



## Analysis of the Effect of Green Packaging on Attracting and Retaining Environmentally Friendly Customers with the Mediating role of Green Brand Image

Naser Seifollahi✉

Department of Management, Faculty of Social Sciences, University of Mohaghegh Ardabili, Ardabili, P.O.Box 13131-56199 Iran.

### Article Info

**Article type:**  
Research Article

**Article history:**  
Received: 09 Nov 2022  
Revised: 14 Feb 2023  
Accepted: 26 May 2023

**Keywords:**  
*Green Packaging*  
*Green Brand*  
*green Brand Image*  
*Customer Attraction*  
*and Retention*

### ABSTRACT

Increasing the level of environmental knowledge of consumers and their level of concern towards the environment and green brands are among the important factors that have been considered in the discussion of consumer behavior in recent years. Marketing managers also try to attract customers' attention to their green products and brands in order to succeed in selling and marketing their products. Therefore, the present study was conducted with the aim of investigating the effect of green packaging on attracting and retaining environmentally friendly customers with the mediating role of green brand image. In terms of the purpose of the research, the type of applied research, the method of collecting descriptive data is of the correlation type. The statistical population of this research is the students of University of Mohaghegh Ardabili, 373 of them were selected as a sample by referring to Morgan's table and using the available sampling method. The required data were collected using a questionnaire and analyzed based on the structural equation modeling method and using SPSS and Smart PLS software. The results of the research showed that green packaging has a positive and significant effect on attracting and retaining environmentally friendly customers as well as the image of the green brand. On the other hand, the image of the green brand has a positive and significant effect on attracting and retaining environmentally friendly customers. Finally, green brand image acts as a mediating factor in the relationship between green packaging and attracting and retaining environmentally friendly customers.

**Cite this article:** Seifollahi, N. (2023). Analysis of the Effect of Green Packaging on Attracting and Retaining Environmentally Friendly Customers with the Mediating role of Green Brand Image. *Pollution*, 9 (3), 950-964. <https://doi.org/10.22059/poll.2023.352529.1723>



© The Author(s).

Publisher: University of Tehran Press.

DOI: <https://doi.org/10.22059/poll.2023.352529.1723>

## INTRODUCTION

Attracting and retaining customers is a very challenging endeavor in the highly competitive and globalized business environment in which we live. A lot of competition in different industries has transformed companies so that they attach great importance to attracting customers as a key factor in determining their success (Alsaggaf and Althonayan, 2018). In the current environment, the way consumers buy has evolved drastically, and conventional marketing strategies are likely to become obsolete. Customer relationship management (CRM) is replacing the traditional four P's of marketing - product, price, place and promotion. Long-term relationships with customers are the key to stability in a dynamic market. It is intended as a comprehensive strategy and process for acquiring, retaining and partnering with selected customers to create superior value for the company and the customer. Therefore, companies are increasingly focused on developing long-term profitable relationships in commercial, domestic

\*Corresponding Author Email: [n.seifollahi@uma.ac.ir](mailto:n.seifollahi@uma.ac.ir)

and consumer markets to increase the value they provide to their customers. Therefore, companies that effectively develop and manage customer acquisition and retention strategies can achieve a competitive advantage, healthier profits, and an admirable reputation. On the other hand, meeting the expectations and needs of customers also depends on the relationship that is established with them (Leninkumar, 2019). When customers believe in the profitability of the relationship, they establish and maintain ongoing relationships with a company. In other words, when the future value of relational behavior is high, customers are more likely to enter the relationship. If relational behavior provides high perceived benefits due to customization, superior service, good customer experience, product packaging, etc., or lower costs due to reduced mental processing, search costs, and risks associated with the purchase, The future value of the relationship will be high (Seifollahi et al., 2017).

In recent years, there has been a growing interest in environmental protection around the world. People's greater concern about environmental issues has made consumers act consciously to make their purchase decisions (behavior) and choose products that do not harm the environment (Salari et al. 2021). The recent increase in green customers has created a new market opportunity for the global economy. People's participation and commitment to environmentally friendly products has increased through green marketing. Green marketing involves assessing stakeholders to create a significant long-term relationship with consumers while preserving, maintaining and enriching the natural environment (Majeed et al., 2022). Since the packaging industry is closely related to environmental protection and sustainable development, green packaging is a new pursuit by consumers to achieve a balance between economic growth and environmental development (Martinho et al., 2015). From the point of view of today's customers, a package should not only function to protect the original product, but it is also expected to be environmentally friendly in order to reduce environmental problems caused by packaging waste (Auliandri et al., 2018). So consumers now want eco-friendly or green packaging (Singh and Pandey, 2018). Green packaging always uses environmental materials for packaging purposes, keeping in mind that products should be effective and safe for human health and the environment (Vendosel et al., 2021). Green packaging, also called sustainable packaging, eco-friendly packaging, eco-green packaging and recyclable packaging, is made entirely of natural materials, can be reused or recycled. and is prone to degradation and encourages environmental sustainability throughout its lifetime and is therefore a very important aspect to reduce the effects of waste and pollution and promote sustainable development. In addition, green packaging is safe and beneficial for the environment as well as the health of people and animals (Zhang and Zhao, 2012). The role of consumers in green packaging is very important, as modern lifestyles often demand a longer product shelf life. This demand is the main factor behind the increased use of green packaging by companies that are still forced to develop formal sustainability policies. Therefore, the study of green packaging from the consumer's point of view includes the analysis of consumers' opinions about green packaging and their purchase decisions (Wandosell et al., 2021). Hence, an important area of research is to study the ways in which consumers demand the use of green packaging strategies to reduce the negative impact of packaging on the environment.

Another purpose that organizations use green marketing is to strengthen the brand image (Chen, 2010). Brand image is the soul of a service or product that is usually conveyed to consumers and makes them believe at a certain stage to help consumers make a decision to purchase the product. Consumers who have a positive image of the brand will be more likely to buy (Ellitan, 2021). In other words, in the purchase decision process, the brand image plays an important role, in the purchase intention process, there is a higher probability that the consumer will buy famous brands with a positive image (Seifollahi and Eskandari, 2021). Green brand image is also defined as a specific group of ideas, thoughts and fears about a brand in the minds of customers that are tied to the concerns of sustainability and environmental friendliness (Bashir

et al, 2020). In other words, the green brand image is the whole visualization and perception of the brand in the customer's memory related to sustainability and environmental concerns (Chen,2010). Green brand image plays an important role in influencing consumer behavior. The role of green brand image is very important for the company, where a company that has a green brand image is one step ahead in trying to gain competitive advantage (Yu Shan Chen and Chang, 2014). One of the objectives of the marketing strategy is to improve the value of a company through the brand image and in the framework of a sustainable environment, the marketing strategy aims to cooperate on environmentally friendly products and gain a competitive advantage (Gao et al, 2016). According to researchers, the perceived value of the brand can not only be a major determinant in maintaining long-term customer relationships, but also plays a key role in influencing purchase intentions (Ellitan, 2021).

