

## DEVELOPMENT OF THE FOOD SAFETY LABELLING TECHNIQUE FOR APPLIED BUSINESS IN THE VIETNAMESE RETAIL FOOD INDUSTRY

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### ABSTRACT

**Objective:** This paper proposed the design of Kim and McDonald food safety labeling circuit for managing and examining the effectiveness system and food safety risk management in the food industry.

**Purpose:** This study sought to examine whether differences exist in the food safety labeling practices across government policies between two major retail markets in Vietnam and whether differences exist in the retailer's own logotypes between two major retail markets in Vietnam.

**Methods:** Photography was used in an observational study conducted among two separate retail market chains, all located in Ho Chi Minh City, Vietnam. The study focused on identifying which fresh vegetable categories were labeled and thus used as cases in this study. In which ways are the applications of the developed Kim and McDonald food safety labeling circuit between two separate retail food markets similar and dissimilar being accounted for? The data were collected from a sample of two photographs. The results were analyzed by illustrating the government policy of Vietnamese Good Agricultural Practices (VietGAP) and the retailer's own logo.

**Results:** Both retail market chains show that the identified labels consist of both government standards and the retailer's own logo.

**Conclusion:** The use of the design of Kim and McDonald food safety labeling circuit contributes toward convincing consumers of the quality of products when applying the standards of VietGAP and its strict implementation to meet food safety standards. The purpose of this study is to evaluate how labelling is managed in Vietnam's retail food industry with a special focus on food in Ho Chi Minh City, Vietnam. Furthermore, This study focuses on the way retailers design and uses their labels to identify produce grown under VietGAP standards as well as to gain the consumer's trust that other retailers may learn from through this research. After a brief introduction and literature review, the methodology section is followed by result and discussion section ending with suggestions for the retail food sector.

**Keywords:** Government guidelines, Green supply chain management, Kim and McDonald food safety labeling circuit.

### INTRODUCTION

In recent years, the environment has become a critical issue of concern regarding environmental sustainability and global warming [1,2]. The most serious problems are global warming and the depletion of natural resources. As the public becomes more aware of environmental issues and global warming, consumers pay more attention to the eco-friendliness of products they are purchasing [3]. According to Pham, producers and manufacturers endeavor to minimize hazardous substances in agricultural by-products since healthy products become the core competitive advantage among food-related firms [4]. For example, green packaging materials reduce the environmental pollution and replace some of the expensive types as well as the lack of resources to reuse waste resources [5,6]. Studies in Food Safety Risk Management have been performed in the food, beverage, and construction sectors [7,8]. According to Sekar, the absence of street food would have led to low intake of food by the consumers because of food insecurity [9]. Despite, the growing emphasis on food insecurity and reducing post-harvest losses in developing country, the food insecurity is still the major concern.[10].

However, the implementation of green food labels and green packaging on corporate performances are still in a nascent stage [11]. The purpose of this study is to evaluate how labeling is managed in Vietnam's retail food industry with a special focus on food in Ho Chi Minh City, Vietnam. Green packaging management in the retail food industry has become increasingly important for several actors in its role as a value-adding element for the success of a product on the consumer market [12].

In addition, green purchasing can be defined as an environmental purchasing initiative that aims to ensure purchased products and materials meet with environmental objectives set by the purchasing firm such as reducing sources of waste, encouraging recycling, and the reuse and substitution of materials [11-13].

However, this has not always been the case as long as the performance of the packaged product constituted the single most important competitiveness factor on the market, the green packaging design of goods represented the most effective means of increasing competitiveness for a company [6]. There are knowledge gaps in our understanding of how the retailers may be related to the labeling management for food safety. Findings indicate possible associations between labeling, logos, and government guidelines like Vietnamese Good Agricultural Practices (VietGAP) in the retail food market. It remains an unsettled question whether there are consumer behavior differences in perception and awareness of green food that is organically produced.

Even though, there is limited literature on food safety and consumer purchase decisions because of VietGAP in the agriculture sector. There are still a few on green packaging management practices in the Vietnamese retail food industry. Furthermore, there are few studies addressing the combination of government guidelines, labeling, and logos on food safety labeling management in the retail food industry. An observation methodological implication of the present research is that information about food safety labeling management needs

to be included in future studies of consumer behavior on green food consumption. It will further be advantageous to have specific information about the green consumerism of green food for marketers and retailers in the retail food industry. In addition, there are only a few studies on green packaging management in the Vietnamese retail food industry. Moreover, there is little evidence to suggest that participation in domestic GAP is profitable or makes food any safer [15]. In addition, there has been very little known about what drivers affect a label market penetration and eco-label design [3].

