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RESEARCH ARTICLE

Investigating the impact of digital marketing on the marketing of green products considering the role of exchanging ideas and using customer knowledge as a mediating variable (case study: medical equipment sales companies in Tehran)

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Abstract

Environmental pollution is one of the most important human problems in the current century, most of which is caused by industrial production. Mankind tries to overcome environmental pollution by creating systems such as green production, green distribution and green products. The media has a great ability to create a new culture among people and can play an important role in marketing green products. Iran, like other parts of the world, has been affected by environmental problems and the rate of environmental degradation in this region has exceeded the standard, so this research aims to investigate the impact of digital marketing on the marketing of green products, considering the role of exchanging ideas and using It has been done from customer knowledge as a mediating variable. The statistical population of this research is made up of the customers of medical equipment sales companies in Tehran who buy online, and the research information is collected and analyzed through library sources and questionnaires using SPSS software and modeling using Laserl software. done The result shows that digital marketing has an effect on the marketing of green products. Explaining that digital marketing can provide an environment for people to exchange ideas in green marketing. As a result, it can be said that digital marketing is vital for business and brand awareness of green products. Digital content and marketing is so common that consumers expect and trust it as a way to learn about brands. On the other hand, brands can also exchange ideas with customers. Broadly speaking, digital marketing is defined as using multiple digital tactics and channels to connect with customers where they spend most of their time.

Keywords: marketing of green products, digital marketing, environment, exchange of ideas, use of customer knowledge.

Introduction

People are increasingly aware of environmental issues due to the catastrophic environmental pollution caused by production and industrial activities in the world (Chygryn et al, 2019). Therefore, sustainable consumption has attracted great attention all over the world. Buying or

consuming green is an important tool in changing towards sustainable and environmental green production and consumption. In order to achieve this sustainable future, the global community, the public and private sector must buy green. Green purchasing behavior is known in relation to goods and products that can be recycled or reused, are beneficial for the environment, or are responsible for environmental considerations (Tsekouropoulos et al, 2018). Despite the researchers' attention to green issues and academics' follow-up and interest, the market share of many green products has not increased significantly during the last decade; The severe decrease in biodiversity and the extinction of many plant and animal species, the accumulation of dangerous substances in the environment, and people suffering from various diseases are examples of the negative effects of chemical consumption. So that with the passage of time, due to concern about environmental problems, modern agricultural systems were severely criticized and a global consensus was formed to support the natural environment in order to develop a type of production that can increase productivity at the same time. to cause the least damage to the environment (Tariq et al, 2022). Therefore, humanity tried to prevent this catastrophic process by providing measures such as organic agriculture. The production of food with the desired quality and in sufficient quantity, in sync with nature and the environment, maintaining the genetic diversity in the production system and its surroundings, strengthening the environmental cycles, and developing long-term soil fertility are among the long-term goals of organic production. (Alkhatib et al, 2023). Consumers must value the protection of the environment before they can be willing to buy environmental products. The level of abstraction of the concept of value and its main features has made it attractive for cross-cultural research. Cultural differences in specific behaviors can be explained more simply by referring to more abstract levels of the cognitive-emotional hierarchy (Erwin et al, 2021). Although a lot of research has been done in recent years in the country in the field of marketing green products and also the desire to buy these products, but due to the newness of this type of production, there is a need for researchers to research different aspects of marketing green products (Diez-Martin et al, 2019).

Today, people widely react to environmental issues and pollution caused by production and industrial activities in the world. Therefore, the term sustainable consumption has been highly regarded. According to this issue, buying or consuming green is a component of influencing the change towards production and environmental sustainability (Baranikumar et al, 2021). Achieving sustainable consumption requires the cooperation of the international community, government and private sector in order to buy green products. Green purchasing behavior by customers is done in the case of products that are useful for the environment and can be recycled again or environmental considerations have been taken into account in their production. In addition to the fact that academics can help in this field by designing modern production systems, the tendency of people to use these products is also very important. Buyers should note that the environment is under serious damage, which can have dire consequences such as the extinction of plant and animal species and the accumulation of toxic substances in the world, so

that with the passage of time, the lives of humans will also be at risk. Therefore, with the activities of environmentalists, a global consensus was formed in order to solve these problems. Their approach was that by providing programs, humans can cause the least damage to the environment while increasing productivity (Dangelico and Vocalelli, 2017).

