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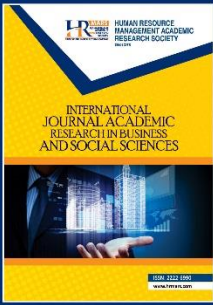
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The Role of Nutrition Label among Malaysian Consumer. A Preliminary Review

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Abstract

This paper seeks to identify the role of the nutrition label, particularly on the use and attitude in the context of Malaysian consumer. Specifically, this paper provides the definitions of the nutrition label, nutrition label use and nutrition label attitude, and describe the potential antecedent and outcome of nutrition label use and attitude obtained from previous research. This is a content analysis involving relevant articles that were identified using both electronic and manual bibliographic search methods. Overall, it was revealed of the lack of empirical evidence on the role of the nutrition label, particularly on the consumer use and attitude in developing countries including Malaysia. The health knowledge has been frequently tested as the antecedent of nutrition label use and attitude, while healthy food choice as the outcome variable. This study provides one of the few attempts to identify, consolidate, and evaluate the extant literature on the nutrition label in the context of

Malaysia. Hence, it provides a reference point that could stimulate and guide future research on the nutrition label.

Keywords: Nutrition Label, Healthy Food Choice, Attitudes, Nutrition Label Use

Introduction

Advances in food technology have resulted in an abundance of processed foods to be available in the market (Bosman, Merwe, Ellis, Jerling, & Badham, 2014). Although processed foods bring more harms than goods, given a hectic life that society is facing, avoiding from consuming processed food seems impossible (Tee, 2011). Realizing the threat from the processed food consumption, the global and local policymakers have put forward the consumer health protection as their major concern (Onete, Voinea, Filip, & Dina, 2014). In order to protect the consumer rights, Weatherill (2013) and; Chapman and Liberman (2005) emphasize that consumer should be given the right information on the content of the food product.

As to provide the nutrition content of food products and assist the consumers to make informed decisions while purchasing a product, it was highlighted the significant role of nutrition label (Campos, Doxey, & Hammond, 2011; K. Grunert & Wills, 2007; K. G. Grunert, Wills, & Fernández-Celemín, 2010). In relation to that, the Ministry of Health Malaysia gazetted amendments to Food Regulations 1985 in 2003 (The Ministry of Health Malaysia (MOH), 2009) and made the nutrition label as compulsory in Malaysia. Due to that, the food manufacturers in Malaysia are obliged to provide the nutritional benefits of their food product (Suhor, Yusoff, Ismail, Aziz, & Razman, 2014). While the food manufacturers have made a move to provide factual, clear, and relevant information about food nutrition, which satisfy the consumers' rights to be properly informed (Owen, 2014), it has been argued that the consumers themselves have failed to exercise their right, particularly by not using the nutrition label in making healthier food choices (Bosman, et al., 2014; Brownell et al., 2010).

Accordingly, this paper seeks to identify the role of the nutrition label, particularly on the use and attitude in the context of Malaysian consumer. Specifically, this paper provides the definitions of the nutrition label, nutrition label use and nutrition label attitude, and describe the potential antecedent and outcome of nutrition label use and attitude obtained from previous research. The study seeks to identify, synthesize, and evaluate extant research on the nutrition label, particularly in Malaysia, with the ultimate aim of unveiling how consumers' right can be properly protected through nutrition label education and promotion. Specifically, it aims to focus on the definitions of the nutrition label, and discussion on the role of nutrition label to promote healthy food choices.

Nutrition Label

According to Koe (1997), nutrition label can be defined as a description used to inform the customer about the nutritional properties of food that helps the customer in purchasing nutritious food and consuming nutritionally balanced meals (Azman & Sahak, 2014). According to Malaysia Dietary Guidelines, nutrition label is a list of the nutrient level of a product displayed on the food label (The Ministry of Health, 2013). In addition, nutrition label refers to the information about the nutrition content of individual food products in order to enable the customers to choose the nutritionally appropriate food (K. Grunert & Wills, 2007, p. 385). Miller and Cassady (2015) explain nutrition label as a label that contains information on calorie, portion

size, and daily value from a few macronutrients, vitamins, and minerals such as fat, carbohydrate, and calcium.

