

## MODERATING EFFECT OF GREEN CUSTOMER BEHAVIOR AND RELATIONSHIP BETWEEN GREEN SALE GROWTH AND GREEN BUSINESS PERFORMANCE: CASE OF RETAIL SECTOR AT HO CHI MINH CITY, VIETNAM

### EFEITO MODERADOR DO COMPORTAMENTO DO CONSUMIDOR ECOLÓGICO E RELAÇÃO ENTRE O CRESCIMENTO DAS VENDAS DE PRODUTOS ECOLÓGICOS E O DESEMPENHO DOS NEGÓCIOS ECOLÓGICOS: O CASO DO SETOR VAREJISTA NA CIDADE DE HO CHI MINH, VIETNÃ

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**Hiep Bao Chu\***

\*University of Finance - Marketing, Ho Chi Minh City, Viet Nam

Orcid: <https://orcid.org/0009-0006-6973-0927>

[cbhiep@ufm.edu.vn](mailto:cbhiep@ufm.edu.vn)

**Tam Minh Huynh\***

\*University of Finance - Marketing, Ho Chi Minh City, Viet Nam

Orcid: <https://orcid.org/0009-0000-0396-0267>

[huynhminhtam@ufm.edu.vn](mailto:huynhminhtam@ufm.edu.vn)

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#### Abstract

This paper is a study about the effect of the green 7Ps in the marketing mix on green sale growth and then green business performance, with the green customer behavior item as a moderation variable between green promotion and green sale growth. This research aims to show the important role of the green marketing mix in the companies when customers request a green and friendly environment and green customer behavior influences the effect on firm revenue through green advertisement of the organization. Data was used for this research by surveying 260 managers of home stores in the retail industry in Ho Chi Minh City in Vietnam, then selecting 252 samples as valid data. We used SmartPLS 3 software to analyze the data. The result show that all of factors in marketing mix are impact direction and positive significant to green sale growth item and achieve favorable green business performance, except green customer behavior variable is negative impact to green sale growth factor. Through this research, the author wants to verify and fill the previous research gap about green 7Ps in the car retail industry and specify the relationship between the green marketing mix and green sale growth (Eneizan et al., 2016) and green business performance. Simultaneously, this paper adds the role of the moderating variable (green customer behavior item) between the green promotion variable and the green sale growth factor; then, it's proved that

#### Resumo

*Este artigo estuda o efeito dos 7Ps verdes no composto de marketing sobre o crescimento das vendas de produtos verdes e, conseqüentemente, sobre o desempenho dos negócios verdes, considerando o comportamento do cliente verde como variável moderadora entre a promoção verde e o crescimento das vendas de produtos verdes. Esta pesquisa visa demonstrar a importância do composto de marketing verde nas empresas quando os clientes buscam um ambiente verde e amigável, e como o comportamento do cliente verde influencia o faturamento da empresa por meio da publicidade verde da organização. Os dados foram coletados por meio de uma pesquisa com 260 gerentes de lojas de artigos para o lar no setor varejista da cidade de Ho Chi Minh, no Vietnã, dos quais 252 foram selecionados como dados válidos. O software SmartPLS 3 foi utilizado para analisar os dados. Os resultados mostram que todos os fatores do composto de marketing têm impacto positivo e significativo sobre o crescimento das vendas de produtos verdes e sobre o desempenho favorável dos negócios verdes, com exceção da variável comportamento do cliente verde, que apresenta impacto negativo sobre o fator de crescimento das vendas de produtos verdes. Por meio desta pesquisa, o autor busca verificar e preencher a lacuna existente na pesquisa sobre os 7Ps verdes no setor varejista de automóveis e especificar a*



recycling products and green customer behavior have a negative impact on the green revenue of the firm. Clearly, if green consumers get green promotion information, their attitude and awareness will grow high, and they will want to protect their environment by reusing goods so that sell-out product quality will decrease. This study contributed to the knowledge about green business performance in the reuse products field and helped investors be careful as they chose goods for suitable company development.

**Keywords:** Green Marketing Mix. Green Sale Growth. Green Customer Behavior. Green Business Performance.

*relação entre o composto de marketing verde e o crescimento das vendas de produtos verdes (Eneizan et al., 2016) e o desempenho dos negócios verdes. Simultaneamente, este artigo adiciona o papel da variável moderadora (item de comportamento do consumidor verde) entre a variável de promoção verde e o fator de crescimento de vendas verdes; então, comprovou-se que a reciclagem de produtos e o comportamento do consumidor verde têm um impacto negativo na receita verde da empresa. Claramente, se os consumidores verdes receberem informações sobre promoção verde, sua atitude e conscientização aumentarão e eles desejarão proteger o meio ambiente reutilizando produtos, de modo que a qualidade dos produtos vendidos diminuirá. Este estudo contribuiu para o conhecimento sobre o desempenho de negócios verdes no campo de produtos reutilizados e ajudou os investidores a serem criteriosos na escolha de produtos adequados para o desenvolvimento da empresa.*

**Palavras-chave:** Mix de Marketing Verde. Crescimento de Vendas Verdes. Comportamento do Consumidor Verde. Desempenho de Negócios Verdes.