It is important to buy green products because the production takes place simultaneously with the protection of the environment, the ecological cycles are strengthened, the fertile soil is preserved, the organisms are not destroyed and human health is not disturbed, and in general it can be concluded that buying these products It is done in order to preserve the environment (Danish et al, 2019).

So far, many advances have been made in the field of marketing; However, there is still a big gap between producers and consumers because factors such as product supply, the buyer's familiarity with the product, his knowledge and the intensity of the consumer's need for the product are some of the gaps that still exist in the market. Due to the fact that environmental problems and as a result people's health are increasing every day, people's environmental awareness should be increased, because as long as they are not aware of their purchase intention, they will not support such approaches, and in this regard, the media plays a very important role. They have an important responsibility.

Like other regions of the world, Iran also suffers from environmental problems. Due to the fact that the rate of environmental destruction in Iran has exceeded the standard, investigating the role of green marketing and designing endogenous patterns in accordance with Iran's native characteristics in the country's manufactured products is of particular importance in terms of environmental protection. The discussion plan that resulted in green management has its roots in the activities of environmental and anti-war activists and is currently considered as an issue supported by science (Carroll, 2021).

In line with green marketing, media play an important role in consumer behavior and can solve many challenges faced by marketers. One of these problems is knowing pro-environmental consumers, characteristics and factors affecting their behavior. Therefore, companies should be able to identify target groups and focus their activities on those groups to implement their environmental programs. Digital media can play a very important role in this field. This research aims to investigate the impact of digital marketing on the marketing of green products, considering the role of exchanging ideas and using customer knowledge as a mediating variable, and examines the following hypotheses:

• Digital marketing has an impact on the exchange of ideas

• Digital marketing has an impact on the use of customer knowledge

• The exchange of ideas has an impact on green marketing

• The use of customer knowledge has an effect on the marketing of green products

Theoretical foundations

Green marketing

In the 21st century, some environmental issues such as global warming, the effects of greenhouse gases, pollution and global climate change are directly related to agricultural and manufacturing industries, which have a destructive effect on human actions. These emerging environmental issues can only be solved if consumers are responsible for reducing hazardous effects on the environment by using more green products. Therefore, many companies have started to use green production and marketing strategies to meet customer preferences to achieve long-term business profits (Nekmahmud and Maria, 2020).

For a long time, green marketing has been focused on product (including packaging and labeling) and promotion strategies. Understanding the united movements and pressures to be green is essential because this can lead us to know how green marketing is implemented in all organizational activities. Companies use the strategic approach of environmental entrepreneurship to have an opportunity to change the process of developing satisfactory, new and technical products and to create a competitive advantage in the same proportion as changes in the pressures on past activities. came into being It can be said that in the new world, business and environment can coincide with each other. Being green is no longer a cost to business but a catalyst for innovation, new market opportunities and wealth creation (Clarke et al, 2021).

Buying behavior generally consists of five parts: discovering a need, searching for a solution, evaluating solutions, deciding to buy, and post-purchase behavior. Factors such as socio-cultural factors, psychological factors, individual-mixed marketing and situational factors affect consumer buying behavior. The demand for ecological products and sustainable business activities is determined by the increase in the awareness of consumers regarding environmental issues and also by the announcement of stricter laws by national governments, especially in developed industrialized countries. and on the other hand, various environmental groups, such as the media, carefully control the company's compliance with ecological principles and create more pressure and awareness in business environments, and all businesses It makes things greener. Green marketing is one of the areas of business that has been discussed a lot in environmental issues. In 1997, a study showed that for 94% of people, the environmental effects of a product are important when buying it. In 1993, researchers came to the conclusion that 32% of European consumers choose products based on environmental performance, and 22% of people in England buy products with more than 22% compatibility with the environment. The green products industry was estimated to be over 200 billion in 2002. Therefore, we can conclude that creating an efficient economy of resources is the focus of green growth. This

requires the adoption of policies to improve resource efficiency and sustainable management of natural resources and materials based on the principle of reduction, reuse and recycling. To be successful, such policies must be based on knowledge of the material foundations of the economy, international and national material flows, and factors that cause changes in natural resource use and material productivity over time, across countries and across different sectors of the economy (OECD, 2019).

