

Cuc, Lavinia Denisia; Pelău, Corina; Szentesi, Silviu-Gabriel; Sanda, Grigorie

Article

The impact of green marketing on the consumers' intention to buy green products in the context of the Green Deal

Amfiteatru Economic Journal

Provided in Cooperation with:

The Bucharest University of Economic Studies

Suggested Citation: Cuc, Lavinia Denisia; Pelău, Corina; Szentesi, Silviu-Gabriel; Sanda, Grigorie (2022) : The impact of green marketing on the consumers' intention to buy green products in the context of the Green Deal, Amfiteatru Economic Journal, ISSN 2247-9104, The Bucharest University of Economic Studies, Bucharest, Vol. 24, Iss. 60, pp. 330-345, <https://doi.org/10.24818/EA/2022/60/330>

This Version is available at:

<https://hdl.handle.net/10419/281637>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.



<https://creativecommons.org/licenses/by/4.0/>

THE IMPACT OF GREEN MARKETING ON THE CONSUMERS' INTENTION TO BUY GREEN PRODUCTS IN THE CONTEXT OF THE GREEN DEAL

Lavinia Denisia Cuc¹, Corina Pelau^{2*}, Silviu-Gabriel Szentesi³,
and Grigorie Sanda⁴

¹⁾³⁾⁴⁾ Aurel Vlaicu University Arad, Romania

²⁾ Bucharest University of Economic Studies, Romania

<p>Please cite this article as: Cuc, L.D., Pelau, C., Szentesi, S.G., and Sanda, G., 2022. The Impact of Green Marketing on the Consumers' Intention to Buy Green Products in the Context of the Green Deal. <i>Amfiteatru Economic</i>, 24(60), pp. 330-345.</p> <p>DOI: 10.24818/EA/2022/60/330</p>	<p>Article History Received: 12 December 2021 Revised: 11 February 2022 Accepted: 30 March 2022</p>
---	--

Abstract

To counteract the negative effects of environmental degradation and climate change, in the European Union, a set of measures and policies has been developed under the name of the Green Deal, which aims to develop a competitive and resource-efficient economy. For these measures to be sustainable, it is important to have green marketing to promote green consumption and an environmentally friendly attitude. The aim of this paper is to determine the empirical relation between the instruments of green marketing and the ecological behavior and attitude of consumers and the impact it has on the future intention to buy green products. The results of a structural equation model show that although product and communication policies are more closely associated with green marketing, digital tools have the greatest impact on green behavior. Their easy way of use has side effects on ecological behavior. A mediation model empirically demonstrates that the willingness to buy green products, the environmentally oriented lifestyle, and the willingness to pay more for green products mediate the relationship between the current ecological behavior and the intention to buy green products in the future.

Keywords: Green marketing, green products, environmentally friendly behavior, Green Deal, European Union

JEL Classification: M21, M31

*Corresponding author, **Corina Pelau** – corina.pelau@fabiz.ase.ro



This is an Open Access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited. © 2022 The Author(s).

Introduction

Our contemporary society faces various challenges related to accelerated urbanization and industrialization. The health crisis and pollution are disruptive factors in ensuring the optimal living conditions for current and future generations. In this context, ecological consumption, defined as the preference for green services, pollution reduction by choosing green means of transportation, and any other environmentally friendly measures taken at the individual level, play a major role in maintaining the health of the population and ensuring a higher quality of life. In other words, today's generations need to be aware of the role they play in protecting the environment through responsible behavior, supporting the consumption of environmentally friendly products, and incorporating these goals into their daily lives.

To support environmental protection, a set of measures known as the Green Deal has been proposed at the European Union level to decrease pollution by reducing greenhouse gas emissions. These measures address several industrial sectors, but also the final consumers. These measures include, among others, the development and marketing of healthy and affordable food and the development of products with a longer shelf life, which can be repaired, recycled, or reused (European Commission, 2021). Achieving the objectives proposed by the Green Deal requires urgent action for the entire production and distribution chain, including for food products. For these changes to be sustainable, it is equally important to increase the awareness of the final consumers so that they are willing to change their lifestyle, buy green products, and even be willing to pay more for environmentally friendly products. In this sense, green marketing is crucial to developing and promoting green products.

In this paper, we will study the impact of green marketing on the ecological behavior and attitude of consumers and on the intention to buy green products, as a prerequisite for the sustainability of measures implemented by the Green Deal of the European Union. We will study from an empirical point of view the role that green marketing instruments have regarding ecological attitudes and behavior. We will also look at the extent to which ecological behavior has an impact on the willingness to buy green products, to pay a higher price for them, and on an environmentally oriented lifestyle. These constructs will be correlated through a mediation model, with the future intention of buying green products. The results contribute to the literature by empirically measuring the impact of the marketing-mix policies on ecological behavior and on the future intention to buy green products. Electronic marketing instruments have a special contribution, namely a reduction in the amount of paper used for advertising materials.

The paper begins with the study of the literature on green marketing. Based on this, a conceptual model is developed, which is then tested empirically. The methodology and results are presented and based on this model, and the discussions are developed at the end.

