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# Nutritional Labelling: Awareness and Its Effects towards Consumer Behaviour in Purchasing Product

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# ABSTRACT

As the number of diet related problems increases from time to time, consumers nowadays are very health conscious about their diet. Nutritional labelling may guide them to assist the food choice. It provides and conveys a lot of information especially nutrient content to the consumers. Hence, this study aims to achieve 3 objectives such as to identify the nutritional labelling awareness among different groups of consumers, to explore the importance of nutritional labelling among consumers in purchasing the product and to discuss the different methods in promoting nutrition labelling among consumers. Secondary data was used as the main reference and discussion has been done that are related to the objectives. It can be concluded that there are a few differences regarding the awareness of nutritional labelling among different groups of consumers. The importance of nutrition labelling has been identified, and most of them give positive result to the consumers and manufacturers. Comparison to other countries showed that Malaysia may need new approaches in promoting nutrition labelling compared to educate the consumers, manufacturers and retailers in taking serious parts in promoting nutritional labelling to the public.

**KEYWORDS:** Nutritional Labelling, Consumers Behaviour, Gender, Education, Rural, Urban, Age, Manufacturer.

# **INTRODUCTION**

Living in the urbanised world these days, consumers have been taking seriously the role of nutrition in their life where it started with the awareness of nutrition in food and reading the nutrition labelling. The increasingly educated consumers and their awareness is a big help to the nutritional labelling in the world. According to [1], there is increasing concern on the diet-related health problems and nutritional substances that have been the necessary acceptance attributes for consumers to purchase a product. This shows that consumers in these day and age are alert on how important the nutritional labelling for them to know what they are consuming every day.

Nutritional labelling refers to a list of nutrients that is put on the food label of packaging. It is meant to provide information to the users about the contents of the products [2]. It contains the name of the products, contents, date marking, nutritional information and many more. The study will help consumers, retailers and manufacturers to learn their roles in nutrition labelling. Besides, all these parties can gain knowledge on the importance of the nutritional label in acquisition of a product and know how to improve their product to facilitate consumers in reading the labels. Currently, many governments are trying to educate their nations and testing a variety of approaches in order to let their consumers to be more aware of nutrition in food and more cognisant on nutritional labelling. When the governments take action to tackle the increasing health problem, other parties will also follow their leaders. Moreover, the application of secure labelling and contents of food products from manufacturers can be empowered by government. The government can use its authority to ensure the usage of the nutrition label to be compulsory for every product.

## METHODOLOGY

The study adopted content analysis, which focused on secondary data as main references. Related literatures that are already being documented or analysed by other researchers on nutritional labelling and consumer behaviour were reviewed. Several kinds of online resources such as Emerald, Science Direct, Scopus and others were utilized to gather data in order to acquire journals that are related to the topic. All related studies were tabled out and compared to generate in-depth knowledge pertaining to the topic. Arguments and debates on issue related to nutritional labelling and consumer behaviour are included in the discussion part of the paper.

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## DISCUSSION

# Awareness of Nutritional Labelling among Different Groups of Consumers

Nowadays, consumer awareness related to the nutritional labelling has increased. This is due to the increase of conscious about the health. In [3] stated that in Malaysia, nutrition information has turned out to be one of the major components incorporated in Malaysian Dietary Guideline in order to promote healthy dietary habits among Malaysians. Since the health issues that are associated with the food and nutritional labelling are increasing, consumers are now giving more attention to that matter [4]. Hence, there is no doubt that nutritional labelling is one of the most important issues that must be known by all consumers.

Apart from that, not all group of consumer are very conscious about the nutrition labels. Most consumers usually have their own priorities that may lead them to be involved more in the nutritional labelling. This is supported by the statement from [5]. They claimed that consumers who have a health problem and require dietary limitations are most likely to use nutrition labels during shopping. In addition, those who wish to avoid unwanted nutrients in food products are also affected by nutrition labels in their purchases [6].

