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## **Determinants of customer satisfaction towards buying fresh foods in supermarkets - A study in Ho Chi Minh City**

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### **Abstract**

The study aims to identify the determinants of customer satisfaction towards purchasing fresh food in the supermarkets in Ho Chi Minh City. By synthesizing and systematizing related studies and applying the model of service quality and customer satisfaction in the retail market, we find that there are five factors impacting customer satisfaction towards buying fresh food in supermarkets. These factors are merchandise, price, physical aspects, supermarket employees, and supermarket policies. The data were collected randomly through online and offline channels from the first half of March 2020 till the end of April 2020. The results from the exploratory factor analysis and multiple regression analysis, using data collected from 261 valid survey responses, show that merchandise has the most powerful effect on customer satisfaction, followed by physical aspect, price, supermarket employee, and supermarket policies. The study indicates that customer satisfaction in buying goods in supermarkets relies on product quality and service quality.

**Keywords:** Customer satisfaction, Fresh food, Ho Chi Minh City, Supermarket

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### **1. Introduction**

Customer satisfaction is a feeling or attitude of a customer reflecting the closeness between his/her expectation and the product's perceived performance (Kotler, 2003). If the perceived performance matches customers' expectations of service, then they will be satisfied. If the perceived performance falls short of customers' expectations, they are dissatisfied. In addition, if the performance of the products exceeds the expectation of the customers, they will be

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highly satisfied or delighted (Rana *et al.*, 2014). In business terms, gaining high levels of customer satisfaction is important to a business because satisfied customers are most likely to be loyal, tend to make repeat orders and use a wide range of services offered by the business (Jeevananda, 2011). A satisfied customer is a key precursor of a business's loyalty (Huyen, 2020). In conclusion, customer satisfaction can be defined as the feeling of customer toward a product/service after it has been consumed. Customer satisfaction is the key to the success of a business. In recent years, thanks to an increase in disposable income, higher education, and living standards, customers tend to care more for the nutrient and safety of fresh foods. This phenomenon leads to a change in customer behavior and a shift from the traditional markets to modern trade channels. The growth rate of traditional channels was just around 5% in two years from 2017. The figure of modern trade doubled to 16% in 2019 (Deloitte Vietnam Company Limited, 2020). Aggressive M&A from giant groups create the motivation for the development of supermarkets and enhance the competing capability of domestic enterprises. One of the typical instances is that of Saigon Co.op, which took over 18 stores and the entire e-commerce retail system of France Auchan Retail in Vietnam in 2019 (Tuoi Tre Newspaper, 2019). Along with the above positive aspects, the Vietnam retail (supermarket) industry is known as one of the most challenging ones. Like most countries in Southeast Asia, Vietnam's retail landscape is heavily dominated by its traditional wet markets and small independent stores catering small quantities of goods and products for day-to-day consumption (Euro Asian research experts, 2018). The COVID-19 outbreak leads to the reduction in customer demands and physical interactions, which creates an accelerated shift towards omnichannel purchasing behaviors. For instance, the e-commerce channels are increasingly used as a substitute for physical shopping activities. As a result of the pandemic, more than 50% of Vietnamese consumers have reduced their frequency of visits to supermarkets, grocery stores, wet markets, while 25% of them have increased their online shopping (Deloitte Vietnam Company Limited, 2020). In the present context, to meet the rapid changes of the market's demand, it is no doubt that analyzing the factors affecting customer satisfaction to reconsider marketing strategies demand is listed among the top priorities of companies.

After the process of analyzing and evaluating the related previous studies, we identify three research gaps. First, most Vietnamese researchers have just analyzed elements affecting the customer intention or customer decision, but not customer satisfaction (Chu and Pham, 2013; Vu *et al.*, 2018; Do and Nguyen, 2015; Nguyen and Nguyen, 2015). Second, the supermarket is the mixed business between the supply of goods and service. However, most previous studies focus on highlighting the impact of service quality, ignoring the contribution of merchandise quality and lacking a deep analysis for particular categories (Nguyen, 2016; Dang, 2019; Dabholkar *et al.*, 1996; Weerasiri, 2015). Lastly, only a few studies investigate the customer satisfaction in the supermarkets in Ho Chi Minh City, which is the largest city in Vietnam, with about 8.6 million people compared to the national population of 94.7 million people (General Statistics Office of Vietnam, 2018).

In this research, we decide to focus on evaluating the determinants of customer satisfaction towards buying fresh foods, which is always known as one of the main products for daily consumption with many strict requirements related to food quality and safety. We will evaluate the customer satisfaction incorporating both service and product quality. The product quality includes two aspects: the physical distinctive characteristics and the price of fresh food. This paper focuses on the customers who bought and/or having been bought fresh foods in the supermarkets in Ho Chi Minh City to deliver the specified recommendations and suggestions.