1. Literature review

The concept of green marketing was introduced in 1975 by the American Marketing Association and, over time, it has had various names such as environmental marketing, organic marketing, social marketing, or sustainable marketing (Zhu and Sarkis, 2016). The literature does not provide a universal definition of green marketing. A common element describing this term is the explicit inclusion of environmental awareness in all its tools and actions (Dangelico and Vocalelli, 2017). Dibb et al. (2005) define green marketing as an

implementation of the four policies of the marketing mix (product, price, place, promotion) without doing any harm to the environment. Peattie (2001) believes that green marketing manages all the processes of the marketing activity in a profitable and sustainable way (Peattie, 2001). Mishra and Sharma (2012) suggest that the concept of green marketing refers to sustainable marketing, promoting the use of products in a socially and responsible way, and introducing products that are non-toxic and do not harm the environment. At the same time, green marketing is seen as a commitment of companies to environmentally friendly products and services (Kinoti, 2011).

According to Yang and Calhoun (2007), the trigger for green marketing can be considered the “green revolution”, which emphasizes environmental protection and sustainable economic development and promotes green consumption, reducing the environmental pollution. Bai et al. (2015) believe that green marketing was triggered by three main factors, namely governmental factors, competitive factors, and opportunities. From the perspective of governmental factors, environmental and sustainable development legislation has been amended (Zhang and Wen, 2008) to protect consumers (Chan, 2001; Chan and Lau, 2000), giving them the right to know the components of products. Thus, eco-labeling programs have emerged, such as the Green Watch program in China (Liu et al., 2012).

From a competitiveness perspective, many businesses have included green issues in their marketing strategy due to pressure from NGOs, government institutions, and environmentalists. Holslag (2015) states that environmental management measures have been adopted due to pressures on the supply chain, which have had an impact on the market share of companies (Marquis and Qian, 2014). An example in this sense is the adoption of ISO 14001 environmental certification in the automotive industry, which attests to the environmental concerns of companies (Qi et al., 2011). Pressures can also be felt at a competitive level. Businesses that have competitors with sustainable attitudes will strive to adopt environmental policies to manifest their social responsibility. These pressures determine entities to adopt environmentally friendly behaviors, including green marketing. The opportunities offered by the market are considered triggers of green marketing because companies/organizations are willing to adopt environmentally friendly attitudes to increase their market share (Forsman, 2013).

All the mechanisms mentioned above have the power to influence the marketing and organizational communication of companies (Marquis and Qian, 2014). Marketing communication refers to the actions of companies to make themselves known through advertising. These marketing actions can have ecological values through ISO 14001 certification (and through an ecological surveillance program). Certifications are not promotional activities, but are perceived by the market as a barometer of environmental performance.

With the advent of the green revolution, the concept of green consumption has been developed. It is seen as a green self-identity of consumers (Sparks and Shepherd, 1992) and involves the use of products that do not endanger human health or the environment through pollution and other means. Within it, green consumers are the main actors in ecological consumption. Zhu and Sarkis (2016) believe that green consumers are the ones who prefer products that are not harmful to life and the environment. Therefore, ecological trends are set by consumers. They put their mark on greening the supply chain (Brindley and Oxborrow, 2014).

In terms of demographic segmentation, global research on green consumers presents them as young, married, with high education, and high income (Gilg et al., 2005). In 2012, Shields and Zeng stated that men are greener consumers than women (Shields and Zeng, 2012). Studies conducted in Romania show that, although the important role of consuming green food and produce such as fruits and vegetables for maintaining personal health is known, this is not a priority for young people at the onset of professional life (Pocol et al., 2021). One explanation is that, although consumers are interested in sustainable development, their desires are not always behaviorally transposed (Dabija, Bejan, and Dinu, 2019). In designing offers and in the promotion of brands, producers need to know the preferences and expectations of consumers, because the sale of products for young consumers is no longer possible without the use of ecological strategies either in production processes or in marketing (Dabija, Bejan, and Dinu, 2019).

Economic development comes with several environmental problems: resource depletion, deforestation, coastal recovery, desertification, climate change, pollution, and excessive energy use. These issues jeopardize economic sustainability, public health, and social stability (Zhu and Sarkis, 2016; Feher et al., 2021). Therefore, global economic growth has also led to environmental concerns that have produced significant social changes, embodied in the emergence of green markets and green consumers. As sustainability norms evolve, certain competitive advantages emerge from the development of green products and a green economy (Zhu and Sarkis, 2016). Thus, concerns related to green marketing began to appear at the level of government, organizations, and final consumers, with the aim of avoiding environmental degradation and facilitating the process of transition to a green economy (Gouvea et al., 2013). Industrial organizations play an important role in influencing consumer choices through green marketing strategies. Globally, social change has occurred and consumers have put pressure on organizations to green their products and processes, thus influencing green markets and innovation (Zhu and Sarkis, 2016).

Food systems contribute significantly to the deterioration of the ecological balance. From this perspective, producers are faced with a new paradigm. On the one hand, the continuous growth of the population means an increase in food production and an improvement in nutritional values, and on the other hand, the production of green food involves higher financial costs while the quantities are smaller (Brînzan et al., 2012). The main challenge for producers is to identify new efficient production methods that meet the market needs and that are also affordable (Popa et al., 2019). As a result, new environmental regulations have emerged, and consumer environmental attitudes have become manifest in several areas (Yu, 2014). Regulatory pressures have arisen in the supply chain (Grumbine, 2014). The COVID-19 pandemic brought a new perspective on consumption patterns and highlighted a continuous orientation of young people toward sustainability, beyond the central dynamic context and disruptions (Dabija, Bejan, and Dinu, 2019).