Based on this and according to the background that was described, this study examines the impact of green packaging, green brand image on attracting and retaining customers as important issues in today's world, where changing market trends created by consumers for the sustainability of the company's operations and how the environmentally friendly image as well as the value obtained are very influential in creating the purchase decision.

The increasing concern of consumers about environmental issues, along with the increasing focus of governments and various societies to take more measures and enact laws to protect the environment, has caused many organizations to take measures to design and implement environmentally friendly programs. In this situation, successful organizations and companies are the ones that include these changes in their recovery and product production processes. Therefore, it seems more necessary to carry out researches that investigate and study these cases.

Very few studies have examined the issue of attracting and retaining customers from the perspective of the green packaging industry and the green brand image in the minds of customers. Also, little research has been done on green packaging purchase intention in developing countries and among young consumers. Now companies are looking to produce or provide services that are in sync with the environment, help the environment and do not harm the environment or the entire planet. You can also use green marketing with the meaning of recyclable marketing. Therefore, the current research is among the few studies that have investigated the variables of green packaging, green brand image and attracting and retaining environmentally friendly customers in a single study in the heart of Iranian young society in order to fill the gap in the relevant literature. . The findings of this study can help managers and marketers of companies in designing a green marketing model to attract customers and create and improve long-term relationships with them, as well as strengthen green purchasing behavior by examining key elements.

Packaging is described as the fifth P of the marketing mix (Nickels and Jolson, 1976) and plays an important role in product protection, logistics efficiency and sales promotion; Therefore, it is an integral part of the circulation of goods (Herbes et al., 2020). Packaging protects and preserves the product until consumption, fulfills the manufacturer's legal obligations and conveys important brand messages to consumers. Packaging is classified into several categories such as passive and active, Primary, Secondary and Tertiary, and Pre- and Post-Consumption (Singh and Pandey, 2018). Pre-consumer features of packaging include branding and graphics. However, post-consumer packaging loses some of its functional importance and improper disposal of used packaging causes significant environmental pollution (Singh and Pandey, 2018). Packaging is considered an important green logistics initiative because it directly affects the environment as well as operational efficiency. Packaging negatively affects the environment in three ways: by consuming resources, by generating waste and solid, liquid, and gas pollution, and by spreading bacteria and pests (Zhang and Zhao, 2012). The main task of sustainable packaging design is to balance sustainability performance with important packaging functions

in the case of perishable agricultural products such as protection and preservation of packaged goods. Green packaging as a new eco-friendly product has contributed to various aspects of environmental protection (Grunman et al., 2013). In other words, green packaging is an important element not only because of its close connection with other components of the value chain, but also because of its direct impact on the environment (Kankaya and Sezen, 2018). A green packaging, which can also be called “ Ecological package “ or “ Environmental friendly package “, is defined as an environmentally friendly packaging that is made entirely from natural plants, can be recycled or reused be prone to degradation and promote sustainable development, even during its entire life cycle, it is harmless to the environment as well as to the human body and animal health (Herbes et al., 2020). Green packaging methods include simple, biodegradable packaging, eliminating excessive packaging, using paper packaging, reducing the amount of polystyrene, easy separation, and using simple materials for packaging (Kung et al., 2012). The main element of green packaging is environmentally friendly technology and resource saving. Green packaging causes little harm to the environment or human health during its entire life cycle, including design, research and development, manufacturing, use and recycling. In addition, the required energy saving and consumption reduction techniques are consistent with sustainable development (Hao et al., 2019). Green packaging is related to the principle (4R1D), that is, reduce, reuse, recover, recycle and degradable. It is also described as packaging made of environmentally friendly/biodegradable/composite materials that can be broken down and absorbed by natural methods and returned to the common elements of the earth such as carbon, oxygen and hydrogen (Dharmadhikari, 2012). Based on the research of Molina-Besch (2016) green packaging includes three basic principles: minimizing the use of hard-to-decompose packaging, using packaging with low energy consumption, and using environmentally friendly packaging. The theme of green packaging is often used to demonstrate a company’s commitment to environmental sustainability and increase brand popularity (Byrne, 2017). Green packaging can demonstrate its value when consumers connect with it and share its environmental protection benefits, thereby increasing its perceived value and reducing its perceived risk.

Brand image is the set of beliefs and perceptions that exist in the minds of target customers regarding a specific brand (Ansari et al, 2019). Kotler also defines the brand image as a set of ideas, beliefs and perception that the customer has of a particular product or brand. Likewise, when environmental or green aspects are involved in a product, then the belief and perception towards this product is considered as a green brand image (Zameer et al., 2019). Green brand image is a subset of the overall brand image. When a company promises to offer environmentally friendly items, current quality perceptions in consumers’ minds may help to reinforce a greener image of the brand (Yadav et al., 2016). With increasing consumer environmentalism and strict environmental regulations, a green brand image has become more critical for companies. The results of green marketing are strongly related to creating a favorable brand image for environmentally friendly products (Majeed et al., 2022), in other words, since green marketing has become a vital way to attract customers who care about environmental protection. As a result, more and more companies are willing to create a green brand image to differentiate their green products (Wu and Lin, 2016). Green brand image refers to a set of perceptions of a brand in the customer’s mind that is related to environmental characteristics and environmental concerns (Chen, 2010). Previous studies in the field of green business practices also define green brand image as environmental aspects related to the product/brand. Also, a group of researchers define the green brand image as a specific group of ideas, thoughts and fears about a brand in the minds of customers that are related to the concerns of sustainability and environmental friendliness (Bashir et al., 2020). In general, the green brand image is the whole visualization and perception of the brand in the customer’s memory that is related to sustainability and environmental concerns (Chen, 2010). Green brand image is the consumer’s understanding

of a company's commitment to environmental stewardship, and consumers tend to perceive a higher quality of green brand image when the company claims to produce an environmentally friendly product (Simão and Lisboa, 2017). The conceptual image of the green brand can be divided into two components, one can be a practical and tangible component and the other is a psychological component. Both of these are equally important. The perception of functional and psychological components is formed through consumer interaction with the product or brand. It is the customer experience that determines how they perceive a particular brand. Green brand image is the accumulation of companies' green initiatives (Zameer et al., 2019).

Customers are the cornerstone of all marketing activities. Due to the intense competition between companies in the current market, customers have become a critical factor in determining success, and customers have become increasingly aware of their value to their companies. In other words, the companies that have the highest rate of attracting and retaining customers and increasing the customer base become the market leader. The achievements of companies do not depend only on identifying and predicting the needs and demands of customers. Meeting their expectations and

needs also depends on the relationship they have established with customers. (Leninkumar, 2019).

There is a group of customers who are called environmentally friendly, because of their environmental concerns, increasing their knowledge of green production encourages them to buy that product (Kumar and Ghodeswar, 2015). This small but strong group of customers prefers to buy products with biodegradable packaging, and therefore more products with environmentally friendly packaging are entering the market (Magnier and Schoormans, 2015). Nittala (2014) found that among educated consumers, opinions about the use of plastic carrier bags and its ban can be used to segment those who are willing to buy green products and those who are not. In Western countries, more than 90% of European citizens insist that companies should actively participate in recycling and reduce the use of plastic in product packaging (Eurobarometer, 2014).