Hawkes (2013) highlights that nutrition label plays an important role as guidance to a better diet and a healthier life. In particular, it helps the consumers to choose healthier diets, stimulate the consumption of the healthy product, switch consumption from 'unhealthy' products toward 'healthy' products more easily, and make an informed judgement of a product's overall value (Azman & Sahak, 2014). According to Souiden, Abdelaziz and Fauconnier (2013), nutrition label is important on three main reasons, i.e. to give clear nutrition information, help consumers to make a decision on certain food and good eating habits, and avoid consumer confusion over the nutrition of food products. Besides, Department of Chemistry Malaysia (2016) stress that nutrition label is important to protect the consumer from health hazard and fraud in the preparation, selling, and usage of certain food. It also gives advantages to the local food industry in order to expand their product's profile to the international crowd (Aschemann-Witzel, de Hooge, & Normann, 2016).

It has been reported that the usage of nutrition label is high among consumers in developed countries, particularly the United Kingdom (UK) (K. G. Grunert, et al., 2010), but still at a low level in developing countries (Ambak et al., 2014; K. Grunert & Wills, 2007). In Malaysia, there is no exception. Based on the limited empirical evidence on the utilization of the nutrition label, although consumers in Malaysia are aware of the importance of nutrition label, they rarely use the nutrition label even during purchasing processed food products (Azman & Sahak, 2014; Darkwa, 2014; Kumar & Ali, 2011; Ministry of Health Malaysia, 2013; Norazlanshah et al., 2013; Rose, 2012). As to promote the nutrition label use among Malaysian consumer, the Ministry of Health Malaysia has revised the Malaysian Dietary Guidelines (MDG) in 2010 (Ministry of Health Malaysia, 2011). Accordingly, the consumer is encouraged to use the nutrition label when buying and consuming processed foods (Yasin, Ahmad, Nordin, Ghazali, & Abdullah, 2015).

Up to now, much research has been conducted to investigate the role of the nutrition label since 1995 (Drichoutis, Lazaridis, & Nayga Jr, 2006; K. Grunert & Wills, 2007). Most of the studies have been focusing on the understanding of the consumer behaviour toward the use of nutrition label (Bosman, et al., 2014; Madhvapaty & Singh, 2014). Since 2005, more and more studies have attempted to address the effect of nutrition label on consumer behaviours, particularly on purchase intention (Burton, Howlett, & Tangari, 2009; Godwin, Speller-Henderson, & Thompson, 2006; Norazlanshah, et al., 2013; Prathiraja & Ariyawardana, 2003).

In Malaysian context, few studies have investigated the impact of consumers' health knowledge, use of nutrition label and attitude towards nutrition label on their healthy food choice (Ju et al., 2010; Ng et al., 2015; Norazmir, Norazlanshah, Naqieyah, & Anuar, 2012; Zheng, Xu, & Wang, 2011). What is more, the previous studies have been concentrating to determine the impact of the nutrition label usage, while neglecting the role of health knowledge and attitude towards nutrition labelling (Norazlanshah, et al., 2013). Moreover, the research on the effect of consumers' health knowledge, use of nutrition label and attitude towards nutrition label in a single framework has been scarce (Cooke & Papadaki, 2014).

Consumerism and Nutrition Label

Consumerism is a free-trade system used by consumers in making a decision on products or services (Lee, Pant, & Ali, 2010). According to O'Hara (2013) and; Oko and Linus (2013),

consumerism can be defined as a social movement done by consumers, government or non-profit organization to protect the consumers' rights and power towards products or services. Furthermore, consumerism is an aspect and activity that leads to concerns over the protection of consumers' rights in the market (Kehinde, 2016; Njuguna, 2015). Consumer right is the actions and policies that ensure the availability of quality goods and services to the consumers (Aggrawal, 2014). In this research, consumerism can be defined as activities done by consumers, government, or non-profit organization to protect and safeguard the consumer interest and rights towards quality products or services (Aggrawal, 2014; Kehinde, 2016; Njuguna, 2015; O'Hara, 2013; Oko & Linus, 2013).

Consumers' rights protection refers to protecting consumers from being victimised by the suppliers' fraud, cheating and unfair conduct (Beekman, 2008; Jacobs, Stoop, & Van Niekerk, 2010). According to Howells and Watson (2012), consumers' rights protection is a form of preservation done by the government towards consumers during products or services purchasing. Furthermore, consumers' rights protection is defined as supervision steps by the government to supervise and care for consumers interests during products or services purchasing from suppliers (Onete, et al., 2014). Consumer right protection is the protection against dishonest suppliers by the government (Aggrawal, 2014). Therefore, in this research, consumers' rights protection is referred as the preservation, supervision and care made by the government to protect the consumer from suppliers' unfair conduct, particularly during the consumer purchasing process (Aggrawal, 2014; Beekman, 2008; Hall, et al., 2012; Jacobs, et al., 2010; Onete, et al., 2014).