Consequently, one of the current concerns of companies is the implementation of profitable green marketing strategies (Papadas et al., 2017). Because the concept of green marketing is in a permanent dynamic, green marketing strategies have not significantly contributed to improving the consumers' quality of life or the health of the ecosystem (Polonsky, 2011). This is where the need for a holistic and integrated analysis of green marketing and concept development arose (Papadas et al., 2017). The mid-1990s were dominated by the emphasis on sustainable consumption and production, by addressing policies and studies in environmental reports debated at the UN, the OECD (Organization for Economic

Co-operation and Development), and the Council for Sustainable Development (Peattie and Crane, 2005). The global financial crisis, together with a changing society (Porter and Kramer, 2011; Stoeckl and Luedicke, 2015), put sustainable development at the forefront so that managers are aware of the need to integrate green marketing at the organizational level (Unruh and Ettenson, 2010). Companies are guided to fulfill their social and sustainable responsibilities (Geels et al., 2015) and integrate green marketing strategies. Through them, they show that they recognize and internalize the importance of ecological concerns (Lash and Wellington, 2007) and that they can gain a competitive advantage by differentiating and developing the business (Gordon et al., 2011; Kotler, 2011).

However, some environmental and sustainability issues are still considered a constraint and too costly for the business. Few industries (mining, chemistry) link them to marketing, as a function of the latter (Shrivastava, 1995). It should be remembered, however, that green marketing is not just about energy consumption and the depletion of natural resources, but it addresses species extinction, ecosystem destruction (Gowri, 2004; Tantau & Şanta, 2021), or supply chain problems (Charter and Polonsky, 2017). Therefore, environmental issues become a competitive factor in the market (Belz and Peattie, 2009; McDonagh and Prothero, 2014).

Another relevant aspect of green marketing is the gradual change of consumer mentality and attitude toward sustainability (Chang et al., 2019). Psychological factors of consumers regarding environmental protection issues gradually affect consumer behavior (Huang et al., 2018). This means that an increased interest in the environment can lead to conscious consumption and can have a positive influence on green consumption behavior. Green marketing is discussed in papers dealing with sustainable strategies, namely the management of the ecological supply chain (Cheng, Lin, and Wong, 2016). Its strategies regarding all instruments of the marketing mix will have an impact on the greening attitude of consumers and will respond to the characteristics of green consumption.

2. Research methodology

The main objective of this paper is to determine, from an empirical perspective, the relationship between green marketing and the ecological behavior of consumers, as well as the implications these constructs have on the future intention to buy green products. At the consumer level, the factors under consideration are the willingness to buy products with green marketing, the environmentally friendly lifestyle, and the willingness to pay a higher price for green products. As described above, green marketing currently includes a wide range of tools and actions that cover the entire marketing mix, from products made using ecological materials to a distribution system that aims to protect the environment, as well as the development of advertising and communication tools based on recyclable materials (Zhu & Sakris, 2016). A digital component is added to the marketing mix, which, besides its practical value, has an ecological component by reducing the consumption of paper and energy (Papadas et al., 2017; Pelau and Acatrinei, 2019). Thus, we formulated the first hypothesis of the research, as follows:

H1: Green marketing tools have a significant positive impact on green behavior and the attitude of consumers.

Starting from the current ecological behavior and attitude, we want to measure the effects they have on the availability to buy green products, the desire to have an environmentally

oriented lifestyle, and the willingness to pay a higher price for green products. We tried to determine if the ecological behavior is only a statement or if it is transposed into action. We also measured whether the consumer's awareness of environmental issues has a contribution to the future intention to buy green products. Therefore, the following hypotheses are formulated:

H2: The willingness to buy green products has a mediating effect on the relationship between the ecological consumer behavior and attitude and the future intention to buy green products.

H3: An environmentally oriented lifestyle has a mediating effect on the relationship between ecological behavior and attitude and the future intention of consumers to buy green products.

H4: The willingness to pay a higher price for green products mediates the relationship between the consumers' ecological behavior and attitude, and the future intention to buy green products.

To empirically validate the proposed hypotheses, quantitative methods were applied, and the data were collected using an online questionnaire, administered in November 2021. We obtained 689 valid answers from a population aged between 20 and 70 years (25.1% less than 20 years, 39.1% between 21 and 30 years, 13.7% between 31 and 40 years, 11.6% between 41 and 50 years, 7.6% between 51 and 60 years, 2.6% older than 60 years) and represented by both genders (77.9% women and 22.1% men).

The questionnaire comprises 42 items, measured using a seven-point Likert scale, with 1 as total disagreement and 7 as total agreement. In more detail, 16 items were used to measure the identification of green marketing instruments. Of these items, 8 items have been adapted from Zhu and Sakris (2016) for the product policy, 5 items have been adapted from Zhu and Sakris (2016) for the communication policy, and 3 items have been adapted from Papadas et al. (2017) for the digital instruments. To measure the ecological behavior and attitude of consumers, 9 items have been adapted from Confente et al. (2020), Peterson et al. (2021), and also self-determined items have been used. Some of the items developed by Peterson et al. (2021) have been adapted to measure the future intention of having an ecological behavior. The willingness to buy green products or products with green marketing is measured by using three items adapted from Confente et al. (2020) and self-determined items. The environmentally oriented lifestyle is assessed using five self-determined items. The willingness to pay more for green products is measured using four items adapted from Hojnik et al. (2021).