There are four contributions of this study. First, the study analyzes customer satisfaction for a specific product and concentrates on both service and product quality impact. Second, this paper proposes and tests two new factors, namely merchandise and price. Third, this research suggests strategies to the Vietnamese businesses in the fiercely competitive retail market. Finally, this study provides a foundation framework for further research for fresh food or the rest of the category in the supermarkets.

The rest of the paper is organized as follows. While Section 2 illustrates the literature review and theoretical framework, research hypotheses are described in Section 3. Research methodologies are presented in Section 4. In Section 5, research results are presented. Suggestions and recommendations are discussed and concluded in Section 6. Finally, Section 7 concludes the paper.

## **2. Literature review and theoretical framework**

According to Hansemark and Albinsson (2004), “satisfaction is an overall attitude towards a product provider or an emotional reaction to the difference between what customers expect and what they actually receive regarding the fulfillment of a need.” Customer satisfaction refers to the outcome felt by those that have experienced a company’s performance which has fulfilled customer expectations (Angelova and Zekiri, 2011). Tse and Wilton (1988) suggest that satisfaction is a general psychological phenomenon, describing the emotional state as a result of an evaluation of the perceived discrepancy between prior expectations and actual performance of the product or service. Kotler (2003) claims that “the buyer’s satisfaction with a purchase is a function of the closeness between the buyer’s expectations and the product’s perceived performance. If performance falls short of expectations, the customer is disappointed; if it meets expectations, the customer is satisfied; if it exceeds expectations, the customer is delighted. These feelings of satisfaction influence whether the customer buys the product again and talks favorably or unfavorably about the product to others.” Based on these definitions, customer satisfaction is defined as a comparison between consumer expectation and perceived value.

Most researchers, investigating the factors affecting customer satisfaction in supermarkets, focus on in evaluating the relationship between customer satisfaction and service quality. Weerasiri (2015) reveals that there is a strong positive relationship between service quality and customer satisfaction. This output is consistent with the study conducted by Beneke *et al.*

(2012), Nguyen *et al.* (2014), and Dabholkar *et al.* (1996). Five dimensions of service quality are: (i) physical aspects, (ii) reliability, (iii) personal interaction, (iv) problem solving, and (v) policy. Among them, physical aspect is the most powerful factors.

Several studies in Vietnam recently demonstrate that service quality in supermarkets is the incorporation between merchandise and service quality. Dang (2019), Nguyen (2005), Le (2019), and Nguyen (2016) show that product quality is one of the most important and decisive factors affecting on the satisfaction of shoppers. However, when they describe the observation variables of product quality, due to lacking analysis of a specific product, they just mention diversity and the availability of the product. Hence, it is the absence of typical characteristics of the product such as the freshness of fresh food.

To the best of our knowledge, most Vietnamese researchers attend to the factors leading to the customer decision or customer intention to purchasing fresh food. The results of Chu and Pham (2013), Nguyen and Nguyen (2015) show that the factors related to the product quality, which are freshness, reliable origin, package, price, and location, are the most crucial elements affecting consumer buying patterns. Although the above results about customer decision do not directly connect to the factors affecting customer satisfaction, they help us understand more about the customer insights, consumer motivations, and demands for fresh food selling in the supermarket.

Several theories are taken into consideration to understand customer satisfaction and its relationship with (i) service quality; (ii) product quality and customer relationship.

First, the European Customer Satisfaction Index (ECSI) model is often applied to the measurement of products or industries having a mixed supply of both service product. The ECSI model indicates that customer satisfaction is the total influence of three effect variables consisting of corporate image, perceived value, and perceived product/service quality. Perceived quality is a measure of the customer's evaluation via recent consumption experience of the quality of a company's products or services. Perceived value is the perceived level of product quality relative to the price paid or the "value for money" aspect of the customer experience (Coenders and O'Loughlin, 2002). Customer expectation is defined as the level of values and benefits that a customer wants to receive from the goods and services. Therefore, this study focuses on the ECSI model and analyses the effect of perceived service/product quality and perceived value on customer satisfaction towards buying fresh food in supermarkets.

Second, the RSQL model is known as the typical model to measure service quality in the supermarket (Dabholkar *et al.*, 1996). Based on the model of SERVQUAL, Dabholkar *et al.* (1996) propose a research model with 28 items, 17 of which are from the existing SERVQUAL scale and the remaining 11 items are from the researchers' review of the literature and qualitative research. Five items from SERVQUAL were deemed inappropriate and dropped. After testing the RSQL model with the U.S. department store, the model shows strong validity and reliability. This model has been applied for many studies (Mehta *et al.*, 2000; Nguyen,

2005; Le, 2019; Nguyen *et al.*, 2014). Because of the differences in culture, social context, economy, and policy between Vietnam and USA, we will conduct some necessary adjustments before applying the RSQL model in this study.

