

RESEARCH PAPER

# The Role of Consumers' Perception on Labels and Packaging Towards Healthy Foods

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## ABSTRACT

Healthy food can be perceived by looking at the label and packaging of the healthy food. Nutrition Claims and Nutrition Information printed as a labels and packaging of the healthy food. Nutrition Claims such as "Cholesterol Free" normally presented at the front of the healthy foods' package while nutrition information presented in a table with detailed information and printed at the back of the healthy foods' package. Previous researchers indicated that nutrition claims tends to be well received by consumers [26] compared to nutrition information. It seems that nutrition information seldom be useful to the customers. This is because nutrition information difficult to understand. However, nutrition information shows more detailed information regarding the product. Both nutrition claim and nutrition information printed as a label of the healthy foods' packaging. Besides that, colour of the packaging also plays an important role of the consumer perceptions towards healthy product. Label and packaging plays an important role for consumers' perception. Nutrition information and nutrition claim that are appeared at the label and the colour of the packaging can model the consumers' perception on healthy food. This study will investigate the importance of nutrition information, nutrition claim and colour of the label and packaging towards consumers' perception on healthy foods. Data and survey will be conducted at Melaka. This study will use quantitative method and will conclude the independent variables that has significant influence towards consumers perception.

**KEYWORDS:** Nutrition claim; Nutrition information; Healthy food.

## 1. Introduction

Healthy food can be perceived or identified by looking at the Nutrition Claims or the Nutrition Information found on both the front and back of food packages which can aid consumers in their food purchasing. Nutrition Claims is placed on the front of the package and normally presented in graphical figures or short healthy claim texts, whereas the Nutrition Information is normally placed on the back of the package in the form of a table, and it shows more detailed information. Nutrition Claim is normally more easily understood than the Nutrition

Information. Nutrition Information is not easily understood by consumers because some consumer behavior tends to be more like pick and go rather than reading the information and deciding upon it.

### 1.1. Research question

1. What is the importance of Nutrition Claim on label and packaging towards consumers' perception of health benefits of the food product?
2. What is the importance of Nutrition Information on label and packaging towards consumers' perception of health benefits of the food product?
3. What is the importance of color on label and packaging towards consumers' perception of health benefits of the food product?

### 1.2. Research objectives

1. To examine the importance of Nutrition Claims on label and packaging towards

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consumers' perception of health benefits of the food product.

2. To examine the importance of Nutrition Information on label and packaging towards consumers' perception of health benefits of the food product.
3. To determine the importance of color on label and packaging towards consumers' perception of health benefits of the food product

### **1.3. Problem statement**

Several studies had been done in the area of food packaging either about the packages' attribution or the nutrition label influence on the consumers' perception. For example, Ares and Deliza studied consumer expectation on milk desserts that is influenced by the shape and the colour of the package and related it to food attribute design in 2014. Another article wrote by Arslanagic, Pestek and Kadic studied the perception of healthy food packaging information and indicated the significance of distinctive attributions of healthy food packaging information on consumers' perception. Concerning the previous researchers, it can be seen that not a lot of studies are about the influence of healthy food labeling on consumer perception. Due to this, research regarding healthy food should be conducted to enhance consumers' knowledge regarding healthy food. In order to enhance the customers' knowledge study based on Nutrition Claims, Information and Colors should be conducted.

## **2. Literature Review (Heading 1)**

### **2.1. The theory**

The theory of Consumer Decision Process (CDP) model and the Theory of Total Food Quality Model (TFQM) is a theory used to empathize the issues relating to healthy food consumption and the consumer perception. The CDP model was first proposed in 1968 by Engel, Kollatt and Blackwell. It has been developed and modified to a more advanced and sophisticated model comprising seven stages. Consumer behaviour theory CDP model examined the interaction between environmental and individual factors effect on consumers' purchase behaviour and eventually selecting the best possible choice. Individual factors include customer resources, motivation, involvement, knowledge, attitude, personality, value and lifestyle. Besides, nutrition knowledge is important for dietary choice for customer to make a purchase decision.