3. Research results

3.1. Results of the confirmatory factor analysis

To test the validity of the selected items and to determine the variables, a confirmatory factor analysis was performed, based on the principal component method and with varimax rotation, using the SPSS 20.0 program. The value of the Kaiser-Meyer-Olkin test was 0.943 and the significance of the value of the Bartlett sphericity test was $p < 0.001$, indicating a good fit of the data for factor analysis. Considering the eigenvalues greater than 1, eight factors were established, explaining 70.23% of the total variance of the model. Of the eight factors, three relate to the characteristics of green marketing, while another five factors relate to the ecological behavioral component of consumers.

The first factor (F1) contains items related to the product policy of green marketing, referring to the sale of green products (0.736), products with eco-label (0.473), ecological materials from which the product is made (0.741), an environmentally oriented production system (0.762), logistics (0.595) and research and development (0.725), as well as the packaging of products made of ecological (0.716) or recyclable (0.699) materials. The validity of this factor is given by the Cronbach-Alpha value of 0.878, and the average value of the factors is $M=5.62$.

The second factor (F2) refers to the ecological communication policy and contains items on promoting ecological claims (0.629) and supporting the recycling process (0.733), as well as creating an environmentally oriented image (0.699) and promoting environmental knowledge (0.732) and environmental standards and policies (0.570). The average value of this factor is $M=5.47$, and the validity is confirmed by the Cronbach-Alpha value of 0.864.

The third factor (F3) contains three items on the role of e-commerce in protecting the environment. It contains items on the role of online advertising in reducing paper consumption (0.692), the greening of e-commerce (0.780), and the use of recycled materials for advertising tools (0.718). The Cronbach-Alpha value for this factor is 0.804 and the average value is $M=4.89$.

The fourth factor (F4) describes the ecological behavior of consumers. It contains five items about one's perception of the ecological attitude and four items about ecological actions. The perception of the ecological attitude is measured by the concern for the environment (0.587), the priority given to environmental protection (0.597), the importance given to ecological materials (0.709), and energy use (0.724) in the manufacturing process of the purchased products, as well as whether respondents consider themselves ecological consumers (0.678). The actions relate to the current behavior of buying only green products (0.730), products from environmentally friendly companies (0.741), or products with green marketing (0.695), as well as the recommendation to buy green products (0.615). Although it combines attitude elements with behavioral elements, this factor has a good validity with a Cronbach-Alpha value of 0.925. The average value is $M=4.33$.

The fifth factor (F5) refers to the satisfaction that ecological behavior gives. It contains three items on how the purchase of green products is associated with ecological behavior (0.662), environmental responsibility (0.660), and the satisfaction it creates (0.609). This factor has a Cronbach-Alpha value of 0.892 and an average value of items of $M=5.14$.

The sixth factor (F6) contains items related to the ecological lifestyle. It includes the management of consumption (0.493) and the lifestyle (0.619) suited for ecological consumption. It also refers to the perception of the impact that a clean environment has on one's and the family's health (0.839), on society (0.864), and future generations (0.833). The validity of this factor is given by the Cronbach-Alpha value of 0.867, and the average value of the items is $M=6.16$.

The seventh factor (F7) describes the intention to behave ecologically in the future. It contains an item on the availability to give up the non-ecological behavior (0.736) and four items on the intentions of future actions. These items are similar to those in F5, but are formulated in the future tense by measuring the intention to behave environmentally friendly. This factor refers to the intention to buy green products (0.770), products with green marketing (0.745), as well as the recommendation to buy green products (0.758), and

products with green marketing (0.690). This factor has a Cronbach-Alpha value of 0.938 and an average item value of $M=4.88$.

The last factor (F8) is the willingness of consumers to pay a higher price for green products. It contains four items on the willingness to pay a higher price for green products (0.713), and for products that contribute to a cleaner environment (0.742), the pride of paying a higher price for green products (0.779), and the contribution this additional price has for the planet (0.765). The Cronbach-Alpha value for this factor is 0.887, and the average value of the items is $M=4.54$.

Table no.1 presents the items grouped into the eight factors extracted using confirmatory factor analysis, in addition to the mean score for each item and the respective loadings.