Third, the theory of retail service quality of supermarket in Hanoi of Le (2019) is taken into consideration. Le (2019) presents that there are five elements leading to customer satisfaction consisting of supermarket employees (0.383), which is followed by merchandise (0.26), reliability (0.131), physical aspects (0.094), and supermarket policies (0.059). The scope of this paper is limited to consumers in Hanoi, which provides more similarities in the economy, policies, customer behavior, and customer insights to our study than foreign studies. Besides, Le (2019) demonstrates that product quality makes a huge contribution to satisfaction of the customer.

Finally, we also base on the customer satisfaction theory of Azhar *et al.* (2013), which focuses on analyzing the impact of fresh food attributes in the hypermarkets in Malaysia. The results reveal that consumers are more attentive to the quality and price of fresh food compared to the availability and reliability of service. The majority of customers were satisfied with fresh food quality especially in the aspect of freshness, physical appearance, cleanliness of fresh food. Our study applies Azhar's results to build the proposed observation items for two measurement scales: product quality and price.

### **3. Research hypotheses**

Combining the theoretical frameworks from previous studies (Dalholkar *et al.*, 1996; Azhar *et al.*, 2013; Le, 2019) with the results of qualitative research and typical features of Ho Chi Minh shoppers, we build a proposed theoretical model with five dimensions consisting of merchandise, price, physical aspects, supermarket employees, and policies.

In this study, merchandise is measured in the aspects of availability, variety, and quality of the product, which includes freshness, reliable label and origin, food safety, and package. Merchandise is known as one of the pivotal elements to obtain customer satisfaction. Customers tend to show a high level of satisfaction with the supermarkets that always provide fresh and reliable fresh foods (Chu and Pham, 2013). The main determinants of customer satisfaction and loyalty are product quality (Gonzalez-Benito *et al.*, 2010). Therefore, the hypothesis is proposed as follows:

*H1: The factor "Merchandise" positively influences and has a positive impact on customer satisfaction.*

Price is evaluated on aspects of the appropriateness of product quality, competitiveness, and stability. Price has the highest impact on the supermarket, which is followed by product (Nguyen, 2016). Gonzalez-Benito *et al.* (2010) reveal that price is an important consideration when buying consumable goods for customers with low-income, as compared to wealthy customers. Customers have a certain amount of money for purchasing fresh foods. They tend to compare prices to other supermarkets and traditional markets. They will satisfy and

purchase fresh foods in places that offer reasonable prices relative to benefits received before, during, and after shopping. Forasmuch as the submitted hypothesis is:

*H2: The factor “Price” positively influences and has a positive impact on customer satisfaction.*

Physical aspects refer to the physical appearance, location, and layout of supermarkets, which create convenience for customers during shopping. Nguyen *et al.* (2014) indicate that the appearance and the convenience of the supermarket such as decoration, advertising materials, and goods layout play a vital role in affecting customer satisfaction. The store environment, facilities, and even imagery thereof have become factors that retailers can use to gain a competitive edge and influence customer satisfaction (Dabholkar *et al.*, 1996). Having a qualitative research with more than 30 respondents in Ho Chi Minh supermarkets, it is found that the majority of respondents chose to buy fresh foods in supermarkets in their residential zone, due to the quality and the price of fresh foods do not express the big difference among supermarkets in Ho Chi Minh City. Supermarkets located in citizen zones or main roads are appealed to customers to purchase fresh food (Chu and Pham, 2013). Hence, the following hypothesis is suggested:

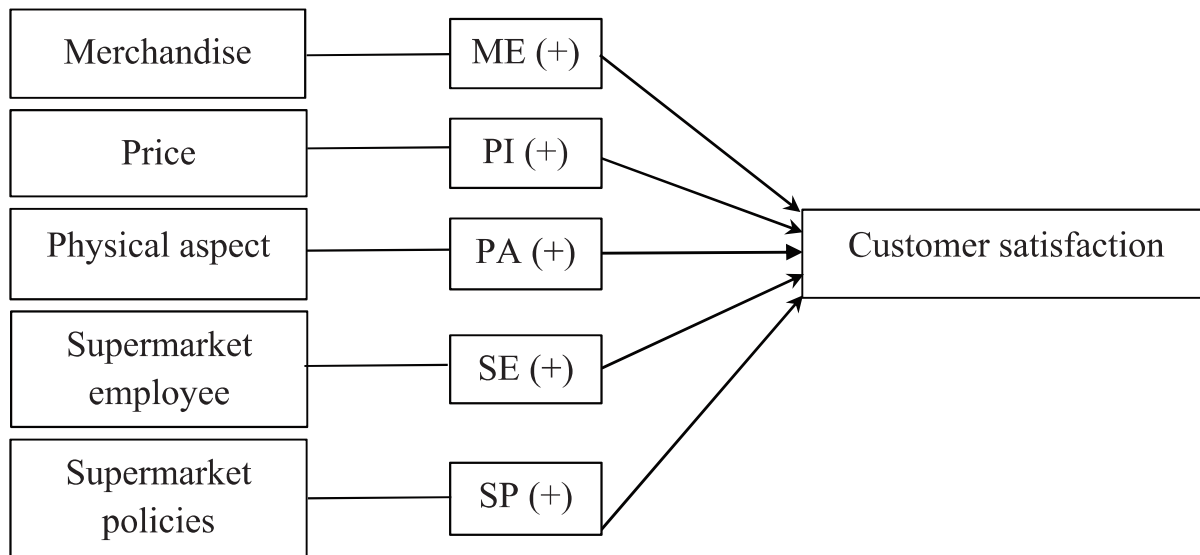
*H3: The factor “Physical aspects” positively influences and has a positive impact on customer satisfaction.*