Strong evidence is emerging that consumers are increasingly basing their purchasing behavior on ethical and environmental criteria. For instance, Wal-Mart and Tesco intend to provide information on the labels of the products through their supply chain footprints and that they continue to seek innovative ways to improve the end-to-end environmental footprints [16]. The effectiveness of labels is not clear in cases of the consumer who is not aware of sustainability issues and may not understand the information displayed on the label. Furthermore, people face difficulties in recognizing eco-labels and distinguishing them from a regular one [17]. Vietnamese retail food market has welcomed many big retailers such as Lotte Mart, the leading retailer to invest in large supermarkets in Vietnam [4,17]. Foreign direct investors' retail corporation has been trying to implement their standard ways in collaboration with new environmental rules and certification requirements in green manufacturing [4,18]. However, there are only a few studies on food safety labeling management in the Vietnamese retail food industry. To determine the effectiveness of the food safety standards system, the new technological design should be clearly identified in which fresh vegetables were labeled in the retail food industry. The implementation of the effectiveness of food safety standards requires the adoption of the right approaches by development and maintenance. This study focuses on the way of retailers design and uses their brand logos and labels to identify what drives the retail food sector to implement food safety labelling technique's practices as well as to propose the technology for measuring the effectiveness of food safety management.

The aims of this study are to address the following types of research questions:

1. In which ways are the applications of the food safety labeling techniques development based on examining four separate retail food markets?
2. How may implications of these findings develop the theory of food safety labeling management in a more practical way toward supplier, manufacturer, and retailers?
3. How to develop the theory of food safety labeling management in a more practical way toward supplier, manufacturer, and retailers?

### Green labeling management

Green labeling is a standard that addressed dealing with environmental sustainability [20]. For instance, the symbolically distinguished label is based on standardization which beneficially represents the effects on consumer buying behavior in terms of environmental, health, and food quality [21]. In Vietnam, food labeling is designed to give the consumer a sense of satisfaction for the safety and quality of the food that they buy is produced within a regulation of food processing, for example, Vietnamese Government's Decree No. 43/2017/ND-CP dated April 14, 2017 [22].

The four mandatory contents of goods labels in the regulation of green packaging management are the name of the goods, expiration date, safety warning, and instructions for use.

Mandatory contents of the label of goods are [23] as follows:

1. Name of the goods: For mandatory information as prescribed, the color of letters, numbers, picture, and symbol on label must be in contrast with the background color of the goods label [23].
2. Expiration date: Date of manufacture and expiration date must be written in the "day-month-year" format and must also be noted in this order if those dates are presented in another order on the product [23].

3. Safety warning (if any).
4. Instructions for use.

The VietGAP is certified by government policy along with criteria which adopted food safety and good quality in Vietnam's retail sector [24]. The VietGAP standardization is certified by government policy and private organization along with criteria which adopted organic standards and good quality in the Vietnamese retail food industry.

### Green purchase

Green purchasing can be defined as environmentally preferable purchasing products and services. The aim of green purchasing is to ensure materials meet with reducing waste, encouraging recycling of materials [11-13].

### Eco-design

This research adopts the definition developed by Johansson and Zhou *et al.* for eco-design, which defines eco-design as the actions taken during the product development stage targeted toward minimizing a product's environmental impact during its product life cycle starting from acquiring raw materials for manufacturing, the use of the product, and finally the disposal of the product without compromising other essential product criteria such as performance and cost [24,25]. Lakshmi Meera and Palanisamy investigated the conceptual framework on related eco-design practices and packaging-related eco-design practices on environmental, economic, and intangible performances [27]. They found that eco-design practices are to create an environmental stance as a driver for improved brand image.

### Environmental cooperation

Adopting Green Supply Chain Management (GSCM) practices requires internal and external cooperation among different stakeholders [11,26]. Environmental cooperation activities take place between the supply chain processes in terms of eco-design, environmental technology, green packaging, use of less energy during transportation of materials and goods, as well as effective support by management capacity enhancement such as environmental technology research and development [27,28]. In addition, environmental cooperation between different stakeholders within the supply chain including the raw material supplier, the manufacturer, the logistics provider, and the customer needs to take place to introduce an environmentally responsible design for a product that is safe and easy to recycle [11].