Table no. 1. Results of the confirmatory factor analysis

Variable	Description	Mean	CFA loading
F1. Green marketing based on product policy (items adapted from Zhu and Sakris, 2016) $M=5.62$, Cronbach-Alpha=0.878, AVE=0.547, CR=0.906			
Co_01	Green marketing refers to the sale of green / environmentally friendly products.	5.83	0.736
Co_02	Green products refer to the sale of eco-labeled products.	5.36	0.473
Co_03	Green marketing refers to the sales of products made out of ecological materials.	5.54	0.741
Co_04	Green marketing refers to products with an ecological / environmentally friendly production process.	6.02	0.762
Co_05	Green marketing refers to products made as a result of research and development processes focused on the environment.	5.66	0.725
Co_06	Green marketing refers to products with an ecological logistics system.	5.27	0.595
Co_07	Green marketing refers to products with packaging made of ecological materials.	5.53	0.716
Co_08	Green marketing refers to products with recyclable packaging.	5.71	0.699
F2. Green marketing based on communication policy (items adapted after Zhu and Sakris, 2016) $M=5.47$, Cronbach-Alpha=0.864, AVE=0.648, CR=0.902			
Co_09	Green marketing refers to the promotion of ecological claims.	5.43	0.629
Co_10	Green marketing refers to companies with an environmentally focused corporate image.	5.17	0.699
Co_11	Green marketing refers to companies that promote recycling.	5.39	0.733
Co_12	Green marketing refers to companies that promote knowledge about ecology and environmental protection.	5.47	0.732
Co_13	Green marketing refers to the promotion of environmentally friendly standards and practices.	5.86	0.570
F3. Green marketing based on digitalization (items adapted from Papadas et al., 2017) $M=4.89$, Cronbach-Alpha=0.804, AVE=0.719, CR=0.885			
Co_14	Green marketing refers to the promotion of online advertising to reduce advertising materials made out of paper.	5.10	0.692
Co_15	Green marketing refers to the promotion of e-commerce because it is more environmentally friendly.	4.59	0.780
Co_16	Green marketing refers to the use of recycled materials for advertising tools.	4.97	0.718
F4. Ecological behavior and attitude (items adapted after Confente et al., 2020, Peterson et al., 2021) $M=4.33$, Cronbach-Alpha=0.925, AVE=0.623, CR=0.937			
Eco_17	I consider myself a person concerned with environmental issues.	5.40	0.587
Eco_18	Environmental protection is a constant priority for me.	5.23	0.597

Variable	Description	Mean	CFA loading
Eco_19	I consider myself an ecological consumer.	4.61	0.678
Eco_23	I am concerned about the use of ecological materials in the production process of the products that I buy.	4.59	0.709
Eco_24	I am concerned about the energy consumption in the production process of the products I buy.	4.40	0.724
Act_30	At the moment, I buy only green products.	3.50	0.730
Act_31	At present, I buy only products from companies that are committed to environmental protection practices.	3.58	0.741
Act_32	Currently, I only buy products from companies that have green marketing.	3.47	0.695
Act_33	At present, I recommend to acquaintances to buy green products.	4.16	0.615
F5. Willingness to buy green products (self-determined items) M=5.14, Cronbach-Alpha=0.892, AVE=0.824, CR=0.934			
Eco_20	Buying green products makes me feel like a green consumer.	4.94	0.662
Eco_21	Buying green products makes me feel responsible for the environment.	5.36	0.660
Eco_22	Buying green products gives me some satisfaction.	5.12	0.609
F6. Environmentally oriented lifestyle (self-determined items) M=6.16, Cronbach-Alpha=0.867, AVE=0.656, CR=0.905			
Act_25	I want to manage my consumption in such a way that it does not harm the environment.	5.57	0.493
Act_26	I want to have a lifestyle that contributes to the protection of the environment.	5.88	0.619
Act_27	I believe that a healthy and clean environment has a major impact on the health of my family and myself.	6.44	0.839
Act_28	I believe that a healthy and clean environment has a major impact on the society I belong to.	6.42	0.864
Act_29	I believe that a healthy and clean environment has a major impact on future generations.	6.46	0.833
F7. Intention to buy products with green marketing (items adapted from Peterson et al., 2021) M=4.88, Cronbach-Alpha=0.938, AVE=0.803, CR=0.953			
Int_34	In the future, I am determined to give up products that are not green.	4.72	0.736
Int_35	In the future, I am determined to buy only green products.	4.72	0.770
Int_36	In the future, I am determined to buy products that have green marketing.	4.72	0.745
Int_37	In the future, I will recommend more green products.	5.23	0.758
Int_38	In the future, I will recommend more products that have green marketing.	5.03	0.690
F8. Willingness to pay more for green products (items adapted from Hojnik et al., 2021) M=4.54, Cronbach-Alpha=0.887, AVE=0.749, CR=0.923			
Price_39	I am willing to pay more for green products.	4.76	0.713
Price_40	I always prefer products with a higher price if their production and sale lead to a cleaner environment.	4.77	0.742
Price_41	I am proud to pay a higher price for green products.	4.01	0.779
Price_42	By paying a higher price for green products, I contribute to saving the planet.	4.61	0.765

3.2. Results regarding the relation between green marketing, ecological behavior, and the intention to buy green products in the future

To determine the relationship between green marketing, ecological behavior, and the intention to buy green products in the future, a two-stage model was developed. In the first stage, the impact of the green marketing instruments on ecological behavior has been

measured empirically. In the second stage, a mediation model was tested, having the ecological behavior as an independent variable, the intention to buy as a dependent variable, and the willingness to buy green products, pursue an environmentally oriented lifestyle, and the willingness to pay a higher price for green products as mediating variables.

In the first stage, the impact of green marketing on the ecological behavior of consumers was measured. To determine this relationship, a structural equations model was created based on the least-squares method, with ecological behavior as a dependent variable and the three components of green marketing, determined in the factor analysis, namely product policy, communication policy, and digitalization as independent variables. To test the validity of the relationship, a bootstrapping having 5,000 distinct samples, was applied, using the Smart-PLS 3 program.

