ISSN 1816-6075 (Print), 1818-0523 (Online)
Journal of System and Management Sciences
Vol. 12 (2022) No. 2, pp. 153-173
DOI: 10.33168/JSMS.2022.0207

Organizational Buying Decision Research: A Case of Paper Packaging

Hiep Minh Phuoc[1], Bao Do-Hoai Tran[2], Thang Quyet Nguyen[2]

[1]Binh Duong University, Thu Dau Mot City 82000, Vietnam

[2]Hutech University, Ho Chi Minh City 700000, Vietnam

nq.thang@hutech.edu.vn

Abstract. The study aims to confirm influencing factors on organizational buying decision. The survey was conducted among 700 enterprises of various fields such as wood manufacturing and processing, pottery and porcelain, handicrafts and fine arts, with the result of 549 valid responses. The authors tested Cronbach's alpha reliability coefficient, Exploratory Factor Analysis (EFA), Confirmatory Factor Analysis (CFA), and Structural Equation Modeling (SEM) - to measure the relationship between its constructs. The result revealed that there are 5 factors directly influencing positively on the reference group and organizational buying decision: Product, Price, Distribution, Technology, and Environmental Protection Policy. Moreover, this research discovered a positive relationship between the reference group and organizational buying decision and reference group plays a key role as an intermediary or quadratic variable that influences on organizational buying decision. Therefore, it increased the impact of the independent variables on the dependent variable "the organizational buying decision".

Keywords: B2B, B2B buying, organizational buying decision, paper packaging, environmental protection policy, Vietnam

1. Introduction

Based on relevant information for products enterprise needs, enterprise will make its most appropriate buying decisions depending on the situation or context of the organization (Dickson, 1966). Besides, enterprise also sets criteria for suppliers such as product, price, distribution, promotion etc. (Dickson, 1966; Weber et al., 1991; Donaldson, 1994) or references other organizations (Loebbecke et al. 2010; Castro and Morgado, 2016). It is said that organizational buying decision making is a complex process and is influenced by a certain group of people (Kotler and Armstrong, 2012; Younus et al. 2015). In recent years, there has been a strong resurgence of reference group in organizational buying decision as a new phenomenon. They are the ones who give a lot of necessary information in the reviews and recommendations before the buying center decides to buy a certain product (Loebbecke et al. 2010; Castro and Morgado, 2016; Steward, 2019). Previous studies have ignored the quantitative research phase for the factors that influence the reference group or its benefits and importance to the buying center. Through the reference group, the purchasing center will find solutions that suit its needs, thereby not only save costs for businesses but also help businesses to minimize the risks of buying. In addition, the explosion of the 4.0 industrial revolution, especially information technology field, it supports customers easily accessing a lot of bigger and deeper information from various sources, that is why it is easy for them to find the best supplier (Lilien, 2015). Thus, we can affirm that there are many studies related to the supplier selection, of course, there will be a lot of factors affecting the organizational buying decision.

Before reviewing and evaluating the organizational buying decision of the paper packaging industry, we know that paper packaging is a marketing tool (Zekiri and Hasani, 2015; Katiyar et al., 2014). Firstly, it helps customers to recognize the difference of their favorite brands, attract customers' attention and lead to their buying decision. Secondly, paper packaging has become an integral part of the product because it protects goods safely, maximizes labor productivity in loading and unloading goods or makes full use of the capacity of transportation vehicles (based on its diverse sizes). That is why the paper packaging industry has become popular for most of products around the world. In recent years, our earth is increasingly polluted by waste, leading to heavy and negative impacts on our living environment. The concept "green products" (Porter and Linde, 1995; Baresel – Bofinger, 2007) was born, and most of countries in the world have been applying "green innovation" in trade. It is mentioned with three main dimensions as energy optimization, material reduction and environmental pollution prevention (Dangelico and Pujari, 2010). Paper packaging is one of products responding to the criteria of a green product. It is lighter than previous product. It can protect the environment because it has a high recycling rate, helps to reduce the huge amount of waste in the living environment, solves this serious problem around the world. In the other hands, paper packaging has

met the urgent needs in the new era, so its current organizational buying trend in product packing is an obvious problem. Hence, understanding the key role of enterprises' environmental protection policy is an attractive topic that attracts great attention from academic.

Binh Duong is a province in the Southeast region of Vietnam with an average population of 2,685,513 people, located in the southern key economic quadrangle (Binh Duong - Dong Nai - Ba Ria Vung Tau - Ho Chi Minh City), with a GDP of 408,869 billion VND per capita, GRDP of 152.25 million VND/year. Binh Duong province is one of the provinces with rapid economic growth rate and dynamic industrial development of Vietnam. Currently Binh Duong has 29 industrial parks and zones with the total area of over 11,721 hectares, in which more than 650 local projects and 4,012 foreign projects under operation with the total capital investment of over US$ 40,44 billion. Export turnover is estimated at 32,512 million USD, up 13.5% over the same period, import turnover is estimated at 25,508 million USD, up 14.7% over the same period; trade surplus reaches 7 billion USD in 2021. Up to now, Binh Duong's exported products have been present in 230 countries and territories around the world. (Binh Duong Statistical Office, 2021)

Therefore, the study aims to find out the major factors affecting the organizational buying decision, in case of buying paper packaging in Vietnam market, specifically in Binh Duong province, in which, the reference group will be an intermediary variable to convey information to the buying center. The research helps us to recognize the importance of the environmental protection policy to the organizational buying decision behavior on choosing Vietnamese paper packaging manufacturing enterprises. This factor has not yet been considered in studies of buying decision making due to lack of information, awareness, responsibility for environmental protection as well as developing country trend. In addition to theoretical studies, the authors believe that it is not enough to recognize the reference group's role in influencing the organizational buying decision, but first we need to consider whether the independent factors, which have a direct impact on the organizational buying decision, impact on the reference group or not. Second, if there is an impact as mentioned above, the level of direct impact between the independent factors on the buying decision will be stronger or weaker than its impact through the reference group on the buying decision. Through previous studies, the authors have not seen any studies on this issue and the relationship between those factors affecting reference group and organizational buying decision has not been confirmed by quantitative research method. Therefore, the authors believe that this is a "gap" that needs to be studied to complete with previous studies in Vietnamese context and to apply a new scale for measuring environmental protection policy and group reference.