Supermarket employees are evaluated on aspects of responsiveness and problem-solving. Supermarket employees having direct and indirect contact with customers will lead to a significant impact on customer satisfaction. When staff members are more responsive, which means attending to clients’ needs quickly and with care and courtesy, it should result in improved customer satisfaction (Rana *et al.*, 2014). A good problem-solving system will detect and solve problems, prevent dissatisfaction, and even encourage complaints (Lewis and Spyropoulos, 2001). The hypothesis is developed as follows:

*H4: The factor “Supermarket employees” positively influences and has a positive impact on customer satisfaction.*

Supermarket policies are additional services for customers. These policies refer to operating hours, payment policy, loyalty programs, and privacy policy. Customers expect retailers to be supportive. Thus, any service mechanism that suggests empathy and understanding is likely to impact favorably on perceived service quality and satisfaction (Dabholkar *et al.*, 1996). Furthermore, customers are often highly pleasant to sale promotions, gifts from membership programs, convenient operating hours. Thus, the following hypothesis is developed:

*H5: The factor “Supermarket policies” positively influences and has a positive impact on customer satisfaction.*



**Figure 1.** The research model

**Source:** The authors' suggestion

Figure 1 illustrates our proposed research model, which represents five suggested hypotheses. In this model, merchandise, price, physical aspect, supermarket employee, and supermarket policies are considered independent variables. Customer satisfaction is chosen as a dependent variable.

#### **4. Research methodology**

##### **4.1 Data collection**

Based on the previous frameworks, we brainstorm and release the proposed survey form. The questionnaire design relies on a Likert measurement scale of five levels, from 1 to 5 for each level, indicating strongly disagree to strongly agree. In details, 1 is for strongly disagree; 2 is for disagree; 3 is for neutral; 4 is for agree; and 5 is for strongly agree.

We conducted three groups of interviews to discuss the survey form and listened to their feedback. Respondents in groups interview have the same demographic characteristics, socio-economic conditions and often buying fresh foods in the supermarkets in Ho Chi Minh City. We have three group interviews with three different age groups. Each group has from five to six respondents. While Group 1 is the group of students, Group 2 consists of the officers aged from 30 to 35, who are our co-workers. Respondents of Group 3 are the housewives, who are our friends' mothers. After the group interviews, respondents' opinions relating to the questionnaire content and format were collected. Group 3 reported that some questions require rereading many times. They suggested that we should use informal words in the process of building the survey form. Besides, an online survey form and small giveaway gifts were additionally suggested by Group 1 and Group 2. After summing up all feedbacks, we fixed confusing questions, eliminated non-conforming point, made some handmade small gifts of bookmarks and lucky candies, created the online survey on Google Form in both English

and Vietnamese. These changes do not only help respondents avoid misunderstanding the meaning of questions, but also increase the convenience and motivation of the respondents. Finally, we conducted an offline trial test on a small group of 20 customers in Ho Chi Minh City in mid-February 2020 in different supermarkets in Binh Thanh and Go Vap districts. There was no comment leading to eliminating or supplementing variables or factors for the questionnaire. Hence, the official survey consists of 41 questions with seven demographic questions, three questions to evaluate customer satisfaction, and thirty-one questions belonging to five components, which are merchandise (seven questions), price (four questions), physical aspects (seven questions), supermarket employees (six questions), and supermarket policies (seven questions).

According to Tabachnick and Fidell (2001), the sample size calculated for the survey in regression analysis must be based on the formula that  $n \geq 8m + 50$ , of which  $n$  is the sample size and  $m$  is the number of independent variables. With  $m=5$ , the minimum sample size is 90. To ensure the representation and reliability for sample size and exploratory factor analysis (EFA), each observed variable needs at least five samples (Bollen, 1989). Therefore, with 31 independent variables, the research needs at least  $31 \times 5 = 155$  samples. Based on two theories, we conducted the survey and collected a minimum of 245 samples for the next step of research.

Our respondents are the ones who have recently purchased fresh food in supermarkets. On the first page of the questionnaire, we create a note for clarification “If you have never bought fresh foods in supermarkets in Ho Chi Minh City, please stop the survey here”. In the pre-data process, we eliminate the data with non-conforming points, such as filling in fake email or choose one answer for all questions, for example, always marking 3.