The results show that all three components of green marketing have a significant positive impact on the ecological behavior of consumers. Digitalization has the highest influence with a coefficient $\beta=0.272$, ($t=5.919$, $p=0.000$, $CI=[0.198; 0.349]$). Although this component is the least associated with green marketing, having the lowest average of items ($M=4.89$), the use of e-commerce has other benefits for the consumer, leading to a greater impact on ecological behavior. Product policy, which also includes certain elements of logistics and distribution, also has a significant positive impact on environmental behavior, with a coefficient $\beta=0.171$ ($t=3.234$, $p=0.001$, $CI=[0.088; 0.263]$). The smallest influence pertains to the communication policy, which has a positive impact of acceptable significance, having $\beta=0.090$ ($t=1.716$, $p=0.086 < 0.10$, $CI=[0.004; 0.175]$). The results of this model can be seen in Table 2. These results show that green marketing, through its components, has an impact on ecological behavior and thus confirms hypothesis H1.

Table no. 2. Relation between green marketing and the ecological behavior and attitude

Dependent variable: Ecological behavior	β	SD	t	CI
Independent variables				
Green marketing based on product policy	0.171	0.053	3.234***	[0.088; 0.263]
Green marketing based on communication policy	0.090	0.052	1.716*	[0.004; 0.175]
Green marketing based on digitalization	0.272	0.046	5.919***	[0.198; 0.349]

Note: *** $p < 0,01$, ** $p < 0,05$, * $p < 0,10$.

In the second stage of the model, we tested the relationship between ecological behavior and the intention to buy green products in the future, introducing the willingness to buy green products and to pay a higher price for them, in addition to an environmentally oriented lifestyle, as mediating variables. To test the validity of this mediation model with three mediating variables, a model of structural equations was created and was tested using the bootstrapping method based on 5000 distinct samples, in the Smart-PLS 3.0 program.

The results of the mediation model indicate that the independent variable “ecological behavior” has a significant positive influence on the mediating variables (a-path) with the following coefficients $\beta=0.680$ ($t=29.251$, $p=0.000$, $CI=[0.641; 0.717]$) for the willingness to buy green products, $\beta=0.483$ ($t=17.493$, $p=0.000$, $CI=[0.438; 0.529]$) for an environmentally oriented lifestyle and $\beta=0.610$ ($t=22.110$, $p=0.000$, $CI=[0.563; 0.654]$) for the ecological price. It can be seen that the ecological behavior and attitudes have the greatest influence on the willingness to buy green products and pay a higher price for them. All three mediating

variables positively influence (b-path) the dependent variable “intention to buy green products in the future” with the following coefficients $\beta=0.160$ ($t=3.937$, $p=0.000$, $CI=[0.093; 0.228]$) for the willingness to buy green products, $\beta=0.178$ ($t=6.464$, $p=0.000$, $CI=[0.133; 0.223]$) for the ecological lifestyle and $\beta=0.315$ ($t=8.527$, $p=0.000$, $CI=[0.256; 0.377]$) for the willingness to pay a higher price for green products.

The biggest influence on future intention comes from the willingness to pay a higher price for green products. The direct effect of the independent variable “behavior and ecological attitude” on the dependent variable “future intention to buy green products” is also positive and significant, having $\beta=0.316$ ($t=8.292$, $p=0.000$, $CI=[0.252; 0.378]$). The total effect of the model is also positive and significant, and the higher value of the coefficient $\beta=0.703$ ($t=33.393$, $p=0.000$, $CI=[0.668, 0.737]$) confirms the existence of a mediation. This is also confirmed by the significant value of the indirect effect having $\beta=0.387$, ($t=12.660$, $p=0.000$, $CI=[0.338; 0.439]$).

The results can be seen in Table 3. Therefore, hypotheses H2, H3, and H4 are confirmed, and the willingness to buy green products, the environmentally oriented lifestyle, and the willingness to pay a higher price mediate the relationship between the current behavior and attitude towards green products and the intention to buy green products in the future.

Table no. 3. Mediation model between the current ecological behavior and attitude and the future intention to buy products with a green marketing

Relation	β	SD	t	CI
Eco → Eco-buy (a-path1)	0.680	0.023	29.251***	[0.641; 0.717]
Eco → Eco-life (a-path2)	0.483	0.028	17.493***	[0.438; 0.529]
Eco → Eco-price (a-path3)	0.610	0.028	22.110***	[0.563; 0.654]
Eco-buy → Eco-intention (b-path1)	0.160	0.041	3.937***	[0.093; 0.228]
Eco-life → Eco-intention (b-path2)	0.178	0.027	6.464***	[0.133; 0.223]
Eco-price → Eco-intention (b-path3)	0.315	0.037	8.527***	[0.256; 0.377]
Eco → Eco-intention (direct effect)	0.316	0.038	8.292***	[0.252; 0.378]
Eco → Eco-intention (total effect)	0.703	0.021	33.393***	[0.668, 0.737]
Eco → Eco-intention (indirect effect)	0.387	0.031	12.660***	[0.338; 0.439]

Note: *** $p < 0,01$, ** $p < 0,05$, * $p < 0,10$.

The complete model with the influence of the three components of green marketing, as well as the mediation model, can be seen in Figure 1.