2. Literature Review

2.1. The organization's decision making behavior

Organizational buying decision making behavior is a complex process and involves a lot of people, goals, and different decision criteria that can bring into conflict (Webster and Wind, 1972; Weber et al., 1991). The buying decision is based on an evaluation of a potential supplier (Sashi and Kudpi, 2001). Organizational ordering and buying behavior play an important role in industrial marketing theory (Morgado and Castro, 2015); it is an integral part of the market research process that modeling, data collection, analysis and interpretation take place with the aim of improving the decision making problem in B2B marketing (Webster and Wind, 1972). Buying behavior is the decision making process and human behavior related to the purchase and use a product (Mohammad and Mohammad, 2011). The buying decision is the selection of qualified suppliers, and regarded as one of the most important functions performed by the purchasing department (Weber et al., 1991). Buying decision making is a process that the buying decision maker can control all the steps towards information gathering, information analyzing and making the appropriate choice by themselves without the authorization (Lau et al., 1999). Organizational buying decision can be routine or extremely complex, involving a few or lots of decision makers as well as the factors influencing the purchase (Kotler and Armstrong, 2012); organizational buying essentially entails the accumulation of undefined behaviors and activities in order to find a solution that meets organization’s needs (Aarikka-Steroos and Makkonen, 2014).

2.2. Factors affecting organizational buying decisions

According to Kotler and Armstrong (2012), at the basic level, organizational buying decisions are influenced by different factors such as marketing, price, technology... that impact and change the perceptions, feelings or intentions of the internal organization; thereby stimulating and influencing the organizational decision making behavior. Therefore, a theoretical research model that shows the influence of factors on organizational buying decision making behavior is built on the basis of decision making of behavioral science. Thus, similar to many other studies, the theoretical basis for this study is the general model of factors affecting supplier selection by Dickson (1966), marketing mix factors by Kotler and Armstrong (2012), research model involving the reference group of Morgado (2018), Terho and Jalkala (2017), packaging research by Das and Sharma (2019). Based on the theoretical research gaps, along with the limitations of previous studies as well as the importance for the study of factors affecting organizational decisions, this study relies on the following factors: the marketing mix, the explosion of the scientific and technological revolution, the environmental protection policy has received special attention from the whole society in recent and the emergence of reference groups on buying decisions as a research premise when discussing with experts.

2.2.1. Products

Product is something that can be offered to a market for attention, acquisition, use, or consumption and that has the potential to satisfy a need or requirement. Product is a combination of two attributes, value in use and value, which can be tangible or intangible (Kotler and Armstrong, 2012). Product is one of the important attributes in the buying decision or supplier selection process (Keshvari et al. 2012; Tektas and Aytekin, 2011; Cheng and Tang, 2009). The buyer's needs will determine the output characteristics of the product because they can choose to buy product differentiation between competitors or the product has similar characteristics but cheaper than other suppliers (Sashi and Kudpi, 2001). Most professional customers are looking for specific products, they do not need to search in a wide range but need a reliable source in a specific area (Pawlowski and Pastuszak, 2016). Customers often require products or services to be checked for quality before being delivered and the vendor will survive if their products or services match the needs and the customer' expectations (Cheraghi et al. 2004).

The reference group, on the other hands, provides a valuable source of information for the purchaser in identifying new business needs. This needs usually happen during meetings which suppliers hold to introduce new products, new technologies, or business solutions that have not yet been adopted by customers. Thanks to the reference group's support allows potential customers to understand the fundamental benefits of such technologies and can stimulate new buying demands (Morgado, 2018). During the buying process, the customer aims to find an optimal solution or product for their problems, so the buying center can use the reference group as the co-finding and co-solving in business problems at this stage (Aarikka-Stenroos and Jalkala, 2012; Yan et al., 2020; Ahmad et al., 2020). The buying center can learn about a particular product or solution and ask the technical department to gather information when they are necessary (Castro and Morgado, 2016; Morgado and Castro, 2016), providing a solution means providing proof of product functionality to convince an organization's buying decision (Morgado and Castro, 2016; Loebbecke et al. 2010). Therefore, the hypotheses are expressed as follows:

Hypothesis H1a: Product has a positive influence (+) on the reference group of enterprise.

Hypothesis H1b: Product has a positive influence (+) on the organizational buying decision.

2.2.2. Price

Price is the amount of money that the buyer has to pay for a product or service. More broadly, price is the total value that a customer has to pay to get the product or service's benefits (Kotler and Armstrong, 2012). Price is a symbol of the product and

service's value in the market. Therefore, price cannot be missing in any buying and selling activities (Tran Minh Dao, 2013). Sellers can easily offer different prices to buyers or can even change the price of rebuy situations by the same customer, but this changes can affect customers buying decision (Zhang et al. 2014). Price optimization is a dimension to be considered (Cheng and Tang, 2009); when a supplier offers a suitable price, it can increase trust and relationship quality between supplier and buyer as well as reduces or offers a low price to help the supplier gain competitive advantage in the market, this is one of the important factor to convince buyer accept the product (Zhang et al. 2014; Keshvari et al. 2012).