Knowledgeable customer can easily make evaluations, look less for external sources of information and, therefore, it is more difficult to influence their decision. [35]

### **2.2. Healthy food**

Food is a basic need for human being and also it plays an important role for health. Healthy food is referred to as 'natural food that is thought to have health-giving qualities'. It does not contain micro-organisms, chemicals or others that can harm human health. Healthy food preferences and dietary habits are related to the development of obesity later in life [27]. As everyone knows that healthy food is also an organic food which is low in fat or less sugar such as fruits, vegetables, yoghurt etc. Consumers choose to consume healthy food for the sake of avoiding illnesses and for a good appearance. The mentioning of healthy food is normally connected with claims and labels such as 'helps maintain weight' and 'helps maintain clear skin' [5]. Besides that, different gender have distinctive observation toward health and wellbeing [11]. Men are more focused on healthy food that tends to increase strength, skill and muscular body more concerning fitness. In contrast, women would like to eat healthy food that can help maintain a healthy weight or slim body shape. Besides, foods are used to fulfil hunger as well as give essential nutrients to them [7]. In short, healthy eating habits can contribute to health, and a good body weight. Therefore, due to differences between perceived and actual product attributes, health foods are invariably the foremost consumers choice.

### **2.3. Consumers perception**

Consumer perception is the process of which physical sensations such as sounds, sights and smells are selected, organized, and interpreted [6]. However, consumer perceptions of foods shifts by various measurements such as healthiness, food label, food packaging [20] and taste. Food selection by consumers based on consumers' perception towards healthy food. They will tend to eat healthy food and purchase food product which are labelled with healthy claims. However, demographic factor including income level, family structure, lifestyle, dietary restrictions and some social values and beliefs always stand as the consumers' preferences and food selection [13]. Generally, consumers use their perception and knowledge to understand and how to use the Nutrition Information about the health benefits

of the food stated on the labels. Packaging design can influence different consumers differently. People preferences are affected by the gender and age and how they evaluate the healthy food product and package design. For example, previous studies found out that more women read the nutrition information than men [26]. In summary, the food product market can get higher sales when the product is being well perceived. Therefore, the importance of this study is to carry out researches on understanding consumer's perception toward healthy food in order to help healthy food producers enhance the development of their foods product in Malaysian market. Furthermore, consumers' perception of the food quality is an important behaviour or belief before making a purchasing decision.

#### **2.4. Label and packaging**

Marketers modifying the label and packaging on food product is called as "placebo effects", that is 'altering experienced pleasantness and efficacy of an otherwise identical product. Food labelling uses studies focused on nutrition labels. Consumers think that Nutrition Claim and Information are very important. Food labelling also help consumers make healthier choices. Food labelling can educate consumers about the nutritional contents in the food and recommended serving size. The information on labels may help consumers assess the health and understand more their values before making informed purchasing choices [32]. Consumer can make a better decision when looking at the food label information. Food labelling is an important marketing tool used by marketers because it can transmit information about the ingredients of the product. The food labelling is not only transmitting information to the consumer, but also it can be used as a promotional tool for food producers and manufacturers to promote their products. Despite the fact that food labels offers an extensive information about the quality of food product, many kinds of design packaging leads consumers to select a non-healthy food [26]. That's due to the fact that numerous consumers do not have the essential nutritional knowledge to clearly understand the food labelling and pick the right healthy product. Normally, consumers will make comparisons between similar products and interpret it in relation to their dietary requirements [26]. Other than the labels of the food products, packaging also plays an important role to promote the food product by way of its attractive appearance.

Pilditch (1972) clarified that food packaging can understand consumer needs and wants in healthy food so that the sales will be increased. In other words, packaging can have a big impact on the final decision made by consumers [36]. Packaging influences the customer perception before making the purchase decision through color.