## 1 INTRODUCTION

“Green” appeared in the 1960s and then developed in the 1980s (Leonidou & Leonidou, 2011). And in the 1990s it became a “core topic” (Vandermerwe & Oliff, 1990) for some research, as in Devi Juwaheer et al., 2012; Hartmann et al., 2005. Notwithstanding, climate change had changed customer behavior and thinking that they should use green goods and be friendly with the environment (Yam-Tang & Chan, 1998). From then on, the companies had to shift marketing strategies (Gilg & Barr, 2006; Nidumolu et al., 2009). Almost all green marketing originated from consumers (Hartmann et al., 2005; Peattie & Crane, 2005; Richey et al., 2014), and they connected with friendly environments (Abzari et al., 2013; Chamorro et al., 2009; Dangelico & Vocellelli, 2017; Garg, 2015; McEachern & Carrigan, 2012). In the front are pressures from the environment, climate change, and some challenges (Zhang, 2011), so firms are proactive and grasp market information (signals) or form their green tactics to create business advantages (Y. S. Chen, 2008; Hsu et al., 2013; Zailani et al., 2015). Thus, enterprises had to create and willingly develop green goods (Y. S. Chen, 2011) to reduce

CO<sub>2</sub>, noise (Tomasin et al., 2013), costs of operation (Goodman & Goodman, 2000; Roth & Menor, 2003; Wolfson et al., 2010), cost savings (Carter & Dresner, 2001), upgrade quantity and green processes (Handfield et al., 1997; Pil & Rothenberg, 2003; Conway & Steward, 1998), be useful for sustainable ecosystems (Frenken & Faber, 2009; Dahlstrom, 2011), and last but not least, increase customer satisfaction (Lai et al., 2010; Mohd Suki & Mohd Suki, 2015; W.Y. Wong et al., 2014). In Ho Chi Minh City, government agencies push some green media programmers with content that says no to disposable plastic products and limited-use nylon bags to protect the environment and climate change adaptation. Simultaneously, they encourage reuse and the use of green products through some green activations and programs that connect to consumers and companies.

Business performance in the retail industry (home application stores) is the final result that firms want. However, achieving this goal requires companies to make an effort to integrate multifunctional strategies across marketing, sales, human resources, finance, and other areas. Nowadays, especially in the home appliance retail sector, a sustainable corporation has to have a green sale transformation, which means products must be environmentally friendly. Based on the previous research gap (Eneizan et al., 2016) about the green marketing mix effect on the green sale growth of the car sector, the author recognizes two issues to study:

Firstly, there have only been 7 green Ps in green marketing mix research, which impacts the direction of green sale growth items in the car field. Secondly, there has been a gap in that research, specifically for green product, green promotion, green people, and green process factors that have impacted direction to car revenue but green price, green distribution, and green physical evident factors have not.

Besides revenue, the author not only recognizes that it needs repeated study to fill the research gaps of Eneizan et al. (2016) but also expands to the new research model by adding a moderating variable (green customer behavior) between the green promotion item and the green sale growth factor and the green business performance variable. Thus, the author proposes and confirms a new research model in home application stores in the retail sector. Although there are many previous studies that show that they have relationships with green environment, green marketing, green sales, or green performance, there is a lack of research about the (7Ps) green marketing mix impact on green revenue and green business performance. Thus, in this paper, we'll focus on the 7Ps factors in the green marketing mix effect on the green business performance sector

through the green sale growth factor and the green customer behavior moderation variable. Thence, the author proposes a new research model and hypothesis.

## 2 LITERATURE REVIEW

### 2.1 Resource based view

Resource-Based View theory is based on the core value that a company's resources and organizational abilities, such as its sales force and marketing skills, create competitive capabilities for the firm (Barney & Hesterly, 2009; Wernerfelt, 1984). Every company could use resource Wernerfelt, resourcesthat take opinions from market to resourcesthe marketbusiness performance (Penrose, 2009) the market2009),and some previous studies proved (And2009),proved thisreu & Ciborra, 1996; Bharadwaj, 2020; Melville et al., 2004; Montealegre, 2002; Peppard & Ward, 2004; Piccoli & Ives, 2005; Ray et al., 2005; Sambamurthy et al., 2003; Santhanam & Hartono, 2003; Tanriverdi, 2006; Teo & Ranganathan, 2004; Tippins & Sohi, 2003; Wade & Hulland, 2004; Zahra & George, 2002; Zhu, 2004).

Related to marketing, resource-based View proof of this.. the resource-based view had used The resource-based view has been to analyze business performance (Dutta et al., 1999; Lieberman & Dhawan, 2005). Specifically, they had indicated that marketing factors impact sale volume and firm performance (Ruiz-Ortega & García-Villaverde, 2008; Song et al., 2007; Song et al., 2005). For example, brand management capacity, marketing mix competence, market efficiency (Moorman & Day, 2016), product development, price, marketing planning, and sales management (Vorhies & Morgan, 2005) lead to increased sales and finance performance. If the marketing strategy is effective, they'll bring customer value and achieve, for example, brand company goals (Morgan et al., 2012). Marketing, therefore, is one of the key factors that create competitiveness. The key factors that create an advantage for an organization (Kamboj et al., 2015) are, for instance, brand (Wernerfelt, 1984; Olavarrieta & Ellinger, 1997; Spanos & Lioukas, 2001), customer relationships, and suppliers (J. Barney, 1991; Grant, 1991; Wernerfelt, 1984).