In addition, studies also affirmed that there is a positive relationship between price and reference group for the organizational buying decision (Jaakkola and Aarikka-Stenroos, 2018; Castro and Morgado, 2016). In order to create more confidence in the buying decision process, it is necessary to perform a reference to sure that what is the product price and what is themarket price for the buying center, the buying center's decision can be reversed by reference group (Castro and Morgado, 2016). Reference group will support the buying center save a lot of costs through the supplier's information evaluation and consideration process, especially the supplier's price (Morgado, 2020). Thereby, we have the following hypotheses:

Hypothesis H2a: Price has a positive effect (+) for the reference group of enterprises.

Hypothesis H2b: Price has a positive effect (+) on the organizational buying decision.

2.2.3. Place

Firstly, distribution is the activities involved in organizing and transporting goods and services from producer to consumer in order to maximize efficiency and minimize costs (Kotler and Armstrong, 2012; Tran Minh Dao, 2013). Donaldson (1994) distribution includes elements such as lead time, reliability in delivery, importance of information value and quantity accuracy delivery. Geographical distance is one of the element affecting the satisfaction of the organizational buying decision because of the delivery time and distribution has also become the minimum requirement for a supplier as they adhere to the market (Slim et al. 2010)

Secondly, based on previous studies, there is a relationship between the distribution factor and the reference group (Castro and Morgado, 2016; Jalkala and Salminen, 2010). The database through consultation of customer will help the buying organization to find the corresponding solutions, the distribution system reference process as a method to evaluate supplier capacity, the buying center used the reference information on previous deliveries as a tool when assessing the equipment capacity of potential organization required for subsequent new projects (Jalkala and

Salminen, 2010). According to Castro and Morgado, (2016) in the buying process, there are three objective factors that the buying organization needs to refer to, including the distribution factor which the expected delivery time is preferred by the buying center consider. Finally, we have the following hypotheses:

Hypothesis H3a: Place has a positive impact (+) on the reference group of enterprise.

Hypothesis H3b: Place has a positive impact (+) on the organizational buying decision.

2.2.4. Technology

Kotler and Armstrong (2012) argued that "Resources create new technologies, new technologies create new products, markets and opportunities". Technological advancement means that buyers and suppliers arrive at their destination with a collection of outstanding programs that do not blend in other supplier (Steward et al. 2019). The application and development of new technology will enhance the importance level of suppliers in the organization's supplier selection decisions (Cheraghi et al. 2004). Technology can improve human-to-human interaction, digitalization is an important driving force for the B2B market, so the author proposes to exploit the technological factor in the market (Cortez and Johnston, 2017).

On the other hand, the reference group will help the company evaluate the supplier's competence for specific issues such as the science and technology level, reduce the buying center's risk through a solution proposed by the supplier (Morgado and Castro, 2015), orient the enterprise implement and deploy new technologies related to different economic benefits (Castro and Morgado, 2016). By means of them, the enterprise can refer to the supplier's advanced technology level, assess the supplier's reliability and capacity, this information will create background affects the organizational buying decision (Morgado, 2020). Thus, the following hypotheses are expressed:

Hypothesis H4a: Technology has a positive (+) impact on the reference group of enterprises.

Hypothesis H4b: Technology has a positive (+) impact on the organizational buying decision.

2.2.5. Environmental protection policy

According to the authors, "Environmental protection policies are legal provisions aimed to change the organization and consumer behavior in protecting and improving the living environment now and in the future". Human's ethical, life standard and environmental issues in customer behavior are increasingly concerned, a lot of studies on green consumption behavior, green product use, environmental improvement have

also been conducted (Bagheri et al. 2012; Dangelico and Pujari, 2010). The use of environmentally friendly products is one of the buying organization's supplier selection factors (Tektas and Aytekin, 2011). Nowadays, we recognize that the current rapid development of the economy, it has seriously affected our social life and the environment such as storms, floods, climate change, pollution. Because of those reasons, the enterprise as well as customers need to pay attention to environmental protection. Thus, manufacturers try to avoid even the smallest pollution by minimizing the heavy metals or harmful chemicals that affect the ecosystem in their business process (Cheng et al. 2009). Up to now, the environmental protection policy has an important influence on the customers' buying decision and the reference group also considers and proposes appropriate policies for the buying center. Therefore, we have the following hypotheses:

Hypothesis H5a: Environmental protection policy has a positive (+) influence on the reference group of enterprises.

Hypothesis H5b: Environmental protection policy has a positive (+) influence on the organizational buying decision.

2.2.6. Reference group

Kotler and Armstrong (2012), reference group plays an important role in the organizational buying decision, they influence buying decisions by defining specifications, and providing information to evaluate and select product options and technical staffs are particularly important influencers. Steward et al. (2019) indicated that 53% of companies buy goods based on the recommendations of other similar industry companies, 76% of suppliers are prioritized based on other company introduction, 84% of the organizational buying begin with the reference group in the B2B market. According to Loebbecke et al. (2010) argued that the reference group has impact on the organizational buying decision; although it is limited to the direct influence of the customer reference in the purchase decision, it is absolute and essential benefit to the supplier in this aspect. In the enterprise, the reference group plays a role co-review and co-solve some problem for the buying center (Aarikka-Stenroos and Jalkala, 2012). Reference group has the most obvious impact on reducing the buying organization's risks which come from the positive opinions of externally referenced information to the buying center (Jalkala and Aarikka-Stenroos, 2018; Morgado, 2020). Thus, we have the following hypothesis:

Hypothesis H6: Reference group has a positive (+) effect on the organizational buying decisions.

2.3. Research model

Based on the theory and an overview of relevant studies on the practice of the organizational buying decisions and discussions with experts on the factors affecting organizational buying decisions, the research model is proposed in Fig. 1.

