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What makes them ignored? Consumers' mindset of food labels

Wai King TSE

LINGNAN UNIVERSITY

Department of Marketing and International Business

BUS 331 Business Project

WHAT MAKES THEM IGNORED?

Consumers' Mindset of Food Labels

Project supervisor: Prof. CUI Geng

Second examiner: Dr. Paul A. WHITLA

Student name: TSE Wai King, Annit

Student number: 1087263

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Executive Summary

While Hong Kong consumers are increasingly concerned with food safety and a healthy diet, their usage of food labels during purchase remains significantly low. In order to prospect for effective moves in the future, one concordant step for both the government and pre-packaged food manufacturers is to understand the consumers' perceptions and usage of food labels. This research explores what factors lead to such phenomenon and subsequently its implications in Hong Kong. The research also examines the behavioral variations of consumers in processing food labels.

The study begins with a literature review to construct research hypotheses, covering aspects of the current practices and regulations in the market, and the reported studies of food labels from overseas. The primary research focuses on the perceptions, information sensitivity, potential biasing filters and processing involvement of the food labels among Hong Kong consumers.

The study finds that the various internal biasing filters interact with respondents' perceived benefits and sensitivity to food labels, which further affect the processing involvement. These findings may help to explain the current low and incomplete usage of food labels among Hong Kong consumers.

The government, manufacturers and consumers all need to be more aware of the potential benefits from adopting better labeling practices and using food labels for purchase decisions respectively.

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Chapter 1 Introduction

1.1 Problem Definition

Consumers in modern society are more concerned with a healthy diet and food safety, and they would like to ensure that the food intakes are safe and beneficial to their body from daily consumption. Food labels can be one major source of information at the point of purchase. When consumers become more informed about the product, they may in one-way or another change their decision before making a purchase. However, the perception, usage and influence of food labels may vary among consumers, and all these will lead to different implications for the pre-packaged food manufacturers in their food labeling practices, and for the government in regulating food labels.

In order to prospect for efficient moves in the future, both the government and pre-packaged food manufacturers need to understand the consumers' perceptions and usage of food labels. While Hong Kong consumers are increasingly conscious about healthy diet and food safety, they seem to have significantly low usage of food labels. The research focuses on exploring what factors cause such phenomenon and subsequently its implications for Hong Kong. The research also examines consumers' behaviors in processing food labels.

1.2 Rationales

Theoretically, food labels can serve as a guide, which provides consumers the relevant product information. Food labels are not just for packaging or promotion considerations; it adds values to the product and becomes part of the product as a strong attribute. An expressive and truthful food label allows the consumers to refine

their purchase decision in accordance with their needs and conditions. This also suggests that food labels can be a marketing device, which demonstrates genuine concerns of the manufacturers for their consumers. The government can make use of the food labels to identify any unqualified or unsafe products in the marketplace. With appropriate practices, food labeling can possibly benefit the whole society.

Nowadays, Hong Kong consumers are more sensitive to food labeling issues, due to the growing level of health consciousness and food safety awareness. Moreover, "households across all income groups have purchased more packaged noodles, canned food, bread and biscuits" (AC Nielsen, 2001). Responding to these trends, the government has recently amended the Food and Drugs (Composition and Labeling) Regulation (Cap.132W), which requires manufacturers to adopt better labeling practices, and aims at enhancing food safety, protecting public' health interest and promoting a balanced diet. Do consumers find the amendments significant or helpful for better decision-making during purchase? This is the focus of the study.

Consumers, however, may not fully understand or utilize the food labels. This leaves rooms for potential misleading and deceptive practices. The recent AC Nielsen Global Research Report (July 2005) showed that only half of the respondents (from 38 different countries) could partly understand the nutrition information labeled on the package. In addition, less than 25 % of the Hong Kong respondents say they would always check labels. It may be due to the fact that consumers have biased ideas about the labels as being irrelevant for purchase decisions.

So, what roles do food labels play in the Hong Kong market? The research examines the current practices and regulations in the market, the reported studies, and conducts a primary study to understand the perceptions and usage patterns of the Hong Kong consumers regarding food labels.

1.3 Research Questions and Objectives

The study focuses on the following three research questions. The first question examines the market situation and current regulations of the food labels in Hong Kong. Are there any proposed changes in regulations to improve the labeling quality? What are the implications for the pre-packaged food industry? Dose the changes significantly influence the consumers' decision-making? These questions help to explore the content, significance and implications of food label regulations.

Second, what are the studies or practices regarding food labels in the other countries? How do they evaluate food labeling? Do they provide any insights for food labeling practices in Hong Kong? These research questions are to find out the different ideas about food labels among countries and their relevancy to the Hong Kong market.

What are the marketing roles that food labels play for the government and the pre-packaged food manufacturers? What are the potential perceptions and specific usage of consumers regarding food labels? Answers to these questions provide insights for the Hong Kong government and the pre-packaged food manufacturers on how to respond to the growing trend of food labels.

Third, the following research questions relate to the consumers' processing practice of food labels. How will they use the information on the different food labels? When and how often do they check the labels? Do they understand and believe all the labels' information? Do they have any biases of using food labels to make purchase decisions? These questions are to determine the perceptions, understanding and processing involvement of Hong Kong consumers regarding food labels, and to identify the magnitudes of different factors in shaping the consumers' mindset.

The results of study help to understand more about consumers' decision-making process regarding the food labels, and to provide the government and pre-packaged

food manufacturers with recommendations of handling food labeling issues.

1.4 The Study

The primary research focuses on the perceptions, information sensitivity, potential biasing filters and processing involvement of the food labels that the Hong Kong consumers possess. There was a visit to supermarkets for identifying products used in the research. A random sample was drawn for conducting a survey. Respondents were the visitors of the supermarkets. The data collected from the survey was inputted into SPSS for data analysis and statistical tests.

1.5 Expected Results and Contributions

The findings show that consumers check for food labels because of certain factors, which include the perceived benefits, information sensitivity or perceived ease of checking. However, their behaviors can still be affected by potential factors like biasing filters. Among the four biasing filters, which are distal attitudes, tangential attitudes, behavioral factors and demographics, each has various interaction with factors like information sensitivity or perceived benefits of food labels, and lead to different effects on the processing involvement. The study aims at generating more awareness of manufacturers and consumers about the potential benefits from adopting better labeling practices and using food labels for purchase decisions respectively.

Chapter 2 Literature Review

2.1 Introduction

The food labeling practices represent part of the modern healthy lifestyle. Promoting a balanced diet and healthy food choices is the initial and genuine intention of food labeling. However, market practices may not always be perfect as expected by the consumers. Likewise, not all the consumers are knowledgeable enough to utilize the food labels. The government should work on both the regulations and education regarding the labeling issues. Whereas the manufacturers may have to refine their current practices, as they are facing greater challenges from the growing needs of consumers and the upcoming regulations. The practice of food labeling has now become a complex and arousing issue in Hong Kong.

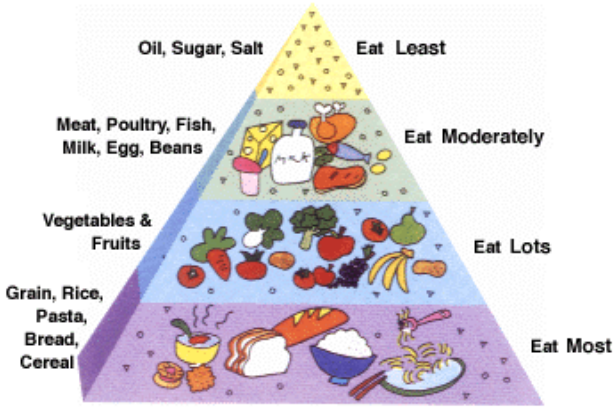
The literature review examines the global practices, followed by the chronological development, current changes and implications of food labeling in Hong Kong. The following part reviews the studies of food labels in terms of marketing roles and consumer perceptions.

2.2 Global Practices

2.2.1 The food pyramid

Consumers commonly use the food pyramid to design their healthy diet. It illustrates the appropriate portion of foods needed for daily intakes. However, relying only the general interpretations from the food pyramid may not be sufficient. Food labels that provide concise information facilitate consumers in making specific choices for healthy diet (Food and Environmental Hygiene Department/FEHD, 2005).

Figure 1 The Food Pyramid



Source: Food and Environmental Hygiene Department (2005)

2.2.2 Codex Alimentarius Commission (Codex)

The Codex Alimentarius Commission is an internationally recognized food authority. Since 1980s, it has published guidelines for nutrition information on food labels including Guidelines on Nutrition Labeling and Guidelines for Use of Nutrition and Health Claims (FEHD, 2005). They provide a template for applying nutrition labeling with consistent format and meaning, and highlight the specific conditions when making nutrient-related claims.

2.2.3 Overseas Practices

Many developed countries have already had in place a labeling system for prepackaged food. Nutrition labeling is mandatory in several countries including the US, Canada, Australia, New Zealand and Malaysia. In countries like Japan and Singapore, it is mandatory only for pre-packaged foods with nutrient-related claims. Countries that are currently developing the voluntary approach like the European Union, are also taking positive steps moving towards mandatory labeling.

2.3 History of Food Labeling in Hong Kong

2.3.1 Legislation

In Part V of the Public Health and Municipal Services Ordinance, Chapter 132 and the subsidiary legislation, the legal framework of food safety is well defined. The vital principle is that "no food intended for sale should be unfit for human consumption." Section 61 of the Ordinance—False Labeling and Advertisement of Food or Drugs (1997) marked the legitimate beginning of labeling practices in Hong Kong. In 2001 and 2003, consultation papers were prepared for Genetically Modified (GM) food labeling and Nutrition Information on the package respectively.

2.3.2 Education

The government continuously works on promoting the food labeling practices: lots of money and resources are used to regulate manufacturers and to educate the consumers for using the food labels. Inside the Health Education Exhibition & Resource Centre, a free and permanent exhibition of food labeling is held for visitors. Despite these efforts, the usage of food labels remains low in Hong Kong.

2.4 Food Labeling and Nutrient Labeling in Hong Kong

2.4.1 What is on the label?

According to the Food and Drugs (Composition and Labeling) Regulation, six main elements should be clearly marked in either English or Chinese language or in both languages on the labels of prepackaged foods:

1. Name of the food

The legible food serves to inform consumers about the nature and type of foods, which shall not be false, misleading or deceptive in any respect.

2. List of ingredients

Under appropriate heading like “ingredients”, “composition”, “contents” or words of similar meaning, the ingredients are to be listed in descending order of weight or volume. The ingredients list must specify the name of allergy-causing substances. Food additives are specified under its functional class, exact name or the identification number adopted by the International Numbering System for Food Additives (INS).

3. Indication of “use by” or “best before” date

The “use by” or “best before” date should be shown in Chinese, English or both to indicate the shelf life of the food.

4. Statement of special conditions for storage or instructions for use

Food labels shall provide a clear statement to indicate the special conditions required for the storage or special instructions for the use of the prepackaged food.

5. Name and address of manufacturer or packer

Legible label shows the full name and full address of the manufacturer or packer.

6. Count, weight or volume of food

The food label also includes the numerical count or net weight or net volume of the prepackaged food.

These six elements provide consumers important information of the pre-packaged food, and facilitate their purchase decisions. However, consumers still need for more clear indications of core nutrient elements to design a healthy diet. Food labels cover not only these six elements, but also nutrition information made on the food labels. In general, there are four types of nutrition information on food labels, which are nutrition labeling, nutrition claims, function claims and health claims. The research mainly focuses on how much consumers are involved in processing the six elements and the ten core nutrient elements in the nutrition labeling.

2.4.2 Nutrition Information—Inconsistency Problems in Content and Format

Presently, Hong Kong has no specific regulations on nutrition labeling. Provision of nutrition information on food labels by manufacturers is voluntary. However, if they choose to use nutrition labels, the information presented must be accurate.

As labeling requirements vary across countries, nutrition labels found in the local market differ greatly in terms of content, expression method and format. Nutrients are expressed in different ways such as “per 100g”, “per 100ml” or “per serving”. It is inconvenient for the consumers to calculate and to compare the nutrition content of various products. Inconsistencies also exist in the label format and the listing order of the nutrients. It is even more difficult for consumers to make comparison directly.

Due to the inconsistency problem, consultation papers and legislation proposals were submitted for introducing new regulations to standardize the presentation of the nutrition information.

2.4.3 Current Changes in Regulations and Implementation

In July 2004, the Food and Drugs (Composition and Labeling) (Amendment) Regulation 2004 was introduced in line with the recommendations of Codex. The new amendments include the declaration of eight allergy-causing substances, the addictives, and the sequential markings of “best before” or “use by” date in Arabic numerals. The Amendment Regulation allows a grace period of 36 months until July 2007 for the manufactures to comply.

Meanwhile, the government is working on a new law concerning the nutrition information. The law is to be introduced in Legislative Council in 2006 and enacted as soon as 2008 with two phrases (Lee, 2005).