Gender plays a significant role in the usage of nutrition labelling. Most of the researchers including [7] have concluded that females have high tendency to use food labels and are more health conscious compared to males. In [8-9] has also reached the same conclusion. They found that females were expected to have more use of the nutrition information on food labels and are usually willing to pay more for nutritious food.

There are many reasons why women are more interested in nutritional labelling, thus it may lead them to choose more nutritious food. This is supported by [7], whereby it claimed that the core reason females were more interested in nutritional labelling was that they were more concerned about their body weights and images. Hence, they used nutrition information to identify and select foods with less fat and calorie. Apart from that, healthier food choice also influences females to pay more attention to nutrition labels. In [7] stated that most females may have special dietary requirements, thus nutrition label may guide them to make healthier food choices. In [9] has convinced that women would pay more attention to the nutritional composition of food, and the usage of nutrition labelling would be more frequent in order for them to make a healthier choice.

On the other hand, males showed lower tendency in the usage of nutrition labelling. This is supported by [5] where they have claimed that men are less likely to use nutritional label than female. In [9] has discussed the reason men were not interested in the nutritional labelling. Among the reasons are most of the males do not agree that nutritional information is valuable, and that information may aid in food choice or that health is a matter of prominence to them. However, in [5] added that males do involve in nutritional labelling but only to choose foods with higher levels of protein. This is probably where most of them really care about their body image.

In a nutshell, it was clear that females are usually giving more attention towards the nutritional labelling compared to male. In the opinion of researchers, men should also take nutritional labelling seriously. This is where everyone knows that now there are many diseases related to the unhealthy eating and diet. Even though men are very active in doing exercises, but still it cannot ensure them not to contract diseases such as obesity or coronary heart disease.

## Group of Consumer with Different Level of Education

Demographic characteristics such as the level of education also influence the usage of nutrition labelling. Consumers with different level of education have different involvement in the food label. Most of the researchers claimed that consumers with tertiary education have higher tendency to use nutritional labelling. This was convinced by the findings in [7] whereby participants with at least a bachelor degree prefer nutrition labelling. This is also supported by [10]. They claim that respondents that have tertiary education were more likely to use the nutrition information on the food label compared to those with a secondary education that only have Malaysian Certificate of Education (SPM) certificate or something similar.

Furthermore, there are many reasons that may lead higher education consumers to be involved in the nutritional labelling. As said by [7], a higher education level would allow the user to benefit more from nutrition information. This is where consumers with higher education level can understand the information on the nutrition label, which then could provide them more information. The study also suggested that a higher education level would offer the consumer tremendous advantage of being more informed about nutrition, thus are more able to interpret the nutrition information. In contrast, consumer with lower level of education pays a little attention towards nutritional labelling. This may be due to the fact that they have some problems in understanding the nutrition labelling. As discovered by [7], lower education level would affect the accuracy of reading food labels. In other words, it does not mean that less educated consumers do not participate at all in the information exploration. They do, but only concentrate on nutrition labels as compared to the educated consumer who look at both food labels and ingredient list [11].

Different education level may influence consumer towards nutritional labelling in various ways. Highly educated consumer may have a better chance of assessing all information in nutrition labelling as compared to

lower education consumer. Hence, media should play their role in promoting the benefit of nutritional labelling in the simplest way to less educated consumer so that they become more interested.

### Group of Rural and Urban Consumers

Based on the reading, it was convinced that both rural and urban consumers showed different awareness and different usage of nutritional labelling. Different researchers have different findings regarding the awareness among rural and urban consumers. According to the research by [1], households in non-city or rural areas are more likely to use nutritional labels. This is where they are more aware of their children eating habits, thus will provide the best for them to have better growth. Interestingly, in [12] also claimed that consumers living in rural areas are more likely to use nutritional information emphasized on the ingredients, sodium, vitamins/minerals and fibre content on food packages than others in the urban areas. This is based on the fact that consumers in the rural area are less busy compared to those in urban areas, which make them have plenty of time to shop. Hence, they have more time to check the nutrition information on food packages.