According to the Ministry of Domestic Trade, Co-operatives and Consumerism of Malaysia (2017), consumers are protected by eight rights and one of them is the right to obtain information. In relation to that, food suppliers are obligated to put in a clear fact and relevant nutrition information on the food packaging (Hamid, Pauzai, Nong, & Aishah, 2011; Suhor, et al., 2014). While all the consumer rights are incorporated in the constitution, it would be useless if the consumers failed to exercise their rights. Hence, when the provider has taken the responsibility to provide nutrition information on the label, the consumer should feel obligated to fully use the nutrition label (Brownell, et al., 2010). That is, in buying goods and services, consumers should make an effort to read and understand the nutrition label (Harun, Ahmad, & Markom, 2016). By doing so, the consumer can exercise the right to be informed, while protect their other rights i.e. rights to get safe products and services (Campos, et al., 2011).

In the Malaysian context, consumers rights are also protected under the Consumers' Protection Act 1999 (APP) (Pesuruhjaya Penyemak Undang-undang, 2006). Those acts ensure consumer to have access to quality products and services (Zakuan & Yusoff, 2011). What is more, chapters V of APP 1999 outlines seven implied guarantees on good supply, in which one of them highlighted issues pertaining to the quality standard on the good by the manufacturer (Pesuruhjaya Penyemak Undang-undang, 2006). Through the use of the label, the consumer can determine whether the nature and condition of the good are acceptable or not by taking into account the type of products, price, facts on the nutrition label, representation and other aspects stated in Section 32 (b) APP (Pesuruhjaya Penyemak Undang-undang, 2006).

According to Rezai, Shamsudin, Mohamed and Sook Ann (2014), due to a rapid development in Malaysia's economy and an increase of populations, it is critically important to make sure that all processed food products are safe to consume. A previous study by Abdul Latiff et al. (2016) has

exposed that consumerism can protect the consumers in choosing and consuming safe food products. The findings also emphasize that the use of nutrition label may encourage consumers to make smart decisions in purchasing healthy food products. However, the study only focuses on the effect of nutrition label use and does not look into other factors such as attitude towards nutrition label. Thus, it is vital for a new study to examine the roles of the nutrition label use and attitude towards the nutrition label in increasing the consumer protection rights in Malaysia.

Nutrition Label Use

Nutrition label use can be defined as the ability of an individual to read, understand, identify and translate the information shown in the graphic a format (chart, graph, table) on the nutrition label (Rose, 2012). According to Carbone (2013), nutrition label use refers to reading, writing, speaking, listening and calculating the information on the nutrition label. In Nutbeam model (2000), the nutrition label use can be classified into functional health use, which refers to a basic skills to understand health information, knowledge, services and systems; interactive communication use that relates to communication and social skills to discuss the health issues and critical health use, which regards to the cognitive and social skills to analyse health information and make health-based decisions (McCaffery et al., 2013; Smith & Moore, 2012). Accordingly, in this research, nutrition label use refers to the ability of a person to obtain, translate, and use the information on the nutrition label (Carbone, 2013; Rose, 2012).

Misra (2007) reveals health knowledge as an insignificant influencer of label reading behaviour. However, Campos et al., (2011) find out that individuals with lower levels of nutrition knowledge strongly associated to label non-use, which indicate that individual with greater nutrition knowledge is more likely to use nutrition label. In addition, Barreiro-Hurlé, Gracia and De-Magistris (2010) report that by possessing nutrition knowledge, the level of nutrition facts panel use might significantly increase. This highlights that the consumers who are equipped with nutrition knowledge are more likely to use their nutrition knowledge, specifically by reading the nutrition labels while shopping for food products.

Furthermore, Petrovici, Fearne, Nayga Jr and Drolias (2012) reveal nutrition knowledge as a significant predictor of consumers' use of nutrition fact information. Along the similar line, Gracia, Loureiro and Nayga (2007) discover that consumer's nutrition knowledge positively influence the nutrition label use when shopping. Miller and Cassady (2015) further highlight that both subjective and objective nutrition knowledge will significantly influence self-reported nutrition label use.

Similarly, Cooke and Papadaki (2014) find out that nutrition knowledge significantly predicts the nutrition label use. However, the effect is negative, indicating that the higher knowledge, the lower the tendency for the consumer to use nutrition labels. Further, they argue that the relationship between knowledge and label use may remain negative unless the consumers are given proper education on the nutrition label. Once nutrition label knowledge improves, only then, its effect on the usage can be positive. Hence, it could be assumed that the effect of nutrition knowledge on nutrition label use might be significant, but the direction may be negative, particularly in societies with a low level of nutrition knowledge.