### Developed procedures for estimating the food safety labeling management for applied business operations

It is essential to continue developing a model of food safety management, with a focus on the guideline, logos, and labeling management and focus on food safety system. Kim and McDonald food safety labeling circuit suggests the effective collaboration between the guidelines of the government policy sector and the private sector in implementing the legal framework to ensure access to the retail food industry.

Kim and McDonald food safety labeling circuit has classified the good

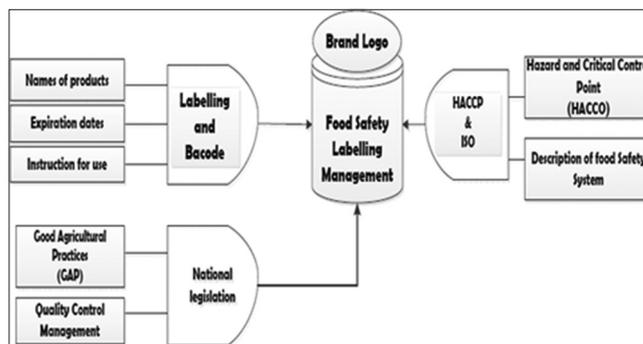


Fig. 1: Kim and McDonald food safety labeling circuit (own developed from Kim and McDonald)

safety labeling management into three broad categories which are labeling, environmental labeling standards, and national legislation (Fig. 1). First, the labeling category composed of four subcategories such as names of products, expiration dates, instructions for use, and barcodes. Second, a food safety system comprised of HACCP and ISO, such as description of the food safety system, hazards and critical standards, and environmental labeling standards. Third, national legislation comprised of good agricultural practices, for instance, the management of pesticides and quality control management.

**Equation for Kim and McDonald food safety labeling circuit**

Labeling and barcode, HACCP and ISO, and national legislation are related to improve food brand by a formula by own developed from the author, which states that:

$$\text{Improving Food Brand} = \frac{\text{Labelling Barcode} \times \text{HACCP and ISO} \times \text{National Legislation}}{\text{Constant}}$$

Where

1. Expenses for the labeling and barcode that is expressed in expenses (U.S. dollar)
2. Expenses for the HACCP and ISO that is expressed in expenses (U.S. dollar)
3. Expenses for the national legislation that is expressed in expenses (U.S. dollar)
4. Expense constants: The value of expense
5. Constants depends on the charge company's own expenses (U.S. dollar) constants as administrating policies for food safety labeling management (HACCP and ISO; National legislation).

**METHODS**

The study was conducted to identify the company logos and food safety labeling management without implementing equation into the Vietnamese retail food sector in terms of government policy and guidelines influencing on application and implementation to the private retail food sector in the direct observational qualitative methods.

**Samples**

First, a pre-observation was carried out among five retails markets at Lotte Mart and VinMart in Ho Chi Minh City, Vietnam, to identify how categories were to be labeled as cases. The two photographs were selected to illustrate the Vietnamese government policy, labeling, and the retailer's own logo.

**Data analysis**

The researcher conducts primary data collection from the two retail food sectors in Ho Chi Mihn City. The primary data were coded with the help of Qualitative Analysis Software (NVivo 11 pro). The illustration outputs were used with the image editor software (Adobe Photoshop CS 6) to identify food safety labeling and implementation of private logos in the Vietnamese real food sector. The results were analyzed by illustrating the government policy of VietGAP and the retailer's own logo to develop Kim and McDonald food safety labeling technology for the applied business operations in the aspect of the good safety labeling management into three broad categories which are labeling, environmental labeling standards, and national legislation.

**RESULTS AND DISCUSSION**

**National legislation: Government regulation level**

Food packaging must satisfy the requirements for Food Safety and Product Quality from contamination during their preservation and must facilitate labeling [29,30].