However, there are different arguments coming from other researcher. In [13] found that based on their study, consumers in suburban and urban areas are more focused on the ingredient list and nutrition information. Apart from that, they also indicate that the rural consumers were not at ease with the usage of English Language on the food packages. Indirectly, it will influence their awareness and usage of the nutrition labelling. In [12] also added that consumer in the urban area is more aware due to the extensive exposure about the importance of nutrition labelling from various media. In [14] say that urban consumer was more likely to read nutrition sections while acquiring the food products rather than rural consumers. Besides, based on their research conducted in Malawi, they also claim that the nutrition knowledge among both rural and urban consumers is the same. In terms of the individual components, rural consumers are more knowledgeable about the dietary recommendations in Malawi than urban counterparts. In contrast, urban consumers showed better consciousness about the interactions between diet and cancer and coronary heart disease as compared to rural one.

In conclusion, it can be concluded that both rural and urban consumers have different level of awareness regarding the nutritional labelling. Different researchers reported different findings that may lead to no conclusive result. Based on the literature, more methods should be carried out to increase the awareness among the rural consumers since most of them do not entirely understand English and have less knowledge about the nutritional labelling. Simple usage of English with more attractive nutrition labelling may help to attract them to read more.

### **Classification of Age among Consumers**

There are 3 types of classifications of age among consumers that include the teenagers, adults and elders. These 3 groups are behaving differently towards nutritional labelling. There are some that they aware about nutritional labelling and there are some that they take it lightly. The elders are more concerned on healthy lifestyle compared to adults and teenagers. The statement is supported by [15] where the education on food labels towards elders with diabetes has been beneficial to them. It helps them to choose food that is suitable for their health condition. In addition, the elders have positive attitude towards nutritional labelling and the consumers in the group appreciate the nutritional value of food that may help them to be more concerned about their health and physical condition [16].

Teenagers are the group that has least care and awareness towards nutritional labelling. This is where teenagers are not sensitive towards nutritional labelling and the nutrition in food that may cause by the lack of exposure regarding the awareness and nutrition knowledge [17]. However, there are some groups of teenagers that take this matter seriously because they put more concern on their diet to have excellent body weight [18]. Even though there are researches that show the elders have the highest awareness, there are also a few studies that have verified that the usage of nutritional labelling is high among adults too [19]. The statement is supported by [16] where the adults with families show high level of awareness in reading the nutrition label because their desire to give their families nutritious foods. Besides, the group may be considered as the group with the highest financial capabilities compared to the elders that are mostly retirees and teenagers that consist of young students.

## Importance of Nutritional Labelling to Consumers and Manufacturers Consumers

The second objective of the paper is to review the importance of nutritional labelling to consumers and manufacturers in purchasing the product. It is heavily discussed in the literature review that there are many benefits of nutritional labelling to the consumers. Most of the researchers stated that the most important factor that attracts the customer towards nutritional labelling is to make healthier food choices. This was verified by the statement from [12] whereby nutrition labelling can educate consumers to choose healthier food options. When consumers are focusing more on the nutritional labelling to make healthier choice, it may lead them to have a better life and help them to decide what food to buy. Interestingly, in [13] found that the nutrition labelling give

consumers the advantages to assess the food before purchasing. By doing that, at least consumers can check what kind of foods that are not suitable for their health. Eventually, it may lead them to make healthy food choices.

The second important matter that may lead the consumers to pay more attention to nutritional labelling is the fact to avoid diet-related disease. Many researchers including [20] agreed that the factor ranks in the second making healthier food choice. Due to the increasing cases of diseases related to unhealthy diet such as obesity, coronary heart disease, overweight and so on, it influences consumers to pay more attention to nutritional labelling. This was convinced whereby in Australia, almost two-thirds of adults (63%) and a quarter of children (25%) are currently classified as either overweight or obese [20]. In my point of view, the factor linked with the first element whereby when consumer makes healthier food choice, it may prevent them from contracting the diet-related disease.