The survey was conducted both online and offline. Due to the outbreak of the COVID-19 pandemic, the process of data collection was much more restricted. The survey form was posted on customer insight groups via a Facebook channel. We also used SendGrid email marketing to spread our survey to suitable respondents. For our online respondents, we send back them the IELTS book, lifestyle book, activation codes for some nutrient online course by email as small gifts.

A total of 279 responses were collected from the first half of March 2020 to the end of April 2020. There were 261 samples meeting the research requirements. There were 161 online samples through Google Form and 100 paper ones gained in several supermarkets in Ho Chi Minh City. The effective rate of questionnaires was 93.54%.

#### **4.2 Data analysis**

The data were processed by SPSS 20.0. The Cronbach’s Alpha test was applied to analyze and evaluate the reliability of measurement scales and find out whether observed variables measure the same concept or not as well as eliminate unsuitable variables because these can generate fake elements (Nguyen and Nguyen, 2009). We apply the EFA test to prove the validity of measurement scale. The EFA is a statistical technique that is used to evaluate



two fundamental values of measurement scale, consisting of the convergence value and the discriminant value (Nguyen, 2011). The main purpose of this test is to evaluate correctly the adhesion between components and dependents variables as well as shorten a set of observed variables  $k$  into a small set of more significant factors  $F$  ( $F < k$ ). Variables that do not meet these above standards were eliminated to readjust the research model. The multiple linear regression analysis was used to test the relationship between explanatory variables and dependent variables and determine the importance of factors.

## **5. Research results**

### ***5.1 Demographic characteristics of the respondents***

To analyze the customer's demographic characteristics, six criteria including gender, age, main job, average income, frequency, and expenditure per order were applied. According to the SPSS outcome, the number of female respondents accounts for 69.3%, which doubles the figure for male respondents (about 30.7%). The respondents whose age ranges from 25 to 40 years old and below 25 years old comprise the highest percentages, with 44.8% and 36.8%, respectively, which are followed by the age from 40-55 years old (10.7%) and above 55 years old (7.7%). Most housewives were familiar with purchasing fresh foods in the traditional markets around the citizen zones, which conforms to the statistical result when only 5.7% of respondents work as housewives. In contrast, the number of respondents working as students is the highest, which is about 42.9 % or half of the figure for the managerial sector. The executive sector ranks at the second level with 35.6%. The respondents with the monthly average salary of less than 5 million VND and from 5 to 10 million VND constitute the highest proportions, with 41.4% and 28.7%, respectively. The percentage of respondents with income ranging from 10 to 20 million VND is 21.8%, which is half of the figure of the first group. In terms of frequency, more than 60% of the respondents often purchase fresh foods in the supermarkets more than once a week. There are 33.7% of respondents, who just buy fresh food twice a month. They are often office workers with limited time. Concerning the average spending per time, less than 200,000 VND is the most popular payment for buying fresh foods in the supermarkets by the survey respondents (43.7%), which is followed by the amount range from 200,000 to 500,000 VND (42,1%).

### ***5.2 Factors affecting consumer satisfaction***

To ensure that all variables are reliable, Cronbach's Alpha test is implemented. The Cronbach's Alpha of five independent variables, which are ME, PI, PA, SE, and SP, and customer satisfaction are 0.876, 0.874, 0.924, 0.925, 0.892, and 0.863, respectively. There are no observed variables with the correlation coefficient corrected item – total correlation of below 0.3. All Cronbach's Alpha if item deleted values of observed variables are not greater than the figure of Cronbach's Alpha. It means that all observed variables and measurement scales in the research model are accepted and suitable.

**Table 1.** Cronbach's Alpha analysis result

<b>Observed variables</b>	<b>Scale Mean if Item Deleted</b>	<b>Scale Variance if Item Deleted</b>	<b>Corrected Item - Total Correlation</b>	<b>Cronbach's Alpha if Item Deleted</b>
<i>Merchandise: Cronbach's Alpha = 0.876</i>				
ME1	22.43	14.154	0.636	0.862
ME2	22.57	13.616	0.679	0.856
ME3	22.28	13.371	0.684	0.855
ME4	22.29	13.846	0.648	0.860
ME5	22.42	14.236	0.694	0.855
ME6	22.62	13.820	0.628	0.863
ME7	22.33	14.514	0.653	0.860
<i>Price: Cronbach's Alpha = 0.874</i>				
PI1	10.57	4.431	0.695	0.854
PI2	10.95	4.806	0.707	0.850
PI3	11.04	4.245	0.776	0.820
PI4	10.89	4.238	0.751	0.831
<i>Physical aspects: Cronbach's Alpha = 0.924</i>				
PA1	22.10	16.828	0.772	0.912
PA2	22.34	16.564	0.726	0.916
PA3	22.40	16.280	0.794	0.910
PA4	22.37	16.281	0.800	0.909
PA5	22.24	16.007	0.779	0.911
PA6	22.31	16.809	0.764	0.913
PA7	22.39	16.901	0.705	0.918
<i>Supermarket employee: Cronbach's Alpha = 0.925</i>				
SE1	17.79	11.254	0.771	0.913
SE2	17.66	10.949	0.786	0.912
SE3	17.73	10.774	0.829	0.905
SE4	17.81	11.279	0.780	0.912
SE5	17.83	11.579	0.740	0.917
SE6	17.51	11.320	0.801	0.910
<i>Supermarket policies: Cronbach's Alpha = 0.892</i>				
SP1	22.26	13.903	0.690	0.876
SP3	22.32	14.027	0.738	0.871
SP3	22.08	14.151	0.686	0.876