#### **2.5. Nutrition claim**

Food contains many essential nutrients vital to the normal functioning of the human body systems. Proper nutrition is important for growth and repair, maintaining the body temperature, providing energy and protection from diseases [4]. Nutrition Claims are placed on the front of food the packages in order to replace the complex nutrition table on the back [34]. This is supported by consumers as a method of providing simplified and visible nutrition information [34]. Claims help consumer to make decision when buying healthy food (Report, 2010). For example, 'low fat', 'sugar free', 'natural', 'heart healthy' and so on. Nutrition Claims may attract consumers' attention, give the product positive image and aid positive perception by consumers.

#### **2.6. Nutrition information**

Nutrition Information plays a vital role in helping customers to make a correct decision when in the process of purchasing. Consumers can find the healthy food through the Nutrition Information on the back of the food package [15]. The Nutrition Information can lead to misunderstanding the claims on the front package [29]. Furthermore, it is hard to understand the Nutrition Information. Thus, some of the consumers prefer a simpler and faster way to evaluate of the nutritional characteristics of the healthy food [31]. Whereas, some other consumers who are becoming more careful shoppers and paying more attention to Nutrition Information tend to be more healthy and nutrition conscious [15]. In addition, Nutrition Information gives a table content of nutrient food components such as energy, sugar, vitamin, fat, and some other important nutrients. However, food components should be processed in limited amounts with others that often are lacking in the diet.

#### **2.7. Color**

A food product's colour may influence consumers' perception and may also influence the customer purchase decisions also [25]. Some consumer may process the purchase decision

based on certain colours of the food product. Food companies take seriously its stand on consumer view on how colour attributes affect purchase decision. This is because consumers' first sight of the food packaging is the colour. In addition, different cultural associations will build different consumers' response with different colour preferences for various healthy food product [25]. Acceptable colour of consumer perceptions is linked with perceptions of healthy and diet food by following the flavour, the nutrition and also with satisfaction levels. Moreover, positive effects on healthy perception can be reached by conducting more than one packaging variable such as the colour of packaging, transparent packs that can see the food colour, incident light, and the brand name appearance [33]. However, it is important to understand well consumers' colour associations as a basis for understanding the emotional aspects of colour.

### 3. Methodology/Materials

#### 3.1. Hypothesis

1. There is a significant importance of Nutritional Claim on label and packaging towards consumers' perception
2. There is a significant importance of Nutritional Information on label and packaging towards consumers' perception.
3. There is a significant importance of colour on label and packaging towards consumers' perception of healthy foods

#### 3.2. Sampling size

200 respondents of sample size were chosen to complete the survey. Total of 200 grocery shoppers will be involved to help answering the question in shopping areas in Jusco, Malacca. Besides that, it can help to lower down the cost and reduce the time to collect data by only survey 200 grocery shoppers. There will be 200 questionnaires to be distributed, however there might occurs some incomplete questionnaires due to the shoppers' time constraints, and also because some of the shoppers might not want to participate as they might consider the

#### 4.2. Mean analysis

questionnaires invading their privacy or waste of their time.

In G\*Power, the aggregate sample size is the quantity of the subject summed all group of the design. G\*Power [21] is a statistical measurement to examination program ordinarily for the social, behavioural and biomedical sciences. In this study, researchers use F test, correlation and regression in their research. Figure 3.2 depicts the output parameter of critical  $F=2.444766$  and the total sample size is 129 as a minimum size of respondent is complete.

#### 3.3. Data collection

Total of 200 questionnaires had been distributed to consumers through Google Form. Five-point Likert scale, ranging from one (strongly disagree) to five (strongly agree) had been used to determine the respondent opinion. Data had been analyzed using SPSS.

### 4. Results and Findings

Statistical Software Package for Social Science (SPSS) version 2.2 had been used to analyse the results. First, a descriptive analysis of the variables, Mean analysis, Pearson's correlation analysis and multiple linear regression analysis will be uses to explain the packaging design influence consumers' perception.