The third factor that causes consumers to read the nutritional labelling is to maintain body weight. From 1213 respondents being interviewed, 85% or above agreed that nutrition labelling may promote a balanced diet thus may maintain the healthy body weight [12]. In [21] added, reading nutrition labels may help consumers to make the right food choices when they were trying to lose weight or prevent weight gain. Especially for female customers, they were very conscious about their body image hence it was crucial for them to read the nutritional labelling when they purchase food products.

The other factor is to have better dietary intake or to reduce the consumption of unhealthy food [12]. Consumer must know that nutrition labelling may contribute to a better dietary consumption or able to decrease the intake of unhealthy foods [1]. However, there were arguments coming from other researchers about the importance of nutrition labelling to the consumers. In [22] argued that nutritious food does not affect user to change their consumption of the unhealthy food product such as carbonated drink and chips. This means that consumers need to be educated about the beneficial impact of making healthy food choices first [7]. In conclusion, consumers may obtain many benefits if they check the nutritional labelling while purchasing the food products. All those factors discussed are significant and may lead them to have a better life now and in the future.

#### Manufacturer

Nutrition labelling is also crucial from manufacturer point of views. According to [13], manufacturers are responsible for producing and selling products. By using the nutritional labelling, it acts as a communication tool that may communicate the information of the product to potential consumers. Based on [2], it was stated that by using new, standardized and easy to read format of nutritional labelling, it may guide consumers to understand the content of food product clearly. Eventually, it may lead them to evaluate the quality of each product before deciding to purchase.

Most of the manufacturers agreed that the provision of nutrition labelling is necessary if it may give them more revenues [1]. They also highlighted that nutritious food may be used as a point-of-sale method or method that may give them more profit if they can provide the information about their product correctly. Apart from that, in [13] also verified that manufacturers may expect what consumers are interested in and therefore they may focus on that information in order to attract more customers. Since consumers nowadays are very health conscious, they are looking for food that may benefit their health. More than that, if the manufacturer follows the regulations by emphasising more on the nutritional properties of the food products, indirectly it will guide the consumers to have better choices [23]. If the nutrition labelling regulations encourage food companies to develop more food with less unhealthy nutrients, then it may benefit the entire population [24].

#### The Different Methods in Promoting Nutrition Labelling Among Consumer

Looking at the different methods in promoting nutrition labelling among consumer is researcher's third objective of the study. It can be seen from the literatures that each country has a different approach on how to educate their citizen with regards to nutritional labelling. Among the methods discussed were healthy logo, Traffic Light Labelling (TLL) and Facts Up Front [25]. It can be a guideline for consumers to choose the right products before buying.

In developed countries such as United States of America, the existence of nutritional labelling is widely accepted by consumers because the country is at war with childhood obesity that kept increasing from day to day. The importance of nutritional labelling was also indicated by the effort of the First Lady Michelle Obama to be the principal contributor to the consolidation of nutritional labelling in the country. In America, the Facts Up Front programme is developed by Grocery Manufacturers Association (GMA) and Food Marketing Institute (FMI). First Lady Michelle Obama has supported the new tools that need to be supplied by food and beverage industry in helping Americans to consume healthier food [26]. Since it has been introduced to the consumers, the manufacturers have volunteered to join the programme. This shows that they can cooperate to give the best to the consumers.

While America is implementing Facts Up Front programme, Belgium and Germany are using the same approaches including the Guideline Daily Amounts (GDA), TLL and healthy logo. However, according to [27],

the TLL is not working because consumers are still with their old habit. However, there are some arguments regarding the programme. A British study has stated that colour and text are needed for more understanding and a study from Food Standards Agency exclaimed that the programme is a good idea to educate consumers [27]. Generally, TLL programme is better compared to GDA where only 5% of users are able to find the better products while 34% of respondent is unable to choose a better product when using GDA programme.

Interestingly, Association of Southeast Asian Nations (ASEAN) countries are using different approaches in nutritional labelling. In Brunei, the state did not make any nutritional labelling as mandatory for the food product [28]. It has been a challenge for food legislation and nutritional labelling because of dependence on imported foods in Brunei. Besides, manufacturers in Brunei only need to claim that it has nutrition information panel [29]. However, issues on food regulation standards and requirements will need to be improved and strengthened more in the future.