3. Research Methods

The purpose of the study is to provide an understanding of how factors influence organizational buying decision. The survey method is used to collect data and build the factors that affect the organizational buying decision. Qualitative research is carried out through the process of reviewing documents, discussion with survey respondents and collecting expert consultation to build draft scale, draft scale results have 34 observed variables. The data of quantitative research were from a questionnaire survey of wood manufacturing and processing, ceramic – porcelain, handicrafts organizations and located in Binh Duong Province in Vietnam. In this research, the respondents were Board of Directors or Procurement Manager of those companies. The reason for choosing them as subjects to collect data is because they are firm's representative or involved in the buying decision.

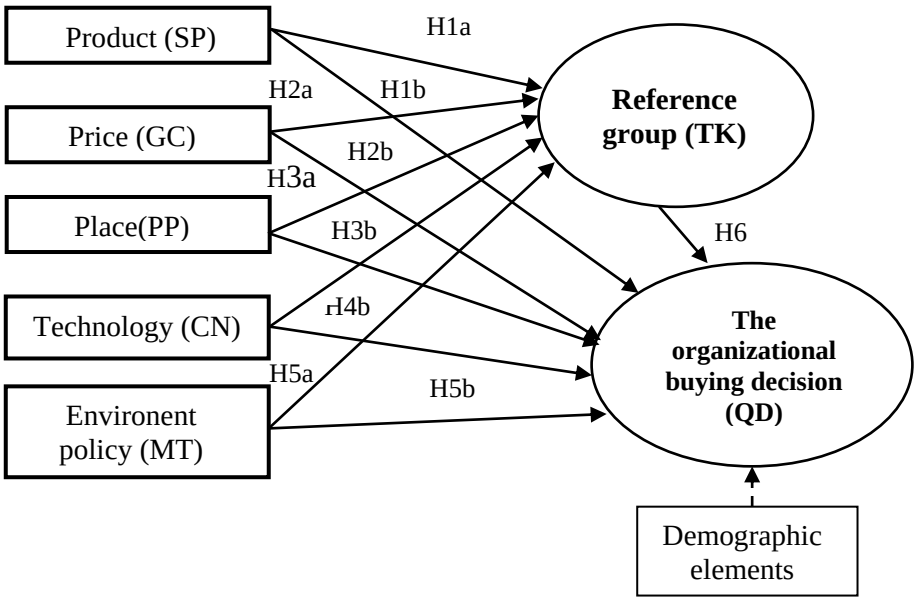

Fig. 1: Proposed research model

(Source: Author's compilation)

In the pilot test, the authors surveyed 90 observations, collected 81 valid observations to analyze Cronbach's Alpha, EFA, the remaining result of 33 observed variables were included in the official study. The official research was conducted to survey with 700 observations, the number of respondents collected was 595, of which 549 were valid. There were 385 questionnaires for wood manufacturing and

processing, 88 votes from ceramic - porcelain and 76 responses from handicrafts and fine arts. The quota sampling method was used to help the authors collect data from the population in this study. After analyzing Cronbach's Alpha and EFA, the remaining result of 33 observed variables were included in the official study through the analysis of CFA and SEM. This study is to use software SPSS 20.0 and AMOS 20 to assess quantitative data collected from the survey.

4. Results

4.1. Measurement modeling results

Before analyzing data with AMOS, we need to assess the measurement modeling included factor loading, reliability, convergent validity and discriminant validity (Hair et al, 2010). In this research, the factor loading of observed variables were all larger than 0.6; KMO > 0.5; eigenvalue > 1 shown in table 1 below so that EFA fits in the modeling.

Table 1: EFA analysis results

Observed variables	Factors						
	1	2	3	4	5	6	7
GC4	0,854						
GC1	0,821						
GC3	0,813						
GC2	0,794						
GC5	0,777						
SP4		0,845					
SP1		0,827					
SP5		0,809					
SP3		0,803					
SP2		0,802					
MT5			0,922				
MT4			0,834				
MT2			0,808				
MT3			0,769				
MT1			0,754				
TK3				0,830			
TK5				0,827			
TK4				0,801			
TK1				0,794			
TK2				0,768			
QD2					0,838		
QD1					0,773		

QD3					0,772		
QD4					0,762		
QD5					0,729		
CN4						0,789	
CN3						0,777	
CN1						0,776	
CN2						0,764	
PP2							0,900
PP3							0,813
PP1							0,640
PP4							0,628
KMO = 0,928							
Eigenvalue = 1,277							
Total variance explained = 72,50%							

(Source: Author's analysis)

Furthermore, when analyzing CFA, overall composite reliability analysis results show that (Pc) of all scales is greater than 0.5; The composite extracted variance (Pvc) of all scales is greater than 0.5 and all scales have Cronbach's alpha coefficient greater than 0.7 confirming that all the scales were good reliability, unidirectional, ensure convergence value and discriminant value.

Table 2: Composite reliability analysis results

Factor	Reliability of the scale			Conclusion
	Cronbach's alpha	Composite Reliability ($_{Pc}$)	Composite Extracted Variance (Pvc)	
SP	0.908	0.909	0.668	Accepted
GC	0.908	0.908	0.664	Accepted
PP	0.836	0.841	0.571	Accepted
CN	0.859	0.860	0.605	Accepted
MT	0.918	0.919	0.693	Accepted
TK	0.906	0.906	0.659	Accepted
QD	0.896	0.896	0.632	Accepted

(Source: Author's data collection)

4.2. Testing research models with SEM

The analysis result shows that the indexes in the model still meet the requirements such as CFA critical model. We see that Chi-Square = 614,306; df = 474; Chi – Square/df = 1,296 < 5; GFI = 0.937 > 0.9; TLI = 0.986 > 0.9; CFI = 0.987 > 0.9 and RMSEA = 0.023 < 0.05, the model fits well with market data (Hair et al, 2010).