In the first phase, manufacturers of pre-packed food have to list the calorie content plus the amount of five core nutrients—protein, carbohydrates, total fat,

saturated fat and sodium, or other nutrients the product claims it has. Phase Two that will follow two years later requires a display of calorie content and four more nutrients besides those introduced in the first phase--cholesterol, sugars, dietary fiber and calcium. The measuring unit, instead of per serving, is standardized as per 100 grams or 100 milliliters.

The proposed changes may imply the imperfection of current regulations that need adjustments. The detailed presentation of nutrition information could be either a threat or an opportunity to manufactures, and it is better not to draw any premature conclusions before further study. Besides, it is imperative to examine whether the changes will influence consumers' perception and usage of food labels.

2.4.4 Implications for the Industry

Regarding the proposed new law, Ho Yuk-yin of the Food and Environmental Hygiene department suggests "About 24 percent of the businesses will be affected in phase one, but the impact to small businesses will be minimal," (Lee 2005).

However, a local marketer suggests that about 190 small businesses may go out of business (Ng, 2005). Similarly, a US study suggests that mandatory labeling practices will result in numbers of companies with low market share in various food categories to exit the industry. The researchers also contend that leaders in the food enjoy a greater product distribution advantage over their smaller rivals (USA Today, 2005). In addition, their superior financial resources, brand awareness and customer knowledge, all enable the larger companies to anticipate and respond quickly and more effectively to the new regulations. Has the government actually underestimated or neglected the impact on small business?

The research will study how consumers perceived food labels in relation to their trust in the manufacturers, and to testify which side of the opinions is truly

representing the situation in Hong Kong.

2.5 Marketing Roles of Food Labels

2.5.1 Government

The practice of food labeling is a public health tool for government to promote a balanced diet and to facilitate healthy food choices. This helps building up better government image of always caring for public health issues and keeping abreast of modern practices in healthy diet. Regulating food labels can enforce manufacturers to maintain good formulation of foods and benefit the public health by compulsory application of legible food labels. The government can also save more public spending in medical services by providing education about a balanced diet.

2.5.2 Pre-packaged Food Manufacturers

Manufacturers can actually utilize permitted food labels for marketing products. Food labels can be one of the most important and direct means to communicate product information (Chan, 2002). It is essential to inform consumers about the health benefits and innovations of a product. Manufacturers should fully display positive information by using labeling practices providing it is legitimate and scientifically proven (Walker, 2005). The use of a label as a 'selling proposition' can possibly increase sales up to 12 % as the package appearance and product image are critically enhanced (Richmond, 2005).

It is also an excellent opportunity to review their products—Are the ingredients and formation of food truly healthy and safe to face the open disclosure? Can the marketers benefit from adding the food labels on the package? Both the government and manufacturers should emphasize on how to address the food labeling practices seriously and prepare for responding to the various and changing consumers' needs.

2.6 Food Labels and Consumers

2.6.1 Functions of Food Labels

With the protection of packaging material, prepackaged food may look clean and hygienic. However, it is still difficult for consumers to ascertain the quality and composition of the food by its superficial appeal to the senses. Because of this, it is a prerequisite for prepackaged food to bear a true and legible label for consumers to understand the content of the food and make the right choice. Food manufacturers or packers must label their products in a prescribed, uniform and legible manner. Consumers may then benefit from food labels at the time of purchase (Food and Environmental Hygiene Department, 2005).

Although the AC Nielsen report (2005) shows that only 25% of the respondents from the 38 interviewed countries would always check for the food labeling during purchase, we cannot simply deny the value of the food labels. The information approach to decision making suggests that consumers will process stimuli in making final decisions, and the involvement increases relatively with the product's importance. Since making healthy food choices is now one of the main concerns in daily life, consumers are more involved in processing the food labels, especially those who suffer from allergies or adverse reactions to certain substances.

The comprehensiveness and clarity of the food labels can actually be the benchmark for consumers to choose food products that give them greater level of trust. Consumers' previous experiences play an important part in maintaining confidence in the product, and the existence of adequate information on products holds the key to long-term confidence (Chan, 2002). However, consumers may still develop different perceptions and end up with various evaluations of food labels.

2.6.2 Studies on Consumers' Perceptions of Food Labels

The demand for information on the food labels can be initialized with the consumers' expenditure on the products (Dimara, 2005). As suggested in Dimara's case study in European countries, the increase in expenditure will urge consumers to search for more information from food labels, in order to support and justify the right decision for purchase. The study of Freiden (1981) suggests that some consumers even simply use the amount of the information on food labels to rate the brand without fully utilizing the information contents. Under the theory of non-use benefits, consumers tend to perceive the product with more information as more favorable.

On the other hand, consumers may not always relate the amount of information positively to the quality. Some consumers have more doubt in the increasing volume of information that appears in advertisement or on the food labels (Mazis, 1997). The information overload may create hostile environment for consumers to make objective decisions. Negative belief and skepticism towards food labels or health claims will prevent consumers from enjoying the real health benefits the foods offer.

Consumers often rely on government to monitor the food labels in the market, and simply assume the government has approved all the information on the food labels. Moreover, consumers in general have poor understanding of the nutritional facts and health claims on the food labels (Williams 2005). Among them, there are consumers who consider certain foods healthier only if they carry health claims.

The Food and Drug Association of United State is well aware of the above problem, and continuously works on refining policy and education to improve consumers' knowledge. The association does encounter difficulties in informing every consumer about whether the information and claims on food labels are scientifically proven, as addressed by their officer Schneeman (Adamy 2005). Since the perception of consumers of utilizing food labels varies, and marketers often manipulate the

information context, precautions are vital to prohibit any misleading food labels.

Government is not the only party for promoting positive concepts of using food labels. Education in schools may help to build up positive benefits of wisely, and objectively reviewing information and health claims on food labels (Lai, 2004). Therefore, consumers can become more capable of making efficient choices and enhance safety in daily intakes.

The observed perceptions of consumers regarding food labels vary and directly affect how they may benefit or be harmed. The fact is that no one can deny that the function of food label is to protect consumers with more information in a complex market. Perception of food labels is only one of the critical factors regarding food labels. This paper will focus on the impact of biasing filters and aims at deriving insights for improving understanding of the consumers, the government and manufacturers regarding food labeling.

2.7 Summary

The emergence of food labeling practices is actually a response to the growing health consciousness of consumers. Both manufacturers and the government realize the growing concern and the need for new legislations and better industry practices. However, it is yet too early to tell whether these changes can enhance the current practices and benefit the food industry as well as the consumers. The interactive and interdependent relationship between consumers, the government and the pre-packaged food manufacturers implies that the latter must attend to the changing interests and perceptions of consumers regarding food labels when they plan for their future moves.

As mentioned in the previous section, although the Hong Kong government has been continuously working on regulations and promotions of food labeling practices, the understanding and usage by general consumers remain at a low level. It may

suggest that the government has failed to adopt the appropriate approaches or they should refer to international practices and learn from others' success.

Besides, the perceived importance and relevancy of food labels vary across countries. Consumers and manufacturers in Hong Kong may have not yet realized the importance and benefits of food labeling practices. Consumers used to make hasty decisions before carefully studying the labels information, while manufacturers often manipulate the food labels to exaggerate claims they make. Consumers may suffer from substances hazardous to their body, causing allergy or other illness. Manufacturers are actually taking great risk by adopting improper labeling; they may lose the reputation, long-term confidence from consumers, even the whole business. Thus, it is necessary to understand how consumers perceive and process the food labels and refine promotion and education tactics to encourage greater use of the food labels. The following study propose several hypotheses about Hong Kong consumers regarding the food labels. The findings would help the government and food manufacturers to observe specific conditions in designing future plans.

Chapter 3 Theories And Hypotheses

3.1 Research Questions

Consumers differ in their attitudes towards food labels; some emphasize abundant information to insure labels quality, while some ask for easily understood nutritional values under standardization. Consumers with better background of advanced education or high income, tend to possess stronger demand for product information (Becker 1976). They are sensitive to the released information and willing to seek information in an active manner. Perceived benefits of consumers towards food labels also significantly influence how consumer search and process food labels (Srinivasan and Ratchford, 1991). It is essential for marketers to identify the different segments of consumers, which vary in information searching behavior. This may help designing effective communications of product benefits.

Given the same food labels in hand, consumers may respond differently due to the internal biasing filters like health consciousness or trust in regulation effectiveness (France and Bone 2005). These filters may actually lead to an adverse product perception after processing the information on the labels. Other possible filters can be the perceived product quality or consumption volume. Exploring the effect of these biasing filters and the relative significance of each filter on product perception will be vital to refine food labels' role in delivering information to consumers.

3.2 Theories

The research is mainly based on the theory of biasing filters in processing product information, along with the concepts of information sensitivity, perceived benefits and perceived ease of label checking as the predictor variables.

Becker's research (1976) provides a cross-national comparison between the

United States and Germany, which discovers that the well-educated consumers with high income in the advanced industrial countries are more sensitive to product information. The tested information mode is the subscription to consumer reports. Information Seekers are those who actively seek comprehensive details. Becker predicts there will be more Information Seekers in other countries with increasing significance and they will bring along changes in the information acquisition and processing. Srinivasan and Ratchford (1991) propose a model for automobile purchasing using perceived benefits and risk analysis for information search. Their model shows a significant positive relationship between perceived benefits and information search. The searching involvement has positive effect on cost savings and consumer satisfaction. This model suggests consumers will increase their effort for searching and processing information when they have more perceived benefits. They may make better purchase decisions to reduce the risks associated with the purchase or to find the best product that can satisfy their needs. Whether the product information can fulfill the selection criteria and how easily consumers can understand the labels will determine whether they will proceed to purchase or to return the product to the shelf (NutraIngredients, 2005). It suggests that consumers' processing involvement of food labels also relates to their perceived ease of label checking.

Given the significant effects of sensitivity, perceived benefits and ease of processing food labels, this study focuses on how consumers process information of food labels under the influences of biasing filters.

The central theory for this study is the biasing filters model, which is introduced by France and Bone (2005) in a research regarding the dietary supplement products. The model theorizes when consumers process information through different filters, they may bias their perceptions of the product. The scholars suggest when a product has been available on the market for some time, the specific beliefs of the product will

systematically bias the consumer's interpretation of the product's claims. They have postulated four filters: distal attitudes, tangential attitudes, behavioral factors and demographics. The first three filters will create a confirmatory bias in the interpretation of product claims (part of the product label) to confirm specific beliefs. From the research results, they conclude that distal attitudes and tangential attitudes are more significant in influencing consumers' interpretations of product information and affect the perception of the product.

This research examines the information sensitivity, perceived benefits and ease of processing food labels, and to what extent they use food labels as significant information tools in the decision-making process. The study concentrates on how the biasing filters interact with the information sensitivity, perceived benefits and affect the processing involvement of food labels.

3.3 Framework of the research

3.3.1 The Variables

The independent variables are mainly the four biasing filters. For distal attitudes filter(X1), there are two variables, which are the trust in regulation effectiveness (X1.1—1.2), and perceived product quality (X1.3). The second filter of tangential attitudes are perceived self-innovativeness (X2.1), health consciousness (X2.2—2.3) and the skeptical attitudes (X2.4—2.5). The behavioral factors filter (X3) includes consumption volume (X3.1—3.2), purchasing purpose (X3.3—3.4) and previous usage of food labels (X3.5—3.6). The filter of demographic factors(X4) refers to the age (X4.1) and gender (X4.2).

The dependent variables are criteria of measuring the processing involvement of food labels. They are the frequency (Y1.1—1.3), coverage (Y2.1—2.6), nutrients checking (Y2.7—2.16), and standardization requirements (Y3.1—3.5) of food labels.