A lot of competition in different industries has transformed companies so that they attach great importance to attracting customers as a key factor in determining their success (Alsaggaf and Althonayan, 2018). Stauss et al (2001) have also defined customer retention as follows: interest, identification, commitment, trust, willingness to recommend and repurchase intention of customers; The first four are affective cognitive maintenance structures and the last two are behavioral intention. Customer retention can also be defined as "a commitment to continue doing business or doing business with a particular company on an ongoing basis." In addition, customer retention means "protecting customers" because finding a new customer can be more than the cost of keeping an existing customer (Alshurideh et al., 2016). Customer retention makes sense because the longer a customer stays with an organization, the more likely it is to increase profits for the customer (Jan and Abdullah, 2014). Accordingly, maintaining an existing customer costs less than attracting a new customer; In other words, retaining existing customers is cheaper than acquiring new customers (Ayo et al, 2016). The cost of customer acquisition is estimated to be high due to advertising, marketing and promotions (Alsaggaf and Althonayan, 2018). Long-term customers tend to increase their purchase value, number of purchases, and positive word-of-mouth advertising (Thakur, 2014). As a result, knowing the needs and expectations of customers has become very important to maximize customer retention (Mishra, 2014). Long-term customers buy more, encourage new customers, take less time from service providers, and are less sensitive to price, so customer retention costs are lower compared to new customer acquisition costs, as well as increasing Customer retention leads to profit growth and company value increase (Alshurideh et al., 2019).

Green packaging is a critical criterion for consumer choice, thereby highlighting the increasing importance consumers place on environmental protection (Singh and Pandey, 2018). Packaging

can influence consumers' perception of appearance, taste, feel, smell, or sound, thus greatly influencing purchasing decisions; In addition, consumers' environmental awareness of new products is mostly formed by packaging (Pan et al., 2021). Green packaging products become the most important features that influence customer evaluations and preferences (Rokka and Uusitalo, 2008). Consumers are somewhat inclined to use green packaging and are willing to pay for it (Hao et al., 2019). Furthermore, purchase intention towards environmentally friendly packaging is significantly influenced by personal norms, attitudes, environmental concerns and willingness to pay (Prakash and Pathak, 2017). According to Hua et al., (2016) research, when online companies take green actions, they improve cost effectiveness and environmental compatibility, and at the same time, increase consumers' perceived value of sustainable development. Global Cosmetic Industry (2017) claimed that 88% of consumers tend to be loyal to brands with positive commitments to the environment. Also, a study by Stinnis et al., (2017) showed that customers respond positively to environmentally friendly packaging. Simmonds and Spence (2017) also showed that packaging not only acts as a protector of the original product, but can also influence consumer perception and purchase behavior. Prakash and Pathak (2017) tried to explain the purchase intention towards green packaging using the Theory of Reasoned Action. Suki (2014) suggested the use of green product packaging with self-declared claims to help consumers choose products with green alternatives. Concluded that environmentally friendly purchase and disposal decisions are related to consumers' environmental awareness and pro-environmental attitudes. This shows that during the purchase process, buyers consider green packaging as a critical feature. This is largely due to the added value provided by green packaging features. Prakash and Pathak (2017) suggested that the attitude towards product packaging is one of the important areas that need attention to build consumer confidence in buying environmentally friendly products. According to the mentioned concepts, the first hypothesis of the research is proposed as follows:

**The First Assumption:** green packaging is effective in attracting and retaining environmentally friendly customers.

The green brand image reflects the company's green value orientation. It shows to what extent companies take the initiative to produce products with green packaging and follow social responsibility (Zameer et al., 2019). Green brand image is formed based on the minds of consumers through a series of perceptions. In today's competitive world with different types of products, the success of any product in sales requires that the packaging and appearance of the product can establish an effective relationship with buyers and provide the customer's attention. (Seifollahi,2021). These judgments are related to: the level of difference between the brand and other brands (benchmarking), the level of the company's reputation as the creator of an environmentally friendly product (reputation), the level of the company's performance in creating an environmentally friendly product (performance), the level of the company's attention to Environmentally friendly product (concern) and the level of customer trust in the company (reliability) (Alamsyaha et al., 2020). Therefore, it can be assumed that green packaging will act as the fifth P in the marketing mix of a green brand image booster. Therefore, the second assumption of the research is presented as follows:

**The Second Assumption:** Green packaging has an effect on the image of the green brand.

Green brand image is a determining factor in the green era and is positively related to the green purchasing behavior of corporate consumers (Chen et al., 2018). Green brand image has been proven to influence consumer purchase intention because it explains consumer judgment and perception of product image (Ramirez, 2013). Brand image has a positive effect on consumer buying behavior because it can weaken the consumer's perceived risk and simultaneously increase the probability of purchase intention at the moment of the transaction (Wang and Tsai, 2014). In other words, according to studies, the image perceived by consumers can significantly affect their behavior, and companies that dedicate themselves to promoting their green brand

images can not only face the problem of punishment from the environment. Eliminate, but are allowed to increase the green purchasing behavior of their customers (Chen et al., 2018). Green brand image can make the company the first choice of customers. By creating a green brand image, a new offer under the umbrella of the same brand is easily accepted by consumers, which increases the attraction and retention of customers and also increases the company's competitive advantage. The amount of green production and its supply refers to the environmental concern of the company in the process of production and supply of products to the society. Companies actively carry out green production and create a green image that can strengthen the positive perception of the brand and cause the formation of a competitive advantage and attract and retain more customers to the company (Zamir et al., 2019). Customer identity, in relation to product excellence and social and corporate responsibility perspectives, has a significant impact on customers' intention to use environmentally friendly brand products. Hence, previous literature suggests that brand image may influence the decision making of customers involved in exchanges, and thus it is argued that green brand image has a positive effect on customer attraction and retention. so the Third hypothesis of the research is proposed as follows:

**The Third Hypothesis:** the image of the green brand has an effect on attracting and retaining environmentally friendly customers.