**Table 1.** Cronbach's Alpha analysis result (*continued*)

Observed variables	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item - Total Correlation	Cronbach's Alpha if Item Deleted
SP4	22.22	13.556	0.762	0.867
SP5	22.45	13.625	0.650	0.881
SP6	22.32	14.087	0.644	0.881
SP7	22.46	13.488	0.671	0.879
<b>Customer satisfaction: Cronbach's Alpha = 0.863</b>				
CS1	7.69	1.890	0.722	0.824
CS2	7.51	1.720	0.759	0.789
CS3	7.59	1.774	0.739	0.808

**Source:** The authors' calculation

Based on the EFA result of independent variables, the level of significance of Bartlett's test is 0.000, which is not greater than the EFA standard of 0.05. According to Chu and Hoang (2008), if the result of the Bartlett's test has statistical significance (Sig. < 0.05), there is an existence of a correlation among the observed variables together. In the other words, the data applied for factor analysis is reasonable. Kaiser-Meyer-Olkin (KMO) value is 0.937. Factor analysis is appropriate with the research model. Cumulative % extraction sums of squared loadings is greater than 50%. It proves the suitability of the EFA method and shows that independent factors explained 67.042% of the sample total variance. The eigenvalues result is 1.320, which meets the criteria set forth.

**Table 2.** Summary of the results of the coefficients in EFA analysis for independent variables

Criteria	Value	Comparison
Sig. in Bartlett's test	0.000	0.000 < 0.05
KMO value	0.937	0.5 < 0.937 < 1
Cumulative % Extraction Sums of Squared Loadings	67.042%	67.042% > 50%
Eigenvalues	1.320	1.320 > 1

**Source:** The authors' calculation

The results presented in Table 3 satisfy all criteria for factor analysis. The Bartlett's test is significant at 0.000. Therefore, there is correlation between observed variables. The KMO value is 0.735, showing the suitability of factor analysis. Cumulative % extraction sums of squared loadings is 78.513% and eigenvalues is 2.356, indicating that this factor remains the same. Therefore, we can conclude that the data used for factor analysis is perfectly suitable.

**Table 3.** Summary of the results of the coefficients in EFA analysis for dependent variable

Criteria	Value	Comparison
Sig. in Bartlett's test	0.000	0.000 < 0.05
KMO value	0.735	0.5 < 0.735 < 1
Cumulative % Extraction Sums of Squared Loadings	78.513%	78.513% > 50%
Eigenvalues	2.356	2.356 > 1

**Source:** The authors' calculation

All observed variables of independent variables satisfy the requirements that factor loading must be greater than or equal to 0.5 and are divided into five groups as the initial basis consisting of merchandise, price, physical aspects, supermarket employee, and supermarket policies. The outcomes of EFA for the dependent variable also present the same conclusion.

**Table 4.** Rotated component matrix

Independent variables	Observed variables	Comparison				
		1	2	3	4	5
Physical aspects	PA6	0.777				
	PA1	0.777				
	PA4	0.772				
	PA5	0.765				
	PA3	0.750				
	PA2	0.722				
	PA7	0.644				
Supermarket employee	SE4		0.787			
	SE5		0.778			
	SE3		0.765			
	SE6		0.744			
	SE1		0.730			
	SE2		0.711			
Merchandise	ME7			0.711		
	ME1			0.705		
	ME2			0.704		
	ME3			0.702		
	ME4			0.695		
	ME6			0.693		
	ME5			0.621		

**Table 4.** Rotated component matrix (*continued*)

Independent variables	Observed variables	Comparison				
		1	2	3	4	5
Supermarket policies	SP2				0.750	
	SP5				0.720	
	SP4				0.692	
	SP3				0.677	
	SP1				0.659	
	SP6				0.623	
	SP7				0.611	
Price	PI3					0.782
	PI4					0.766
	PI1					0.694
	PI2					0.671

**Source:** The authors' calculation

Finally, the multiple linear regression analysis is applied to evaluate the level of influence of factors affecting customer satisfaction towards buying fresh foods in supermarkets in Ho Chi Minh City. The regression model is defined as follows:

$$BL = \beta_0 + \beta_1 H_1 + \beta_2 H_2 + \beta_3 H_3 + \beta_4 H_4 + \beta_5 H_5,$$

where  $\beta_0$  is the y-intercept coefficient;  $\beta_i$  is the slope coefficient for each explanatory variable.