## 2.2 Green marketing mix

The fundamental theory of the marketing mix was proposed in 1964 by Neil Borden, and then in 1960 Jerome McCarthy concluded the 4Ps, including Product, Price, Promotion, and Place (Lee, 2009; Singh, 2012; Waheed Riaz, 2011). There is some research, then, like Constantinides (2002, 2006) and Grönroos (1994), who expanded some “Ps” elements and added to the 4 Ps of traditional marketing, and Booms and Bitner (1981), who expanded to the 7 Ps model of the marketing mix (added 3 Ps: People, Process, and Physical Evidence) (Lim, 2020), and their 7 Ps model had been popularized (Rafiq & Ahmed, 1995). After a long time, climate change, in charge of demand, economic development, and customer income, increases so that they have some requirements higher than, like, quality products and service. Let’s start from the green needs of customers, firm sustainable development, and climate change, against which request organizations need to build a green marketing strategy. In 1980, green marketing appeared (Peattie & Crane, 2005) to describe environmentally friendly marketing activities such as design, advertisement, price, and promotion (Gupta et al., 2013; Mahmoud, 2019). Moreover, they (Goodman & Goodman, 2000; Roth & Menor, 2003; Wolfson et al., 2010) want their products to become friendly with the environment plus customer satisfaction, so they have defined green marketing theory. Besides that, he (Dahlstrom, 2011) conceptualized that green marketing had a significant effect on the country's economy as well as the environment, developing nations, customers, organizational strategies, goods, the process of production, and of course the supply chain, all of which had benefited from green marketing.

### 2.2.1 Green product

Anything in the market can be called a product if it can attract the attention of shoppers, using consumption to satisfy a desire and demand of consumers. Green products are some eco-products with sustainable and friendly features that play an important role in green marketing programs. Encouraging the use of green goods is a necessary result for scarce natural resource needs, waste, and related environmental issues. When high customer need has a lot of green products, which will become popular on the market, firms will create green products to respond to that demand of customers.

If customer needs increase, sale volume, of course, will rise. Meanwhile, buyers recognize that important environmental issue, and they will require some green products. That means companies combine the green thinking of customers with developing green product programs (Chen, 2010; Chen et al., 2015) and try to attract and retain customers (Dangelico & Pontrandolfo, 2010). However, to achieve market sharing more than for green products, firms should focus on product innovation and diversity to respond to consumer demand and continuously make new green goods for people (Wang et al., 2019). Sale volume will depend on suitable green product development for the market goal. Furthermore, every product has costs and may be insignificant (Arseculeratne & Yazdanifard, 2014) so that they impact the sale volume of the enterprise. Besides that, those products should bring more profits for firms if they have suitable goods (Leonidou et al., 2013), so the H1 hypothesis is proposed

H1: Green product has positive impact to green sale growth.

### 2.2.2 *Green price*

Green price is an important ingredient of the green marketing mix (Agrawal & Ansari, 2022); furthermore, it includes the environmental fee relationship with production and consumption of services and products (Banzhaf, 2005). Especially, it plays a very important role in climate change programs and saving the nation's resources (Stiglitz, 2019). More than that, green prices must count economic costs and environmental fees in marketing and product progress, and usefulness and profits for customers and companies. For green products often have high costs (Zhao & Zhong, 2014), and the price is higher than other environmentally friendly goods, which becomes a barrier for buyers (Moser, 2015; Newton & Meyer, 2013; Steg et al., 2014), but they could become necessary if end users recognize green product benefits (Muller & Ruffieux, 2011) and appropriate cost tactics of companies (Delai & Takahashi, 2013; S. Liu et al., 2012; X. Liu et al., 2010; Sarkis et al., 2011). The green price is set up based on business policy after considering environmental relationship issues so consumers could pay reasonable fees to use them. When a product is created by fresh and friendly energy resources like solar, wind, geothermal, hydroelectric, and biomass energy, it will simultaneously encourage other enterprises to use renewable and friendly environmental energy. Packaging is a part of promotion, but packaging costs are increasing and adding to the product cost, so some

companies reduce packaging materials, which may decrease green product cost (Arseculeratne & Yazdanifard, 2014), and they will affect the possible green price (Leonidou et al., 2013). If the company sets an incorrect or unsuitable price, it may seriously damage sale growth. To achieve the revenue target, the company tries to install lower value than competitors (Uusitalo & Roïkman, 2007). From that, the H2 hypothesis is proposed:

H2: Green price has positive impact to green sale growth.

### 2.2.3 Green promotion

Green promotions include green documents, magazines, books, banners, signboards, websites, and clips or videos, and they involve media activation to attract potential customers for products and services that benefit the environment without causing harm (Mahmoud, 2019). In the present, green promotions of the environment have used limited promotion letters for advertisements; instead, they use limited, high-technology advertisements that increase competitive advantage (Sabir et al., 2014). Green promotion relates to increasing marketing tactics for media products and services that profit the environment (Peattie & Crane, 2005). Green advertisement experts use the activities and strategies of companies and organizations to spread goods, services, and new ideas that express their commitments to remain in a good environment (Sharma, 2021; Roh et al., 2022). In addition, eco-brands (Brécard, 2013), programs related to price (Bullock et al., 2017), and the word-of-mouth method (Gleim et al., 2013) promote green programs. When the company uses the eco-logo, they will encourage retailers' efforts to green advertisement, and then business profits will grow since product innovation and social welfare are higher. products are higher. Generally, green promotion is a method that marketers use to position their green goods in consumers' minds (Eren-Erdogmus et al., 2016). Green advertisement impacts the attitude of the other person by their promotion programs and intent to purchase products for a friendly environment (Kim et al., 2019). Green promotion will help customers have the best choice by buying or using environmentally friendly devices; at that time, highlight the benefits of the best selection of consumers that the company's goods care about the environment (Chterian & Jacob, 2012). Advertisement and price of product may help the environment achieve goals by promotion programs (Arseculeratne & Yazdanifard, 2014), and they have a positive effect

on green promotion (Leonidou et al., 2013). If companies reevaluate low customer needs and consumers are not buying companies' goods for that, profits will be affected, and if products and services are simple and not diverse, revenue may be reduced, too (Warnaby & Medway, 2004); therefore, the H3 hypothesis is suggested.