#### 4.1. Descriptive analyses

Sample characteristic of respondents and general pattern of the response had been analyse using Descriptive analyses. According to the consumers' perception by first attention, the Nutrition Information on the packages was the most noticeable labels of healthy food. 65 persons marked it as the first things that caught their attention, it is equal to 33% of the participants. The colour of the packages was caught first by 27% of the participants, which means 55 persons. The shape of the packages was noticed first by 43persons which represents 21% of the participants. Only 37 persons paid attention to the Nutrition Claims, meaning 19%.

**Tab. 1. Mean and standard deviation for the labels and packages of healthy food**

| Variable              | Mean | Standard Deviation |
|-----------------------|------|--------------------|
| Nutrition Claims      | 3.60 | 0.76               |
| Nutrition Information | 3.71 | 0.58               |
| Colour                | 3.34 | 0.67               |

Results are the means based on five point scale, where 1 indicates “strongly disagree” and 5 indicates “Strongly Agree”.

The study assessed important packaging attributes as perceived by consumers. Results in Table 4.3 show that consumer acknowledge the

useful of packaging particularly in term of Nutrition Information on the back of packages (mean score 3.71), Nutrition Claims on front of the packages (3.60), colour of the packages (3.34)

4.3. Pearson’s correlation analysis

Tab. 2. Correlation between packaging design and consumers’ perception

|                       |                     | Nutrition Claims | Nutrition Information | Colour | Shape  | Consumers’ Perception |
|-----------------------|---------------------|------------------|-----------------------|--------|--------|-----------------------|
| Nutrition Claims      | Pearson Correlation | 1                | .147*                 | .306** | .144*  | .657**                |
|                       | Sig. (2-tailed)     |                  | .038                  | .000   | .042   | .000                  |
|                       | N                   | 200              | 200                   | 200    | 200    | 200                   |
| Nutrition Information | Pearson Correlation | .147*            | 1                     | -.078  | .087   | .140*                 |
|                       | Sig. (2-tailed)     | .038             |                       | .275   | .221   | .048                  |
|                       | N                   | 200              | 200                   | 200    | 200    | 200                   |
| Colour                | Pearson Correlation | .306**           | -.078                 | 1      | .539** | .360**                |
|                       | Sig. (2-tailed)     | .000             | .275                  |        | .000   | .000                  |
|                       | N                   | 200              | 200                   | 200    | 200    | 200                   |

\*. Correlation is significant at the 0.05 level (2-tailed).

\*\*. Correlation is significant at the 0.01 level (2-tailed).

Tab. 3. Rule of thumbs of correlation analysis

| Coefficient Range | Strength of Association         |
|-------------------|---------------------------------|
| ±0.91 to ±1.00    | Very Strong                     |
| ±0.71 to ±0.90    | High                            |
| ±0.41 to ±0.70    | Moderate                        |
| ±0.21 to ±0.40    | Small but definite relationship |
| ±0.00 to ±0.20    | Slight almost negligible        |

Source: Hair J Money A Samouel P &Page M (2007)

The above correlations show that the consumers’ perception has significant (p < 0.05) and positive correlations with the other three labels and packaging which are Nutrition Claims, Nutrition Information, colour and shape. The positive correlation coefficient 0.657 are indicates that there is a statistically significant (p < 0.001) linear relationship between these two variables such that the

Nutrition Claims on front of packages will influence more consumers’ perception on healthy food. Value for the correlation coefficient which is 0.449 which is falls under the coefficient range of ±0.41 to ±0.70. Hence, this indicates a moderate relationship between Nutrition Claims and Consumers’ perception towards healthy food.