The SPSS results reveal that the value of  $R^2$  and adjusted  $R^2$  are 0.635 and 0.627, respectively. These values show that 62.7% of the variation of customer satisfaction is explained by the independent variables. The Durbin-Watson value is 1.724, suggesting that there is no correlation among variables in the regression model.

**Table 5.** Model summary of multiple linear regression analysis

Model	R	R Square ( $R^2$ )	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	0.797 <sup>a</sup>	0.635	0.627	0.39556	1.724

**Source:** The authors' calculation

The significance level value Sig. of F test equals 0.000. We reject the hypothesis that  $\beta_0 = \beta_1 = \beta_2 = \beta_3 = \beta_4 = \beta_5 = 0$ . The multiple linear regression model is appropriate with the overall data.

**Table 6.** Multiple linear regression analysis results

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	0.170	0.176		0.968	0.334		
	ME	0.272	0.053	0.258	5.111	0.000	0.561	1.782
	PI	0.185	0.050	0.196	3.722	0.000	0.516	1.937
	PA	0.199	0.050	0.206	3.948	0.000	0.524	1.907
	SE	0.152	0.052	0.155	2.918	0.004	0.506	1.977
	SP	0.180	0.058	0.171	3.089	0.002	0.470	2.129

a. Dependent variable: CS

**Source:** The authors' calculation

Following the results presented in Table 6, it is obvious that the significance levels of independent variables satisfy statistical requirements. All these values are smaller than 0.05. All standardized coefficients are positive values, indicating that explanatory factors have positive impacts on customer satisfaction. The estimated regression model is formed as follows:

$$CS = 0.258ME + 0.196PI + 0.206PA + 0.155SE + 0.171SP.$$

Among five components, the merchandise has the most powerful effect on customer satisfaction (0.258), which is followed by physical aspect (0.206), price (0.196), supermarket policies (0.171), supermarket employee (0.155).

For merchandise, the mean value of factor clear label and origin is the highest, which is followed by the clear expiry and food safety with values of 3.87 and 3.83, respectively. It is clear that the customers highly appreciate the safety, reliable origin, and clear duration of fresh foods, which are considered as outstanding of fresh food in the supermarkets compared to the traditional markets. In terms of price, all observed variables of price get a quite high and a positive level of customer satisfaction. The highest point relates to the clear price on package or price tag. The mean values of observed variables for physical aspect items are also high, in which the highest value is the convenience of location. The values of the rest of the observed variables range from 3.62 to 3.79, which provides positive signals for the current service quality in the supermarkets. The mean value of all observed items of the supermarket employees is lower compared to other factors, which mainly belong to the range from 3.4 to 3.5. Supermarket policies with a beta value of 0.171 has a strong impact on customer satisfaction. The highest mean value is for convenience in payment.

## 6. Results and discussion

The regression results show that merchandise has the highest positive impact on the satisfaction of the customers. These results are consistent with the research results of Le

(2019). However, unlike Le (2019), this study shows that merchandise, especially clear label and origin of the product, plays a pivotal role in customer satisfaction. There are two reasons for this difference. Firstly, this study focuses on fresh food. The questionnaire was designed with many questions related to the typical feature of fresh food. The merchandise quality is highlighted as important as service quality. Secondly, the reliable label and origin are the main difference between supermarkets and traditional markets, which are the key motivation for customer choosing to purchase fresh food in the supermarkets (Nguyen and Nguyen, 2015). Such the results completely satisfy with the current market context, where clear food origin and food safety are the new social trend, especially among younger customers in big cities like Ho Chi Minh City (Deloitte Vietnam Company Limited, 2020).

Physical aspects is one of the most essential factors leading to the satisfaction of purchasers. However, the difference between our study and the studies conducted by Beneke *et al.* (2012), Nguyen *et al.* (2014), and Dabholkar *et al.* (1996) is that the physical aspects is only ranked second. If the study focuses on evaluating the impact of both product quality and service quality, customer satisfaction will tend to be affected more by the quality of goods because supermarkets are for goods transaction, not for services. The results also show that the convenience of supermarket location plays a pivotal role on customer satisfaction. The supermarkets in Ho Chi Minh City are often located in key positions of the city where traffic is high and they are closed to residential zones and office areas. Price factor is among the third-highest rank. All observed variables get a high and positive level of customer satisfaction. The highest point is for the clear price on package or price tag, which helps customers control their budget during shopping. However, the price of fresh food in the supermarkets is fixed and there is no chance for bargaining, which is known as one of the most noticeable reasons for purchasing fresh food in the wet markets where customers get a better deal thanks to the ease of bargaining. In conformity with the reality of the market, the competing capability of fresh food's price compared to the traditional markets and other supermarkets also express the second lowest in all observed variables of the model. Correspondingly, supermarkets should put more effort to build better price strategies to attract more customers.