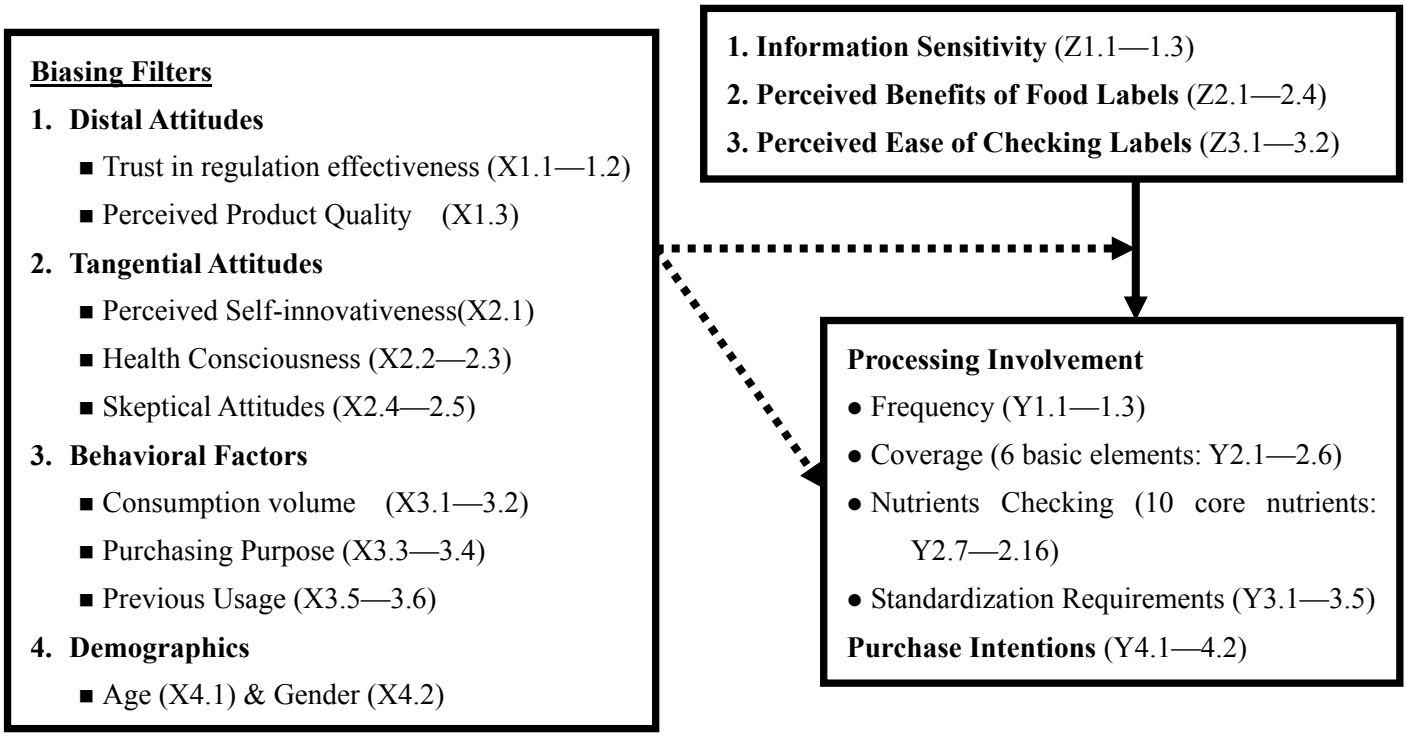
The purchase intention (Y4.1—4.2) is the last dependent variable for evaluation.

The predictor variables are the information sensitivity (Z1.1—1.3), perceived benefits (Z2.1—2.4) and perceived ease (Z3.1—3.2) of food labels, and the demographic data (Z4—6). They can help to make comparison between different groups of samples.

3.3.2 The Relationship among factors

Given the same sensitivity to information, ease and benefits perceived by consumers regarding food labels, their processing involvement still substantially vary. It may be due to the various internal filters in consumers' mindset. These filters may directly influence the processing involvement or they may have indirect impact of supporting or weakening the effect of information sensitivity, perceived benefits or perceived ease on processing involvement. The diagram below demonstrates consumers' processing involvement under the influence of biasing filters.

Figure 2—How do biasing filters affect processing involvement of food labels?



3.4 Hypotheses

Based on the above theories and the framework, this study would test the following hypotheses.

Hypothesis 1—Distal Attitudes

Trust level in regulation effectiveness

Consumers' trust level in regulation effectiveness refers to their evaluation of the government's performance in regulating labeling practices. Consumers who believe the government has already inspected all food labels will not perform much label checking, they believe none of the unqualified or misleading food labels are on shelves. It is hypothesized that the greater the trust in regulation effectiveness, the less the consumers will be involved in processing food labels. The processing involvement is examined under three criteria—a) frequency, b) coverage and nutrients checking and c) standardization requirements of food labels.

Hypothesis 1a: Consumers' levels of trust in the regulation effectiveness have a negative effect on the processing involvement of food labels.

Perceived quality of products

Perceived quality of products will be negatively related to the processing involvement of food labels. Facing enormous information of different products, consumers have greater confidence in quality products with more positive remarks, and demand for less information and are less involved in processing the food labels.

Hypothesis1b: Perceived product quality has a negative effect on the processing involvement of the food label.

Hypothesis 2—Tangential Attitudes

Perceived self-innovativeness

The innovativeness of consumers has positive effect on the involvement of processing food labels. As the product is new to the consumers, the uncertainty level may deter the purchase intention. However, if consumers perceive themselves to be innovative, they are more likely to be involved in processing the label to raise the sense of security. Hence, the more innovative the consumers perceive themselves, the more the consumer will be involved in processing the food labels.

Hypothesis 2a: The perceived self- innovativeness of consumers has a positive effect on the involvement of processing food labels.

Health consciousness

Health consciousness of consumers has a positive effect on the involvement in information processing. Moorman and Matulich (1993, as cited by France and Bone) define health motivation as "goal-directed arousal to engage in preventive health behaviors", which implies consumers with high health consciousness will engage in behaviors like acquiring product information on food labels to ensure the product is beneficial and safe to their body. Hence, the greater the health consciousness, the more the consumers will be involved in processing the food labels.

Hypothesis 2b: Heath consciousness of consumers has a positive effect on the processing involvement of the food labels.

Skepticism

Skeptical attitude is positively related to the involvement of processing food labels. In order to understand the products, people are expected to be more involved in the processing food labels, they check more frequently and request for greater details

of individual substances. Hence, the more skeptical the consumers are, the more he/ she will be involved in processing food labels.

Hypothesis 2c: The skeptical attitude of consumers toward a food product has a positive effect on the processing involvement of food labels

Hypothesis 3—Behavioral Factors

Consumption volume

Consumption volume has a positive effect on the processing involvement of the food labels. As more money is spent on the products, the consumers become more sensitive to the purchase decision, and look for more details of the product to make their decisions (Dimara, 2005). Hence, the more the consumer purchases, the more the consumers will be involved in processing the food labels.

Hypothesis 3a: Consumption volume has a positive effect on the processing involvement of food labels.

Purchasing purpose

The purchasing purpose will affect how much consumers will be involved in processing the food labels. If the product is purchased for others, they may be more involved when the person is closely related to them, or they have special health concerns for the consumers.

Hypotheses 3b: When buyers are closely related to the users, who have special health concerns, they will be more involved in the processing.

Previous usage of food labels

Negative experience of using food labels has a negative effect on the processing involvement. If consumers were not satisfied with the previous usage of food labels,

their pre-existing belief towards the food label is more negative, which in turn discourages them to check food labels in the future. Therefore, negative experience from previous usage will result in less processing involvement.

Hypothesis 3c: The unsatisfactory experience from previous usage of food labels has a negative effect on the processing involvement.

Hypothesis 4—Demographic Factors

Gender

Gender affects processing involvement of food labels. Meyers-Levy (1989 cited by France) proposes men tend to be “selective processors”, focus mainly on limited important criteria, but women are "comprehensive processors" who always look for as much information as possible. Hence, women will be more involved in processing the food labels than men are.

Hypothesis 4a: Men are less involved in processing the food labels than women.

Age

Aging will have a negative impact on the processing involvement of food labels. The comprehension ability decrease as consumers age increases, while at the same time older people tend to have limited alternatives in making choice as they process the information less effectively. Hence, as age of consumers increases, the involvement in processing food label decreases.

Hypothesis 4b: Age has a negative effect on processing involvement of food labels.

Chapter 4 Research Methodology

4.1 Sample

The research population are the Hong Kong consumers who purchase prepackaged foods, and the study focuses on a sample of supermarket shoppers. The researcher conducted survey from a random sample of 10% from the sampling frame. In other words, every tenth shopper was asked to fill in the questionnaire. When the shopper refused to provide information, another tenth person was invited for the interview. The process continued until enough questionnaires were collected.

The researcher interviewed the supermarket shoppers about their perception, usage pattern of food labels via completing questionnaires. The sample was randomly selected from three supermarkets located in different districts: Wan Chai, Tsim Sha Tsui and Tsuen Wan. With even distribution of surveys, an equal numbers of questionnaires were collected from each district and from each gender. The purpose was to reduce the geographical and gender biases. The supermarket chosen for this research was the Park'n Shop Superstore that usually had a high patronage throughout the week. In each selected superstore, the study interviewed 30 shoppers from each gender. Thus, 180 was the minimum number of interviewees required for the research.

4.2 The Survey

The questionnaire consisted of five parts. (Appendix I—Questionnaire Design) Part I is about the consumption pattern of the pre-packaged foods. It measures consumers' monthly purchase frequency, average spending and products purchased.

Part II explores consumers' information sensitivity and perceived benefits of food labels. The part focuses on their perceived reliability, validity, ease of using food

labels, it helped to indicate the possibility of consumers using food labels to facilitate decision-making.

Part III is related to the biasing filters of processing information. The biasing filters might explain why consumers do not response directly to the perceived benefits of food labels. This part explores the criteria that consumers upheld internally to decide their involvement of processing food labels.

Part IV focuses on the processing practices of food labels, which respondents adopted during purchase. For measuring the processing involvement, this part focuses on the frequency, coverage and information requirements of label checking.

Part V aims at collecting the sample demographics. It collects information of the respondents' gender, age, education level, occupation and personal monthly income.

Chapter 5 Results And Analysis

5.1 Sample Characteristics

The supermarket shoppers are the target sample for the survey. Face-to-face interviews were conducted with 180 shoppers in January 2006. Demographic variables are some of the factors that might affect consumers' perceptions and usage pattern of food labels. They include gender, age, education, occupation, and income. Gender and age are the control variables in this study. There is an equal number of interviewees in both genders, which are categorized into five age ranges in Table 1.

Table 1 Age and Gender distribution

		Sex		
		Male	Female	Table Total
Age	<17	6.7%	5.6%	6.1%
	18-25	30.0%	35.6%	32.8%
	26-35	22.2%	15.6%	18.9%
	36-50	26.7%	27.8%	27.2%
	>50	14.4%	15.6%	15.0%
Table Total		100.0%	100.0%	100.0%

The age distribution pattern is similar in both gender groups. The respondents are mainly aged in the range of 18 to 25 and 36 to 50, making up nearly 60% of the sample. Both groups are the main consumers of the prepackaged food products.

As shown in Table 2 below, there are about 45% of the respondents working in the service sector and 31% in the business sector. About 13% of respondents are students whose personal monthly incomes are the lowest among the sample. Around 53% of the total sample have personal monthly income of less than $10,000. Among the 180 respondents, about 65% have attained middle education level.

Table 2 below shows that around 90% of the respondents from the largest age

range of 18 to 25 have low income and have attained middle education level. Respondents in the age of 50 onwards, the 15% of the sample, form the largest portion of having completed high education, receiving higher income and working in the business sector. And this is actually reflecting the real situation in Hong Kong.

Table 2 Demographic variables

		Age					
		<17	18-25	26-35	36-50	>50	*Table total*
No of sample		11	59	34	49	27	180
% of the sample		6.1%	32.8%	18.9%	27.2%	15.0%	100%
Occupation	student	63.6%	23.7%	2.9%	.0%	3.7%	12.8%
	service sector	27.3%	61.0%	47.1%	34.7%	33.3%	45.0%
	industrial sector	.0%	.0%	8.8%	18.4%	11.1%	8.3%
	business	.0%	11.9%	41.2%	42.9%	51.9%	31.1%
	others	9.1%	3.4%	.0%	4.1%	.0%	2.8%
Education	middle	100.0%	81.4%	55.9%	51.0%	48.1%	64.4%
	high	.0%	18.6%	44.1%	49.0%	51.9%	35.6%
Income	low	100.0%	91.5%	38.2%	22.4%	22.2%	52.8%
	middle	.0%	8.5%	55.9%	51.0%	29.6%	31.7%
	high	.0%	.0%	5.9%	26.5%	48.1%	15.6%
Table Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

From this table, it is also observed that majority of the respondents are in the service sector, possessing middle education level and belong to the low-income group. The income level is positively related to occupation and education. Across the different age groups of Table 2, there is an increasing percentage of respondents having high education level and high income level. Respondents with higher education or employment in business sector tend to have higher income, which also implies greater purchasing power. And more of the respondents working in business

sector belong to older age group. These demographic factors may affect respondents' consumption behaviors and information processing pattern which are to be discussed in later section.

5.2 Behavioral Pattern

5.2.1Consumption Pattern

Table 3 shows that respondents usually purchase the prepackaged staple foods 4 to 6 times a month. As shown in Table 4, about 30% and 38% of the sample make an average spending of $41 to $60 or more than $80 respectively for purchasing the prepackaged staple foods.