Since resources are limited and human desires are unlimited, it is important for marketers to use resources efficiently without compromising the achievement of organizational goals. Green marketing is a marketing strategy that helps marketers achieve this goal. This type of marketing supports the environment by creating recognizable environmental benefits based on what the customer expects.

It can be stated that companies gain a competitive advantage over irresponsible companies through green marketing. Business companies have realized the importance of green marketing as a tool to gain a competitive advantage over competitors in the industry. A business's business strategy is devised in response to changing market needs, and green marketing has boomed tremendously by reviving environmental awareness among consumers. Green marketing actually represents a paradigm-shifting strategy in many business enterprises, as it has changed the way a business interacts with customers (Arseculeratne, 2018).

 There are many examples of companies that try to be more responsible towards the environment so that they can better satisfy the needs of consumers. For example, tuna producers modified their fishing techniques because people's concerns about fishing nets and the resulting death of dolphins had increased. In green marketing, there are other green concepts such as: Green consumers: Green consumers are people who are very concerned about the natural environment and their purchasing and consumption behaviors in order to support the environment by purchasing products that are They create a healthy environment. 5% of consumers pay a lot of attention to the environment (Yusiana, 2023).

Green marketing is a movement that has entered the world of marketing in recent years and has focused on the ecological balance of the earth and survival in the future. Green marketing now goes beyond a paradigm and a special attitude, creating a competitive advantage for companies, organizations and institutions. Such a paradigm has now led to extensive guidelines for companies and institutions to include a diverse set of links in this relationship more than before (Ilhamalimy et al, 2023).

 Green marketing is the organization's strategic effort in providing environmentally friendly products to customers. The green marketing approach has been welcomed in countless countries and marketers are trying to include environmental costs in the purchase decision process. According to the definition, green marketing includes all activities designed to create and

simplify any type of exchange that satisfies people's needs and desires with minimal damage to the environment. Directing these needs and demands in different markets to a type of consumption that causes minimal damage to the environment is one of the social responsibilities of marketing. When designing products, organizations should pay attention to the different roles and effects of these products in different markets, in addition to considering the green standards desired by consumers. The good performance of a product in a particular market may not lead to gaining a competitive advantage, but certainly a poor performance can create a strategic risk and lead to competitive weakness. As a result, multi-dimensional analysis of environmental performance of products is mandatory because it is influenced by many factors and is directly related to competitors' products. Therefore, green consumption deserves attention not only as a vital issue, but also as a long-term trend that reflects changes in social values (Chen et al, 2021).

Marketing with an environmental perspective is referred to as "green marketing", "environmental marketing", "social responsibility in marketing" and "sustainable marketing". In general, green marketing includes "marketing activities that attempt to reduce negative social and environmental impacts on existing products and production systems and increase low demand for products and services" (Gupta and Syed). , 2022). Therefore, green marketing is related to future health and environmental protection. It should be noted that the quality of life of future generations depends on the efforts of current generations to protect the environment. Professional buyers are also expected to purchase eco-friendly green products to contribute to a sustainable world and also gain a green competitive advantage. The quality of the green product is reflected by its features and environmental benefits. Examples of green features include eco-labelling, non-polluting materials, recyclability, energy savings and overall assurance of limited environmental impact. Green product quality can be defined as "dimensions of product characteristics, product design, and product packaging that are involved in energy conservation, pollution prevention, waste recycling, and environmental friendliness" (Gelderman, 2021). Developing innovative green products allows companies to charge higher prices and earn higher profits. Many customers are willing to pay higher prices for green products, as long as the extra sacrifice is justified by sufficient added value. Obviously, not all customers are willing or able to pay more for green or environmentally friendly products. Customers need price fairness. When a (green) product is believed to contribute to sustainable development, customers are less sensitive to price. Institutional buyers are reluctant to pay higher prices whenever they see lower quality green or recycled products such as paper (Sharma, 2020).