One of the most highlighted results relating to supermarket policies is the impact of convenience of payment trend on customer satisfaction. The appearance of new payment methods, especially non-cash payments such as smart wallets, credit cards, mobile banking, creates a joyful mood for shopping time. It means that supermarkets should update and accept new non-cash payment methods to meet the customer requirements.

Based on the regression outputs, we have several suggestions. First, in conformity with the research results, young customers account for a large part. They are potential customers. Supermarkets need to provide more strategic plans to grab this customer group's attraction and boost customer satisfaction.

Second, supermarkets should pay more attention to enhance the fresh food supply chain system to ensure fresh food safety, availability and reduce transportation costs, which leads to a more competitive price. Customer satisfaction is one of the most essential competitive

advantages. It is of a high demand for understanding customer's needs through frequent customer surveys for adjusting price strategy. Supermarkets need to focus on the storage of fresh food process, which have to meet the ISO 22000 or FSSC 22000 (food safety management system). This will help supermarkets reduce the spoilage rate of fresh food and enhance food safety.

Third, supermarkets should focus on the gap between fresh food quality and price. Customers will be more satisfied if the benefits they gain are higher than the costs they pay. Supermarkets should conduct more customer surveys about fresh food quality in the supermarket to gain customer insights and the current customer's needs for the purpose of adjusting price strategy as well as solutions to enhance product quality. Furthermore, supermarkets need to create new methods to deliver fresh food information to customers. Sometimes, although new kinds of fresh food with expensive price contain a high level of nutrients and are good for health, their names may not be popular for Vietnamese customers. Customers may not know about their special attributes. Therefore, in the case of new products, supermarkets need to find smarter methods to tell customers more about the products.

Four, supermarkets should concentrate on recruitment and staff training programs under a "customer-oriented" mindset. In the recruitment stage, supermarkets should prioritize the selection of young employees with good-looking appearance, good communication skills to satisfy the main groups of the supermarket customers. In the interview section, the interviewers should focus on testing the candidate's attitudes with some mini-tests about problem-solving skills, communication skills. In the training programs, employees should be explained about company culture, detailed product information, and basic knowledge about supermarket arrangement, employee duties and missions, because with clear and abundant information, employees will show self-confident rely upon customer problems, and create trust from customers. Every month or quarter, it is necessary to organize training courses to enhance employee skills in problem-solving, handling unexpected situations. People-oriented strategy, in which company cares and invests in the employee growth, should be considered as the key element for the sustainable development of supermarkets.

With the development of advanced technology, supermarkets need to focus on developing e-commerce applications to encourage customers to buy fresh food from distance. Supermarkets can increase brand awareness and attract new customers through promotion programs on TV, Youtube, and KOLs.

State agencies should impose policies to encourage cooperation between vendors and supermarkets, which will help to ensure the supply chain system. Thanks to these connections, supermarkets will take advantage of local products with cheaper transaction costs which directly affect fresh food prices and create an advantage competitive for the modern trade channel such as stable and competitive price, the reduction time of delivery. Preferential tax and interest policies also lead to the convenience for the business to invest more in operation.



## 7. Conclusion and limitation

In this study, a research model is built with five factors affecting customer satisfaction, including merchandise, price, physical aspects, supermarket employee, and supermarket policies. The results show that merchandise is a profound element. Two new factors are built and tested, which are merchandise and price. Both new elements show positive results.

This study contributes to the literature of consumer satisfaction. The results show the profound impact of merchandise quality, which are clear label, freshness, availability, and food safety. Both high quality product and service is the main key to gain customer's love. The study also examines customer satisfaction and discovers its determinants in the context of an urban area in a developing economy. The findings are significant from a theoretical perspective. The research suggests managerial implications regarding four factors affecting consumer satisfaction, which are merchandise, price, supermarket employee, and supermarket policies. Recommendations are proposed for state agencies to enhance retail business environments and supermarket competitive advantages.

Limitations are inevitable in this study. The duration of the study is short and the sample size collected by the survey method is small. Therefore, to increase the effect for analysis, further studies should try to obtain a larger sample size and carry out surveys in a longer period of time. In addition, the research model includes only five independent variables consisting of merchandise, price, physical aspect, supermarket employee, and supermarket policies. Future studies should analyze other factors and build up a research model to analyze unsatisfied characteristics of supermarkets. Moreover, this study uses Cronbach's Alpha, EFA and multiple linear regression method to test these hypotheses related to the reliability and validity of the model, multicollinearity phenomenon. More applicable and practical analysis methods such as structural equation modeling (SEM) should be applied.

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