The estimated results (standardized) on the main parameters of the formal research model are presented in Table 3, showing that the relationships between the concepts in the formal research model are statistically significant at 5% ($p < 0.05$).

Table 3: Hypothesis test results

Hypothesis	Relationship	P values	Result
H1a	TK <--- SP	0.006	Accepted
H2a	TK <--- GC	***	Accepted
H3a	TK <--- PP	0.014	Accepted
H4a	TK <--- CN	0.017	Accepted
H5a	TK <--- MT	***	Accepted
H1b	QD <--- SP	0.018	Accepted
H2b	QD <--- GC	***	Accepted
H3b	QD <--- PP	***	Accepted
H4b	QD <--- CN	0.017	Accepted
H5b	QD <--- MT	***	Accepted
H6	QD <--- TK	***	Accepted

(Source: Author's analysis)

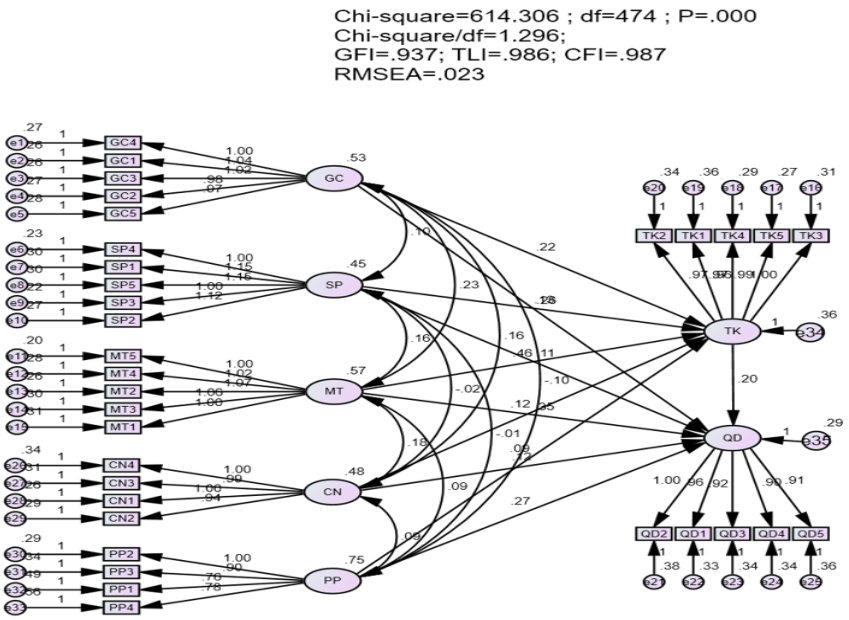

Fig. 3: The analysis result of the study with SEM

(Source: Author's analysis)

Moreover, this study uses the Boostrap method with the number of replicates and substitutions N equivalent to 1000 and the results are in Table 4. Determination rule: If |CR| = |Bias/ SE-Bias| ≤ 2, There is no bias occurs and vice versa.

Table 4: Bootstrap Estimation Results

Relationship	Bootstrap Estimation

	SE	SE-SE	Mean	Bias	SE - Bias	|CR|
TK <--- GC	0.046	0.001	0.199	0	0.001	0.00
TK <--- SP	0.042	0.001	0.111	-0.002	0.001	2.00
TK <--- MT	0.04	0.001	0.435	0.001	0.001	1.00
TK <--- CN	0.044	0.001	0.106	0.001	0.001	1.00
TK <--- PP	0.042	0.001	0.101	-0.001	0.001	1.00
QD <--- GC	0.043	0.001	0.229	0.002	0.001	2.00
QD <--- SP	0.037	0.001	0.088	-0.001	0.001	1.00
QD <--- MT	0.046	0.001	0.32	0	0.001	0.00
QD <--- CN	0.039	0.001	0.096	-0.001	0.001	1.00
QD <--- PP	0.044	0.001	0.284	0.002	0.001	2.00
QD <--- TK	0.047	0.001	0.194	-0.001	0.001	1.00

(Source: Author's analysis)

Through the Bootstrap estimation results, we find that the bias appears but is not much and large and the absolute value of the CR coefficient of each pair of related variables is smaller than or equal 2, the bias is very small, so it is not statistically significant with 95% confidence. Therefore, the estimates in the model can be trusted. This proves that the research model can be trusted in a larger sample.

5. Discussion

The study has identified six factors that positively affect the organizational buying decision, including Product, Price, Distribution, Technology, Environmental Protection Policy and Reference Group. In which, the reference group is determined as an intermediate variable affected by five remaining factors. Research has added Marketing theory about the important role of reference group in practice and the support of reference groups will increase the impact level on organizational buying behaviour and make up the buying centre's mind quickly and easily in buying decision as well as reducing the organization risk.

Firstly, the result shows that product has a positive impact both the buying decision and the reference group with $\beta = 0.089$ and 0.133 and P values < 0.05, it meant H1a, H1b were supported. The findings of this study are similar to many previous studies such as those of Cheng and Tang (2009); Kotler and Armstrong (2012); Aarikka-Stenroos and Jalkala, (2012) which state that product is something that can be put on the market for paying attention, making an acquisition, having a use, or satisfying a certain need . The buying center uses information beliefs base on the reference group tries to find the most suitable product, so they are considered a co-searcher or co-solver of the business. The quality of packaging products not only shows the prestige of supplier but also helps consumers identify the difference about the brand they seek. Therefore, suppliers need to consider or apply international quality management systems to ensure the quality control process of products in accordance with established regulations as the quality management standard ISO 9001:2015. The beautiful packaging design will help increase brand recognition for

customers, it supports effective communication campaigns, increase competitiveness, especially the ability to attract customers.