H3: Green promotion has positive impact to green sale growth.

#### *2.2.4 Green place*

Green places play an important role in green marketing, so they help consumers approach convenient green goods while still ensuring quality and environmental standards. Green places are not tools that create cost (Hossain & Khan, 2018), but they help companies increase revenue by green transport, which means reducing carbon dioxide emissions (Solaiman et al., 2015) and turning down damaged goods. Green places include providing green goods to users while ensuring standards of environment and quality (Agrawal & Ansari, 2022). Green distribution means that energy is user-friendly with the environment, reduces emission (CO<sub>2</sub>) in transportation, and protects the health of humans. Furthermore, the characteristics of green distribution are green packages of goods, which are easy to transport and made of organic and fresh raw material. Green places are concerned with sustainable environments through environmentally friendly delivery services. This means that distribution must reduce risks and be safe when they are delivering (Arseculeratne & Yazdanifard, 2014), and supply chains of firms have to enhance the performance of the environment and monitor activities. In addition, green distribution had some profits and affected company performance (Leonidou et al., 2013). From that, the H4 hypothesis of this study needs to be verified

H4: Green place has positive impact to green sale growth.

#### *2.2.5 Green people*

The "people" factor in the marketing mix model refers to individuals who are directly or indirectly involved in the service delivery process, including employees, consumers, and customers. Employee activities and attitude affect the success of service delivery. In other words, people are those humans joined to create green services and products so that it's requested many suppliers must have green thinking to imply their

activities (Larashati et al., 2012). For instance, their employees have to be trained in green knowledge such as green working, green culture... especially green awareness. Then each human resource helps their organization to use green communication, create a green culture, or share the green performance of competitors, since they think about green ideas and green products in the market that are suitable for customer needs and a friendly environment. That's why the attitude and behaviors of staff have made changes in the awareness of customers and advanced firm performance (Ottenbacher & Harrington, 2010). Green thinking requests managements that know clearly and apply it in their organization (Larashati et al., 2012) and become a green organization culture. More than that, so consumers could know about the benefits and use green products, green people must study green market research and unique green promotion methods (Arseculeratne & Yazdanifard, 2014), so the author proposes hypothesis (H5) based on the given information

H5: Green people has positive impact to green sale growth.

#### 2.2.6 *Green process*

The process refers to the activity stream or working process of a product or service, and it is a key factor in marketing, influencing how customers perceive their satisfaction with the service delivery system, which is an integral part of the overall service. Companies that determine to use a green marketing strategy need to customize the process by linking marketing tactics to business strategy (Arseculeratne & Yazdanifard, 2014). According to Lightfoot & Gebauer (2011), the process must be standardized, simultaneously minimize costs, and enhance the environmental sustainability of the system, which should be incorporated into green marketing programs (Larashati et al., 2012). Green processes include ecolabels at stores, ecowarehouse certification according to ISO 14000, and sustainable ecosystems involving raw production, delivery, storage, and office management. Product process profit focuses on making high-quality products at the lowest cost through products, by-products, and waste handling (Dahlstrom, 2011). Processes need to focus on main objectives and ensure that the green functions of the system are the best choice for the first green strategies (Larashati et al., 2012). Simultaneously, green tactics must connect to core strategies (Arseculeratne & Yazdanifard, 2014). So the H6 hypothesis is proposed.

H6: Green process has positive impact to green sale growth.

### *2.2.7 Green physical evidence*

Physical evidence of the company includes both tangible and intangible aspects, such as the organization's communicator methods and service area, as well as external assets (like signals, parking, and scenery) and internal properties (including design, layout, equipment, and decoration). According to Parasuraman et al. (1994), physical evidence factors include modern instruments, attractive facilities, neat staff, and looking professional. For instance, the building's environment, including its location, department décor, lighting, sound, fragrance, and weather, is designed to stimulate individuals, as these practical factors influence consumers' decisions to purchase and use products or services. The green space concept encourages organizations that are responsible for the working environment (Abzari et al., 2013). Physical evidence is a part of the marketing mix, and green physical evidence (Tomasin et al., 2013) plays an important role in the 7Ps, and it's not only a key factor in service but also in retail. For example, green physical evidence is included in various green marketing strategies that convey a commitment to sustainability through a green image, a green location, and a friendly working environment. Since it helps their customers contemplate Ability Green products are environmentally friendly (Arseculeratne & Yazdanifard, 2014). On the other hand, customers need information about the physical evidence of the company's green system, from activities and tactics to the green products sold on the market (Larashati et al., 2012). That's a reason why the H7 hypothesis appears:

H7: Green physical evidence has positive impact to green sale growth.

## **2.3 Green customer behavior**

Green customer behavior refers to behavior not harmful to the environment and often expressed by measures of internal and external behavior based on willingness to buy green products (Joshi & Rahman, 2015). In some previous studies, the research has focused on green customer behavior through purchasing intention (Kong et al., 2014) and green trust (Konuk et al., 2015; Chen & Chang, 2012; Chen et al., 2015; Wang et al., 2019). There are 67% of consumers who express concern for the environment, and only

4% of consumers really buy green goods (Hughner et al., 2007). Notwithstanding the technology progress and government policies, green goods had been accepted (Ottman, 2008) with possible change from customer behavior and had promoted green consumer behavior (Moisander, 2007; Chowdhury & Samuel, 2014). Additionally, customers' responsibility and trend to buy friendly environments are growing up; simultaneously, awareness of customers is increasing about sustainability and sustainable development through green promotion (Xue & Muralidharan, 2015).