Government regulation of food law plays the guiding role of the green packaging management such as packaging, storage, and transportation containers used for organic products that do not contaminate the organic product through the regulation and food law [21,31,32]. Table 1 indicates

the logo of VietGAP in Vietnamese food satisfaction policy. The VietGAP contains standards and guidelines to prevent risks of food safety and food quality. The Ministry of Agriculture and Rural Development (MARD) (2008) posted VietGAP which contains standards and guidelines to assist individuals or organizations, producers, and consumers to prevent risks to food safety, produce quality and workers in production, as well as harvest and postharvest handling of fresh fruit and vegetables. These also serve to protect the environment and are used for product identification, traceability, and recall.

The organization on Food Safety Standards System in Vietnam is controlled by the Ministry of Science and Technology and coordinated by the Ministry of Health, Ministry of Trade, MARD, Ministry of Fisheries, Ministry of Industry, Ministry of Finance, and Ministry of Culture and Information [34].

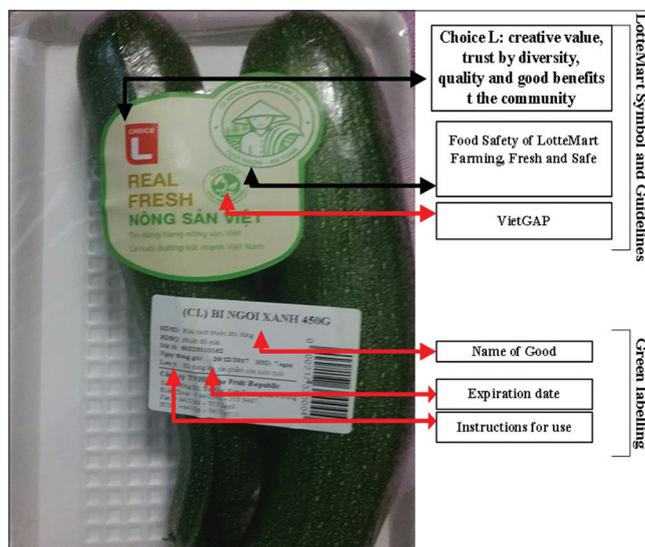
**Food safety standards system: Labeling and barcode**

Fig. 2 indicates that the contents of green labeling such as guidelines or government factors and the symbol of Choice L (create value, trust by diversity, quality, and benefits) for the customers significantly impact

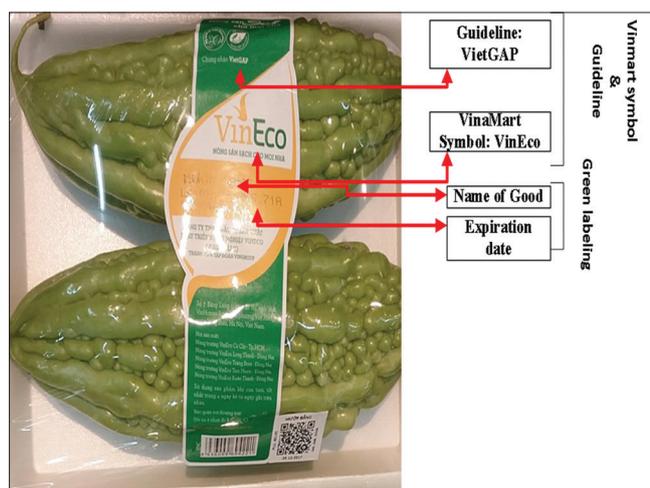
**Table 1: Labels and food requirements**

Logo	Certifying	Specific requirements
	Guidelines safe food production	Standard and guideline to assist individuals or organization producers and consumers to prevent risks to food safety, product quality, and workers in productions
	VietGAP is a voluntary application process	Harvesting and postharvest handling of fresh fruits and vegetables

(Source: Self-elaboration on basis of guidelines of The Ministry of Agriculture and Rural Development in Vietnam, 2008). VietGAP: Vietnamese Good Agricultural Practices



**Fig. 2: Attribution symbol, guideline, and labeling**



**Fig. 3: Attribution symbol, guideline, and labeling**

the success of applying the government guidelines to the Food Safety Practices in the Vietnamese retail food sector.

Fig. 3 also shows that the contents of the VinEco label indicate the domestic clean process to ensure a green future.