The ethical commitment of companies producing green products to the environment, society, and ethics is a key factor in influencing consumers' positive evaluation of the company and its brands. In order to reduce the negative effect of greenwashing and the skeptical attitude of consumers towards the company's green actions, the dimension of perceived green transparency has been studied. Green transparency refers to a state in which green brands provide information related to their environmental policies and accept the fact that their production process affects the

environment easily and transparently, because green brands usually offer prices more than non-green brands, consumers need more information to facilitate their green decision-making processes, and companies can induce value by increasing the transparency of information related to sustainability. These cases show the importance of the customer and his satisfaction and loyalty to green products. Customer loyalty is usually referred to as a strong commitment to repurchase a product in the future. Repurchase intention reflects loyalty because attitudinal loyalty emphasizes an emotional attachment and strong preference for a particular brand or product. Green customer loyalty refers to a customer's willingness to maintain a relationship with an establishment that has environmental or green concerns and the customer's commitment to repurchase the preferred product regularly in the future. Similarly, we can define green customer satisfaction as a pleasurable overall fulfillment of some of the customer's needs, goals, and desires regarding environmental or green concerns (Suki, 2017).

Social networks

Social networks have a great impact in social, economic and even cultural fields, and in this research more attention is paid to their (economic) marketing function. Social networks can be divided into virtual and non-virtual networks. Non-virtual networks are operated by a set of interconnected individuals and groups in the social environment (Rodriguez et al, 2024). A virtual network or Internet social network is a website or a collection of websites that allows users to share their interests, thoughts, and activities with each other. In recent years, social networks have expanded at an unprecedented speed. Telegram, Instagram and WhatsApp also received a great reception in Iran. Virtual social networks are sites that offer sharing features to their users by adding features such as chat, email, following, rating, the possibility of creating a private network, and the like, and developing simple website template features such as a search engine (Chu, 2024). Social networks are the gathering place of hundreds of millions of internet users who interact and exchange information regardless of borders, language, gender and culture. A social network is a site that firstly allows people and organizations to create their pages on it and secondly allows these pages to be connected based on various commonalities (Kusuma et al, 2024).

Therefore, this emerging phenomenon provides the possibility of forming virtual communities, virtual social networks are considered to be a progressive force in social and political changes of societies. In the last decades of the 20th century, with the occurrence of the information revolution and the increasing access of different societies to the Internet and computer networks, many theoretical efforts were devoted to finding a suitable model for studying the Internet, its political and social dimensions and effects. Hanandeh et al., 2024).

Virtual social networks are among the products of the global network of virtual space, which itself is one of the emerging phenomena in the world of communication (Punjabi et al, 2024). The development of communication technologies has always been accompanied by the creation

of new theories. He believes that for the first time in the media, hypertext or metalanguage has been formed, which integrates the written, oral, visual and auditory methods of human communication within the framework of one system. This phenomenon, which is called the information highway, has undergone fundamental changes in the nature of communication due to the ability to integrate text, image and sound in a system and global network, and since communication plays a decisive role in culture, culture also undergoes fundamental changes due to new technological changes. (Peixoto Rodriguez, 2024).

Research method

This research aims to examine the impact of digital marketing on green product marketing, considering the role of exchanging ideas and using customer knowledge as a mediating variable. Therefore, this research, in terms of its purpose, is an applied research. This research is a survey research in terms of data and information collection and analysis method and aims to answer a real problem and question that exists in practice with a research process. This research is a survey type according to the implementation method. The target statistical population in this research includes customers of medical equipment sales companies in Tehran. Naturally, this society includes people who have certain characteristics; As an example, children and teenagers will be removed from the statistical population due to possible unfamiliarity with the issue, and in addition, those who are familiar with green products will be used. The statistical population in this research is unlimited and as mentioned, people who are buyers of green products or are aware of this concept have been considered as the statistical population. In this study, due to the relatively large (unlimited) and unspecified statistical population, sampling has been done from this population. Due to the wideness of the statistical population, the population is classified into homogeneous and similar members and is selected from the population by a probabilistic (random) method, so determining the sample size (n) is one of the most important points in sample surveys. should be taken into account. In this research, available sampling method was used and 250 questionnaires were distributed. In this research, a researcher-made questionnaire was used, and SPSS23 software was used for quantitative analysis of information and quantitative investigation of the subject, and Lisrel software was used for modeling, and data were collected from library studies and similar researches. The validity of the questionnaire using the CVR method was equal to 0.6 and the reliability of the questionnaire was equal to 86.5 using Cronbach's alpha.