Table 3 Monthly purchase

		Frequency	*Percent*
Valid	1 to 3 times	43	23.9
	4 to 6 times	89	49.4
	7 to 9 times	23	12.8
	>9 times	25	13.9
	Total	180	100.0

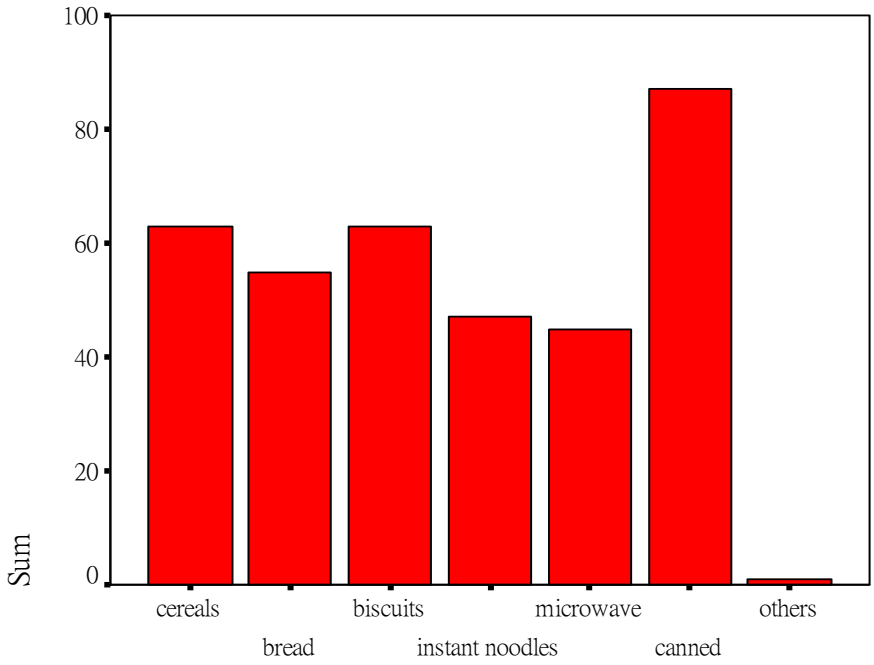
Table 4 Average spending

		Frequency	*Percent*
Valid	$0-$20	12	6.7
	$21-$$40	26	14.4
	$41-$60	54	30.0
	$61-$80	19	10.6
	>$80	69	38.3
	Total	180	100.0

The most commonly bought pre-packaged staple foods is the canned food. As shown in Figure 3, nearly 50% of the sample (around 90 respondents) purchased the food in the previous month. It might be due to the busy lifestyle of Hong Kong consumers who have less time to prepare food and want to enjoy their meals in a

convenient and timesaving way. Respondents also frequently purchase other staple foods like cereals and biscuits. About 60 out of the 180 have purchased the two types of food respectively.

Figure 3 Consumption of pre-packaged staple foods



5.2.2 Food Label Processing Pattern

Apart from viewing the consumption pattern of the respondents, the study also examines their processing pattern and involvement of food labels. When and how often do consumers check food labels? These are imperative for planning any marketing moves regarding food labels.

From Table 5, it shows that majority of the respondents incline to check the food labels when they are buying new products, probably to check for any suspicious allergy-causing substances. However, it shows that respondents are not that influenced by the circumstantial factor of dieting. They would not make additional checking even when they are on a diet. This may imply that respondents do not find food labels useful for planning their diet, or perhaps they rely on other sources of information. About 30% of respondents check the food labels during every purchase. This

comparatively low frequency strongly signifies the need to better promote the usage of food labels.

Table 5 Frequency—When do they check food labels?*

	New Product		On Diet		Every Purchase	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Strongly disagree 1	9	5.0%	85	47.2%	3	1.7%
2	8	4.4%	17	9.4%	12	6.7%
3	13	7.2%	6	3.3%	9	5.0%
4	44	24.4%	39	21.7%	41	22.8%
5	37	20.6%	18	10%	33	18.3%
6	50	27.8%	8	4.4%	54	30.0%
Strongly agree 7	19	10.6%	7	3.9%	28	15.6%
Total	180	100%	180	100%	180	100%

*(Measured in a 7-points scale: ranging from 1 = strongly disagree to 7 = strongly agree)

Table 6 Coverage—Always check the information listed on food labels*

	N	*Frequency*	*Percent*
6 Basic Elements			
Product name	180	21	11.7%
Count, weight or volume	180	41	22.8%
Expiry date	180	113	62.8%
Ingredients list	180	36	20%
Manufacturers' information	180	14	7.8%
Storage and Usage instruction	180	97	53.9%
Nutrient List			
Protein	180	22	12.2%
Carbohydrates	180	23	12.8%
Total fat	180	60	33.3%
Saturated fat	180	63	35%
Cholesterol	180	71	39.4%
Sugar	180	53	29.4%
Sodium	180	31	17.2%
Dietary fiber	180	36	20%
Calcium	180	31	17.2%
Energy (Calorie)	180	103	52.7%

*(Respondents that answered with ranking above 5 in a 7-points scale: ranging from 1 = strongly disagree to 7 = strongly agree)

In Table 6, the majority of the sample firmly responses that they considers the expiry date and instructions of storage and usage are important and would always check the two items during purchase. But it seems that they do not put much emphasis on the ingredients list, for only 20% of the respondents will always check the ingredient lists which actually provides lots of information about the foods.

The government is currently proposing for compulsory and standardized listing of nutritional information, and this includes the 10 most common nutrients indicated in Table 6. It shows majority of the respondents do not always check for these nutrients, they seem not to have strong support for the proposal. The most frequently checked nutrient is Energy—the calories of the intakes. Cholesterol content is the second nutrient that respondents are more concerned with. Foods with low calories or low cholesterol content may still be unhealthy, they might contain a high level of saturated fat or sodium, leading to serious heart diseases or nephritis.

It should be noticed that if most of the consumers make their judgment relying only one or two elements of the food labels, they are still far from utilizing the labels, and may still purchase foods that are not suitable to their health.

Table 7 Standardization requirements of food labels*

	N	*Minimum*	*Maximum*	*Mean*
Chinese and English indications	180	1	7	5.00
Standardized measurements	180	1	7	5.11
Listing common allergens	180	1	7	4.96
Indicate on both sides of the package	180	1	7	4.13
Show the info source on food labels	180	1	7	4.51

*(Measured in a 7-points scale: ranging from 1 = strongly disagree to 7 = strongly agree)

The table above illustrates respondents' requirements made on the food label information. The respondents seem to be indifferent to the layout and standard of food labels they use. Among the five aspects, they only show comparatively stronger

reaction towards measurement issue. For consumers who are not reading the labels carefully, they are facing the risk of being misled by the packers and are harming their own health. The government should pay attention to the low and incomplete usage of food labels in the current market, and should work on educating the public for fully utilizing the food labels.

The findings show that most of the respondents do not have a strong preference for using food labels. This may be due to the perceived benefits of food labels the respondents possess, or may be some internal biasing filters have altered their processing patterns. These will be later discussed in the part of hypothesis testing.

5. 3 Hypotheses Testing

5.3.1 Hypothesis 1—Distal Attitudes

Trust level in regulation effectiveness

Consumers' trust level in regulation effectiveness refers to their evaluation of the government's performance in regulating labeling practices. Consumers who believe the government has inspected all food labels on shelves would not perform much label checking. They believe any unqualified or misleading food labels are not going to be on shelves. It is hypothesized that the greater the trust in regulation effectiveness, the less the consumers would be involved in processing food labels. The processing involvement is examined under three criteria—a) frequency, b) coverage and nutrients checking and c) standardization requirements of food labels.

Hypothesis 1a: Consumers' levels of trust in the regulation effectiveness have a negative effect on the processing involvement of food labels.

Table 8 Correlation between trust in regulation effectiveness and processing involvement

	Effective regulations
Frequency	-.048
Coverage	-.381(**)
Nutrients checking	-.514(**)
Standardization requirements	.239(**)

** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed).

The results in Table 8 partially support this hypothesis. In general, respondents would have less processing involvement when they perceive the current regulations are effective. This may due to their growing inclination to rely on the government solely to monitor the manufacturer's performance, and they would expect that all food labels on shelves are with good quality. There is a negative correlation between regulation effectiveness and processing involvement of food labels, except the standardization requirements on food labels. It may suggest that respondents who have high trust in the government's regulation, they require for more and higher standardizations in food labels mainly because they believe it can be easily achieved through effective government regulations. And through checking those standardized elements required on food labels would allow them to justify their beliefs in the regulation effectiveness.

Perceived quality of products

Perceived quality of products will be negatively related to the processing involvement of food labels. Consumers face various information regarding different products, to those with more positive remarks, consumers have greater trust and confidence in their quality, and demand for less information and are less involved in processing the food labels.

Hypothesis1b: Perceived product quality has a negative effect on the processing

involvement of the food label.

Table 9 Correlations between perceived product quality and processing involvement

	Perceived quality of product
Frequency	.055
Coverage	.318(**)
Nutrients checking	.218(**)
Standardization requirements	.200(**)

** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed).

This hypothesis is not supported by the results in Table 9. Overall speaking, there is a positive correlation between the perceived quality and processing involvement. Respondents have higher processing involvement when they have higher perceived quality of the product. Consumers may think that poor quality products have poor labels, which are difficult to check. The confidence in product quality can be essential to strengthen their trust level in food labels, to encourage them to have more checking for useful and valid information.

5.3.2 Hypothesis 2—Tangential Attitudes

Perceived self-innovativeness

The innovativeness of consumers has a positive effect on the involvement of processing food labels. As the product is new to the consumers, the uncertainty level may deter the purchase intention. However, if consumers perceive themselves to be innovative, they are more likely to be involved in processing the label to raise the sense of security. Hence, the more innovative the consumers perceive themselves, the more the consumers will be involved in processing the food labels.

Hypothesis 2a: The perceived self- innovativeness of consumers has a positive effect on the involvement of processing food label.

Table 10 Correlations between perceived self-innovativeness and processing involvement

	Always the first to try out new products
Frequency	.073
Coverage	.066
Nutrients checking	.145
Standardization requirements	-.086

** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed).

The results in Table 10 does not support this hypothesis. None of the above measurement criteria is significantly correlated with the perceived self-innovativeness. Respondents may decide their processing effort with considerations other than their perception of self-innovativeness, or they may not rely on processing food labels to raise the sense of security when trying new product.

Health consciousness

Health consciousness of consumers has a positive effect on the processing involvement. Moorman and Matulich (1993, as cited by France and Bone) suggest consumers with strong health motivation have "goal-directed arousal to engage in preventive health behaviors", like acquiring product information on food labels to ensure the product is beneficial and safe to body. Hence, the greater the health consciousness, the more the consumers will be involved in processing the food labels.

Hypothesis 2b: Heath consciousness of consumers has a positive effect on the processing involvement of the food label.

Table 11 Correlations between health consciousness and processing involvement

	Concerned for healthy diet	Seek for information of health issues
Seek for information of health issues	.591(**)	
Frequency	.400(**)	.525(**)
Coverage	.648(**)	.538(**)
Nutrients checking	.495(**)	.528(**)
Standardization requirements	.313(**)	.256(**)

** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed).

The hypothesis is significantly supported. The health consciousness of respondents is positively related to their processing involvement. Respondents with stronger health consciousness involve more in processing food labels. Among the three criteria of processing involvement, coverage is comparatively strongly correlated with health consciousness (r=0.648 and r=0.538), followed the nutrients checking. For frequency and standardization requirements, they have a relatively weaker but positive correlation with health consciousness.

Skepticism

Skeptical attitude is positively related to the involvement of processing food labels. In order to clarify the understanding of the products, people are expected to be more involved in the processing food labels, they check more frequently and request for greater details of individual substances. Hence, the more skeptical the consumers, the more he/ she will be involved in processing food labels.

Hypothesis 2c: The skeptical attitude of consumers toward a food product has a positive effect on the processing involvement of food labels

Table 12 Correlations between skeptical attitudes and processing involvement

	New products, more suspicious allergens
Frequency	.238(**)
Coverage	.177(*)
Nutrients checking	.297(**)
Standardization requirements	.105

** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed).

The results in Table 12 support this hypothesis. There is a positive correlation between skepticism level and processing involvement of food labels. By and large, when respondents have higher skepticism level, especially for new products, they are more involved in the processing of food labels. It shows that increasing skepticism level leads the respondents to enlarge the checking coverage and have more nutrients checking as well. These two high measurement criteria may imply that respondents want to minimize risk of having unhealthy intakes by checking food labels.

5.3.3 Hypothesis 3—Behavioral Factors

Consumption volume

Volume of consumption has a positive effect on the processing involvement of the food labels. As more money is spent on the products, the consumers become more tied to the purchase decision, and look for more details of the product to make their decision (Dimara, 2005). Hence, the more the consumer consumes, the more the consumers will be involved in processing the food labels.

Hypothesis 3a: Consumption volume has a positive effect on the processing involvement of food labels.

Table 13 Correlations between consumption volume and processing involvement

	Always purchase with large volume
Frequency	.244(**)
Coverage	.401(**)
Nutrients checking	.499(**)
Standardization requirements	-.013

** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed).

The hypothesis is supported except for standardization requirements. The purchasing volume is generally positively related to processing involvement. When respondents are making purchases in bulk, they involve more in processing the food labels. Again, coverage and nutrients checking are the highest among the three measurement criteria. Respondents would like to understand more about the food products which they purchase in large volume.