Secondly, with an impact of $\beta = 0.227$ and 0.199 and P values < 0.05, it meant H2a and H2b were supported which meant that price impacted positively on the buying decision and the reference group. The price is a value symbol of the product on trading activity, so the price has become as indispensable to any barter economy and thanks to the reference group, the buying center can determine which price is relevant to the market, according to the findings of previous studies (Dickson, 1966; Cheng et al, 2009; Castro and Morgado, 2016). Paper packaging enterprises should carry out the best price strategic to satisfy their organization needs to achieve business target and competitive advantage. An appropriate pricing policy is not only motivating but also increasing the trust and the relationship quality between supplier and organization. Therefore, paper packaging firms especially pay attention to setting the price with the expected profit in line with the market price and being able to rival competitors in the same class products.

Thridly, for Place with an impact of $\beta = 0.282$ and 0.102 and P values < 0.05, we can be concluded that H3a and H3b were supported which meant Place positively influenced B2B paper packaging purchase decisions and Reference group. This study is in line with the information processing literature in that place has become one of minimal criteria when a enterprises wish to enter the market (Cheraghi et al, 2004; Sim et al, 2010) and the buying centers often use reference group information to assess the capacity of supplier by referring to previous deliveries (Jalkala and Salminen, 2010). Therefore, investment in place such as delivery time and production time should be considered as a top priority by designing a reasonable location for materials in the factory to optimize and reduce waste time. The paper packaging suppliers can improve machinery to increase productivity, warehouse management with modern means to be able to save production and delivery time to the lowest level in order to shorten the lead time to satisfying customer requirements.

Fourth, Technology affected positively on Organizational buying decisions and Reference group with $\beta = 0.097$ and 0.106 and P values < 0.005, hence the data were supported H4a and H4b. The findings are absolutely consistents with previous researchs (Steward et al, 2019; Cortez and Johnston, 2017; Lee et al, 2010; Cheraghi et al, 2004). The study found that application and development in new technology will help paper packaging manufacturers to enhance their position with the buying organization and can bring many benefits or oppotunities to suppliers in attracting the buying centers to buy their products. The findings argue that through the application of the supplier's technology supported the reference group knows the features and specifications of the product to support the buying centers to make prompt decisions and can evaluate the supplier's reliability (Morgado, 2020; Jalkala and Salminen 2009). Therefore, the suppliers should focus on improving the capacity of machinery and equipment, which is a less expensive process than investing in a new machinery

and equipment line as well as innovating new technologies, especially put an end to invest in outmoded technologies and equipment and encourage suppliers to approach new technologies. In addition, suppliers should innovate synchronously to help them absorb worldwide knowledge easily and they do not face any difficulties in operation of machinery and equipment.

Fifth, Environmental protection policy with an impact of $\beta = 0.32$ and 0.434 and P values < 0.05, it meant H5a and H5b were supported which meant Environmental protection policy has a strongest positive influence on the Organizational buying decision and Reference group. The findings of this research are similar to the results of previous studies (Porter and Linde, 1995; Baresel-Bofinger, 2007; Dangelico and Pujari, 2010; Begheri et al, 2012). The research argues that firms implementing environmental protection policy by green goods innovation is one of a key element to achieve business growth. Enterprises need to be responsible for the living environment by saving energy, materials reduction and pollution prevention as identified in the life cycle phases of products and can reduce negative environmental impacts such as emissions, waste, and can use renewable energy development including wind, solar, biomas, gas thermal power to get competitive advantage in the current market. The findings of this study found that paper is one of reasonable chosen with highly recyclable and reduce environmental pollution (Cahyorini and Rusfian, 2011). The results indicate that there is a different between this study and previous research, which did not support a positive relationship between environmental protection policy and reference group as well as organizational buying decisions in concerning the quantitative result while there was a strongest support for the influence of environmental protection policy on B2B purchase decisions and reference group. It is lack of quantitative research about this policy in Vietnamese context, most of previous studies focused on the traditional dimension in the past such as product, price, place and so on. It means that the suppliers is no longer the traditional factors oriented in paper packaging industry. Therefore, suppliers need to have an assessment process for hazardous materials related to goods safety in Vietnamese standards. Enterprises should pursue environmental protection policies carefully, this means that companies must design and manufacture products that are easily recyclable to ensure environmental protection criteria. Moreover, enterprises need to limit and reduce the amount of industrial waste to the natural environment by proactively identifying the source of waste so that the authorities can handle them properly. In addition, paper packaging suppliers should achieve the FSC certification of the forest management council for the carton packaging industry (FSC - Forest Stewardship Council). “FSC Certified” it means that the carton used in the product and the manufacturer that made it met the requirements of the Forest Stewardship Council, this view will increase suppliers value due to suitable for the international context.

Finally, the result specifies that the reference group impacted positively on the buying decision making process of enterprises and orients the buying center to have

a fatal blow of buying and limit risks for the organization as Morgado (2020) with β = 0.195 and P values < 0.05, it can be concluded that H6 was supported. The findings of this research are in line with previous findings (Steward et al, 2019; Jalkala and Aarikka-Stenroos, 2018; Minsky and Quesenberry, 2016; Loebbecke et al, 2011). The reference group plays an important role in persuading the buying center to buy goods and supplier without reputation needs to go through the reference group to penetrate the new market and 84% of business purchases typically start with a reference group in the B2B market (Steward et al, 2019). They play an important role in proposing criteria for the buying center, from which, enterprise has a basis for making the most appropriate buying decisions. This study shown a contrasting result to previous studies when the outcomes argued that reference group plays role as an intermediate or quadratic variable that keeps further influenced on buying decision. Therefore, investment in the Marketing mix to Reference group has to be considered as a top priority, because without this group, the buying center is not only lack of supplier's information but also lack of determining specifications as well as assess the sample and goods quality.