Data analysis

The results obtained from the research show that 175 men and 75 women participated in the research. In terms of diversity, it can be said that the ratio of men to women is far away. Most of the people participating in the research are in the age range above 50 years and they account for 62.4% of the statistical population. The majority of the statistical population consists of people

with undergraduate education, and the lowest amount (45 people) is reserved for people with postgraduate education.

Based on the obtained results, the statistical community does most of its activities on Instagram. Internal applications have not been able to succeed in this field as they should. Due to its features, Instagram plays a very important role in the growth of social awareness in Iran. Instagram has a high capability in marketing and audience attraction, and the statistical community's answer to this question indicates the same role of Instagram.

Table 1. Characteristics of the statistical population

Dimensions	Parameter	frequency	Percent
Gender	Male	175	70
	Femal	75	30
Age	30-40 years	44	17.6
	40-50 years	50	20
	50< years	156	62.4
Degree	diploma	63	25.2
	post graduate	45	18
	Bachelor's degree	79	31.6
	Master's degree	63	25.2
Social Networks	Telegram	21	8.4
	Instagram	183	73.2
	Facebook	22	8.8
	Iranian applications	24	9.6
Experience in social Networking	3-4 years	49	19.6
	More than 5 years	201	80.4

After entering the information of each questionnaire in SPSS software, the Kolmogorov-Smirnov test is used to determine the normality of the data. In any research, if the data has a normal distribution, the parametric test is used, otherwise, the non-parametric test should be used. After the SPSS analysis in the output of the Kolmogorov-Smirnov test, if the test was significant, i.e. p was less than 5 percent, it means that the distribution is not normal and non-parametric test should be used, and if this number was greater than 0.05, it means that is that the data distribution is normal and parametric tests should be used. According to the explanations provided, if the result of this test is not significant, it is possible to use parametric tests. The result of the Kolmogorov-Smirnov test is shown in the table 2.

Table 2. Examining the Kolmogorov-Smirnov test in examining the data related to the statistical population

Dimensions	sig (2-tailed)
Digital marketing	0.2
Green marketing	0.16
Exchange of ideas	0.06
Using customer knowledge	0.105
The whole questionnaire	0.073

In the following, the hypotheses of the research are examined; In this research, the linear regression test is used to analyze the data;

H1: Digital marketing has an effect on the exchange of ideas.

Table3. Results of the linear regression test

Model	R	R Square	Adjusted R Square	Std.Error of the Estimate
1	0.675	0.532	0.585	0.12312

Table 3 shows the results of the linear regression test. R indicates Pearson's correlation coefficient. This coefficient indicates the linear correlation between the value of the dependent variable (digital marketing) and the predicted value (exchange of ideas) by the model. This

coefficient shows that 67.5% of digital marketing and exchange of ideas are correlated with each other and this correlation is also positive.

R Square indicates the contribution of 53.2% of the model in expressing the dispersion of the dependent variable. Adjusted R Square or coefficient of determination is corrected or adjusted. Part of the interpretation of the regression results in SPSS is related to the value of the coefficient of determination, which is equal to 0.585, while the value of the corrected coefficient of determination is equal to 0.532. The proximity of these two values indicates that the variables used in the model have been able to provide a good fit. In table 4, the sig number shows that the linear regression has a suitable model and that digital marketing has an effect on the exchange of ideas.

Table4. Analysis of Variance Table

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3211.025	1	3511.035	396.709	0.000
	Residual	3211.475	98	8.277		
	Total	6422.620	249			

Table 5 shows the coefficients of the regression model.