Purchasing purpose

The purchasing purpose will affect how much consumers will be involved in processing the food labels. If the product is purchased for others, they may be more involved when the person is closely related to them, or they have special health concerns for the consumers.

Hypotheses 3b: When buyers are closely related to users, who have special health concerns, they will be more involved in the processing of food labels.

Table 14 Correlations between purchasing purpose and processing involvement

	Purchase food for family members	Buy for people with health concerns
Frequency	.296(**)	.150(*)
Coverage	.165(*)	-.161(*)
Nutrients checking	.130	-.099
Standardization requirements	.179(*)	.206(**)

** Correlation is significant at the 0.01 level (2-tailed) * Correlation is significant at the 0.05 level (2-tailed).

The results in Table 14 provide partial supports to this hypothesis. There is a positive correlation between the purchasing purpose and processing involvement when the purchase is for family members. Hence, when respondents purchase foods for their family members they would be more involved in processing the labels. The only comparatively higher criterion is frequency, ($r=0.296$, $p<0.01$), but not criteria like coverage and standardization requirements, this may imply respondents may do their checking often but not always cover all aspects seriously. When respondents are buying for those with health concerns, they do less in covering all the information on food labels. However, they would make the checking more often and having more standardization requirements on food labels. It may be due to the necessary checking on those common allergy-causing substances for people with health concerns.

Previous usage of food labels

Negative experience of using food labels has a negative effect on the processing involvement. If consumers were not satisfied with the previous usage of food labels, their pre-existing belief towards the food label is more negative, which in turn discourages them to check food labels in the future. Therefore, negative experience from previous usage will result in less processing involvement.

Hypothesis 3c: The unsatisfactory experience from previous usage of food labels has a negative effect on the processing involvement.

Table 15 Correlations between previous usage experience and processing involvement

	Difficult to identify suitable food products for diet planning	Confused with the meanings of health claims
Frequency	.065	.024
Coverage	-.279(**)	-.188(*)
Nutrients checking	-.352(**)	-.404(**)
Standardization requirements	.079	.265(**)

** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed).

The results in Table 15 provide only partial support for this hypothesis. There are negative correlations found in both coverage and nutrients checking. Respondents who had unsatisfactory experience on food labels during previous usage, they would be less involved in checking the food labels. It is understood that the previous experience discourage them to use food labels which are too confusing or difficult to understand. There is a significant positive correlation found in standardization requirements and processing involvement, especially when respondents experienced confusing health claims of the product (r=0.249, p=0.01). Having more standardization requirements on food labels indicates the respondents' demand for standardized and consumer-friendly food labels that are easy to understand and to use.

5.3.4 Hypothesis 4—Demographic Factors

Gender

Males and females differ in processing involvement of food labels. Meyers-Levy (1989 cited by France) proposes men tend to be "selective processors" and focus mainly on limited ratio of important criteria, but women are "comprehensive processors" who always look for as much information as possible. Hence, women will be more involved in processing the food labels than men are.

Hypothesis 4a: Men are less involved in processing the food labels than women.

Table 16 T-Test of gender and processing involvement

	Sex	*N*	*Mean*	*Std. deviation*	*Std. Error Mean*	*Sig.(2-tailed)*
Frequency	Male	90	3.96	1.028	.108	.010
	Female	90	4.34	.977	.103	
Coverage	Male	90	5.13	.922	.097	.152
	Female	90	5.33	.907	.096	
Nutrients checking	Male	90	5.12	1.539	.162	.508
	Female	90	5.27	1.475	.155	
Standardization requirements	Male	90	4.68	.799	.084	.374
	Female	90	4.80	1.057	.111	

The results in Table 16 do not support the hypothesis. Among the three processing measurement criteria of processing involvement: frequency, standardization requirements, coverage and nutrients checking, women always have a higher mean than men, however only frequency is statistically significant ($p<0.05$), and the means of female and male are 4.34 and 3.96 respectively. From this, it only shows that women may have more frequent label checking, but their checking is not necessarily more detailed or comprehensive than men do.

Age

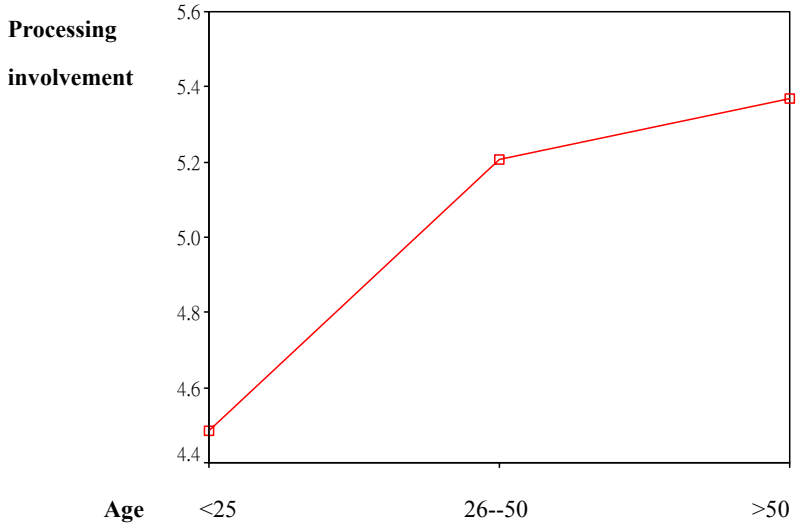
Age has a negative impact on the processing involvement of food labels. The comprehension ability decrease as consumers age increases, while at the same time older people tend to limit less alternatives in making choice as they process the information less effectively. Hence, as age of consumers increases, the involvement in processing food label decreases.

Hypothesis 4b: Age has a negative effect on the processing involvement of food labels.

Table 17 ANOVA test of age and processing involvement

		N	*% of Sample*	*Mean*	*Std. Deviation*	*Std. Error*	*95% Confidence Interval for Mean*		*Minimum*	*Maximum*	*Sig.*
							Lower Bound	Upper Bound			
Age	>25	70	39%	4.49	.959	.115	4.26	4.71	2	7	.000
	26—50	83	46%	5.20	.894	.098	5.01	5.40	3	6	.000
	>50	27	15%	5.37	.629	.121	5.12	5.62	4	6	.000
	Total	180	100%	4.95	.959	.071	4.81	5.09	2	7	

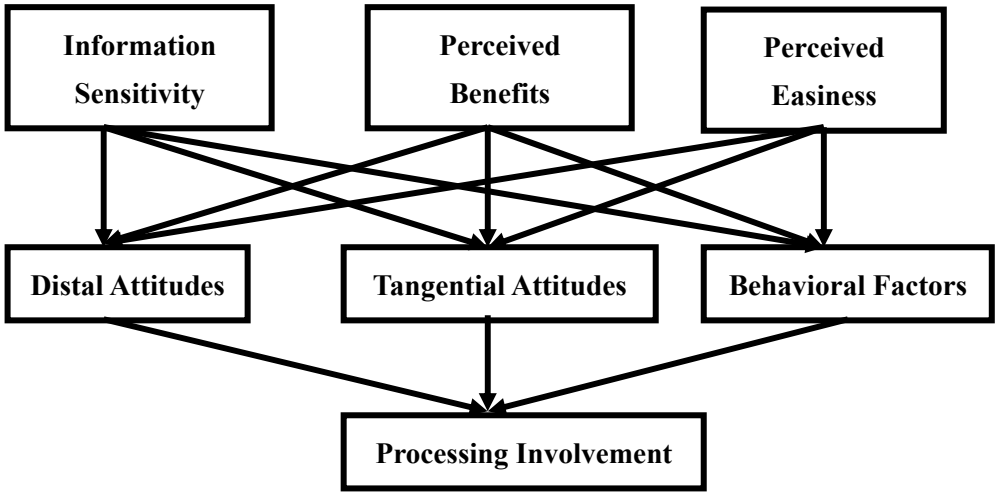
Figure 4 Mean values of processing involvement from different age groups



The results in table 17 does not support for the hypothesis. The eldest respondents are yet those who involve least in processing the food labels. Though they only account for 15% of total sample, they are shown to be more inclined with higher processing involvement. And the respondents who have least involvements are found in the age range of below 25. It seems that the processing involvement grows along with the increase in age. This may imply that the aging effect of decreasing processing involvement does not exist. It may be due to the fact that as respondents become more mature, they are informed about the importance and benefits of using food labels, and would like to be more involved in the processing of food labels.

5. 4 Additional Analyses

The following testing focuses on the filtering effect of the three variables, which are distal attitudes, tangential attitudes and behavioral factors, on the relation between the three independent variables and processing involvement.



5.4.1 Information Sensitivity and Processing Involvement

As suggested by Becker's Information Seeker theory (1976), there is a positive relationship between information sensitivity and information processing. The research has testified how far this theory can be applied to the processing involvement of food labels in Hong Kong.

Table 18 Correlations between information sensitivity and processing involvement

	Question for		
	For making decision	Information validity	Interested in food labels
Frequency	.130	.355(**)	.278(**)
Coverage	.463(**)	.498(**)	.408(**)
Nutrients checking	.232(**)	.351(**)	.390(**)
Standardization requirements	.446(**)	.331(**)	.391(**)

** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed).

The results in Table 18 support the theoretical prediction. There is positive correlation between information sensitivity and processing involvement. When

respondents are sensitive to food labels, they will be more involved in processing the information. Among the measurement criteria, information sensitivity has a strong impact on coverage and standardization requirements. It is probably because of the strong information acquisition and processing behavior of Information Seekers, they usually want to gather as much information as possible and further look into the validity and relevancy of the information.

5.4.2 Perceived Benefits and Processing Involvement

Srinivasan and Ratchford (1991) suggest that consumers are more involved in processing information when their perceived benefits of the information increase.

Table 19 Correlations between perceived benefits and processing involvement

	Higher quality	Nutrition values	Help planning diet	Facilitates purchase decision
Frequency	.165(*)	.012	.106	.097
Coverage	.411(**)	.035	.002	.512(**)
Nutrients checking	.149(*)	-.222(**)	-.225(**)	.430(**)
Standardization requirements	.233(**)	.390(**)	.440(**)	.323(**)

* Correlation is significant at the 0.05 level (2-tailed). ** Correlation is significant at the 0.01 level (2-tailed).

The theory is generally supported by the results. There is an overall positive correlation between perceived benefits and processing involvement of food labels. When respondents perceive more benefits of checking food labels, they are more involved in processing the information. However, there is a negative relation found between perceived benefits of providing nutrition values and helping diet planning with criterion of nutrients checking (r=0.222 and r=0.225). This may imply that the current indication practice of nutritional information is not satisfactory or incomprehensive, which makes the respondents unable to relate the perceived benefits of checking food labels with checking nutritional information.

5.4.3 Perceived Ease and Processing Involvement

The results in Table 20 support the positive relation between perceived ease and processing involvement of food labels. Respondents are more involved in processing the information of food labels, when they perceive labels are easy to understand. As shown in the table, the strongest correlation is found between checking frequency and perceived ease (r=0.311 and r=0.342). It is understandable that when respondents perceive checking food labels as easy task, they are willing to process the information and do the checking more often.

Table 20 Correlations between perceived ease and processing involvement

	Easy to understand	Easing decision making
Frequency	.311(**)	.342(**)
Coverage	.202(**)	.189(*)
Nutrients checking	.175(*)	.087
Standardization requirements	.248(**)	.189(*)

** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed).

5.4.4 Information Sensitivity and Biasing Filters

Distal Attitudes

Table 21 shows that as more distal attitudes are entered into the model, there is a continuous decrease in the effect (Beta) of information sensitivity on processing involvement. The effect of information sensitivity falls from 0.541 to 0.461 ($p<0.05$), and this actually suggest distal attitudes would weaken the effect of information sensitivity on processing involvement of food labels. The results also show that the regulation effectiveness has stronger impact in weakening the effect than perceived quality of product.

Table 21 Regression model of Distal Attitudes

Distal Attitudes			*Unstandardized Coefficients*		*Standardized Coefficients*	*T*	*Sig.*
Model	Adjusted R square		B	Std. Error	Beta		
1	.289	(Constant)	2.879	.251		11.454	.000
		Information sensitivity	.453	.053	.541	8.583	.000
2	.390	(Constant)	3.627	.269		13.484	.000
		Information sensitivity	.409	.049	.489	8.276	.000
		Effective regulations	-.203	.037	-.328	-5.542	.000
3	.400	(Constant)	3.148	.361		8.731	.000
		Information sensitivity	.385	.051	.461	7.629	.000
		Effective regulations	-.204	.036	-.329	-5.614	.000
		Perceived quality of product	.113	.057	.118	1.973	.050

Dependent variables: Processing involvement

Tangential Attitudes

Information sensitivity is firstly entered into the regression model, and its effect on processing involvement is slightly strengthened as the first tangential attitude of perceived self-innovativeness enters, which is shown in Table 22. However, as the second tangential attitude enters, the health consciousness of respondents, the effect of information sensitivity on processing involvement is significantly weakened. Though the skeptical attitudes also contribute to weaken the effect of information sensitivity, its impact magnitude is comparatively smaller. It shows that among the variables of tangential attitudes, health consciousness has the strongest filtering impact on the effect of information sensitivity on processing involvement.