Mediating the green brand image in relation to the green brand image and attracting and retaining environmentally friendly customers:

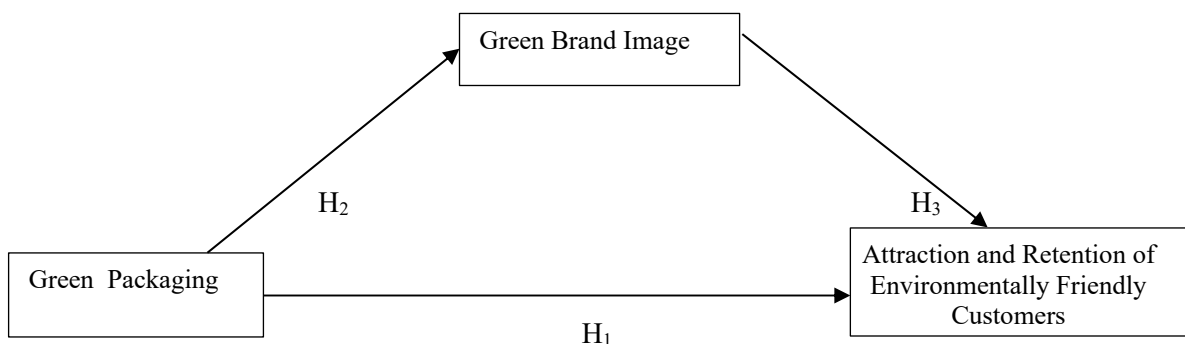
The discussion on the link between green packaging, green brand image and attracting and retaining green customers shows that green packaging will ultimately strengthen the company's competitive advantage. However, in order to investigate the indirect effect of green packaging on attracting and retaining customers, green brand image can be considered as a third (intermediary) variable. People's attitudes and perceptions of a brand and the image they have of it play an important role in their decision to buy, how they behave after doing this, and how they generally behave with the brand (Majeed et al., 2022). As a result, it has been argued that the image of the green brand in the context of the current research can also play a mediating role, so the fourth hypothesis of the research is proposed as follows: so the fourth hypothesis of the research is proposed as follows:

**Fourth Hypothesis:** Green brand image plays a mediating role in the relationship between green packaging and attracting and retaining environmentally friendly customers.

According to the stated content, this research aims to investigate how green packaging affects the attraction and retention of environmentally friendly customers through the mediation of the green brand image in the form of the following model.

According to the stated content, this research aims to investigate how green packaging affects the

attraction and retention of environmentally friendly customers through the mediation of the green brand image in the form of the following model:



**Fig. 1.** The Conceptual Model of the Research

## MATERIAL AND METHODS

In terms of the method of descriptive research, in terms of the applied goal, in terms of the method of data collection, it is a survey and quantitative research, and it is specifically based on the method of structural equations with the help of Smart PLS software. The method of data collection included library and field. First, in order to collect information about the background of the research and theoretical foundations, the library method was used, which includes the review of printed and electronic sources about the research under review, and then according to the research method under review, which is descriptive and correlational. Therefore, a standard questionnaire was used as the most suitable tool for data collection in the field method. The scale used in the questionnaire was a five-point Likert scale. In this study, students University of Mohaghegh Ardabili has been selected as the statistical population. According to the statistics, the number of students in this university is 10428, of which 373 were selected based on Morgan's table by non-random sampling method available to answer the questionnaire. It is necessary to explain that in order to collect information, 400 questionnaires were distributed to the university during several stages of face-to-face visits.

To measure the fit of the measurement model, index reliability, convergent validity and divergent validity were used. Fornell and Larcker (1981) suggested the use of Average Variance Extracted (AVE) as an index for convergent validity and considered the minimum value of AVE for Composite Reliability (CR) to be equal to or higher than 0.5. In Table 2, the output results of the model for AVE can be shown. As can be seen, the results indicate the appropriateness of the convergent validity index (AVE).

To check the discriminant validity of the measurement model, the Fornell-Larcker criterion was used. Based on this criterion, the acceptable discriminant validity of a model indicates that a variable in the model interacts more with its indicators than other variables. Fornell and Larcker (1981) stated that discriminant validity is at an acceptable level when the AVE for each variable is greater than the shared variance between those variable and other variables in the model. In the PLS method, this is checked by a matrix (Table 3) whose rows contain the value of the correlation coefficients between the variables and the square root of the AVE values for

**Table 1.** Composition of Questions in the Questionnaire

variable	Number of Questions	Source
Green Packaging (GP)	4	Chen et al. (2012)
Green Brand Image (GBI)	7	Anji et al. (2014)
Attracting and Retaining Environmentally Friendly Customers (AREFC)	6	Gib(2005)

**Table 2.** Cronbach's Alpha Criteria, Composite Reliability(CR), Average Variance Extracted (AVE)

variable	Cronbach's Alpha	rho A Value	CR	(AVE)
Green Packaging (GP)	0.740	0.816	0.857	0.702
Green Brand Image (GBI)	0.802	0.768	0.791	0.646
AREFC	0.837	0.824	0.871	0.627

**Table 3.** The Results of Investigating the Discriminant Validity of the Research Constructs

	Attracting and Retaining Environmentally Friendly Customers (AREFC)	Green Brand Image	Green Packaging
AREFC	0.714		
Green Brand Image	0.659	0.726	
Green Packaging	0.681	0.812	0.705



each variable.

According to the findings obtained from the correlations and the square root of AVE placed on

the diameter of Table (3) it can be concluded that the model's divergent validity at the structure level is based on the Fourel-Larker criterion. The reliability of the research questions was measured with the standard and common criteria of Cronbach's alpha and composite reliability, and the appropriate value for Cronbach's alpha is equal to and greater than 0.7 (Cronbach, 1951), for composite reliability, a value equal to and above 0.7 is reported as desirable. (Nunnally, 1978). According to the values of Cronbach's alpha and composite reliability in table number 2, as can be seen, all hidden variables have Cronbach's alpha value and composite reliability coefficient above 0.7, which indicates that the model has reliability (both in terms of Cronbach's alpha and what is desirable in terms of combined).

The determination coefficient ( $R^2$ ) and predictive power coefficient ( $Q^2$ ) were used to check the fit of the structural model. The coefficient of determination ( $R^2$ ) shows the effect that an exogenous variable has on an endogenous variable and is a measure used to connect the measurement part and the structural part of structural equation modeling. The higher the value of  $R^2$  related to the endogenous structures of a model, the better the fit of the model. A value greater than 0.7 indicates a strong influence of the exogenous variable on the endogenous variable.  $Q^2$  criterion determines the predictive power of the model. In terms of the severity of the predictive power of the model regarding endogenous structures, the higher the calculated value of  $Q^2$  is greater than 0.2, the higher the predictive power of the model will be (Seifollahi, 2019). In Table 5, both criteria  $R^2$  and  $Q^2$  have acceptable values (Table 4).

To check the overall fit of the model, a criterion called Goodness of Fit (GOF) is used, and three values of 0.01, 0.25, and 0.36 have been introduced as weak, medium, and strong values for GOF (Wetzels et al, 2009). According to the value obtained for GOF (0.532), the general and strong fit of the present research model can be confirmed.

$$GOF = \sqrt{((community) \times R^2)} = \sqrt{(0.612 \times 0.464)} = 0.532$$

Figure 2 and 3 show the tested model of the research in the form of standard and significant coefficients.

In Table 6 summary of the results of the hypotheses is presented.

According to the t statistic values that are greater than 1.96 at the 95% confidence level Therefore according to Table 5, all hypotheses are confirmed.