Green product advertisement of performance could attract customers and often solve environmental problems that buyers care about. Green promotions include advertising messages to attract the needs and wants of customers (Hartmann et al., 2015), such as outstanding features of goods or services, and thus affect the possible purchase decisions of buyers (Dangelico & Vocalelli, 2017). Furthermore, brand image is associated with the faith, idea, and impression of customers for an organization (Kotler & Keller, 2016), and they could create a relationship between customers and trademarks for the belief and favorite of customers for a product or company reputation (Cretu & Brodie, 2007). Meanwhile, word-of-mouth channels do not require a lot of budget, so if there is a satisfied customer about a product or service, good news is spread or introduced to other users (Buttle, 1998; Brown & Reingen, 1998). Additionally, there's much research about costs and promotion activities oriented toward customer profits, which make sale volume increase, but the results are mixed. Besides that, the competition of level-related prices in retail is increasing fiercely. Although manufacturer's profits grow by promotion programs, profits from retail are low (Ailawadi et al., 1999). Furthermore, green promotion has a significant impact on the green behavior of consumers, including incredulous attitudes (Albayrak et al., 2013; Kordshouli et al., 2015; Raska & Shaw, 2012). Totally, the author needs to check 2 hypotheses (H8 and H9) after analysis and based on the above information, specifically as follows:

H8: Green customer behavior has a positive impact to green sale growth.

H9: Green customer behavior has a significant moderating impact to the relationship between green promotion and green sale growth.

## 2.4 Green sale growth and green business performance

Sale is a goods exchange process between individuals or groups to satisfy their needs and wants, to express the money. Some documents do not have any green sale general concepts. They described that it combines green store and green transportation, or green purchase, green design, green product advertisement, green package, and green service or green development support: green policy, green development technology, and green human development (Lai et al., 2010). Retailers, nowadays, respect green activities or protect the environment to enhance their value chain performance, and organizations applied green activities, apply which have better business performance than others. So green sale is an important factor in the business performance of retail companies, and profits of green activities show that cost saving (energy and material packaging), advanced perception and company brand (green product sale), and reduced impact (negative) to the environment (growth down, reuse, waste recycling, and package material) are beside that improved green sale practices. Sale growth reflects business performance as it expands the market and maintains customer loyalty (Suci & Hazmi, 2024). Stable sale growth and increase, which may be an important factor to evaluate organization performance organizationally year by year. The growth of the sale has been related to the profit rate (business performance); if the profit rate is high, the sale growth will increase greatly (Tomasin et al., 2013), so the author proposes a hypothesis (H10) based on that information:

H10: Green sale growth has positive impact to green business performance.

## 3 RESEARCH METHODOLOGY

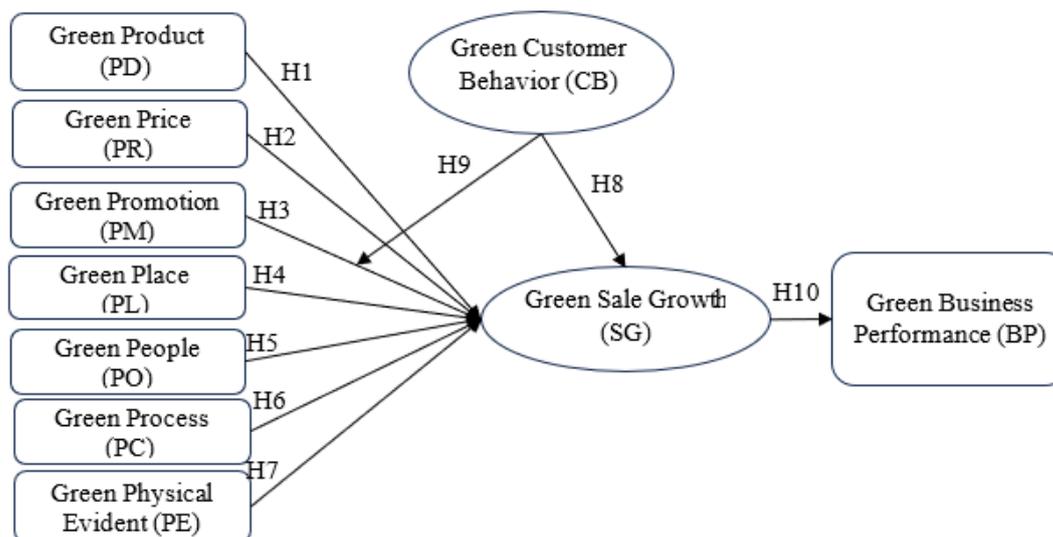
### 3.1 Sample and measures

This study aims to investigate the relationship between green product, green price, green promotion, green place, green people, green process, green physical evidence, and green sale growth and between green sale growth and green business performance, simultaneously checking evidence, simultaneously checking the moderation variable between green promotion and green sale growth. Based on the research gap of Eneizan et al.'s (2016) paper, the author built research questions

and questions and then a literature literature review to propose a research research hypothesis and model study. Besides that,. Besides that, this study added the moderator the moderator effect of green customer green customer behavior on the relationship between green promotion and green. In this study, the qualitative the qualitative and quantitative research methods were methods were used by the author, who, who investigated 260 managers in home application stores in the retail sector retail sector in Ho Chi Minh City City about green business performance, but only 252 samples were accepted. The questionnaire was sent to store managers by the convenient sampling method using the Google Docs tool. This survey method is the best choice for this study for several reasons: it is convenient for surveyors, saves printing costs, and reduces travel time. The survey process was done as follows.