Table5. Coefficients of the regression model

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	13.083	0.889		14.714	0.000
	Exchange of ideas	0.267	0.051	0.390	5.260	0.000

In the table 5, column β, mean and column Std. Error is the standard deviation of the estimators of each of the regression coefficients. The value of the beta coefficient is equal to 0.390.

H2: Digital marketing has an effect on the use of customer knowledge.

To perform this test, linear regression and correlation methods are used, and the results of the linear regression test are shown below.

Table 6. Results of the linear regression test

Model	R	R Square	Adjusted R Square	Std.Error of the Estimate
1	0.677	0.483	0.568	0.14123

Table 6 shows the results of the linear regression test. Pearson's correlation coefficient shows that 67.7% of digital marketing on the use of customer knowledge are correlated with each other and this correlation is also positive.

R Square equal to 0.483 was obtained, which indicates the contribution of 48.3% of the model in expressing the dispersion of the dependent variable (customer knowledge). The coefficient of determining correction or adjustment is 0.483. The closeness of this number with R Square indicates that the variables used in the model have been able to provide a good fit. The table 7 shows the information related to the ANOVA or analysis of variance table.

Table 7. Analysis of Variance Table

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1281.337	1	1383.317	303.324	0.000
	Residual	1568.836	98	4.633		
	Total	2738.944	249			

In Table 8, the Sig number is smaller than 0.05, which indicates that the regression model is suitable. Therefore, the sig number shows that the linear regression has a suitable model and that digital marketing has an effect on the use of customer knowledge. In the continuation of the regression test, the table of coefficients of the regression model is shown.

Table8. Coefficients of the regression model

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	13.452	2.131		6.312	0.000
	Customer Knowledge	0.288	0.120	0.190	2.405	0.017

In Table 8, the β coefficient is equal to 0.190.

H3: Exchange of ideas has an effect on green marketing.

To perform this test, linear regression and correlation methods are used, and the results of the linear regression test are shown below.

Table 9. Results of the linear regression test

Model	R	R Square	Adjusted R Square	Std.Error of the Estimate
1	0.773	0.483	0.491	0.19235

Table 9 shows the results of the linear regression test. The Pearson correlation coefficient shows that 77.3% of the exchange of ideas on green marketing is correlated with each other and this correlation is positive.

R Square equal to 0.483 is obtained, which indicates the contribution of 48.3% of the model in expressing the dispersion of the dependent variable (green marketing). The coefficient of determining correction or adjustment is 0.491. The closeness of this number with R Square indicates that the variables used in the model have been able to provide a good fit. Table 10 shows the information related to the ANOVA or analysis of variance table.

Table 10. Analysis of Variance Table

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1363.347	1	1363.347	300.224	0.002
	Residual	1451.713	98	4.721		
	Total	3124.963	249			

In Table 10, the Sig number is smaller than 0.05, which indicates that the regression model is suitable. Therefore, the sig number shows that the linear regression has a suitable model and the exchange of ideas has an impact on green marketing. In the continuation of the regression test, the table of coefficients of the regression model is shown.

Table 11. Coefficients of the regression model

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	14.904	1.269		11.749	0.000
1 Marketing of green products	0.217	0.073	0.245	3.134	0.002

In Table 11, the β coefficient is equal to 0.245.

H4: The use of customer knowledge has an effect on the marketing of green products.

To perform this test, linear regression and correlation methods are used, and the results of the linear regression test are shown in Table 12.

Table 12. Results of the linear regression test

Model	R	R Square	Adjusted R Square	Std.Error of the Estimate
1	0.789	0.610	0.566	0.18123

Table 12 shows the results of the linear regression test. Pearson's correlation coefficient shows that there is a correlation of 78.9% between the use of customer knowledge and marketing of green products, and this correlation is also positive.

R Square is equal to 0.610, which indicates the contribution of 61% of the model in expressing the dispersion of the dependent variable. The correction coefficient is 0.005.

Table 13 shows information related to the ANOVA or analysis of variance table.