It is different in Indonesia and Thailand where they are using regulations to make the nutritional label mandatory for several types of foods. For example such as baby foods, dietary foods, dairy products and other foods as are specified by the Director-General for Indonesia. It includes the rules for foods with nutrition claim, comparative claim or nutrient function claim, foods with claims of specific benefits or functions to the body or specific ingredients, foods for particular target groups and other foods prescribed by the Food and Drug Administration Office. On the other hand, Singapore is taking another approach. A voluntary programme was launched in 1997 to initiate nutrition labelling for an extensive variety of general foods. The Ministry of Health Singapore also published Nutritional Labelling Handbook that is used to describe in details the format for a typical nutrition information panel [28]. The country also uses healthy logo to facilitate consumers to choose healthier food products [24].

In Malaysia, regulations and acts for nutrition were established in 1983 and 1985 with no provision stated for labelling of food products [29]. However, Malaysia has achieved many developments for the last 29 years in terms of nutritional and dietary labelling in accordance with the development of the country as supported by [28]. In 1997, the Ministry of Health (MOH) has launched The Healthy Eating Campaign where the campaign highlighted four main topics t including the nutritional labelling. The purpose of launching the programme is to make the citizen to be well-informed consumers by understanding the food and nutrition labelling. Furthermore, MOH has also been collaborating with various organisations in order to comprehend more food labelling and provision of healthy food choices.

Besides Regulation and Act for Food in 1983 and 1985, the MOH has proclaimed to make improvements in the past regulations by formulating a new law that has obligatory nutritional labelling for core nutrients such as energy, carbohydrates, protein and fats. To explain this new rule, the related parties have organised seminars in order to publicise the proposed regulations to the food industry. Arguments inside the MOH about nutrition labelling are also included to encourage the education of nutritional labelling among consumer. As the prime message to educate the public, leaflets have been the medium to educate the public on 'read the label' habit in purchasing the product [28].

It is noted that ASEAN countries especially Malaysia were far behind in terms of nutritional labelling as compared to other well developed countries. Hence, aggressive efforts should be taken by Asian countries specifically Malaysia, Brunei and Indonesia to educate consumers on the awareness and importance of nutritional labelling before buying food products. Moreover, suitable programmes on nutritional labelling such as giving a comprehensive training and education as well as testing the product that might attract the community to stay and learn effectively may serve as a starting point for all these countries.

## CONCLUSION

The study concludes that nutritional labelling is very crucial in influencing consumers to purchase a product. Aggressive efforts from the manufacturers and suppliers need to be done especially in marketing their product. All three research objectives were achieved. Based on the first research objective, it has been shown that a different group possesses different level of awareness regarding the nutritional labelling. In terms of gender, it is clear that females are usually giving more attention towards the nutritional labelling as compared to male. This may be due to the fact that women are more concerned towards their body and image as well as to make healthier food choices. Hence, recommendation should be done by encouraging males to take nutritional labelling seriously. Increasing their participation in purchasing process with their mates can achieve this.

In terms of education, highly educated consumers have more awareness compared to the less educated ones. They have better understanding of the information provided in nutritional labelling thus may interpret it very well. Hence, mass media should play their role very well in promoting the benefit of nutritional labelling in the simplest way to less educated consumer so that they become more interested in it. On the other hand, between rural and urban consumers, it is noted that both rural and urban consumer have different level of awareness regarding the nutritional labelling. Hence, several approaches should be exerted to increase the awareness among

the rural consumers. Most of them do not fully understand the usage of English and have less knowledge about the nutritional labelling. The last group is the elder's group that has the most concern to undergo a healthy lifestyle by positively taking action during purchasing by reading the nutritional labelling. Among the 3 groups, the elderly are usually diagnosed with disease. The level of awareness on nutritional labelling between the groups is followed by the adults and the least aware about nutritional labelling is the teenagers.