6. Conclusion

The research investigated factors affecting the organizational buying decision – a case of paper packaging in Vietnam. By using a qualitative and quantitative methodology, the study provides insights on determinants involving both organizational buying decisions and reference group. This article proposes our understanding on the organizational behavior and reference group role in buying paper packaging, which is one of green product projects in enterprises that have pursued the path toward environmental protection. The research employed a sample of 549 enterprises of various fields such as wood manufacturing and processing, pottery and porcelain, handicrafts and fine arts from Vietnamese market. The aim of this study is to evaluate a framework of organizational buying decisions in the complex environment. To assess this model, we used SPSS and AMOS to confirm which factors affected on organizational buying decisions.

In this empirical research, the results show that there are five factors directly influencing on the reference group and organizational buying decision: Product, Price, Place, Technology, and Environmental Protection Policy Reference group plays an importance role as an intermediate or quadratic variable that keeps further influence on buying decision. This study has supplemented the Marketing theory of the important role of reference groups in the buying process. The findings show that buying centers will make buying decisions faster and easier due to the support of the reference group, which increases the influence of other factors on this decision problem. Additionally, the study also found that environmental protection policy had a strongest impact on organizational buying decision and reference group. From the result, the authors argued that the contribution of this research was a key factor to

motivate Vietnamese paper packaging supplier to recognize the significance of environmental protection policy, and help supplier to have a relevant investment to develop the enterprises affectively. The study also serves for Board of Management understanding which factors influenced on organizational buying decision, thereby they can change or re-build their business strategies suitable for the current market as well as focus on improving their environmental performance such as green product, green innovation, waste reduction, pollution prevention and so on.

This research, like other studies, has some limitations. First, it only focused on the paper packaging aspect in Vietnam, so it cannot be extended to other packaging industries. Future research should consider and investigate other packaging industry such as metal packaging, plastic packaging, wood packaging to build and develop the general model for whole industry. Second, the survey subjects also investigated three industries including wood, ceramics and handicrafts, so some aspects only meet the needs of these sectors while there are additional other factors that have not been analyzed in this study. So, future research should discuss other business fields to explore and find the impact of other elements on organizational buying decision as well as reference group. Third, the qualitative research phase of this study is carried out 5 factors that affect the reference group and organizational buying decision, but, in different context, there are likely to arise new factors that contribute to the theoretical framework of the organizational buying decision, so, further studies need to consider this issue in a specific context. Fourth, this study is conducted from a practical point of view from the supplier's perspective, however, in trading includes both buyers and suppliers, and this is also one of the limitations of this study.It is hoped that subsequent researches will exploit in the direction of new research models basing on the buyer’s perspective in order to more objectively complete the theoretical framework. Fifth, future studies should investigate the impact of environmental protection policy in tranditional factors to examine how its impact regards to enterprises and which should change in future. Finally, future studies should also enhance the size and scope of article in sampling method, only the quota and convenient sampling method was used to collect data in this research but there are other methods have numerous advantages.

References

Aarikka-Stenroos, L. & Makkonen, H. (2014). Industrial buyers' use of references, word-of-mouth and reputation in complex buying situation. *Journal of Business & Industrial Marketing*, 29(4), 344-352.

Aarikka-Stenroos, L. & Jalkala, A. (2012). Customers as co-marketers: A triadic value creation in reference networks. A work-in-progress-paper presented at the 28th IMP-conference, 13th-15th September, Rome, Italy.

Ahmad, A. & Marchuk, V. (2020). Analysis of corporate pricing strategy based on word-of-mouth communication on social networks. *International Journal of Smart Business and Technology*, Global Vision Press, 8(2), 13-24.

Bagheri, H., et al. (2012). Surveying the impact of green product on consumers' buying decision process: Case study of consumers of energy saving bulbs. *African Journal of Business Management*, 7(23), 2266-2270.

Baresel-Bofinger, A., et al. (2007). Innovative measures for green supply chain management in South-East Europe. Innovative measures for GSCM in SEE, 1-10.

Cahyorini, A. & Rusfian, E. Z. (2011). The effect of packaging design on impulsive buying. Journal of Administrative Science and Organization, 18(1), 11-21.

Castro, L. M. D. & Morgado, A. V. (2016). Customer references and the buying of capital equipment for a project firm. *Journal of Strategic Contracting and Negotiation*, 2(3), 244-263.

Cheng, J. –H. & Tang, C. -H. (2009). An application of fuzzy delphi and fuzzy AHP for multi-criteria evaluation on bicycle industry supply chains. *WSEAS Transactions on Systems and Control*, 1(4), 21-34.

Cheng, J. -H., et al. (2009). An application of fuzzy delphi and fuzzy AHP on evaluating wafer supplier in semiconductor industry. *WSEAS Transactions on Information Science and Applications*, 5(6), 756-767.

Cheraghi, S. H., et al. (2004). Critical success factors for supplier selection: An update. *Journal of Applied Business Research*, 20(2), 91-108.

Cortez, R. M. & Johnston, W. J. (2017). The future of B2B marketing theory: A historical and prospective analysis. *Industrial Marketing Management*, 1-13.

Dangelico, R. M. & Pujari, D. (2010). "Mainstreaming green product innovation: Why and how companies integrate environment sustainability. *Journal of Business Ethics*, 95, 471-486.

Das, B. K. & Sharma, S. (2019). Business to business relationship management in flexible packaging industry of Bangladesh. *Journal of Business*, 6(2), 85-98.

Davis, J. L., et al. (2009). Interdependence with the environment: Commitment, interconnectedness, and environmental behavior. *Journal of Environmental Psychology*, 29, 173-180.