Table 13. Analysis of Variance Table

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	1410.347	1	1410.347	303.271	0.000

Residual	1335.626	98	4.711		
Total	2938.341	249			

In Table 13, the Sig number is smaller than 0.05, which indicates that the regression model is inappropriate. Therefore, the sig number shows that the use of customer knowledge does not affect the marketing of green products. In the continuation of the regression test, the table of coefficients of the regression model is shown in Table 14.

Table 14. Coefficients of the regression model

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
	(Constant)	1.711	1.031		12.122	0.003
1	Marketing of green products	0.362	0.032	0.668	17.771	0.000

The beta value in Table 14 is equal to 0.668.

In the following, structural equation method (using Lisrel version 8.80) was used to draw the research model. The results of structural equation modeling are shown below. The explanation is that the bigger the factor load, the better it can determine the independent variable. A reflection on the confirmatory factor analysis section of the model shows that the factor loading of all variables is higher than 0.3. If the factor load is less than 0.3, the relationship is considered weak and is ignored. A factor between 0.3 and 0.6 is acceptable, and if it is greater than 0.6, it is very desirable. The value of the RMSEA index equal to 0.071 was obtained, which indicates the favorable approval of the model because this value should be less than 0.1. The value of the CFI index in this model is equal to 0.99, and since it is greater than 0.9, it shows that the model is desirable. Incremental fit IFI index is another adaptive fit index. This index is acceptable for values above 0.9 and a sign of model suitability. The RFI index is another index of the model, which is equal to 0.92, and since it is more than 0.9, it indicates the desirability of the model. The NFI index is higher than 0.95, indicating that the model has a good fit.

Therefore, summarizing the results of structural equations shows that the dimensions are well loaded on the research variables and can provide a suitable description of the variables. The fitted model of the research is shown below.
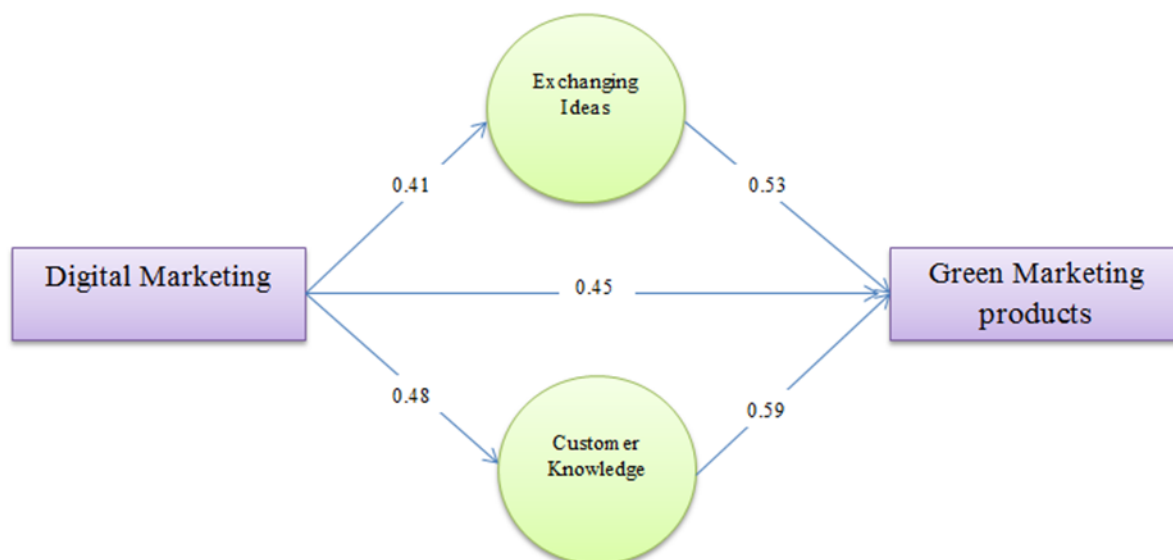
Picture 1. Research model

The fitted indices of the model are shown in Table 15.

Table 15. Indicators fitted in the model

fit index	RFI	IFI	RMSEA	NFI	CFI
Acceptable value	0.9<	0.9<	0.1>	0.9<	0.9<
Estimated value	0.92	0.97	0.071	0.96	0.99

In table 16, the path coefficients, significance coefficients and rejection or confirmation of the hypothesis are shown separately.