Green packaging management in the retail industry has become increasingly important for several actors in its role as a value-adding element for the success of a product on the consumer market [12]. In addition, green purchasing can be defined as an environmental purchasing initiative that aims to ensure purchased products and materials meet with environmental objectives set by the purchasing firm such as reducing sources of waste, encouraging recycling, and the reuse and substitution of materials [11-13]. However, this has not always been the case as long as the performance of the packaged product constituted the single most important competitiveness factor on the market and the green packaging design of goods represented the most effective means of increasing competitiveness for a company [6]. There are knowledge gaps in our understanding of how the retailers may be related to the labeling management for food safety. Findings indicate possible associations between labeling, logos, and government guidelines like VietGAP in the retail food market. It remains an unsettled question whether there are consumer behavior differences in perception and awareness of green food that is organically produced. Strong evidence is emerging that consumers are increasingly basing their purchasing behavior on ethical and environmental criteria. For instance, The International Organization for Standardization (ISO) certified facilities are implementing Supply Chain Management system that documents the organization's environmental aspects to a greater extent that relate to identifying suppliers' environmental practices. [35].

The effectiveness of labels is not clear in cases of the consumer who is not aware of sustainability issues and may not understand the information displayed on the label. Furthermore, people face difficulties in recognizing eco-labels and distinguishing them from a regular one [17]. The guideline of government policy and retailers responsible for food safety in Vietnam should develop a better-coordinated system for food safety labeling management. For example, green marketing as a better-coordinated system involves cleaner production and green packaging which are stringent food safety standards for farming and supply chain processing. In addition, the Vietnam MARD explicitly aims to implement and reduce food safety incidents through a combination of legislation (Law on Food Safety [LoFS], No.55/QH12/2010) and retail modernization [36].

The relationships between GSCM practices and Vietnamese consumer behavior familiar with organic food consumption will be addressed in future studies because at present there are too few studies on food

safety in the Asia-Pacific region, but in Vietnam particularly, literature on green packaging management research is rare. Despite the Lotte Mart labels and VinMart labels consist of the VietGAP standards and the logo of Choice L and VinEco that in effort to improve food safety labelling management with regard to national legislation, brand logo, and barcode. However, there was no value of HACCP and ISO standard to identify a food safety standard processing in the Kim and McDonald Food safety Labelling Circuit.

The VietGAP labeling targets the consumers who perceived the adoption of this food safety standard to minimize or eliminate their exposure to biological, chemical, or any physical hazards related to the products purchased at each of the two retailers in Vietnam. In all two retailers, successful approaches in terms of labeling and guidelines of government policy in the Vietnamese retail food market, VietGAP, were incorporated into the value chain of their supply chain management, with an emphasis on labeling with the guideline of VietGAP and own logos of the retailer.

The present study showed that VietGAP standardization is certified by Vietnamese government policies and used by the private retail food sector in line with practices for labeling and logos on food safety labeling management. Furthermore, this study provides an insight into the importance of food safety labeling management in the retail food sector and how it has been applied in Vietnam's retail food sector. Furthermore, it has compared the green labeling and green packaging in Vietnam's retail food sector, and it was reviewed that there have been few empirical studies on green packaging management in Vietnam's retail food sector.

Vietnam's government in the agriculture sector ensures that it can implement green packaging management practices that include a food safety standards system when sourcing food products to ensure that they only procure using the guidelines through VietGAP which provides standards and guidelines to assist individuals or organizations since 2008. The focus on food safety needs to improve food safety labeling systems, own logos and guidelines of government policies for food safety and product quality by incorporating recyclability, and reuse waste resources in GSCM as well as focusing on environmental sustainability. In addition, Vietnam's food retail sector needs to improve the knowledge based on their research and development for food safety labeling management processing in the supply chain, in particular, green labeling and guidelines of government policies.

Understanding the consumer behavior of a market is a crucial factor while an entrepreneur aims to achieve success in a new target market so that academics and practitioners can take advantage of this research for other further studies. According to results from current research, the following suggestions were formed, to help retailers and manufacturers' aim to meet the global standard and local standard on food safety for penetrating into Vietnam's retail food sector. The function of green packaging is required to maintain promoting production and quality of packaging. For example, the eco-friendly materials on ecological packaging materials are directly related to protecting ability as well as maintaining the safety and stability of the supply chain. The competitive products with green benefits and food safety would be at an advantage in attracting consumers to choose the green products. Furthermore, knowledge about food safety labeling management and guidelines of government policies should be raised among Vietnamese consumers for improving the consumer awareness of labeling and the packaging of products.