Moreover, the second objective summarized that there are numerous advantages of nutritional labelling. It is indeed beneficial to both parties: manufacturers/suppliers and end users/consumers when government enforced rules on nutrient labelling and make it compulsory for each food products. From the consumer point of view, nutrition labelling is paramount for them because they may make healthier food choices to avoid diet-related diseases and maintain ideal body weight. Besides, they may also have better dietary intake and may reduce the consumption of unhealthy food. When they are focusing more on the nutritional labelling while purchasing the product, definitely they may get all those benefits thus may contribute to a better lifestyle. From the manufacturer point of view, nutritional labelling may act as a communication tool in providing relevant and accurate information about their products in the proper way. Besides, it may also generate and give more revenue to the manufacturers. Through nutritional labelling also, manufacturers may expect what consumers are interested in, thus may focus on that information to attract more customers.

The last objective is to discuss the different methods of promoting nutrition labelling among consumers. Among the famous methods used by well developed countries like the USA and Belgium are healthy logo, TLL and Facts Up Front. It can be concluded that Malaysia is still far behind compared to developed countries especially in the strategies to approach customers. Hence, it is crucial for the government to work on the issue and take action to establish rules and regulations regarding nutritional labelling. Malaysia needs to impose on creating awareness and educating consumers the importance of nutritional labelling before buying food products.

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## REFERENCES

- 1. Drichoutis, A.C., P. Lazaridis and R.M. Nayga, 2006. Consumers' Use of Nutritional Labels: A Review of Research Studies and Issues. Academy of Marketing Science Review, 9 (9): 1-22.
- Food Safety and Quality Division (Ministry of Health Malaysia), 2010. Guide to nutrition labelling and claims. Retrieved from http://fsq.moh.gov.my/v4/images/filepicker\_users/5ec35272cb-78/Perundangan/Garispanduan/Pelabelan/GuideNutritionLabel.pdf.
- 3. Norazmir, M., H. Norazlanshah, N. Naqieyah and M.I.K. Anuar, 2012. Understanding and Use of Food Package Nutrition Label among Educated Young Adults. Pakistan Journal of Nutrition, 11 (10): 836-842.
- 4. Kasapila, W. and S. Sharifudin, 2011. Harmonisation of Food Labelling Regulations in Southeast Asia: Benefits, Challenges and Implications, 20 (1): 1-8.
- 5. Govindasamy, R. and J. Italia, 2000. The Influence of Consumer Demographic Characteristics on Nutritional Label Usage. Journal of Food Products Marketing, 5 (4): 55-68.
- 6. Cowburn, G. and L. Stockley, 2005. Consumer Understanding and Use of Nutrition Labelling: A Systematic Review. Public Health Nutrition, 8 (1): 21-28.
- 7. Law, K.P., 2011. Systematic review on the association between nutrition labelling and choice of healthier food, Master thesis, The University of Hong Kong, Pokfulam, Hong Kong.
- 8. Nayga, R.M., 1996. Determinants of Consumers' Use of Nutritional Information on Food Packages. Journal of Agricultural and Applied Economics, 28 (2): 303-312.
- 9. Nayga, R.M., 1999. Toward an Understanding of Consumers' Perceptions of Food Labels. The International Food and Agribusiness Management Review, 2 (1): 29-45.
- Wiles, N.L., M. Peterson and J.L. Meaker, 2009. What Factors Determine the Use of the Nutrition Information on the Food Label When Female Consumers from Pietermaritzburg Select and Purchase Fat Spreads? South African Journal of Clinical Nutrition, 22 (2): 69-73.
- 11. Bender, M.M. and B.M. Derby, 1992. Prevalence of Reading Nutrition and Ingredient Information on Food Labels among Adult Americans: 1982-1988. Journal of Nutrition Education, 24 (6): 292-297.