In the Malaysia context, it has been found that despite high nutrition knowledge, students seldom use food label during buying food product (Nurliyana, Norazmir, & Anuar, 2011). Besides, Norazlan Shah et al., (2013) highlight that consumers with a higher level of nutrition knowledge

are more likely to read nutrition label when purchasing food. However, both studies failed to reveal a significant relationship between the level of nutrition knowledge and nutrition label use. By relating to Cooke and Papadaki (2014), it could be assumed that the results might be due to the low nutrition knowledge among Malaysian consumers.

In addition, Graham and Laska (2012) and; Barreiro-Hurlé, Gracia and De-Magistris (2010) find out that nutrition label use significantly and positively predicts the healthy food choice among consumer. The results indicate that the higher the usage of the nutrition label, the higher the reported healthy food choice. Besides, Campos et al. (2011) show that nutrition label use may promote healthier eating. Furthermore, Cooke and Papadaki (2014) show that the use of nutrition label has a significant and negative effect towards dietary quality, indicating that nutrition label use might not be sufficient to trigger higher dietary quality among consumer. That is, nutrition label use does not induce the consumer to purchase a healthy food product. In addition, they emphasize that the effect of nutrition label use on healthy food choice will remain negative unless the consumer is well-equipped the nutrition knowledge.

In the context of Malaysia, Norazmir et al. (2012) reveal that the nutrition label use is low among young adults and due to that they have less tendency to choose and purchase healthy food. Besides, a study conducted by National Health and Morbidity Survey (2015) report the low-level nutrition label use among Malaysian consumer, which trigger them to choose unhealthy food and consequently lead to bad health results. Accordingly, it could be expected the significant relationship between nutrition label use and healthy food choice.

Attitude towards Nutrition Label

Attitude can be defined as a form of mental stability and brain's nerve of the individual to give a response (positive or negative) through experience towards an object or idea (Allport, 1935). Furthermore, attitude is a form of the human inclination to consistently react towards an object or situation (Banaji & Heiphetz, 2010). According to Soleimani and Hanafi (2013), attitude can be defined as an evaluation and belief, either positive or negative, towards an object or situation. Moreover, attitude is defined as the reaction to feeling or impression of an individual, either happy or sad, which reflected through attitude change (Koller & Walla, 2015). Taking from the slightly different perspective, Roy and Kareem (2016) relate attitude as a way of thinking by an individual that is prone to give response positively or negatively towards an idea, object or situation.

Attitude can be divided into cognitive, affective, and behavioural components (Eagly & Chaiken, 1993). Cognitive component refers to the belief formed based on the information gained from direct and indirect experience (Harreveld, Nohlen, & Schneider, 2015; Kwon & Vogt, 2010). Affective component refers to reactions to positive and negative emotional experience or preferences with object or situation (Schamari & Schaeffers, 2015). Behavioural attitudes component is defined as individual's overt action toward an object or situation (Amsteus, Olsson, & Paulsson, 2015). Thus, attitude can be defined as the individual's belief, emotion and action that derived from the experience towards an object or situation (Aygen, 2012; Kwon & Vogt, 2010).

Specifically, Cannoosamy, Pugo-Gunsam and Jeewon (2014) define attitude towards nutrition label as a form of feelings or perception of an individual towards nutrition label, while Samant,

Crandall and Seo (2016) refer attitude towards nutrition label as a form of evaluation in an individual's mind that may induce the tendency to use the nutrition label in making food selection. Hence, attitude towards nutrition label can be explained as individual feelings, perception and evaluation, either positive or negative, towards nutrition label when purchasing food products (Cannoosamy, et al., 2014; Graham & Laska, 2012; Samant, et al., 2016).

Aertsens, Mondelaers, Verbeke, Buysse and Van Huylenbroeck (2011) find out that objective and subjective knowledge significantly and positively influence attitude towards organic food, implying the positive effect of knowledge on attitude. Further, a significant positive correlation between health knowledge and attitudes towards nutrition labels was reported (Marietta, Welshimer, & Anderson, 1999). Similarly, Kigaru, Loechl, Moleah, Macharia-Mutie and Ndungu (2015) reveal a significant relationship between nutrition knowledge and attitudes. Along the similar line, Acheampong and Haldeman (2013) explain that consumers with high nutrition knowledge are more likely to have positive attitudes about healthy eating. However, a recent study by Mogre, Aryee, Stevens and Scherpbier (2017) highlight that consumers' nutrition-related knowledge does not correlate with their attitudes. Furthermore, Baser, Ture, Abubakirova, Sanlier and Cil (2016) show that food safety knowledge significantly influences the attitude of staff working in hotels in Turkey (Baser, et al., 2016). Knowledge has a significant effect on attitude formation toward genetically modified foods (Zhu & Xie, 2015).