To measure the role of mediation, the Sobel test is used:

$$Z - value = \frac{a * b}{\sqrt{(b^2 * s_a^2) + (a^2 * s_b^2) + (s_a^2 * s_b^2)}}$$

In this formula, a is the coefficient of the path between the independent variable and mediator, b is the coefficient of the path between the mediator and dependent variable,  $S_a$  is the standard error of the path of the independent and mediator variable,  $S_b$  is the standard error of the path of the mediator and dependent variable (Table 6).

**Table 4.**  $R^2$  Criterion and  $Q^2$  Criterion

Variable	$R^2$	$Q^2$
Green brand image	0.478	0.398
AMEFC	0.532	0.349

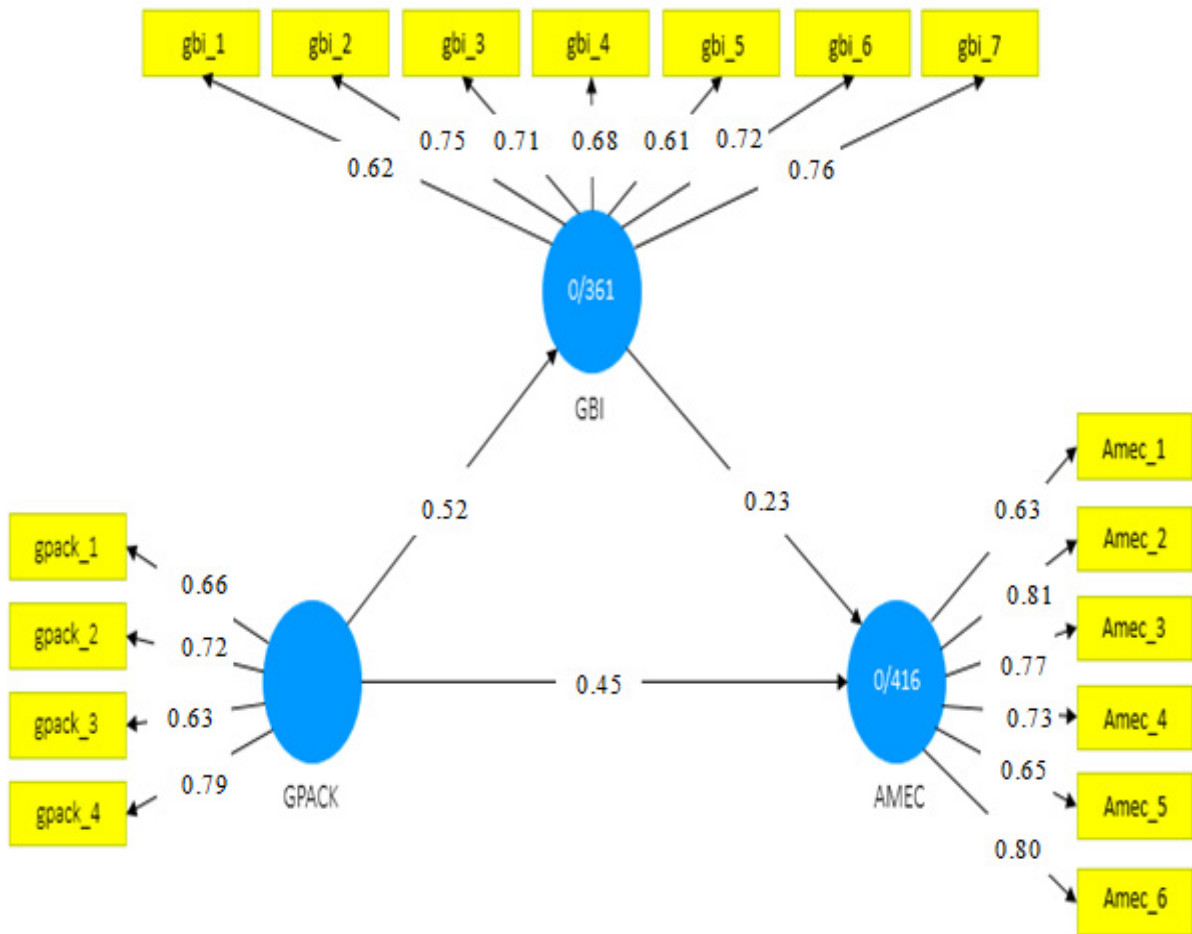


Fig. 2. Factor load coefficients and path coefficient values for the main hypotheses of the research

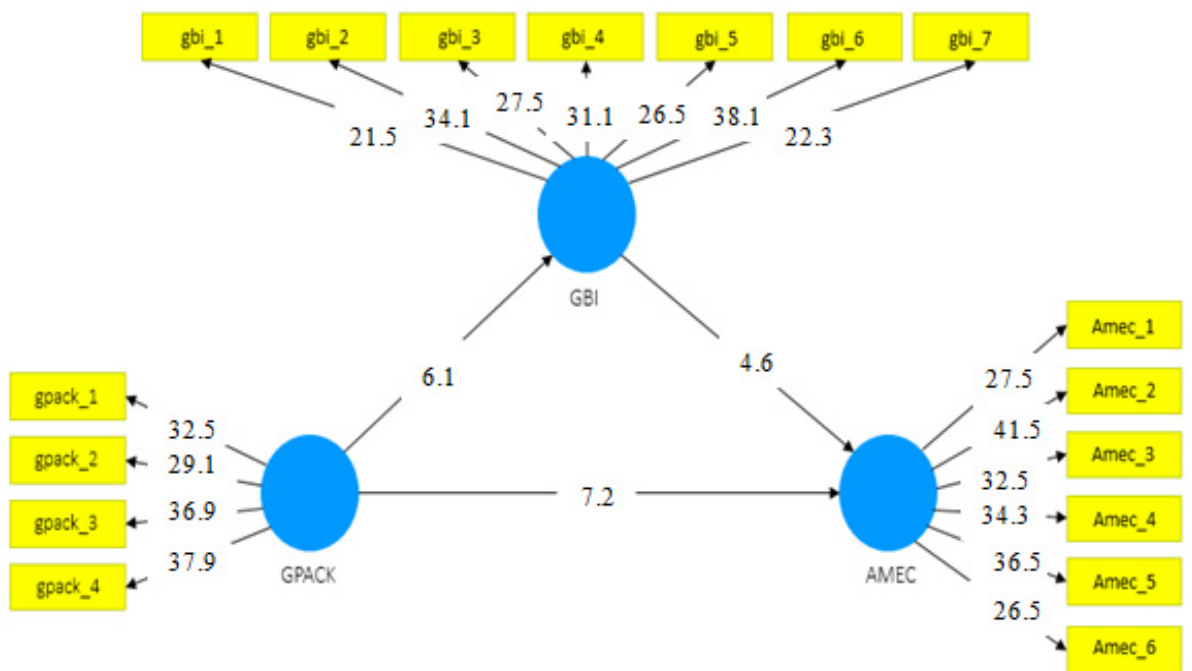


Fig. 3. The values of t statistic for the main hypotheses of the research

**Table 5.** The results of the main hypothesis test

	Path Coefficient	t-values Result	P-values
Green Packaging → AREFC	0.454	7.247	0.000
Green Brand Image → Green Packaging	0.528	6.192	0.000
Green Brand Image → AREFC	0.236	4.638	0.000
Mediating role of brand image	0.123	3.231	0.000