**Figure 1**

*Suggested research model.*



Firstly, the author checks measurements by face-to-face interview with 10 managers from home application stores (over 2 years of experience) to evaluate and justify words, sentences, and the meaning of research measures that are suitable for retail industry characteristics. After that, the questionnaires were approved; they should install then survey. Of course, the questionnaire must verify their scale. Finally, the author will test the hypothesis and model the research. Data has been collected to validate the measurement and evaluation of the 7Ps of the Green Marketing Mix (Green Product –

PD, Green Price – PR, Green Promotion – PM, Green Place – PL, Green People – PO, Green Process – PC, and Green Physical Evidence – PE), Green Customer Behavior (CB), Green Sale Growth (SG), and Green Business Performance (BP). They were collected to consider the effect and verify the measures and the research model. Specifically, PD is measured by 4 items, PR has 4 items, PM has 3 items, PL (of course) has 4 items, PO has 4 items, PC uses 3 items, PE has 5 items, CB has 3 items, SG has 4 items, and BP has 4 items. Based on the Likert scale with 5 points in measurement (from 1- lowest agreement to 5- strongest agreement) to evaluate sale measurements, the author then suggests a theory research model like Figure 1.

### 3.2 Data analysis

This paper uses SmartPLS 3 software to measure and evaluate research data, then reports are presented in some tables such as: Firstly, collected data were imported into Excel software, then they were linked with SmartPLS 3 for analysis in the research process, like Indicator Reliability – Outer Loadings (factor loading), Internal Consistency Reliability (Cronbach Alpha – construct reliability & EVA – convergent validity), Discriminant Validity, HTMT (Heterotrait-Monotrait Ratio), and the result table of the PLS model.

## 4 RESULTS

### 4.1 Indicator reliability – outer loadings

**Table 1**

*Factor loading, reliability and validity*

Variable	Indicators	Factor loading	Cronbach's Alpha	Composite Reliability (CR)	Average Variance Extracted (AVE)
Green Product (PD)	PD2	0.837	0.810	0.888	0.725
	PD3	0.815			
	PD4	0.901			
Green Price (PR)	PR1	0.890	0.881	0.918	0.738
	PR2	0.823			
	PR3	0.848			
	PR4	0.875			
Green Promotion (PM)	PM1	0.935	0.900	0.938	0.834
	PM2	0.895			
	PM3	0.909			

Green Place (PL)	PL1	0.920	0.883	0.920	0.741
	PL2	0.866			
	PL3	0.797			
	PL4	0.857			
Green People (PO)	PO1	0.895	0.877	0.916	0.731
	PO2	0.887			
	PO3	0.782			
	PO4	0.851			
Green Process (PC)	PC1	0.918	0.875	0.922	0.798
	PC2	0.885			
	PC3	0.876			
Green Physical Evidence (PE)	PE1	0.888	0.884	0.920	0.743
	PE2	0.885			
	PE3	0.840			
	PE4	0.833			
Green Customer Behavior (CB)	CB1	0.913	0.858	0.914	0.779
	CB2	0.852			
	CB3	0.882			
Green Sale Growth (SG)	SG1	0.926	0.952	0.965	0.875
	SG2	0.939			
	SG3	0.937			
	SG4	0.939			
Green Business Performance (BP)	BP1	0.911	0.926	0.947	0.818
	BP2	0.901			
	BP3	0.889			
	BP4	0.916			
Moderating Effect (PM*BC)	PM*BC	1.179	1.000	1.000	1.000

(Source: Computation by the author)

The author used a separate analysis method for factor loadings to count Cronbach's Alpha, Composite Reliability, and Average Variance Extracted for the validity and reliability measurement. From Table 1, it's shown that every item has a factor loading (from 0.782 to 0.939) over 0.70. Likewise, Cronbach's Alpha (CA) with values ranging about 0.810 and 0.952 (>0.7) means that they had strong reliability to measure the constructs, and Composite Reliability (CR) is the next indicator, which all of them have accepted; for example, the CR value ranges from 0.888 to 0.965, surpassing the acceptable threshold of 0.70 (Nunally & Bernstein, 1994). Furthermore, the Average Variance Extracted (AVE) is higher than 0.50 (significant), following Hair *et al.*, 2017. These results confirm the high quality and reliability of the analysis model. From there, the author continues to measure the next steps of the research process of mine.

## 4.2 Discriminant validity

**Table 2**

*Fornell-Larcker Criteria*

	BP	CB	(CB*PM)	PC	PD	PE	PL	PM	PO	PR	SG
BP	0.904										
CB	0.521	0.883									
Moderating Effect (CB*PM)	-0.443	-0.205	1.000								
PC	0.526	0.258	-0.306	0.893							
PD	0.487	0.341	-0.289	0.318	0.852						
PE	0.645	0.416	-0.326	0.316	0.343	0.862					
PL	0.567	0.252	-0.454	0.396	0.307	0.399	0.861				
PM	0.440	0.280	-0.375	0.187	0.295	0.355	0.351	0.913			
PO	0.556	0.336	-0.346	0.394	0.366	0.557	0.433	0.365	0.855		
PR	0.539	0.387	-0.416	0.365	0.346	0.401	0.360	0.221	0.413	0.859	
SG	0.687	0.447	-0.226	0.500	0.483	0.543	0.507	0.194	0.565	0.469	0.935

(Source: Computation by the author)

The Fornell-Larcker criterion is used to evaluate discriminant validity. They're very important to explain factor relationships and to confirm distinctiveness between structures. The diagonal components are AVEs squared and always more than off-diagonal elements in each line, column, or row. Now, let's look into table 2. Every value of each item under the diagonal is smaller than the numbers on the diagonal (ex: the PC value is 0.893, which is higher than others, like 0.258, 0.526 and - 0.289 on the same row). That means if the correlation of PC with other constructs exists, then it is significant. Furthermore, if PC value correlations with other constructs (the same row or column) are over 0.895, then they meet the requirements.