In Malaysia's context, Sani and Siow (2014) reveal that there is a significant positive correlation between the food safety knowledge and attitudes, indicating that food safety knowledge level of food handlers will influence their attitudes in handling food safely. Furthermore, according to Koo, Lee, Hidayah and Hazwani (2018), there is a positive association between one's knowledge and attitude towards whole grain consumption. Thus, the results reveal that both knowledge and attitudes are significantly related and, health knowledge significantly influences consumer attitude in a positive direction. Accordingly, it could be assumed that health knowledge serves as a significant determinant of consumer attitude toward nutrition label.

In addition, previous studies show that consumers' attitude is very important in making purchasing decision of food products (Harker, Gunson, & Jaeger, 2003; Magnusson & Hursti, 2002; Schifferstein, 2001). Graham and Laska (2012) also emphasize that the attitude towards preparing healthy food is significant when consuming healthy foods. Furthermore, Costell, Tárrega, & Bayarri (2010) point out that the consumer attitude affects their choices of healthy food. Cooke and Papadaki (2014) support the findings by revealing that attitude plays a significant role in practising healthy diet and a positive attitude towards nutrition label induce the consumer to choose healthy food (Cooke & Papadaki, 2014). Similarly, Trendel and Werle (2015) show that attitude does have a significant influence on the consumer's tendency to make healthy food choices.

Despite lack of previous studies on the consumers' attitudes towards nutrition label use, particularly in Malaysia, a study by Ng et al. (2015) indicates that a poor attitude towards nutrition labels are less likely to induce healthy food choices. That is, poor attitude towards nutrition label make the consumer to act irrationally and consequently lead to unhealthy food choices (Ng, et al., 2015). Similarly, Shah Alam and Mohamed Sayuti (2011) stress that attitude significantly and positively affects the consumer food purchase intentions. Hence, it can be predicted that the attitude towards nutrition label may have a significant effect on the consumers' tendency in choosing healthy food.

Nutrition Label Use Model (NLUM)

NLUM had been developed by Cooke and Papadaki (2014). In this model, nutrition knowledge, attitude towards healthy eating and nutrition label use were predicted to positively affect healthy eating behaviours (Rasberry, Chaney, Housman, Misra, & Miller, 2007). Specifically, an individual that has a vast nutrition knowledge and favourable attitude towards healthy eating is more keen to practice healthy eating (Graham & Laska, 2012; Kearney et al., 2001; Parmenter & Wardle, 1999). Furthermore, nutrition label use acted as a mediator relationship between nutrition knowledge and attitude towards healthy eating in the healthy eating habits (Graham & Laska, 2012; Kearney, et al., 2001; Nelson & Lytle, 2009; Parmenter & Wardle, 1999). The findings of previous research's showed that nutrition knowledge had a positive relationship on the nutrition label use (Figure 2.2) (Grunert, G, Shepherd, Traill, & Wold, 2012; Guthrie, Fox, Cleveland, & Welsh, 1995; Li, Miniard, & Barone, 2000; Misra, 2007; Rasberry, et al., 2007).

Conclusion

Due to the abundance of processed foods available in the market and a hectic lifestyle, it is impossible for the society to avoid consuming processed food. Realizing processed foods bring more harms than goods; the global and local policymakers have put forward the consumer health protection as their major concern. Considering the significance of the nutrition label to promote healthy food choice, consumers are forced to use the nutrition label effectively while purchasing food products. However, to date, it has been raised on the low nutrition label use, particularly among consumer in developing countries. Thus, it is crucial to investigate the role of nutrition label use and attitude to influence the healthy food choice and consequently serve as a mechanism to protect the consumer right.

This review has clearly shown that nutrition label holds an important position in promoting healthy food choice. The review also puts forward of a very few studies on this topic that have been conducted in the developing countries, including Malaysia. The review provides a literature review on the nutrition label, nutrition label use and nutrition label attitude and highlights the potential antecedents and outcomes of nutrition label use and attitude obtained from previous research. In particular, as to determine the role of nutrition label in Malaysia, the effect of health knowledge on nutrition label use and attitude, and consequently on healthy food choice should be considered. The results of this review will add to the existing literatures on the roles of nutrition label in in guiding the consumer to make healthier food choice (Cheong, Kaur, Lim, Ho, & Mohmad, 2013; Ju, et al., 2010; Norazlan Shah, et al., 2013; Norazmir, et al., 2012; Nurliyana, et al., 2011).

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