**Table 6.** Values related to the Sobel test of the fourth hypothesis

The fourth hypothesis	
Parameters	values
The path coefficient between the independent variable and the mediator	0.528
Path coefficient between mediating and dependent variables	0.236
Standard error of path of independent variable and mediator	0.098
The standard error of the mediator and dependent variable path	0.093

$$Z - \text{Value} = \frac{0.528 \times 0.236}{\sqrt{(0.236^2 * 0.098^2) + (0.528^2 * 0.093^2) + (0.098^2 * 0.093^2)}} = 2.264$$

According to the value of the calculated Z statistic, which is greater than 1.96 at the 95% confidence level, the mediating effect of the variable in the hypothesis is confirmed and shows that the green brand image plays a role between green packaging and attracting and retaining environmentally friendly customers acts as a mediator. Also, according to the indirect path analysis, the effect of green packaging on attracting and retaining environmentally friendly customers through the image of the green brand is equal to  $(0.528 \times 0.236 = 0.125)$ .

## CONCLUSION

The purpose of this research was to investigate the effect of green packaging on attracting and retaining environmentally friendly customers with the mediating role of green brand image. Due to the ever-increasing level of competition among companies in the present era, also due to the gap in studies in the field of examining the effects of these variables on each other in the form of a single research, and also from the fact that currently most managers and marketers of domestic companies are somewhat The importance of these concepts and themes are neglected, this study can provide practical information for managers and marketers to develop competitive strategies and help the progress and growth of companies' market share. Therefore, this research is among the first combinations of experimental studies that examine the effect of these variables comprehensively.

Regarding the first premise of the current research, our findings indicate that green packaging is a key factor in attracting and retaining environmentally friendly customers in companies. when companies use green packaging in their products, on the one hand, they improve the cost effectiveness and compatibility with the environment, and on the other hand, the consumers' perceived value of their products as well as sustainable development. increase, and in this way, the causes of attracting their positive opinion towards the company are provided. Therefore, it is very important to convey the experience of uniqueness and the sense of environmental protection in packaging.

Regarding the second assumption of the research, the results of the study indicate that green packaging has a positive effect on the image of the green brand. This result is consistent with the findings of the research of Majid et al. (2022). Accordingly, when a company offers its

products in the form of environmentally friendly packaging, the understanding of this issue by environmentally friendly customers can help strengthen the greener image of the brand. Successful environmental activities may strengthen companies' relationships with all stakeholders.

In relation to the third hypothesis of the research regarding the influence of the green brand image on the attraction and retention of environmentally friendly customers, the results obtained from the present research indicate the confirmation of this hypothesis. This result is in line with the research findings of Zamir et al. (2020), Elitan (2021) and Majid et al. (2022). Brand image is the soul of a service or product that is usually conveyed to consumers and makes them believe in the brand, which helps them make a decision to buy the product. The positive image of the green brand in the minds of environmentally friendly customers will increase their intention to use environmentally friendly products and thus increase the attraction of new customers and the retention of current customers.

Finally, regarding the fourth hypothesis of the study, i.e. the mediation of green brand image in the relationship between green packaging and attracting and retaining environmentally friendly customers, the available research findings confirmed this hypothesis. This finding is somehow consistent with the research findings of Majid et al. (2022) and the research of Chen et al. (2017). In this way, green packaging will create a suitable platform for improving the image of the green brand in the minds of environmentally friendly customers, and this will allow companies to increase the purchase of products with green packaging and attract and retain as many customers as possible. In this way and according to the findings of the research, marketers are advised to pay special attention to the values that green packaging provides. To this end, they can create creative advertising plans that showcase the benefits of green packaging for the environment and move towards green consumption patterns. It is also recommended that companies take the lead in disseminating knowledge about green packaging and improving consumer awareness of green packaging by using social media and the Internet, magazines and creating advertising campaigns.

Also, this study is useful for companies in that it shows that they can gain a competitive advantage through enhancing their green brand image. In this regard, it is recommended that companies include the green concept in their corporate culture and marketing strategy to strengthen the green image of the brand to gain a competitive advantage.

## **GRANT SUPPORT DETAILS**

The present research did not receive any financial support.

## **CONFLICT OF INTEREST**

The authors declare that there is not any conflict of interests regarding the publication of this manuscript. In addition, the ethical issues, including plagiarism, informed consent, misconduct,

data fabrication and/ or falsification, double publication and/ or submission, and redundancy has been completely observed by the authors.

## **LIFE SCIENCE REPORTING**

No life science threat was practiced in this research.

