalty to them. While shopping, consumers can choose not to purchase the good at all or choose to purchase their usual brand. Brand clearly indicates the enhancement of general liking scores when products are accompanied by brand names. Indeed, they conclude that brand and color importance superseded importance of flavor preference in the tomato puree product category.

1.2 Statement of the Problem

Today consumers are exposed to many labels in the food market. Therefore for Malaysian consumers, the existence of labels on food products has become a subject of interest; however some labels are misleading and can create confusion for consumers. Despite increasing the awareness among consumers, still many of them have problems with the understanding of scientific terms and concepts of food labels. i.e MSG, E321. The design of some labels is not consumer friendly or well-known by consumers. i.e fair trade, eco labels. There is an uncertainty to what extent the food label will influence food purchasing behavior.

Therefore there is a need to explore if food labeling is an effective way of giving information regarding the food making process to consumers or how influential food labels are on the consumer purchasing choice. How consumer attitude, subjective and perceived behavior control will influence their intention to purchase food products based on labels. If the main concern of labeling is to convey the producer's message to consumers; which of group consumers are willing to spend more time and pay higher prices for food products to receive the producers' message.

The issue of the use of food labels has drawn the attention of the Malaysians on the value of consuming specific items. The aim of this approval is to indicate to their target customers that their items meet the factors. This will definitely create significant advantages for particular producers compared to their opponents that do not have food label qualifications. However the lack of administration and tracking in the use of qualified food labels has triggered the public to question the

credibility on some of the items or solutions. This is also true for the mark of food labels from different nations and sources carrying different labels. As customers are not in a position to perfectly evaluate food labels, they depend on the food production industry and the government to build their confidence for them.

Another issue is the existing technique of labeling may fulfill law, but the specialized terminology used is more likely to misinform, than notify the community. Individuals can comprehend the terms “Sodium Caseinate” or “Monosodium Glutamate”, which are substance preservatives in prepared foods but may not comprehend how they operate. (Prescott and Young, 2002)

Furthermore there is a lack of awareness among Malaysians pertaining to the use of nutrition label when purchasing foods. Most available food products are high in calories, fat, refined carbohydrates and sodium. These products if consumed excessively can cause obesity and other obesity related diseases (Joint WHO/FAO, 2003). The public should bear this in mind and create wise decisions as the primary step towards healthy eating. Consumers should learn the nutritional content of each product, thus making nutrition labeling one of the most effective solutions in providing this information. (MOH, 2005)

One element that must be considered is how food labels hide food information leading to cheating' buyers both economically and nutritionally. Comfort, quality, and complexity have been determined as the major styles of customer food demand and leading to the formation of new food services. Malaysian customers are therefore more engaged with the marking of food, more discerning about food, wishing more visibility in the growth process and submission programs and overburdened by negative advertising. (Tamin, 2002)

Specific beliefs related to food label information, could be seen through the ingredient label. Muslim consumers in common are found to be very particular about the ingredients of the meals they eat. They believe that the ingredient issue is not just a company label that is being used by the food manufacturers but it is the total quality control of actions engaged in tracking of the slaughtering, managing, and storage procedures as well as all the substances used in managing the foodstuffs. Thus, the associates of different religious categories are likely to make purchase choices which are affected by their religious perception. Such trend is commonly recognized in the global business and marketing techniques. This symbolizes an opportunity for food manufacturers to discover the needs of consumers' specialized market. (Temporal, 2011)

The factors that have created confidence among consumers are the release of food labels in the industry which created awareness among Malaysian customers and the high interest due to the impact of having acquired nourishment information when buying food. Food labels have been consistently enhanced over the recent years. This success is mainly due to the enhanced interest for customer wellness awareness. Through enhanced technology and product quality, is it possible to give customers, a positive picture of the food label so they could make a health-conscious buying choice. Another issue is the questions of whether producer labels are an effective means of interacting details on their diet and how much these details are important among the buying options.