It is essential to continue developing a model of food safety management, with a focus on the guideline, logos, and labeling management and focus on food safety systems. Kim and McDonald Food Safety Labeling Circuit suggests the effective collaboration between the guidelines of the government policy sector and the private sector in implementing the legal framework to ensure access to the retail food industry. The suggested Kim and McDonald Food Safety Labeling Circuit is to improve

the quality of life both in Vietnam's retail food market and the global retail food market by improving their access to safe food and to minimize food risks due to pesticides, contamination, or poor food safety management.

This study had major contributions to improve food safety risk management and living standards for safety food consumption by using the Kim and McDonald Food Safety Labelling Circuit. The concept of Kim and McDonald Food Safety Labeling Techniques involves the regulation of inputs such as labeling and barcode, national legislation, HACCP, and ISO, which implement logical conjunction. If all seven inputs of correct labeling contribute to the gate of food safety management, self-designed brands and eco symbols by retailers can be shown to have high output results in food safety labeling management.

Darnall *et al.* defined GSCM as the application of environmental management principles to the entire set of activities across the whole customer order cycle, including design, procurement, manufacturing, assembly, packaging, logistics, and distribution [37]. Another definition elaborates GSCM as a set of supply chain management policies and relationships that pay close consideration to the natural environment when an enterprise distributes its resources [11,26,31]. In addition, Choong *et al.* stated that environmental awareness should be integrated into GSCM throughout the whole process, from international standards of raw materials to the terminal disposal of goods to achieve and minimize negative environmental effects to be sustainable [39].

Recently, Tundys also claimed that GSCM is an increasingly expanded strategy by which to gain the most optimal performance for reducing the environmental costs of packaging [40]. Khoi *et al.* conducted a study on Ajinomoto Japanese manufacturing and found that supply chain collaboration impacts a form of Research and Development (R and D) investment in environmental technologies [19]. The Ajinomoto Company applied 100% reusable waste during the plant operation. Furthermore, Negi conducted a study on the natural environment and is leading the agricultural industry by integrating environmental thinking into supply chain management [41]. According to Laarj, GSCM practices include the use of environmentally friendly materials and equipment, environmental policies, and environmental audits [42]. However, two key areas in GSCM practices were selected as the most significant which are related to the food safety labeling management which are environmentally friendly materials and environmental policies.

The advantage of Kim and McDonald Food Safety Labeling Circuits improves food safety labelling and environmental standards using an observational study for improving the visualization of food safety labelling management and contributes an environmental solution in the following ways such as (1) to maximize the benefit of brand and Eco Symbol through access to food safety labeling management, (2) to contribute to the improvement of labels and barcodes by adding the information to labels and barcodes such as the name of product, expiration, and instructions for use, (3) to contribute to the improvement of food safety by adding the information of national legislation such as GAP and quality control management, and (4) to strengthen GSCM practices and the manufacturing of raw materials for products in GSCM to ensure an effective implementation of its hazard and critical control point as well as the description of the food safety systems.

The findings from the observational study imply that retailers prefer products with labeling with functional attributes (e.g., logos). The findings are implemented into Kim and McDonald Food Safety Labeling Techniques to improve the quality of life both in Vietnam's retail food market and the global retail food market by improving their access to safe food and to minimize food risks due to pesticides, contamination, or poor food safety management and to contribute to the improvement of food safety knowledge and living standards of the Vietnamese and global consumers by improving their access to easily check the labeling

in terms of brand and Eco Symbol such as labeling, barcode, description of food safety system, and national legislation.

In addition, suppliers, manufacturers, and retailers need to introduce innovative food products which combine green consumerism and functional attributes. In this research, the impact of demographic factors and consumer-related forces was not considered. Further research may examine green consumer buying behavior. Furthermore, research may investigate the determinants of the relationships between the suggested Kim and McDonald Food Safety Labeling Techniques and consumer buying behavior toward food products in the retail food industry. The suggested Kim and McDonald Food Safety Labeling Circuit is to improve the quality of life both in Vietnam's retail food market and the global retail food market by improving their access to safe food and to minimize food risks due to pesticides, contamination, or poor food safety management and to contribute to the improvement of food safety knowledge and living standards of the Vietnamese and global consumers by improving their access to easily check the labeling in terms of brand and Eco Symbol such as labeling, barcode, description of food safety system, and national legislation.