## REFERENCES

- Agolla, J. E., Makara, T. & Monametsi, G. (2018). Impact of banking innovations on customer attraction, satisfaction & retention: the case of commercial banks in Botswana. *International Journal of Electronic Banking*, 1(2); 150-170. doi:[10.1504/IJEBANK.2018.095598](https://doi.org/10.1504/IJEBANK.2018.095598).
- Akturan, U. (2018). How does greenwashing affect green branding equity & purchase intention? An empirical research. *Marketing Intelligence & Planning*. Alamsyah, D., Othman, N. & Mohammed, H. (2020). The awareness of environmentally friendly products: The impact of green advertising & green brand image. *Management Science Letters*, 10(9); 1961-1968. doi:[10.5267/j.msl.2020.2.017](https://doi.org/10.5267/j.msl.2020.2.017)
- Alketbi, S., Alshurideh, M. & Al Kurdi, B. (2020). The influence of service quality on customers' retention & loyalty in the uae hotel sector with respect to the impact of customer's satisfaction, trust, & commitment: a qualitative study. *Palarch's journal of archaeology of egypt/egyptology*, 17(4); 541-561. [www.ijcc.net](http://www.ijcc.net)
- Almohaimmed, B. (2019). Pillars of customer retention: An empirical study on the influence of customer satisfaction, customer loyalty, customer profitability on customer retention. *Serbian Journal of Management*, 14(2); 421-435. DOI:[10.5937/sjm14-15517](https://doi.org/10.5937/sjm14-15517)
- Alsaggaf, M. A. & Althonayan, A. (2018). An empirical investigation of customer intentions influenced by service quality using the mediation of emotional & cognitive responses. *Journal of Enterprise Information Management*. 31 (1);194-223. doi.org/[10.1108/JEIM-04-2017-0048](https://doi.org/10.1108/JEIM-04-2017-0048).
- Alshamsi, A., Alshurideh, M., Kurdi, B. A. & Salloum, S. A. (2020). The influence of service quality on customer retention: A systematic review in the higher education. In *International Conference on Advanced Intelligent Systems & Informatics Springer, Cham.*; 404-416
- Alshurideh, D. M. (2019). Do electronic loyalty programs still drive customer choice & repeat purchase behaviour?. *International Journal of Electronic Customer Relationship Management*, 12(1); 40-57.
- Ansari, S., Ansari, G., Ghori, M. U. & Kazi, A. G. (2019). Impact of brand awareness & social media content marketing on consumer purchase decision. *Journal of Public Value & Administrative Insight*, 2(2); 5-10.
- Auliandri, T. A., Thoyib, A., Rohman, F. & Rofiq, A. (2018). Does green packaging matter as a business strategy. Exploring young consumers' consumption in an emerging market. *Problems & Perspectives in Management*, 16(2); 376-384. doi.org/[10.21511/ppm.16\(2\).2018.34](https://doi.org/10.21511/ppm.16(2).2018.34).
- Aulina, L. & Yuliati, E. (2017). The Effects of Green Brand Positioning, Green Brand Knowledge, & Attitude towards Green Brand on Green Products Purchase Intention. *36(Icbmr)*; 548-557.
- Ayo, C.K., Oni, A., Adewoye, O.J. & Eweoya, I.O. (2016) 'E-banking users' behaviour: e-service quality, attitude, & customer satisfaction', *International Journal of Bank Marketing*, 34, ( 3); 347-367. doi.org/[10.1108/IJBM-12-2014-0175](https://doi.org/10.1108/IJBM-12-2014-0175)
- Barusman, A. R. P., Rulian, E. P. & Susanto, S. (2019). The Antecedent of Customer Satisfaction & Its Impact on Customer Retention in Tourism as Hospitality Industry. *Int. J. Adv. Sci. Technol*, 28; 322-330. doi:[10.31235/osf.io/469v5](https://doi.org/10.31235/osf.io/469v5)
- Bashir, S., Khwaja, M. G., Rashid, Y., Turi, J. A. & Waheed, T. (2020). Green brand benefits & brand outcomes: The mediating role of green brand image. *Sage Open*, 10(3); 2158244020953156.
- Buttle, F. (2009). *Customer relationship management: Concepts & technologies* (2nd ed.). New York, NY: Butterworth-Heinemann Elsevier.
- Byrne, S. (2017). Purposeful packaging: Global trends in sustainable packaging confirm that consumers support brands that reflect their values & preferences. *Brand Packaging*, 21; 22-25.
- Cankaya, S. Y. & Sezen, B. (2018). Effects of green supply chain management practices on sustainability performance. *Journal of Manufacturing Technology Management*.30(1) ; 98-121. doi.org/[10.1108/JMTM-03-2018-0099](https://doi.org/10.1108/JMTM-03-2018-0099)
- Chang, C. H. & Chen, Y. S. (2014). Managing green brand equity: the perspective of perceived risk theory. *Quality & Quantity*, 48(3); 1753-1768.
- Chen, Y. S., Huang, A. F., Wang, T. Y. & Chen, Y. R. (2020). Greenwash & green purchase behaviour: the mediation of green brand image & green brand loyalty. *Total Quality Management & Business Excellence*, 31(1-2); 194-209. doi.org/[10.1080/14783363.2018.1426450](https://doi.org/10.1080/14783363.2018.1426450)
- Chen, Y. S., Hung, S. T., Wang, T. Y., Huang, A. F. & Liao, Y. W. (2017). The influence of excessive product packaging on green brand attachment: The mediation roles of green brand attitude & green brand image. *Sustainability*, 9(4); 654. doi.org/[10.3390/su9040654](https://doi.org/10.3390/su9040654).
- Chen, Y. S. (2010). The Drivers of Green Brand Equity: Green Brand Image, Green Satisfaction, &

- Green Trust. *J. Bus. Ethics.* 93; 307–319.
- Darabei, A., Akbari, M. & Mousavi Kashi, Z. (1400). Investigating factors affecting the relationship between green packaging & green brand affiliation. *New Marketing Research Journal*, 11(3); 45-66. (in Persian).
- Deng, X. & Kahn, B. E. (2009). Is your product on the right side? The “location effect” on perceived product heaviness & package evaluation. *Journal of Marketing Research*, 46(6); 725-738.
- Dharmadhikari, S. (2012). Eco-friendly packaging in supply chain. *IUP Journal of Supply Chain Management*, 9(2), 7.
- Ellegaard, C. & Ritter, T. (2006). Customer attraction & its purchasing potential. In 22nd IMP Conference, Milan.
- Ellitan, L. (2021). The Role of Green Marketing & Green Brand Image in Enhancing Purchase Intention. 5(6); 1277-1282. <https://www.ijtsrd.com/papers/ijtsrd47599.pdf> Paper URL
- Eurobarometer (2014). Attitudes of Europeans towards waste management & resource efficiency. last accessed 18.10.15. available at: [http://urbanpromo.it/info/wpcontent/uploads/sites/2/2015/08/2014-06\\_European-Commission.pdf](http://urbanpromo.it/info/wpcontent/uploads/sites/2/2015/08/2014-06_European-Commission.pdf).
- Fortenberry, J. L. & McGoldrick, P. J. (2020). Do Billboard Advertisements Drive Customer Retention?: Expanding the “AIDA” Model to “AIDAR”. *Journal of Advertising Research*, 60(2); 135-147. DOI:10.2501/JAR-2019-003
- Gao, Y. L., Mattila, A. S. & Lee, S. (2016). A meta-analysis of behavioral intentions for environment-friendly initiatives in hospitality research. *International Journal of Hospitality Management*, 54; 107-115. <https://doi.org/10.1016/j.ijhm.2016.01.010>
- Hao, Y., Liu, H., Chen, H., Sha, Y., Ji, H. & Fan, J. (2019). What affect consumers’ willingness to pay for green packaging? Evidence from China. *Resources, Conservation & Recycling*, 141; 21-29. doi.org/10.1016/j.resconrec.2018.10.001
- Herbes, C., Beuthner, C. & Ramme, I. (2020). How green is your packaging—A comparative international study of cues consumers use to recognize environmentally friendly packaging. *International Journal of Consumer Studies*, 44(3); 258-271. doi.org/10.1111/ijcs.12560
- Jan, M.T. & Abdullah, K. (2014) ‘The impact of technology CSFs on customer satisfaction & the role of trust: an empirical study of the banks in Malaysia’, *International Journal of Bank Marketing*, 32(5); 429. doi.org/10.1108/IJBM-11-2013-0139.
- Karunarathna, A. K. P., Bandara, V. K., Silva, A. S. T. & De Mel, W. D. H. (2020). Impact of green marketing mix on customers’ green purchasing intention with special reference to Sri Lankan supermarkets. 1(1); 127-153. DOI:10.13140/RG.2.2.25067.77606.
- Kumar, P. & Ghodeswar, B. M. (2015). Factors affecting consumers’ green product purchase decisions. *Marketing Intelligence & Planning*, 33(3); 330-347. doi.org/10.1108/MIP-03-2014-0068.
- Leninkumar, V. (2019). Antecedents of customer satisfaction. *Archives of business research*, 7(6); 62-76. doi.org/10.14738/abr.76.6622.
- Magnier, L. & Schoormans, J. (2015). Consumer reactions to sustainable packaging: The interplay of visual appearance, verbal claim & environmental concern. *Journal of Environmental Psychology*, 44; 53-62. doi.org/10.1016/j.jenvp.2015.09.005.
- Mahmoud, M. A. (2019). Gender, e-banking, & customer retention. *Journal of global marketing*, 32(4); 269-287. doi.org/10.1080/08911762.2018.1513108.
- Majeed, M. U., Aslam, S., Murtaza, S. A., Attila, S. & Molnár, E. (2022). Green Marketing Approaches & Their Impact on Green Purchase Intentions: Mediating Role of Green Brand Image & Consumer Beliefs towards the Environment. *Sustainability*, 14(18); 11703. doi.org/10.3390/su141811703.
- Martinho, G., Pires, A., Portela, G. & Fonseca, M. (2015). Factors affecting consumers’ choices concerning sustainable packaging during product purchase & recycling. *Resources, Conservation & Recycling*, 103; 58-68. <https://doi.org/10.1016/j.resconrec.2015.07.012>
- Mishra, S. (2014) ‘Analysing relationship among service quality, satisfaction & loyalty in internet banking: a study from India’, *International Journal of Electronic Finance*, 8(1); 57–73. DOI:10.1504/IJEF.2014.063999.
- Molina-Besch, K. (2016). Prioritization guidelines for green food packaging development. *British Food Journal*. 118 (10); 2512-2533. <https://doi.org/10.1108/BFJ-12-2015-0462>
- Nasir, S. (2017). Customer retention strategies & customer loyalty. In *Advertising & Branding: Concepts, Methodologies, Tools, & Applications* (1178-1201). IGI Global.
- Nickels, W. G. & Jolson, M. A. (1976). Packaging-5th p in marketing mix. *SAM Advanced Management*