4.4. Reliability analysis

Tab. 4. Summary of reliability analysis result

| Level of Attributes   | Variables            | Cronbach’s Alpha Result |
|-----------------------|----------------------|-------------------------|
| Nutrition Claims      | Independent Variable | 0.724                   |
| Nutrition Information | Independent Variable | 0.724                   |
| Colour                | Independent Variable | 0.780                   |
| Consumers’ perception | Dependent Variable   | 0.728                   |

Table 4.4 presents reliability analysis, all attributes including independent and dependent variables were to be good reliability with all the Cronbach’s Alpha results are of above 0.6. According to Sekaran (2003), alpha coefficients

less than 0.6 are poor, those in the 0.7 range are considered acceptable in most social science research situations, and those over 0.8 are considered as good result.

#### 4.5. Multiple linear regression analysis

Relationship between packaging attribution and consumers' perception towards healthy food had been determined by Multiple regression analysis. Multiple Linear Regression Analysis estimates the coefficients of a linear equation, involving one or more independent variables to

predict the best value of the dependent variable. These is also used in statistical technique in the behavioural sciences [28]. The packaging attributes consists of Nutrition Claims, Nutrition Information and Color of the packages while the consumers' perception constitutes the dependent variable.

**Tab. 5. Multiple linear regressions model summary**

| Model | R                  | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|--------------------|----------|-------------------|----------------------------|
| 1     | 0.682 <sup>a</sup> | 0.465    | 0.454             | 0.49560                    |

a. Predictors: (Constant), Nutrition Claims, Nutrition Information, Colour

b. Dependent Variable: Consumers' perception

This table display R, R Square, adjusted R Square and standard error of the estimate. R is the correlation between the observed and predicted values of the dependent variable. The value of R is range from -1 to 1. The sign of R indicates the positive relationship in this research. Typically, values of R<sup>2</sup> below 0.2 are

considered weak, between 0.2 and 0.4 considered moderate and strong when above 0.4. In this research, the R<sup>2</sup> value, 0.465 showed that Nutrition Claims, Nutrition Information and colour of the packages predicted approximately only 46.5% of the variations in consumers' perception toward healthy food.

#### 4.6. Summary of hypothesis testing

| Hypothesis  | Result      |
|---|-------------|
| H1: There is a significant relationship between Nutrition Claims and customer Support perception of healthy food.           | Support     |
| H2: There is a significant relationship between Nutrition Information and customer Not Support perception of healthy food.  | Not Support |
| H3: There is a significant relationship between the colour of the packages and customer Support perception of healthy food. | Support     |

### 5. Conclusion

The findings indicate that Nutrition Claims and Nutrition Information are influence consumers' perception towards healthy food. There is three research question raised in this study. First question asked whether there is any relationship between Nutrition Claims and consumers' perception? This finding shows that Nutrition Claims is positively related to the consumers' perception toward healthy food. Second question asked whether there is any relationship between Nutrition Information on the back of the packages and consumers' perception of the health benefits of the food product? This finding shows that Nutrition Information negatively related to the consumers' perception toward healthy food. Third question asked whether there is any relationship between the colour of the packages and consumers' perception? The outcome from this study shows there have positive significantly the colour of the packages affects consumers' perception toward healthy food. Marketers could better be understanding consumers' perception toward healthy food on the packaging attributes. Nutrition Claims, Nutrition Information and

colour of the packages have different influences in consumer decision making. It particularly indicates which packaging attributes to have greater impact on the perception by different consumer. Case in point, health conscious consumers tend to focus more on Nutrition Information and colour of the packages in making their decisions. With increasing number of health conscious and computer savvy consumers, making Nutrition Information readily available online would give manufacturers a competitive edge. Moreover, this study can also help both the policy maker and firm to be more aware from current situation of healthy food demand and to forecast the future for these markets. Agencies such as the Food and Drug Administration may give a better educate to consumer about the physically activity and food intake. Agencies could help consumers better control their consumption by educating on the appropriate serving size and actual health content of the food product. Also, agencies may evaluate the food manufacturers' claims on the product packaging.

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