Table 22 Regression model of Tangential Attitudes

Tangential Attitudes			*Unstandardized Coefficients*		*Standardized Coefficients*	*t*	*Sig.*
Model	Adjusted R square		B	Std. Error	Beta		
1	.289	(Constant)	2.879	.251		11.454	.000
		Information sensitivity	.453	.053	.541	8.583	.000
2	.306	(Constant)	2.532	.289		8.749	.000
		Information sensitivity	.461	.052	.551	8.825	.000
		Perceived self-innovativeness	.070	.030	.145	2.328	.021
3	.534	(Constant)	1.804	.250		7.229	.000
		Information sensitivity	.168	.053	.201	3.176	.002
		Perceived self-innovativeness	.076	.025	.157	3.072	.002
		Health consciousness	.451	.048	.593	9.371	.000
4	.551	(Constant)	1.443	.279		5.179	.000
		Information sensitivity	.143	.053	.171	2.711	.007
		Perceived self-innovativeness	.081	.024	.168	3.334	.001
		Health consciousness	.440	.047	.579	9.279	.000
		Skeptical attitudes	.132	.049	.142	2.716	.007

Dependent Variable: Processing involvement

Behavioral Factors

The results in Table 23 shows that effect of information sensitivity on processing involvement is continuously weakened as more behavioral factors enter into the model. Among the three behavioral factors, consumption volume has the comparatively stronger impact in weakening the effect of information sensitivity. However the filtering effect is gradually shrinking. For purchase purpose, it shows to be the weakest behavioral filtering variable ($p>0.05$) in influencing the effect of information sensitivity on processing involvement.

Table 23 Regression model of Behavioral Factors

Behavioral Factors			Unstandardized Coefficients		Standardized Coefficients	T	Sig.
Model	Adjusted R square		B	Std. Error	Beta		
1	.289	(Constant)	2.879	.251		11.454	.000
		Information sensitivity	.453	.053	.541	8.583	.000
2	.374	(Constant)	2.614	.242		10.819	.000
		Information sensitivity	.354	.053	.424	6.662	.000
		Consumption volume	.160	.032	.319	5.021	.000
3	.370	(Constant)	2.609	.250		10.453	.000
		Information sensitivity	.354	.054	.423	6.610	.000
		Consumption volume	.159	.032	.319	4.957	.000
		Purchase purpose	.003	.036	.005	.087	.931
4	.386	(Constant)	3.111	.327		9.501	.000
		Information sensitivity	.353	.053	.421	6.666	.000
		Consumption volume	.125	.035	.250	3.570	.000
		Purchase purpose	.029	.037	.048	.769	.443
		Previous usage	-.113	.049	-.156	-2.330	.021

Dependent Variable: Processing involvement

5.4.5 Perceived Benefits and Biasing Filters

Distal Attitudes

Table 24 shows that among the two distal attitudes, only trust level in regulation effectiveness has a more significant impact on the effect of perceived benefits on processing involvement of food labels. And the impact of regulation effectiveness has actually strengthened the effect of perceived benefits. For perceived quality of product, it does not show any significance of influencing the effect of perceived benefits.

Table 24 Regression model of Distal Attitudes

Distal Attitudes			*Unstandardized Coefficients*		*Standardized Coefficients*	*t*	*Sig.*
Model	Adjusted R Square		B	Std. Error	Beta		
1	.065	(Constant)	3.414	.433		7.889	.000
		Perceived benefits	.317	.087	.264	3.658	.000
2	.292	(Constant)	3.556	.377		9.436	.000
		Perceived benefits	.456	.078	.380	5.871	.000
		Effective regulations	-.306	.040	-.494	-7.635	.000
3	.297	(Constant)	3.268	.424		7.711	.000
		Perceived benefits	.408	.084	.340	4.878	.000
		Effective regulations	-.299	.040	-.482	-7.423	.000
		Perceived quality of product	.096	.065	.100	1.467	.144

Dependent Variable: Processing involvement

Tangential Attitudes

From Table 25, it is shown that the tangential attitudes have significant filtering impact on the effect of perceived benefits on processing involvement. The effect continues to weaken with more tangential attitudes enter the model. And the health consciousness is again the strongest filtering variable of the effect. The effect of perceived benefits on processing involvement has become even insignificant ($p>0.05$) at all after all the three tangential attitudes enter the model.

Table 25 Regression model of Tangential Attitudes

Tangential Attitudes			*Unstandardized Coefficients*		*Standardized Coefficients*	*T*	*Sig.*
Model	Adjusted R Square		B	Std. Error	Beta		
1	.065	(Constant)	3.414	.433		7.889	.000
		Perceived Benefits	.317	.087	.264	3.658	.000
2	.078	(Constant)	3.036	.473		6.417	.000
		Perceived Benefits	.335	.087	.279	3.866	.000
		Perceived self-innovativeness	.066	.035	.138	1.909	.058
3	.508	(Constant)	2.138	.353		6.054	.000
		Perceived Benefits	.012	.068	.010	.175	.861
		Perceived self-innovativeness	.073	.025	.151	2.872	.005
		Health consciousness	.538	.043	.708	12.465	.000
4	.532	(Constant)	1.668	.375		4.448	.000
		Perceived Benefits	.007	.067	.006	.108	.914
		Perceived self-innovativeness	.079	.025	.165	3.198	.002
		Health consciousness	.511	.043	.672	11.892	.000
		Skeptical attitudes	.155	.049	.167	3.168	.002

Dependent Variable: Processing involvement

Behavioral Factors

Table 26 shows that purchasing volume and previous usage tend to have an impact of strengthening the effect of perceived benefits of food labels on processing involvement. This may due to the nature of these variables, such as large purchasing volume may strengthen the importance of the perceived benefits of food labels, and leads to more processing involvement. Among the factors, purchasing purpose is again having the least impact on the effect of perceived benefits.

Table 26 Regression model of Behavioral Factors

Behavioral Factors			Unstandardized Coefficients		Standardized Coefficients	t	Sig.
Model	Adjusted R Square		B	Std. Error	Beta		
1	.065	(Constant)	3.414	.433		7.889	.000
		Perceived benefits	.317	.087	.264	3.658	.000
2	.299	(Constant)	2.196	.406		5.405	.000
		Perceived benefits	.342	.075	.285	4.546	.000
		Consumption volume	.243	.031	.487	7.773	.000
3	.295	(Constant)	2.183	.410		5.322	.000
		Perceived benefits	.340	.076	.283	4.496	.000
		Consumption volume	.242	.032	.484	7.596	.000
		Purchase purpose	.010	.038	.016	.250	.803
4	.331	(Constant)	2.692	.430		6.261	.000
		Perceived benefits	.385	.075	.321	5.130	.000
		Consumption volume	.192	.035	.385	5.543	.000
		Purchase purpose	.045	.039	.075	1.158	.248
		Previous usage	-.166	.052	-.228	-3.215	.002

Dependent Variable: Processing Involvement

5.4.6 Perceived Ease and Biasing Filters

Distal Attitudes

For the distal attitudes, trust in regulation effectiveness has slightly strengthened the effect of perceived ease of label checking on processing involvement of food labels. In Table 27, as the perceived quality of product enters the model, the correlation between perceived ease and processing involvement is then adversely weakened. Among the two variables, regulation effectiveness seems to have a stronger magnitude of influencing the effect of perceived ease of using food labels.

Table 27 Regression model of Distal Attitudes

Distal Attitudes			*Unstandardized Coefficients*		*Standardized Coefficients*	*t*	*Sig.*
Model	Adjusted R Square		B	Std. Error	Beta		
1	.064	(Constant)	3.823	.325		11.770	.000
	.246	Perceived ease	.264	.073	.263	3.634	.000
2	.246	(Constant)	4.372	.303		14.430	.000
		Perceived ease	.303	.065	.302	4.633	.000
		Effective regulations	-.268	.040	-.432	-6.636	.000
3	.284	(Constant)	3.407	.421		8.088	.000
		Perceived ease	.286	.064	.286	4.484	.000
		Effective regulations	-.264	.039	-.426	-6.701	.000
		Perceived quality of product	.196	.061	.204	3.212	.002

Dependent Variable: Processing Involvement

Tangential Attitudes

Table 28 shows that the tangential attitudes are keeping their impact on the effect of perceived ease on processing involvement of food labels. Though the perceived self-innovativeness of consumers slightly strengthens the effect of perceived ease on processing involvement, its influencing magnitude is comparatively weaker than health consciousness. As the tangential attitude of health consciousness enters the model, the perceived ease loses its impact on the processing involvement of food labels.

Table 28 Regression model of Tangential Attitudes

Tangential Attitudes			Unstandardized Coefficients		Standardized Coefficients	t	Sig.
Model	Adjusted R square		B	Std. Error	Beta		
1	.604	(Constant)	3.823	.325		11.770	.000
		Perceived Ease	.264	.073	.263	3.634	.000
2	.073	(Constant)	3.556	.362		9.810	.000
		Perceived Ease	.268	.072	.267	3.705	.000
		Perceived self-innovativeness	.057	.035	.118	1.632	.105
3	.508	(Constant)	2.209	.285		7.749	.000
		Perceived Ease	-.007	.057	-.007	-.130	.896
		Perceived self-innovativeness	.072	.025	.151	2.866	.005
		Health consciousness	.543	.043	.714	12.549	.000
4	.532	(Constant)	1.743	.314		5.547	.000
		Perceived Ease	-.016	.056	-.016	-.283	.778
		Perceived self-innovativeness	.079	.025	.164	3.199	.002
		Health consciousness	.517	.043	.680	12.029	.000
		Skeptical attitudes	.156	.049	.168	3.181	.002

Dependent Variable: Processing involvement

Behavioral Factors

Table 29 shows that among the three behavioral factors, only consumption volume shows to have significant impact on the effect of perceived ease on processing involvement of food labels. And the impact is a positive one which helps to strengthen the effect of perceived ease of checking food labels. For purchasing purchase and previous usage, they seem to have no significant impact.

Table 29 Regression model of Behavioral Factors

Behavioral Factors			Unstandardized Coefficients		Standardized Coefficients	T	Sig.
Model	Adjusted R Square		B	Std. Error	Beta		
1	.064	(Constant)	3.823	.325		11.770	.000
		Perceived ease	.264	.073	.263	3.634	.000
2	.304	(Constant)	2.575	.322		8.005	.000
		Perceived ease	.294	.063	.294	4.699	.000
		Consumption volume	.247	.031	.493	7.896	.000
3	.301	(Constant)	2.579	.322		8.002	.000
		Perceived ease	.305	.065	.304	4.688	.000
		Consumption volume	.250	.032	.501	7.856	.000
		Purchase purpose	-.024	.039	-.040	-.615	.540
4	.311	(Constant)	3.044	.407		7.477	.000
		Perceived ease	.294	.065	.293	4.533	.000
		Consumption volume	.221	.036	.441	6.207	.000
		Purchase purpose	-.001	.041	-.002	-.022	.982
		Previous usage	-.095	.052	-.132	-1.850	.066

Dependent Variable: Processing Involvement

Chapter 6 Discussion

6.1 Conclusion

6.1.1 Hypothesis Testing Results

The findings show that consumers check for food labels because of certain factors including the perceived benefits, information sensitivity or perceived ease of checking. However, these predictor variables may not completely reflect consumers' practices of checking food labels. For those who have many perceived benefits of food labels may still engage little in the processing involvement of food labels. Such behavior can be affected by potential factors like biasing filters. Among the four biasing filters, which are distal attitudes, tangential attitudes, behavioral factors and demographics, each has various impact on the effects of predictor variables on the processing involvement.

For the first biasing filter—distal attitudes, there are two variables under this category, which are the trust in regulation effectiveness and the perceived quality of product. From the findings, the trust in regulation effectiveness has a significant impact on the processing involvement. As the trust level increases, the processing involvement decreases. Thus, the hypothesis of this negative correlation is supported.

Though it is hypothesized that perceived product quality has a negative impact on the processing involvement of food product, the results show just the opposite—a positive correlation between the two variables. As the perceived quality of products becomes higher, consumers are more involved in the processing of food labels. This significant correlation actually suggests that improved quality of products will encourage usage of food labels.

Under the tangential attitudes, perceived self-innovativeness, health

consciousness and skeptical attitudes are tested. All the three variables are hypothesized to have a positive impact on the processing involvement of food labels. The hypotheses of the tangential attitudes are supported, except for the perceived self-innovativeness. Consumers may perceive themselves innovative enough to try out new products, they may not always use food labels to identify the right food or to raise the sense of security.

The strongest correlation is found between tangential attitude of health consciousness and processing involvement. Consumers with high health consciousness are the most involved in processing the food labels, in terms of all the three measurement criteria of frequency, standardization requirements and coverage. Health consciousness is said to be the strongest driving force of using food labels. The skeptical attitudes are also found to have positive impact on processing involvement. When consumers are skeptical about the products, especially the new ones, they tend to be more involved in processing food labels.