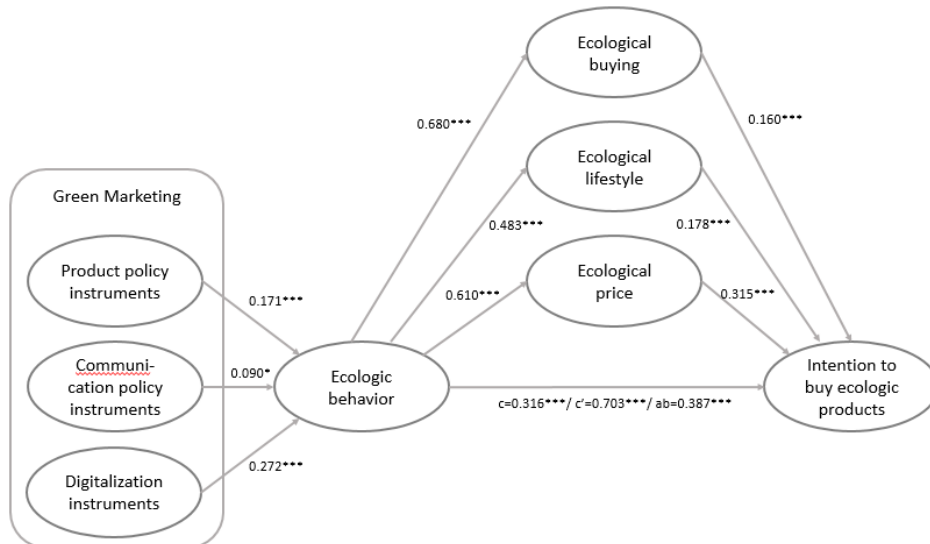


Figure no. 1. The model describing the relation between green marketing, ecological behavior and attitude, and the intention to buy green products

4. Discussions

The results of the research highlight the importance of green marketing on the ecological behavior and attitude of consumers. The paper also measures the impact of the willingness to buy and pay a higher price for green products and pursue an ecological lifestyle on the future intention to buy green products.

In the first stage of the proposed model, although respondents mostly associate the ecological elements of production, distribution, or communication with green marketing, digitalization has the biggest influence on the ecological behavior and attitude. Although not directly related to green marketing, most consumers adopt e-commerce or online communication, which has a positive impact on the environment. It should also be noted that this type of behavior is not necessarily determined by an ecological attitude, but can be determined by the benefits that digitalization has on consumers' activity. In this case, the influence on the environment is a side effect of digitalization and it is not necessarily associated with ecological behavior. This is confirmed by other research that revealed that digital behavior reduces energy consumption (Pelau & Acatrinei, 2019).

The ecological elements implemented in the marketing mix, such as green products, distribution, or communication, are prominently associated with the ecological behavior and attitude. Although in the short term, it may have a lower effect on the environmental behavior and attitudes, companies need to pursue environmentally oriented policies, considering the policies developed in the European Union through the Green Deal, to develop a green environment and a conscious attitude to protect the environment. From the point of view of environmental protection, it is important to implement any kind of policies that lead to a green economy. At the same time, it is important to increase consumer awareness of environmental protection. Therefore, it is recommended to continue the environmental policies supported by the European Green Deal.

The second stage of the analysis tested whether the ecological attitude was also transposed into practical measures. First, the independent variable of the mediation model underscores the correlations between items about the ecological attitude (“I feel like an ecological consumer”) and items that describe actions associated with the purchase of green products. The impact of the current ecological behavior on the future intention to buy green products is tested through a mediation model. The mediating variables propose three types of attitude associated with ecological behavior. The first attitude refers to the association between being a green consumer and the buying of green products. Thus, the current ecological behavior has a positive impact on this relationship, which subsequently influences the future intention to buy ecological products. The second attitude refers to a healthy lifestyle and responsibility for society. This mediation relationship is also confirmed, proving that the ecological attitude and behavior determine changes in the lifestyle of consumers through a stronger orientation toward the environment and a stronger responsibility toward peers and future generations. The latter attitude refers to the willingness to pay a higher price for green products. This is the most sensitive mediating variable, having the highest coefficient, and also has a positive impact on the future intention to buy green products.

Conclusions

The empirically tested model presented in this paper confirms the complexity of the ecological behavior and its significance. Understanding this behavior with all the associated attitudes is essential for the development and promotion of green products. For environmentally friendly companies, it is important to know the attitude of consumers to include it in future research related to the development, production, and distribution of green products, but also to create communication messages designed to attract the consumers' attention. The success of a green marketing approach depends largely on the individual's ability to adapt to an environment where respect for nature is above all else. These values of environmental behavior are also crucial for policies and measures adopted under the European Union's Green Deal. These policies aim to raise consumer awareness of the importance of protecting the environment, promoting a balanced lifestyle in harmony with nature, and acknowledging the responsibility for future generations.

The results of this research have important theoretical and practical implications. From a theoretical perspective, this model explains the impact of the marketing mix instruments on the ecological lifestyle and the willingness of consumers to buy and pay more for green products. It complements existing research by explaining how marketing instruments determine the intention of consumers to buy green products in the future. The results also have important managerial implications for companies that use green marketing, highlighting the impact of the marketing mix on ecological behavior. An important result in this regard is the use of electronic marketing instruments to reduce pollution and energy consumption. One of the limitations of the research refers to the way in which marketing instruments have been selected for the used items. Future research may further develop these instruments to verify their impact on ecological consumer behavior. In the context of the European Green Deal, green marketing continues to be of great importance for ecological consumer behavior.