Food label principles can be very popular among Malaysian customers while the community is made more alert of problems regarding health, creature privileges and protection, the environment, public privileges and well being.

Understanding the consumers' attention and behaviour towards food label is important since they look for food products that sustain wellness and prevent illnesses. Moreover, competition among Malaysian food producers has improved and they are now searching for marketing strategies to face the difficulties which face the industry. The producers need to have legitimate, accessible and practical details about customer preference and behaviour. Presenting food labels on products could be a great opportunity to have the customers as promoters of the products.

The current global economic crisis has also affected Malaysia. Thus, the country needs to change its production techniques and company performance related to meals production. Competitors have started new market places or expanding the existing ones. It is sensible that regulators in Malaysia seriously consider having control over food labeling in order to become competitive in the global markets.

1.3 Research Question

1. Is there any influence from consumers' attitude, their society and their capability to purchase food products based on food labels?
2. Whether knowledge information and experience on food labels affect consumers purchasing choices and decisions?
3. What are factors that can influence consumer food purchasing behavior based on food labels?

1.4 Objectives of the Study

The main objective of the study is to investigate the effect of food labels on Malaysian consumer purchasing behavior based on their intention.

The specific objectives are:

1. To identify the level of importance of food labels on food products.
2. To determine factors influencing consumer purchasing intention based on food labels.
3. To examine the relationship between the influencing factors (such as attitude, subjective norm and perceived behavior control) on consumer purchasing intention based on food labels.

1.5 Hypothesis

H1: Awareness has no positive relationship with Consumer Attitude.

H2: Perceived Control has no positive relationship with Intention

H3: Consumer Attitude has no positive relationship with Intention

H4: Subjective Norm has no positive relationship with Intention

1.6 Significance of the Study

Looking at the growing importance of the halal market segment, it is relatively obvious that little research has been conducted in general and one can claim that many questions relating to specific attitudes and food choices still remain unexplored. There is a need for research in this area to examine the attitudes of Muslims towards halal meat.

This study is able to exhibit the impact of consumer's attitude on food label, and whether it serves as a determinant on the purchasing choice and behavior. It can serve as a means of adding to the knowledge of the consumer and his or her behavior in terms of revealing how food labeling can impact consumers' purchasing choices and decisions. In addition, the findings of this research would give a description of theoretical contributions which may further develop the existing literature on consumers' attitude toward food labeling. Besides, there may be some other revealing factors that can influence consumers' perceptions and attitude toward food labels which may or may not lead to a purchasing behavior.

To some extent, the findings of this research will benefit both consumers and food producers in terms of where the latter can attain a better understanding of the consumer's attitude towards their food labeling. Additionally, they both stand to benefit from the results of this research through attaining a better understanding of the halal logo, their presentation of food nutrients and how the ingredients can positively or negatively influence the choice and decisions of consumers toward their products. Furthermore, food producers, based on the outcome of this research, can further improve their overall marketing strategies in terms of improving the consciousness of consumers about the halal nature of their food products, and their nutritional and ingredient messages to achieve the goal of convincing consumers towards making a positive purchase decision of their product.

1.7 Organization of the Study

This thesis is organized in five chapters. The organization of the study is as follows:

Chapter 1: This chapter covers the introduction, statement of the problem, research objectives, and significance of the study.

Chapter 2: This chapter will address an overview of issue related to food labeling in Malaysia, and reviews the literature on factors that influence consumer's attitude towards making purchase decisions.

Chapter 3: This chapter will present the development of a conceptual model, study approach on proposed variables and hypothesis development. This chapter also includes the research methodology, which covers sampling technique, research design, and the process of data collection.

Chapter 4: This chapter will present the results from data analysis that covers descriptive analysis of respondents' characteristics and findings of statistical tests and analysis.

Chapter 5: This chapter will focus on the in-depth discussion of the results, conclusions, implementation of the study, recommendations, contribution of the study and suggestions for future research in this area.

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