## 4.3 HTMT (Heterotrait-Monotrait Ratio)

**Table 3**

*HTMT criteria*

	BP	CB	(CB*PM)	PC	PD	PE	PL	PM	PO	PR	SG
BP											
CB	0.584										
Moderating Effect (CB*PM)	0.461	0.221									

PC	0.579	0.298	0.334							
PD	0.561	0.411	0.322	0.379						
PE	0.713	0.476	0.350	0.356	0.404					
PL	0.626	0.291	0.484	0.447	0.361	0.451				
PM	0.481	0.320	0.396	0.209	0.351	0.400	0.394			
PO	0.617	0.385	0.371	0.447	0.431	0.634	0.492	0.408		
PR	0.597	0.446	0.444	0.412	0.409	0.455	0.409	0.251	0.472	
SG	0.731	0.494	0.231	0.537	0.546	0.589	0.553	0.209	0.615	0.511

(Source: Computation by the author)

According to Henseler & Sarstedt (2013), the Heterotrait-Monotrait criterion shows discriminant validity; that means they compare the correlation mean value between different and the same constructs. Indeed, most of the HTMT values in table 3 are below the allowable threshold, and the discriminant value is often less than or equal to 0.85 (strict) or 0.90 (acceptable) (Sarstedt et al., 2020), leaving analysis of other discriminant validity to be found. Besides that, we found that the relationship of SG and BP values is close to the threshold, so the HTMT value is obtained at 0.731, which means they have a potentially strong relationship.

**Table 4**

*Direction and Moderation effect*

Relationship	Original Sample (O)	Standard Deviation (STDEV)	T Statistics ( O/STDEV )	P Values	Result
<b>Direction</b>					
PD → SG	0.201	0.049	4.136	0.000	Accepted
PR → SG	0.121	0.056	2.150	0.032	Accepted
PM → SG	- 0.136	0.060	2.268	0.024	<b>Rejected</b>
PL → SG	0.245	0.056	4.351	0.000	Accepted
PO → SG	0.212	0.060	3.523	0.000	Accepted
PC → SG	0.190	0.050	3.790	0.000	Accepted
PE → SG	0.193	0.054	3.595	0.000	Accepted
CB → SG	0.142	0.062	2.280	0.023	Accepted
SG → BP	0.687	0.051	13.558	0.000	Accepted
<b>Moderation</b>					
(PM*CB) → SG	0.141	0.062	2.260	0.024	Accepted

(Source: Computation by the author)

The results in Table 4 show that all factors PD (Green Product) – H1, PR (Green Price) – H2, PL (Green Place) – H4, PO (Green People) – H5, PC (Green Process) – H6, PE (Green Physical Evidence) – H7, CB (Green Customer Behavior) – H8 have a positive impact on SG (green sales growth), where the moderating effect (CB\*PM) → SG (H9) is

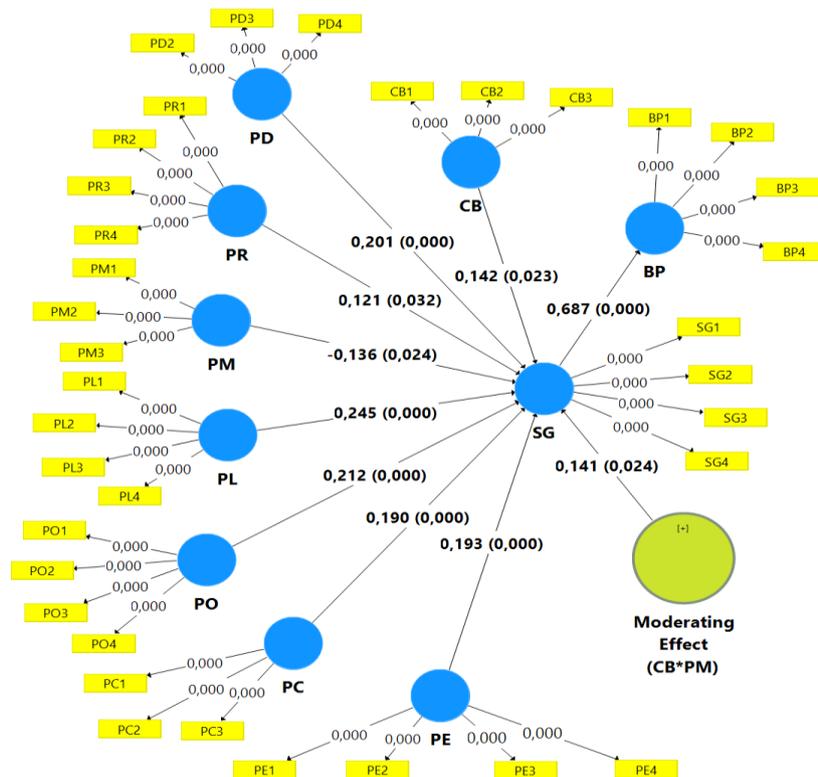
also accepted, and  $SG \rightarrow BP$  (H10) because the P.value is less than 0.05. However, PM has a negative impact on SG, contrary to hypothesis H3 (which was proposed with the expectation of a positive effect), so hypothesis H3 is rejected. Therefore, only 9 hypotheses (H1, H2, H4, H5, H6, H7, H8, H9, H10) are accepted.