Among the three variables of behavioral factors of consumption volume, purchasing purpose and the previous usage of food labels, consumption volume is most significantly supported by the findings of its impact on processing involvement. And as consumption volume increase, consumers in general will increase their processing involvement, likely the frequency and coverage of checking. Consumers may want to understand more about the foods purchased in large volume.

When consumers are buying foods for family members who may have health concerns, they tend to have higher checking frequency of food labels and are more concerned with the standardization requirements of the food labels. It may be due to the necessary checking of common allergy-causing substances for their family members. For the previous usage of food labels, as there is only partial support from the testing results, it is not considered as a strong predictor for processing

involvement. But it should be noted that negative usage experience is rather significant to trigger strong demand on improving and standardizing the food labels.

The two demographical factors tested are age and gender. It is hypothesized that women are more involved in processing food labels than men are. The findings provide partial supports to frequency of checking only. Women may more frequent checking than men would, but they may not cover more elements during the checking or have serious standardization requirements on food labels, such as the measurement standardization or indication languages. The testing results show that the initial hypothesis of aging will decrease processing involvement is not supported. Mature citizens may not be those that are the least involved in processing food labels.

6.1.2 Findingsof Additional Analyses

The three predictor variables of information sensitivity, perceived benefits and perceived ease of food labels are all shown to have positive effect on the processing involvement of food labels. However, the distal attitudes, tangential attitudes and behavioral factors of biasing filters tend to influence the effect of these three variables on processing involvement variously.

For the two distal attitudes of trust in regulation effectiveness and perceived product quality, the former seems to have stronger magnitude of influencing the effects of the predictor variables on the processing involvement. The influence of trust in regulation effectiveness has weakened the effect of information sensitivity, but at the same time strengthening the effects of perceived benefits and ease of food labels on the processing involvement. For the attitude of perceived product quality, it seems to have little significance on filtering the effect of predictor variables on processing involvement of food labels.

The tangential attitudes are found to have the strongest filtering impact on the

effect of the three predictor variables. Though the three attitudes of perceived self-innovativeness, health consciousness and skeptical attitudes all contribute to weakening effect of the predictor variables, health consciousness has the strongest magnitude. Under the influence of health consciousness, the effects of the predictor variables on processing involvement are significantly weakened. For perceived benefits and ease of using food labels, they completely lose their significance in processing involvement under the synergy of the three tangential attitudes.

Among the three behavioral factors, only consumption volume is found to have significant impact on influencing the effect of predictor variables on processing involvement of food labels. Similar to the impact of trust in regulation effectiveness (distal attitude), consumption volume significantly weakens the effect of information sensitivity on processing involvement, but simultaneously strengthens the effect of perceived benefits and ease of using food labels.

6.2 Practical Implications

The findings have provided several implications on the current practices of food labels for the government, pre-packaged food manufacturers and the consumers. Although studies like the one by AC Nielsen (2005) suggest the usage of food labels remains low in Hong Kong, it does not deny the importance of promoting and regulating food labeling practices in Hong Kong. What the government should do is to understand the reasons behind such low and incomplete usage of the food labels.

As shown in the additional analyses, information sensitivity, perceived benefits and perceived ease of checking food labels all have a positive impact on processing involvement of food labels. The government should focus on building up and promoting these attributes, so as to strength Hong Kong consumers' usage of food labels.

Factors like perceived benefits and information sensitivity can help to encourage more processing involvement, however, consumers' behaviors may not solely depend on these perceptions, and the reason is biasing filters. Other than weakening the effect of the predictor variables, biasing filters have direct impact on processing involvement. The government should notice that the distal attitude of trust in regulation effectiveness has a negative impact on processing involvement. For consumers who believe that the effective regulations will prohibit all misleading labels, they are less involved in checking food labels. The government should definitely maintain the regulation effectiveness and prohibit misleading labels, however they should also emphasize on informing consumers about their own duties. One possible way is through early education, so that consumers can accumulate their sensitivity and confidence in food labels throughout the education process.

Health consciousness has significant filtering effects on all predictor variables, also a direct influence on processing involvement. After all, consumers with higher health consciousness are more involved in processing the food labels. The recent food poisoning issue of expired pre-packaged foods should reveal the fact that there are still plenty of unqualified pre-packaged foods in the market, and consumers should be more aware of the health issues and check the labels carefully to protect themselves.

The proposed changes of standardizing the measurement units and introducing the core nutritional information on food labels should be clearly communicated to both manufacturers and consumers, so that they can adapt to new changes and understand the importance of these changes. The findings show that consumers would be more involved in processing food labels of brands they perceive of having higher quality, which often are brands from large companies. The government should pay attention to the market development and quickly respond to manufacturer' concerns. The proposed changers do not aim at driving out small business from the market,

providing adequate technical guiding and financial funds to small businesses can be one of the helpful approaches. It not alone helps small business for providing more competitive and qualified food labels, but also allows consumers to have more choices of healthy foods other than those from large brands.

Skeptical attitudes and experience of using food labels are closely related to the performance of the manufacturers, and the consumers' impressions will actually affect their processing involvement of food labels. Manufacturers should continuously work on improving its product quality and strengthening its image in consumers' mind. They should adopt a cooperating and open manner in disclosing the formulation and ingredients of the foods, and follow the government regulations, so as to build up consumers confidence in both food labels and their own products. In the long run, even for manufacturers with smaller size and less assets, those that are able to provide trustworthy and useful food labels will have better comments from the consumers and gain more business opportunities.

The research findings also suggest that consumers only rely on one or two elements in the nutritional information and do not check the labels checking frequently. They should understand that such low and incomplete usage may lead to harmful effect of choosing the wrong food products. They should be the coworker of government in monitoring the performance of manufacturers in providing food labels, which in turn will benefit themselves in buying more qualified food products with healthy ingredients and legible food labels. They should increase the sensitivity towards food labeling issues and provide recommendations for better regulations and market practices.

6.3 Limitations and suggestions

The target sample of the study has only focused on supermarket shoppers.

Although most of the pre-packaged foods with food labels are found in supermarkets, the framed sample may not entirely represent consumers that are checking food labels regularly. And the sample seems to consist of respondents of 18 to 25 years old whose perceptions and usage of food labels can be much different from those of the younger or more mature generation. Since the ideas from all age groups should be concerned for better regulations and education planning, future studies of consumers' perception and usage of food labels should have a wider and more evenly distributed age groups. The food product in the study is the pre-packaged staple food, and respondents were asked to fill in the questionnaire in relation to the food selected. Future study can examine the applicability of the theories for other food products.

This research tests several variables of processing involvement of food labels. However, there are may be other factors that should be explored, such as the relation between processing involvement and price, which is one of the important factors of influencing consumers' behavior. Although the study has tested the impact of biasing filters on processing involvement and also the interactions with factors like information sensitivity, perceived benefits of food labels, further exploration can be made on the interrelations between the four biasing filters. Similar exploration is also possible for revealing the relations between the three predictor variables. These effort will further enhance our knowledge of food labels and hopefully to benefit the public health of Hong Kong society as a whole.

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Appendix

Appendix 1 Questionnaire

What makes them ignored?—Hong Kong Consumers' Mindset of Food labels

Dear respondents:

Facing the growing trend in health consciousness and food safety, the pressure of consumers to choose the right food has been accelerated even faster with the complexity of and inaccessibility to product information. The increasing practice of food labels may serve as consumers' beacon to sensitive purchase decisions. It is imperative for the manufacturers and the government to understand the perceptions of consumers, to modify the current practices and benefiting the public health. Your assistance is appreciated in filling in the questionnaire, which has 57 questions and needs about 15 minutes. Confidentiality and accessibility to the information are assured for research purpose only.

Year 3 BBA student of Lingnan University

Part I General information on consumption pattern

Sample of Food Labels (Appendix 2)

For the following questions, please choose **only one answer** which is most suitable for you in each question except those stated.

1. **Have you bought the following foods in last month? (You may indicate more than one choice).**

   Pre-packaged staple foods: Cereals □ Bread □ Biscuits □ Instant noodles □ Microwave product □ Canned food □ Others, please specify: _____

2. **How frequently do you make the household purchase for the food chosen above?**

   Do not purchase □ 1—3 times a month □ 4—6 times a month □ 7—9 times a month □ Above 9 times □

3. **To your best knowledge, estimate the average spending of each purchase occasion.**

   Below $20□ $20—$40□ $40—$60 □ $60—$80 □ Above $80 □

Part II Information Sensitivity and Perceived Benefits of Food Labels

Please circle the ranking that is most appropriate to you.

	1=Totally Disagree---4=Neutral---7=Totally Agree
Information Sensitivity (Z1)	
4. I want more product information to make purchase decision. **(Z 1.1)**	1 2 3 4 5 6 7

5. I will question for the information validity. **(Z 1.2)**	1	2	3	4	5	6	7
6. I am interested in information related to food labels. **(Z 1.3)**	1	2	3	4	5	6	7
Perceived Benefits of food labels (Z2)							
7. Products with food labels have higher quality. **(Z 2.1)**	1	2	3	4	5	6	7
8. Provide useful information on the nutritional value. **(Z 2.2)**	1	2	3	4	5	6	7
9. Facilitate balanced diet planning. **(Z 2.3)**	1	2	3	4	5	6	7
10. Essential to make appropriate purchase decision. **(Z 2.4)**	1	2	3	4	5	6	7
Perceived Ease of using food labels (Z3)							
11. The information on food labels is easily understood. **(Z3.1)**	1	2	3	4	5	6	7
12. Food labels make purchase decision easier **(Z3.2)**	1	2	3	4	5	6	7

Part III Pre-existed Biases related to food labels processing

Please circle the ranking that is most appropriate to you.

	1=Totally Disagree---4=Neutral---7=Totally Agree						
Distal Attitudes (X1)							
13. There are effective regulations on food labels. **(X 1.1)**	1	2	3	4	5	6	7
14. All deceptive food labels have been prohibited. **(X 1.2)**	1	2	3	4	5	6	7
15. Good quality product always has good food labels as well. **(X 1.3)**	1	2	3	4	5	6	7
Tangential Attitudes (X2)							
16. I am always among the first group to try the new products. **(X 2.1)**	1	2	3	4	5	6	7
17. I am always concerned for healthy diet. **(X 2.2)**	1	2	3	4	5	6	7
18. I constantly seek information about health issues. **(X 2.3)**	1	2	3	4	5	6	7
19. New products lack substantial references on health impacts. **(X 2.4)**	1	2	3	4	5	6	7
20. New products contain more suspicious allergy-causing substances. **(X 2.5)**	1	2	3	4	5	6	7
Behavioral Factors (X3)							
21. I always do purchase in large volume. **(X 3.1)**	1	2	3	4	5	6	7

22. For frequently purchased product, price is the key issue. **(X 3.2)**	1	2	3	4	5	6	7
23. I am responsible to purchase for family members. **(X 3.3)**	1	2	3	4	5	6	7
24. I purchase foods for users with health concerns. **(X 3.4)**	1	2	3	4	5	6	7
25. I find it difficult to identify suitable foods for planning healthy diet by using food labels. **(X 3.5)**	1	2	3	4	5	6	7
26. I am always confused with the meanings of health claims on food products. **(X 3.6)**	1	2	3	4	5	6	7

Part IV Processing practice of food labels.

This part is related to how you will process food labels during purchase, please circle the ranking which is most appropriate to your usual habits.

	1=Totally Disagree---4=Neutral---7=Totally Agree						
Processing Involvement							
A. Frequency (Y1)							
27. I always check the food label of new product. **(Y 1.1)**	1	2	3	4	5	6	7
28. I check for food labels when I am on diet. **(Y 1.2)**	1	2	3	4	5	6	7
29. I check for food labels every time I do shopping. **(Y 1.3)**	1	2	3	4	5	6	7
B. Coverage (Y2)							
30. I always check the **product name**. **(Y 2.1)**	1	2	3	4	5	6	7
31. I always check the **volume or amount**. **(Y 2.2)**	1	2	3	4	5	6	7
32. I always check the **expiry date**. **(Y 2.3)**	1	2	3	4	5	6	7
33. I always check the **ingredients**. **(Y 2.4)**	1	2	3	4	5	6	7
34. I always check the **manufacturer's information**. **(Y 2.5)**	1	2	3	4	5	6	7
35. I always check the **special conditions/ instructions**. **(Y 2.6)**	1	2	3	4	5	6	7
Information in Nutrition Facts							
36. I always check for the **Protein** amount. **(Y 2.7)**	1	2	3	4	5	6	7
37. I always check for the **Available Carbohydrate** amount**. (Y 2.8)**	1	2	3	4	5	6	7
38. I always check for the **Total Fat** amount **(Y 2.9)**	1	2	3	4	5	6	7
39. I always check for the **Saturated Fat** amount. **(Y 2.10)**	1	2	3	4	5	6	7
40. I always check for the **Cholesterol** amount. **(Y 2.11)**	1	2	3	4	5	6	7
41. I always check for the **Sugars** amount. **(Y 2.12)**	1	2	3	4	5	6	7

42. I always check for the **Sodium** amount. **(Y 2.13)**	1	2	3	4	5	6	7
43. I always check for the **Dietary Fibe**r amount. **(Y 2.14)**	1	2	3	4	5	6	7
44. I always check for the **Calcium** amount. **(Y 2.15)**	1	2	3	4	5	6	7
45. I always check for the **Energy** amount. **(Y 2.16)**	1	2	3	4	5	6	7
C. Standardization requirements of food labels (Y3)							
46. Indications in both Chinese and English. **(Y3.1)**	1	2	3	4	5	6	7
47. Standardized measurements for all food labels. **(Y3.2)**	1	2	3	4	5	6	7
48. Provide clear indication of common allergens. **(Y3.3)**	1	2	3	4	5	6	7
49. Being placed at the adjacent sides of the package. **(Y3.4)**	1	2	3	4	5	6	7
50. Provide the source of the nutritional information. **(Y3.5)**	1	2	3	4	5	6	7
Purchase Intention (Y4)							
51. I make purchase decision after processing the labels **(Y 4.1)**	1	2	3	4	5	6	7
52. I purchase the products after I understand all the information on the food label. **(Y 4.2)**	1	2	3	4	5	6	7

Part V Demographic information of respondents

Please check the box of the option that is most appropriate to you.