Table 16. rejection or confirmation of the hypothesis

Model relationships	path coefficient (operating load)	standard	Reject or confirm the hypothesis
Digital marketing - exchange of ideas	0.41	0.3<	confirm
Digital Marketing - Customer Knowledge	0.48	0.3<	confirm
Exchange of ideas - marketing of green	0.53	0.3<	confirm

products			
Customer knowledge-marketing of green products	0.59	0.3<	confirm
Digital marketing-marketing of green products	0.45	0.3<	confirm

conclusion

This research was conducted on the impact of digital marketing on marketing of green products, considering the role of exchanging ideas and using customer knowledge as a mediating variable. The first hypothesis of the research stated that "digital marketing has an effect on the exchange of ideas". The results of the research showed the existence of this effect. On the other hand, the factor load calculated by Lisrel software showed that this influence is significant because the factor load equal to 0.46 was obtained, which was greater than 0.3, thus showing its influence. The result shows that digital marketing can provide an environment for exchanging people's ideas in green marketing. As a result, it can be said that digital marketing is vital for business and brand awareness of green products. Digital content and marketing is so common that consumers expect and trust it as a way to learn about brands. On the other hand, brands can also exchange ideas with customers. Broadly speaking, digital marketing is defined as using multiple digital tactics and channels to connect with customers where they spend most of their time.

The second hypothesis of the research stated that "digital marketing has an effect on the use of customer knowledge". The results of the research confirmed the existence of this relationship, on the other hand, the results of the Lisrel test showed that the factor loading between digital marketing and the use of customer knowledge is equal to 0.48. Based on this, the relationship between them is meaningful. Explaining that digital marketing is an inevitable form of marketing in the information age. As technology continues to evolve, there are better and better ways to reach consumers, educate them, learn from them, and ultimately buy, and digital technology is undoubtedly a great vehicle for this purpose. Digital marketing refers to advertising delivered through digital channels such as search engines, websites, social media, email and mobile applications, which constitute several main types of digital marketing: which include: content marketing, optimization Search engine building, payment. The use of customer knowledge is facilitated by digital marketing, and green product manufacturers can easily use the knowledge of their customers.

The third hypothesis of the research states that "the exchange of ideas has an effect on green marketing". Based on the results obtained from the test, this relationship was significant and the results showed that the factor loading between the two mentioned components is equal to 0.53,

and considering that this number is greater than 0.3, this relationship is strong and acceptable. Explaining that green marketing is the development and sale of environmentally friendly goods or services. This helps to improve credibility, reach a new segment of the audience and stand out from the competition, as more and more people become aware of the environment and can contribute to green marketing and development by sharing the ideas of environmental protection. Help sell its products.

It is in the exchange of ideas that customers understand that our planet is facing many threats such as air and water pollution, food waste, plastic pollution and deforestation. Chemicals produced by factories can be found everywhere, and that is why many companies are thinking about producing their products in an environmentally friendly way. In addition, the level of environmental awareness among consumers will increase and people will be eager to buy environmentally friendly products despite the higher prices. In this regard, many brands do their best to respond to the demands of their customers and have started producing such products according to their responsibility as inhabitants of this planet. The exchange of ideas makes people know that green marketing will have a positive effect on the health of people and the state of the environment and is not limited to production.

The fourth hypothesis of the research stated that the use of customer knowledge has an effect on the marketing of green products. The research results also showed the significant effect of these components. The results showed that the factor load of this relationship is strong and equal to 0.59, hence their relationship is stronger than other relationships. Marketers publicize the environmental performance, innovation, and features of green products through multiple media, hoping to persuade consumers to try new green products. Various marketing methods are potential ways to disseminate green product knowledge to consumers. As a result, environmental awareness and health awareness of consumers has increased. As a result, consumers gradually change their consumption concept and increase the purchase of green products. Consumers improve their green product knowledge through purposeful learning and random learning strategies, and their knowledge level of green products gradually increases. More consumers are participating in environmental protection activities. The result of the research showed that customer knowledge affects their decision-making processes. The use of customer knowledge and their attitude towards green products is directly related to the marketing of green products.

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