The results in the table 5 show that all factors have an impact on SG, with the strongest impact being PL (Green place) with  $f^2 = 0.096$  and the weakest impact being PR (Green price) with  $f^2 = 0.024$ . Next, SG (green sale growth) has a strong impact on BP (green business performance) with  $f^2 = 0.895$  (Hair et al., 2017). Furthermore, the results show that the corresponding component model of the dependent variable BP has a  $Q^2 = 0.380$  (in the range of 0.25–0.5); therefore, the model has average predictive accuracy. Meanwhile, the corresponding component model of the dependent variable SG (green sale growth) has a  $Q^2 = 0.508$  (greater than 0.5); therefore, the model has high predictive accuracy (Hair et al., 2017)

#### 4.4 Result of research model by SmartPLS software

**Figure 2**

*Result of testing hypothesis by SmartPLS*



(Source: Computation by the author)

**Table 5***Evaluating the value of f-square ( $f^2$ ) and Q-square ( $Q^2$ )*

Factors	$f^2$		$Q^2$
	BP	SG	
BP			0.380
CB		0.036	
Moderating Effect (CB*PM)		0.046	
PC		0.066	
PD		0.075	
PE		0.054	
PL		0.096	
PM		0.034	
PO		0.064	
PR		0.024	
SG	0.895		0.508

(Source: Computation by the author)

## 5 DISCUSSION

The results show that, in home application stores in retail, there are effects from green seven P to green sale growth and green firm performance. Every item, although, has a different small or strong impact on revenue, but a moderator variable is added between green promotion and green sale growth, which are opposite, so it's an impossible effect. For example, the green awareness and attitude of customers is growing, so when customers are encouraged to have green consumption through green advertisement and recommended reused products and collected disassembled products to take them to suppliers (Lai et al., 2010), a part of the revenue has gone.

There are three issues that are solved in this paper. Firstly, this paper result has filled the research gap of Eneizan et al. (2016) and contributed the significant green 7Ps model—the Green Marketing Mix, which is a complete model in the retail industry (home application stores)—and showed that it positively impacted the end indicator, Green Business Performance.

Secondly, the green sale growth factor has affected the strong direction of green business performance; meanwhile, the green sale growth factor depends on the green marketing mix element. Since it helps managers who know that green marketing tactics play an important role in their organization's innovation and development. Furthermore,

the image, brand, and fame of the company will improve. Simultaneously, managers will base the 7Ps elements in this marketing mix on enhancing, improving, and adjusting the business plan to achieve high business performance in the future.

Lastly, all of the factors (7Ps) have a significant impact on green sale growth. Green marketing mix strategy, thus, has been implicated in business firms that increased sale volume and helped sustainably develop companies. Therefore, they are help-salers who recognize green marketing mix profits and are willing to contribute new green ideas for green improvement to green service in home application stores in their retail (except for the recycling industry).

Furthermore, from green customer behavior, an impossible effect to green sale growth proves that awareness and attitude of residents are increasing about 3R (Reduce, Reuse, and Recycling). For instance: (Reduce) People will select high-durable goods, high quality, and long deadlines. (Reuse) The residents will create new use from existing goods to save spending. (Recycling) Humans are encouraged to collect recyclable goods for manufacturers in order to reduce natural resource exhaustion. From that, they help managers implicate technology and science in modern production, improve products, and enhance the recycling process and waste collection. Simultaneously, the company should advise employees of them who avoid wasting fresh water, save electric and toilet paper, restrict the use of electricity nylon packaging, and protect their green working environment to achieve high organizational performance. Besides that, the government should encourage green enterprise by green policies like eco-green, green industry parks, green supply chains, waste recovery, and green high technology and science investment.

## 6 CONCLUSIONS AND LIMITATIONS

This paper has contributed to green marketing mix research in the service and retail sectors, specifically home application stores, where there was little previous research or papers focused on the 4Ps. There are not, however, papers that show the effect of a green marketing mix on green sales growth and business performance yet. Through this research, the author shows that all indicators affect positive green sale growth and green business performance. Then this research could help managers and national policy to create a green culture for organizations and society. However, in Ho Chi Minh City, in reality, there has been limited use of the green marketing mix because of the high cost of

making green products, expensive green raw materials, high prices for customers, and limited green consumer thinking. Besides that, green sale growth has adverse effects on green business performance, which means managers should focus on product innovation or create new goods to respond to increasing customer needs, especially products in the recycling industry.

This journal has some restrictions, like the research sample not being representative enough for the industry yet, so the sample size is still small. At the same time, the research is only studying home stores in Ho Chi Minh City, so their study scope is narrow. Furthermore, the study is based on an analysis of some theories that the author approaches; thus, they may not be deeply academic theories yet. In future research, the author will verify this model in other sectors, like wholesale, hospitals, restaurants, food, and beverages. Furthermore, there is a lack of research about the green marketing mix in the deep recycling industry, so that is future research. Additionally, this research may be evaluated and confirmed in-home application stores in retail with a sample size bigger than 500 observations, and the study's scope is wider than, for instance, the country of Southern Viet Nam.

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**Authors' Contribution**

All authors contributed equally to the development of this article.

**Data availability**

All datasets relevant to this study's findings are fully available within the article.

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