53. Gender (X 4.1): Male □ Female □

54. Age (X 4.2): 0-17 □ 18-25 □ 26-35 □ 36-50 □ above 50 □

55. Education (Z 4): Primary school □ Secondary School □ University □
Other, please specify: _____ □

56. Occupation (Z 5): Student□ Service Sector □ Industrial Sector □
Business □ Other, please specify _____□

57. Personal monthly income (Z 6): $0-$5,000 □ $5001-$10,000 □
10,001-$15,000 □ $15,000-$20,000 □ $20,001-$25,000 □ Above $25,000□

~ The end & Thank you for your valuable opinions!

香港消費者對食物標籤的意見調查

致受訪者:

有鑒於健康意識及食物安全日趨重要，加上產品資料越見複雜且難以獲得，消費者在選購適當食物時實在面對不少壓力。有意見指加強食物標籤的應用可以引領消費者作出明智的決定。爲了改善現有的行業常規及公眾健康，政府與食物生產商必須了解消費者對食物標籤所持的觀念。希望您能協助回答問卷中共57題的問題，需時約10分鐘。您所提供的資料會被嚴格保密及僅作研究用途。

嶺南大學工商管理系三年級學生

以下的問題，除特別註明外，每條問題只能選擇一個答案。

第一部份　消費模式的基本資料

請選出適合的答案，並在□加上∨。

1. 在最近一個月內，您有否購買過以下的食品?（可選擇多於一個答案）

預先包裝的主要食品: □ 穀類加工食品　□ 飽點　□餅食　□ 即食麵
□ 微波加熱食品　□ 罐裝食品　□ 其他，請註明：_____

2. 在上列所選擇的食品，您平均多久會作一次家用購買?

□ 不會購買　□ 每月1—3次　□ 每月4—6次　□ 每月7—9次　□ 每月多於9次

3. 每次購物中，您平均花費多少在以上所選擇的食品?

□ $0—$20　□ $21—$40　□ $41—$60　□ $61—$80　□ $80以上

第二部分　對食物標籤的資訊關注度、認知利益及應用便利性

請圈出最爲適合您的序號。

	1=非常不同意---4=中立(不置可否)---7=非常同意						
資訊關注度							
4. 我希望有多些產品資料來協助選購。	1	2	3	4	5	6	7
5. 我會詢問資料的可靠性。	1	2	3	4	5	6	7
6. 我對有關食物標籤的資料甚感興趣。	1	2	3	4	5	6	7
認知利益							
7. 擁有食物標籤的食品有較高的質量。	1	2	3	4	5	6	7
8. 食物標籤有效地提供關於食品營養價值的資料。	1	2	3	4	5	6	7
9. 食物標籤能協助消費者制定均衡飲食。	1	2	3	4	5	6	7
10. 食物標籤對選購合適的食品十分重要。	1	2	3	4	5	6	7

應用的便利性							
11. 食物標籤上的資料很容易理解。	1	2	3	4	5	6	7
12. 應用食物標籤能令選購變的簡單。	1	2	3	4	5	6	7

第三部分　有關於食物標籤應用的潛在傾向

請圈出最爲適合您的序號。

	1=非常不同意---4=中立(不置可否)---7=非常同意						
末端事宜態度							
13. 現有的條例能有效的監管食物標籤的應用。	1	2	3	4	5	6	7
14. 所有具誤導成分的食物標籤都已被禁止。	1	2	3	4	5	6	7
15. 高質素食品一定具有優良的食物標籤。	1	2	3	4	5	6	7
關聯事項態度							
16. 我總是搶先嘗試新產品。	1	2	3	4	5	6	7
17. 我一直都非常重視健康飲食。	1	2	3	4	5	6	7
18. 我時常收集有關保健的資料。	1	2	3	4	5	6	7
19. 新產品缺乏有關健康影響的參考資料。	1	2	3	4	5	6	7
20. 我認爲新產品會有較多的致敏物質。	1	2	3	4	5	6	7
行爲因素							
21. 我總是選擇作大量的購買。	1	2	3	4	5	6	7
22. 對於經常購買的食品，價錢是最重要的考慮因素。	1	2	3	4	5	6	7
23. 我經常負責爲家人購買平日所需的食物。	1	2	3	4	5	6	7
24. 我爲身體需要特殊照料的人購買食物。	1	2	3	4	5	6	7
25. 我適合的食物來調配均衡飲食十分困難。	1	2	3	4	5	6	7
26. 我常對保健食品的功效聲稱的真正含意感到困惑。	1	2	3	4	5	6	7

第四部份　食物標籤的慣常應用

請圈出與您日常習慣最一致的序號。

	1=非常不同意---4=中立(不置可否)---7=非常同意						
處理及應用的程度							
甲. 檢查次數							
27. 我每次都檢查新產品的食物標籤。	1	2	3	4	5	6	7
28. 在節食期間我會選擇檢查食物標籤。	1	2	3	4	5	6	7
29. 每次購物時我都會檢查食物標籤。	1	2	3	4	5	6	7
乙. 覆蓋範圍							
30. 我總是會檢查**產品名稱**。	1	2	3	4	5	6	7
31. 我總是會檢查產品的**數量、重量或體積**。	1	2	3	4	5	6	7
32. 我總是會檢查**食物保質期**。	1	2	3	4	5	6	7
33. 我總是會檢查**食物配料表**。	1	2	3	4	5	6	7
34. 我總是會檢查**生產商的資料**。	1	2	3	4	5	6	7
35. 我總是會檢查特定的**貯存方法及使用指示**。	1	2	3	4	5	6	7
營養標籤的資料							
36. 我總是會檢查**蛋白質**的含量。	1	2	3	4	5	6	7
37. 我總是會檢查**碳水化合物**的含量。	1	2	3	4	5	6	7
38. 我總是會檢查**脂肪的總量**。	1	2	3	4	5	6	7
39. 我總是會檢查**飽和脂肪**的含量。	1	2	3	4	5	6	7
40. 我總是會檢查**膽固醇**的含量。	1	2	3	4	5	6	7
41. 我總是會檢查**糖**的含量。	1	2	3	4	5	6	7
42. 我總是會檢查**鈉**的含量。	1	2	3	4	5	6	7
43. 我總是會檢查**膳食纖維**的含量。	1	2	3	4	5	6	7
44. 我總是會檢查**鈣**的含量。	1	2	3	4	5	6	7
45. 我總是會檢查食物的**熱量**。	1	2	3	4	5	6	7
丙. 對食物標籤統一標準化的要求							
46. 產品要附有中英文的食物標籤。	1	2	3	4	5	6	7
47. 所有食物標籤要應用一致的量度單位。	1	2	3	4	5	6	7
48. 標明食物中的常見過敏原。	1	2	3	4	5	6	7
49. 食物標籤要在包裝的兩邊。	1	2	3	4	5	6	7
50. 提供標籤上的資料來源。	1	2	3	4	5	6	7

購買意願							
51. 我會先檢查標籤上的資料才決定選購那種食品。	1	2	3	4	5	6	7
52. 我只選購我能完全明瞭其食物標籤的食品。	1	2	3	4	5	6	7

第五部分 個人資料

資料絕對保密，請在□加上∨。

53. 性別： □男 □女

54. 年齡： □0－17歲 □18－25歲 □26－35歲 □36－50歲 □50 歲以上

55. 最高學歷： □小學畢業 □中學畢業 □大學畢業 □其他，請註明___

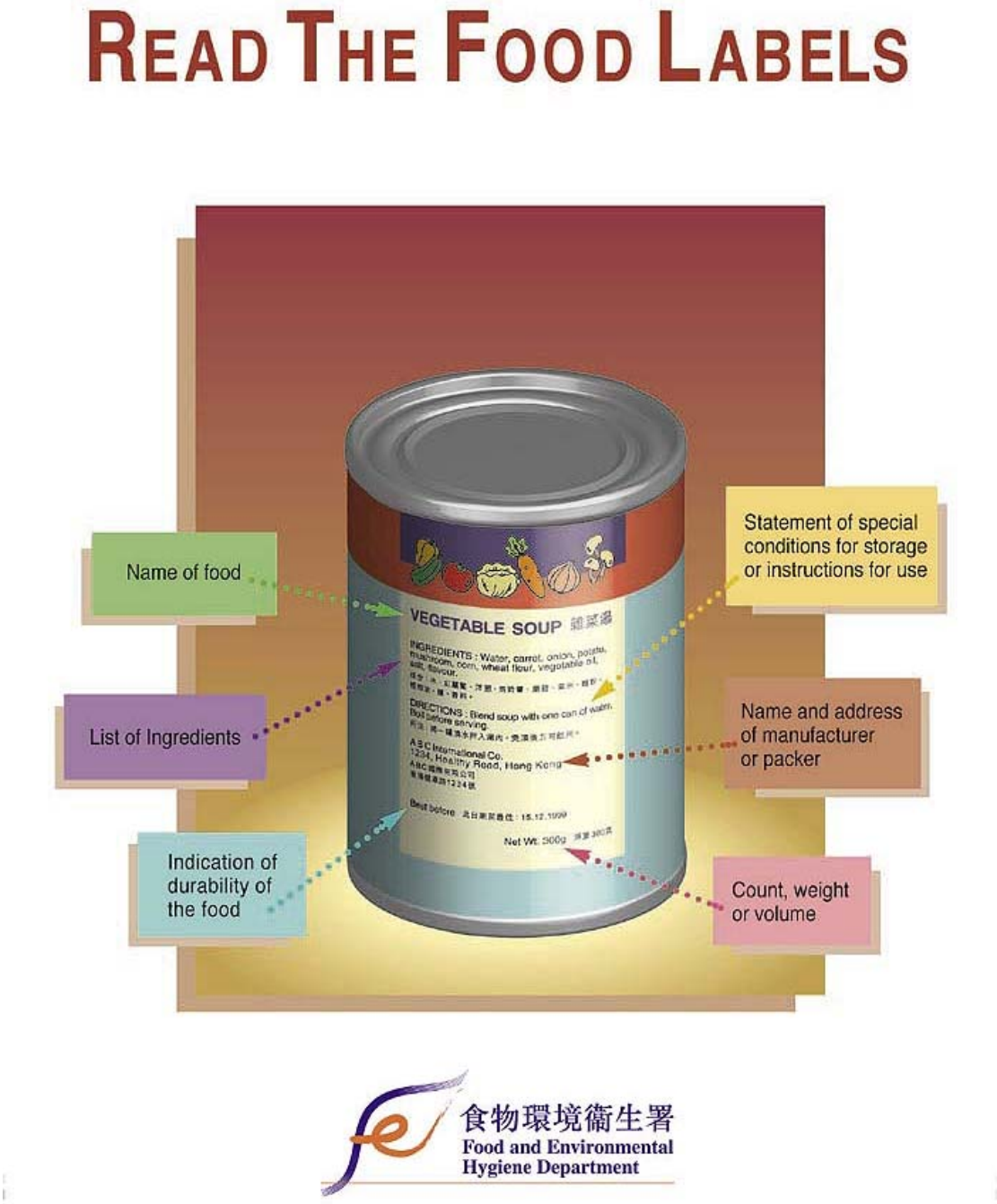
56. 職業： □學生 □服務業 □工業 □商業 □其他，請註明：_____

57. 個人月收入：□$0-$5,000 □$5001-$10,000 □$10,001-$15,000
□15,001-$20,000 □$20,001-$25,000 □$25,000 以上

~問卷完畢，多謝閣下抽空提供寶貴的意見!~

Appendix 2 Samples of food labels

Six Basic Elements



Nutrition Information