## CONCLUSION

Reviewing food safety labeling management initiated in Vietnam's retail food market sector and the government guidelines of VietGAP shows that application is possible. LotteMart and VinMart indicated the effective combined application of own private brand logos, national legislation, and barcode on the packaging. This application of food safety labelling management makes a contribution to the business performance of the food retail sector. Furthermore, the cases of LotteMart and VinMart application using VietGAP and own logos of retailer can have long-term prospective success due to being accompanied by the motivation of food safety risk management. For instance, some cases of the food safety labeling management practices were promoted by the retailers such as Choice L and VinEco which will have obvious benefits, which can encourage adoption of standard regulations for potentially hazardous foods or Green Supply Short Chain practices. Thus, further research studies should be examined the integration of designed brand logos, national, food safety standards (HACCP and ISO), and the barcode with the Kim and McDonald Food Safety Labelling Circuit in other food retail sector.

Guidelines for government policy and own logo of retailers alone will never compel every retail market, especially smallholders production and traditional market retail. However, guidelines for government policy and own logo of retailers are beneficial to the current stage of food safety labeling management and its development. Finally, the guideline of government policy and retailers responsible for food safety in Vietnam should develop a better-coordinated system for food safety labeling management. For example, green marketing as a better-coordinated system involves cleaner production and green packaging which are stringent food safety standards for farming and supply chain processing. In addition, the Vietnam MARD explicitly aims to implement and reduce food safety incidents through a combination of legislation (LoFS, No.55/QH12/2010) and retail modernization [36].

Hence, what are some of the solutions to the food safety labeling in Vietnam's food retail market? The experiences of different retail markets can provide lessons for improving food safety in Vietnam. Two retail markets have shown that the food safety labeling management reduces food safety risks over relatively short periods. The impact of these government guidelines can be seen in the labels used in this study such as those of LotteMart for example. The LotteMart labels consist of both government standards and the retailer's own logo (Choice L), this dimensions can help consumers in measuring the effectiveness of purchasing intention, thus contributing to a "green" future.

In two retailers, successful approaches in terms of labeling and guidelines of government policy in Vietnam's retail food market,

VietGAP, were incorporated into the value chain of their supply chain management, with an emphasis on labeling with the guideline of VietGAP and own logos of the retailer. This research study offers a technological circuit development and observational proven how do retailers understand the concept of government policy (VietGAP) and what government policies and food safety labelling management practices are implemented in the retail food market. The evidence of these dimensions in the Kim and McDonald Food Safety Labelling Circuit can help retailers and manufacturer to improve consumers' easy access to check the labelling in terms of brand logos, barcode, description of food safety system, and national legislation.

Based on the findings, the application of KIM and McDonald Food Safety Labeling Circuit is an important for supply chain management staffs to improve food safety labeling, environmental standards, and food risks management that will help to improve the visualization of food safety labeling management, food risk management, and contributing an environmental solution in the following ways (Own developed from Kim and McDonald):

1. To maximize the benefit of brand and Eco Symbol through access to food safety labeling management;
2. To contribute to the improvement of labels and barcodes by adding the information to labels and barcodes such as the name of product, expiration, and instructions for use;
3. To contribute to the improvement of food safety by adding the information of national legislation such as GAP and quality control management;
4. To strengthen food safety and the manufacturing of raw materials for products in food industry to ensure an effective implementation of its hazard and Critical Control Point as well as the description of the food safety labeling circuit.

The relationships between and Vietnamese consumer buying intention of organic food consumption will be addressed in future studies because at present there are too few studies on food safety; particularly, literature on green packaging management research is rare.

Findings indicate possible associations between labeling, logos, and government guidelines like VietGAP in the retail food market. Strong evidence is emerging that consumers are increasingly basing their purchasing behavior on ethical and environmental criteria [16]. An observation methodological implication of the present research is that information about food safety labeling management needs to be included in future studies of consumer behavior on green food consumption. It will further be advantageous to have specific information about the green consumerism of green food for marketers and retailers in the retail food sector. In addition, there are only a few studies on green packaging management in Vietnam's retail sector.

Furthermore, it remains an unsettled question whether there are consumer behavior differences in perception and awareness of green food that is organically produced for further study.

#### CONTRIBUTION OF THIS STUDY

The developed KIM and McDonald Food Safety Labeling Circuit has implementations for the retail food industry, manufacturer, marketers, and policymakers who are dealing with the food safety labeling management.

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