Dickson, G. W. (1966). An analysis of vendor selection systems and decisions. Journal of Purchasing, 5-17.

Donaldson, B. (1994). Supplier selection criteria on the service dimension. *European Journal of Purchasing and Supply Management*, 1(4), 209-217.

Hair, J., Black, W., Babin, B. & Anderson, R. (2010). Multivariate data analysis (7th ed.): Prentice-Hall, Inc. Upper Saddle River, NJ, USA.

Jaakkola, E. & Aarikka-Stenroos, L. (2018). Customer referencing as business actor engagement behavior – creating value in and beyond triadic settings. *Industrial Marketing Management*, 1-16.

Jalkala, A. & Salminen, R. T. (2010). Practices and functions of customer reference marketing – Leveraging customer references as marketing assets. *Industrial Marketing Management*, 39(6), 975-985.

Jalkala, A. & Salminen, R. T. (2009). Communicating customer references on industrial companies' web sites. *Industrial Marketing Management*, 38, 825-837.

Katiyar, A. et al. (2014). Role of packaging as influencing factor of consumer buying decision a study of consumer of Kanpur region, UP, India. Abhinav international monthly refereed journal of research in management & technology, 3(8), 43-49.

Keshvari, R. S., et al. (2012). The impact of B2B behavior on customer satisfaction within Shahab Khodro company. *International Journal of Business and Management*, 7(7), 151-171.

Kotler, P. & Armstrong, G. (2012), Principles of Marketing, 14th ed., Labor and Social Publishing House, HCMC.

Lau, G. -T., et al. (1999). Purchase-Related factors and buying center structure. *Industrial Marketing Management*, 28, 573-587.

Lee, A. H. I. & cộng sự. (2009). An evaluation framework for technology transfer of new in high technology industry. *Technological Forecasting and Social Change*, 77, 135-150.

Lilien, G. L. (2016). The B2B knowledge gap. *International Journal of Seeker in Marketing*, 33, 543-556.

Loebbecke, C., et al. (2010). Drivers of B2B software purchase decisions. *Bridging the Socio-technical Gap in Decision Support Systems*, 535-546.

Minsky, L. & Quesenberry, K. A. (2016). How B2B sales can benefit from social selling. *Harvard Business Review*, 8-11.

Mohammad, O. A. I. Z. & Mohammad, T. B. (2011). The effect of using celebrities in advertising on the buying decision. Empirical study on students in Jerash private university. *American Journal of Scientific Research*, 13, 59-70.

Morgado, A. V. (2020). Customer's expectations and perceptions of reference marketing programs. *Journal of Business & Industrial Marketing*.

Morgado, A. V. (2018). The value of customer references to potential customers in business markets. *Journal of Creating Value*, 4(1), 1-23.

Morgado, A. V. & Castro, L. M. D. (2016). Customer referencing in the context of a capital equipment buying decision. Annual IMP Conference. Poznan University of Economics and Business (Poland).

Morgado, A. V. & Castro, L. M. D. (2015). Customer referencing: Testing a conceptual framework in the context of a case study. *Annual IMP Conference*. University of Southern Denmark (Kolding).

Morgado, A. V. & Castro, L. M. D. (2015). Customer referencing in the context of industrial buying and purchasing: the case of a thermal power plant. *In Proceedings of the Forum on Industrial Organization and Marketing*, Lisbon, Portugal.

Pawłowski, M. & Pastuszak, Z. (2016). B2B customers buying behavior. *International Journal of Synergy and Research*, 5, 19-35.

Porter, M. E. & Linde, C. van der. (1995). Green and competitive: Ending the stalemate [online], 2/18/16, from http://kentlundgren.se/artiklar/vetenskapliga/Porter_Linde_1995.pdf.

Sashi, C. M. & Kudpi, V. S. (2001). Market selection and procurement decisions in B2B markets. *Management Decision*, 39(3), 190-196.

Sim, H. K. et al. (2010). A survey on supplier selection criteria in the manufacturing industry in Malaysia. The 11th Asia Pacific industry engineering and management systems conference, 7-10 December, Melaka, Malaysia.

Steward, M. D., et al. (2019). From transactions to journeys and beyond: The evolution of B2B buying process modeling. *Industrial Marketing Management*, 1-13.

Tektas, A. & Aytekin, A. (2011). Supplier selection in the international environment: A comparative case of a Turkish and an Australian company. *IBIMA Business Review*, Article ID 598845, 1-14.

Terho, H. & Jalkala, A (2017). Customer reference marketing: Conceptualization, measurement and link to selling performance. *Industrial Marketing Management*, 1-12.

Tran, M. D. (2013). Basic marketing. Fourth Edition, National Economics University, Hanoi.

Weber, C. A., et al. (1991). Vendor selection criteria and methods. *European Journal of Operational Research*, 50, 2-18.

Webster, F. E. Jr. & Wind, Y. (1972). A general model for understanding organizational buying behavior. *Journal of Marketing*, 36, 12-19.

Yan, B. & Mo, Y. (2020). The relationship of consumer perceived value, online word-of-mouth and behavioral intention in mobile e-commerce. *International Journal of Smart Business and Technology*, Global Vision Press, 8(1), 11-18,

Younus, S., et al. (2015). Identifying the factors affecting customer purchase intention. *Global Journal of Management and Business Research: Administration and Management*, 15, 2(1), 8-13.

Zekiri, J. & Hasani, V. V. (2015). "The role and impact of the packaging effect on consumer buying behavior. *Ecoforum Journal*, 4, 232-240.

Zhang, J. Z., et al. (2014), Dynamic targeted pricing in B2B relationships. *Marketing Science*, 33(3), 317-337.