- Journal, 41(1); 13-21.
- Nittala, R. (2014). Green consumer behavior of the educated segment in India. *Journal of International Consumer Marketing*, 26(2); 138-152. doi.org/10.1080/08961530.2014.878205
- Pan, C., Lei, Y., Wu, J. & Wang, Y. (2021). The influence of green packaging on consumers' green purchase intention in the context of online-to-offline commerce. *Journal of Systems & Information Technology*. 23 (2); 133-153(21).DOI: <https://doi.org/10.1108/JSIT-11-2019-0242>
- Prakash, G. & Pathak, P. (2017). Intention to buy eco-friendly packaged products among young consumers of India: A study on developing nation. *Journal of cleaner production*, 141; 385-393. <https://doi.org/10.1016/j.jclepro> .2016.09.116
- Purnama, H. (2019, March). The effect of green packaging & green advertising on brand image & purchase decision of Teh Kotak product. In 16th International Symposium on Management , 132-135)..
- Rokka, J. & Uusitalo, L. (2008). Preference for green packaging in consumer product choices—do consumers care? *International Journal of Consumer Studies*, 32(5); 516-525.
- Sarari, T., Gorbani, B. & Kolahi, M. (2021). Factors affecting the behavior of environmentally friendly consumers (Case study: environmental non-governmental organizations of Mashhad. *Contemporary Sociological Research*. 10(19); 295-320. (in Persian). doi: 10.22084/csr.2022. 24629.1989
- Seifollahi, N; Eskandari, N. (2021). Social media marketing & consumer purchase intention; Image mediation & brand awareness. *Consumer Behavior Studies*, 8(3); 199-220. doi: 10.34785/J018.2021.772(in Persian).
- Seifollahi, N. (2021). Investigating the Effect of Packaging of Agricultural Products on the Consumer's Purchase Intention. *Iranian Journal of Agricultural Economics & Development Research*, 3(52); 525-539. [10.22059/IJAEDR.2021.307443.668936](https://doi.org/10.22059/IJAEDR.2021.307443.668936) (in Persian)
- Simanjuntak, M., Putri, N. E., Yuliati, L. N. & Sabri, M. F. (2020). Enhancing customer retention using customer relationship management approach in car loan bussiness. *Cogent Business & Management*, 7(1); 1738200. [doi.org/10.1080/23311975.2020.1738200](https://doi.org/10.1080/23311975.2020.1738200).
- Simão, L. & Lisboa, A. (2017). Green marketing & green brand—The Toyota Case. *Procedia manufacturing*, 12; 183-194. [doi.org/10.1016/j.promfg.2017.08.023](https://doi.org/10.1016/j.promfg.2017.08.023)
- Simmonds, G. & Spence, C. (2017). Thinking inside the box: How seeing products on, or through, the packaging influences consumer perceptions & purchase behaviour. *Food Quality & Preference*, 62; 340-351. DOI: [10.1016/j.foodqual.2016.11.010](https://doi.org/10.1016/j.foodqual.2016.11.010).
- Stauss, B., Chojnacki, K., Decker, A. & Hoffman, F. (2001). Retention effects of a customer club. *International Journal of Service Industry Management*, 12(1); 7-19. [doi.org/10.1108/09564230110382745](https://doi.org/10.1108/09564230110382745).
- Thakur, R. (2014) 'What keeps mobile banking customers loyal?', *International Journal of Bank Marketing* 32(7), 628 – 646.
- Trivedi, R. H., Patel, J. D. & Acharya, N. (2018). Causality analysis of media influence on environmental attitude, intention & behaviors leading to green purchasing. *Journal of cleaner production*, 196; 11-22. [doi.org/10.1016/j.jclepro.2018.06.024](https://doi.org/10.1016/j.jclepro.2018.06.024).
- Wandosell, G., Parra-Meroño, M. C., Alcayde, A. & Baños, R. (2021). Green packaging from consumer & business perspectives. *Sustainability*, 13(3); 1356. [doi.org/10.3390/su13031356](https://doi.org/10.3390/su13031356).
- Wang, Y. H. & Tsai, C. F. (2014). The relationship between brand image & purchase intention: Evidence from award winning mutual funds. *The International Journal of Business & Finance Research*, 8(2); 27–40. DOI: [10.1108/IJCHM-05-2015-0233](https://doi.org/10.1108/IJCHM-05-2015-0233).
- Yadav, R., Dokania, A. K. & Pathak, G. S. (2016). The influence of green marketing functions in building corporate image: Evidences from hospitality industry in a developing nation. *International Journal of Contemporary Hospitality Management*. 28 (10); 2178-2196. doi.org/10.1108/IJCHM-05-2015-0233.
- Zameer, H., Wang, Y. & Yasmeen, H. (2020). Reinforcing green competitive advantage through green production, creativity & green brand image: implications for cleaner production in China. *Journal of cleaner production*, 247; 119119. [doi.org/10.1016/j.jclepro.2019.119119](https://doi.org/10.1016/j.jclepro.2019.119119).
- Zhang, G.; Zhao, Z. (2012). Green Packaging Management of Logistics Enterprises. *Phys. Procedia*, 24; 900–905. [doi.org/10.1016/j.phpro.2012.02.135](https://doi.org/10.1016/j.phpro.2012.02.135).