- 12. Aygen, F.G., 2012. Turkish Consumers' Understanding and Use of Nutrition Labels on Packaged Food Products. International Journal of Business and Social Science, 3 (6): 171-183
- 13. Mensah, J.O., D.R. Lawer and R. Aidoo, 2012. Consumers' Use and Understanding of Food Label Information and Effect on their Purchasing Decision in Ghana: A Case Study of Kumasi Metropolis. Asian Journal of Agriculture and Rural Development, 2 (3): 351-365.
- 14. Kasapila, W. and P. Shawa, 2011. Use and Understanding of Nutrition Labels among Consumers in Lilongwe (Malawi). African Journal of Food, Agriculture, Nutrition and Development, 11 (5): 5171-5186.
- Miller, C.K., L. Edwards, G. Kissling and L. Sanville, 2002. Nutrition Education Improves Metabolic Outcomes among Older Adults with Diabetes Mellitus: Results from a Randomized Controlled Trial. Preventive Medicine, 34 (2): 252-259.
- 16. Cheong, S.M., J. Kaur, K.H. Lim, B.K. Ho and S. Mohmad, 2013. Use and Understanding of Nutrition Labelling among Elderly Men and Women in Malaysia. Malaysian Journal of Nutrition, 19 (3): 353-362.
- 17. Misra, R., 2007. Knowledge, Attitudes, and Label Use among College Students. Journal of the American Dietetic Association, 107 (12): 2130-2134.
- Driskell, J.A., M.C. Schake and H.A. Detter, 2008. Using Nutrition Labelling as a Potential Tool for Changing Eating Habits of University Dining Hall Patrons. Journal of the American Dietetic Association, 108 (12): 2071-2076.
- Neuhouser, M.L., A.R. Kristal and R.E. Patterson, 1999. Use of Food Nutrition Labels is Associated with Lower Fat Intake. Journal of the American Dietetic Association, 99 (1): 45-53.
- 20. Pettigrew, S. and M. Pescud, 2013. The Salience of Food Labelling Among Low-income Families with Overweight Children, Journal of Nutrition Education and Behavior, 45 (4): 332-339.
- 21. Bruso, J., 2015. Importance of nutrition labels. Retrieved from http://healthyeating.sfgate.com/importancenutrition-labels-5212.html.
- 22. Teisl, M.F., N.E. Bockstael and A. Levy, 2001. Measuring the Welfare Effects of Nutrition Information. American Journal of Agricultural Economics, 83 (1): 133-149.
- 23. Ministry of Health Malaysia, 2015. Country health plan 10th Malaysia plan 2011-2015. Retrieved from http://moh.gov.my/images/gallery/Report/Country\_health.pdf.
- 24. C. Hawkes, 2004. Nutrition labels and health claims: The global regulatory environment. World Health Organization.
- Daniells, S., 2009. Front-of-pack 'traffic-lights' ineffective for health choices: Study. Retrieved from http://www.foodnavigator.com/Market-Trends/Front-of-pack-traffic-lights-ineffective-for-health-choices-Study.
- PR Newswire, 2014. Facts up front launches consumer education campaign to drive awareness and increase nutrition knowledge. Retrieved from http://www.prnewswire.com/news-releases/facts-up-front-launchesconsumer-education-campaign-to-drive-awareness-and-increase-nutrition-knowledge-248172081.html.
- 27. Foodwatch, 2012. Research supports traffic light colours. Retrieved from http://www.foodwatch.org/en/what-we-do/topics/traffic-light-labels/more-information/research-supports-traffic-light-colours/.
- 28. Tee, E., 2002. Nutrition Labelling and Claims: Concerns and Challenges; Experiences from the Asia Pacific Region. Asia Pacific Journal of Clinical Nutrition, 11 (6): 215-223.
- 29. International Life Sciences Institute Southeast Asia Region, 2013. Nutrition labelling, claims and communication strategies. Retrieved from http://www.ilsi.org/SEA\_Region/Documents/2013%208th%20Nutrition%20Labeling,%20Claims%20and %20Communication%20Strategies%20(Jakarta,%20Indonesia)/Seminar%20Report\_8th%20Nutrition%20 Labeling%20(Dec%2026).pdf.