References

- Bai, C., Sarkis, J. and Dou, Y., 2015. Corporate sustainability development in China: review and analysis. *Industrial Management & Data Systems*, 115(1), pp.5-40, <https://doi.org/10.1108/IMDS-09-2014-0258>
- Belz, F.M. and Peattie, K. 2009. *Sustainability marketing*. Glasgow; Hoboken, NJ: Wiley & Sons.
- Brindley, C. and Oxborrow, L. 2014. Aligning the sustainable supply chain to green marketing needs: A case study. *Industrial Marketing Management*, 43(1), pp.45-55. <https://doi.org/10.1016/j.indmarman.2013.08.003>
- Brînzan, O, Radu, D. and Țigan, E. 2012. Food consumption and sustainability, *Journal of Environmental Protection and Ecology*, 13, 253-257.
- Chan, R.Y., 2001. Determinants of Chinese consumers' green purchase behavior. *Psychology & Marketing*, 18(4), pp.389-413, <https://doi.org/10.1002/mar.1013>
- Chan, R.Y. and Lau, L.B. 2000. Antecedents of green purchases: a survey in China. *Journal of consumer marketing*, 17(4), pp.338-357, <https://doi.org/10.1108/07363760010335358>
- Chang, K.C., Hsu, C.L., Hsu, Y.T. and Chen, M.C., 2019. How green marketing, perceived motives and incentives influence. *Journal of Retailing and Consumer Services*, 49, pp.336-345, <https://doi.org/10.1016/j.jretconser.2019.04.012>
- Charter, M., Polonsky, M.J. (Eds.). 2017. *Greener marketing: a global perspective on greening marketing practice*. New York: Routledge.
- Cheng, S., Lin, K.Z. and Wong, W. 2016. Corporate social responsibility reporting and firm performance: evidence from China. *Journal of Management & Governance*, 20(3), pp.503-523, <https://doi.org/10.1007/s10997-015-9309-1>
- European Commissions, 2021. European Green Deal, Available at: <https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal>, [Accessed: 28.12.2021].
- Confente, I., Scarpi, D. and Russo, I. 2020. Marketing a new generation of bio-plastics products for a circular economy: The role of green self-identity, self-congruity, and perceived value. *Journal of Business Research*, 112, pp.431-439, <https://doi.org/10.1016/j.jbusres.2019.10.030>
- Dabija, D.C., Bejan, B. and Dinu, V., 2019. How Sustainability Oriented is Generation Z in Retail? A Literature Review. *Transformations in Business & Economics*, 18(2(47)), pp.140-155.
- Dangelico, R.M. and Vocalelli, D., 2017, "Green Marketing": An analysis of definitions, strategy steps, and tools through a systematic review of the literature, *Journal of Cleaner Production*, 165, pp.1263-1279, <https://dx.doi.org/10.1016/j.jclepro.2017.07.184>
- Dibb, S., Simkin, L., Pride, W.M. and Ferrell, O.C., 2019. *Marketing: Concepts and strategies*, Cengage Learning.
- Feher, A., Iancu, T., Raicov, M. and Banes, A., 2021. Food Consumption and Ways to Ensure Food Security in Romania, in: Erokhin, V. Tianming, G., Andrei, J.V. (eds) 2021. *Shifting Patterns of Agricultural Trade*. Singapore: Springer Nature.
- Forsman, H., 2013. Environmental innovations as a source of competitive advantage or vice versa? *Business Strategy and the Environment*, 22(5), pp.306-320, <https://doi.org/10.1002/bse.1742>
- Geels, F.W., McMeekin, A., Mylan, J. and Southerton, D., 2015. A critical appraisal of Sustainable Consumption and Production research: The reformist, revolutionary and reconfiguration positions. *Global Environmental Change*, 34, pp.1-12. <https://doi.org/10.1016/j.gloenvcha.2015.04.013>
- Gilg, A., Barr, S. and Ford, N., 2005. Green consumption or sustainable lifestyles? Identifying the sustainable consumer. *Futures*, 37(6), pp.481-504. <https://doi.org/10.1016/j.futures.2004.10.016>
- Gordon, R., Carrigan, M. and Hastings, G., 2011. A framework for sustainable marketing. *Marketing theory*, 11(2), pp143-163. <https://doi.org/10.1177/1470593111403218>

- Gouvea, R., Kassicieh, S. and Montoya, M.J., 2013. Using the quadruple helix to design strategies for the green economy. *Technological Forecasting and Social Change*, 80(2), pp.221-230, <https://doi.org/10.1016/j.techfore.2012.05.003>
- Gowri, A., 2004. When Responsibility Can't Do It. *Journal of Business Ethics*, 54, pp.33-50. <https://doi.org/10.1023/B:BUSI.0000043497.23400.00>
- Grumbine, R.E., 2014. Assessing environmental security in China. *Frontiers in Ecology and the Environment*, 12(7), pp.403-411, <https://doi.org/10.1890/130147>
- Hojnik, J., Ruzzier, M., Fabri, S. and Klopčič, A.L. 2021. What you give is what you get: Willingness to pay for green energy, *Renewable Energy*, 174, pp.733-746, <https://doi.org/10.1016/j.renene.2021.04.037>
- Holslag J., 2015. Explaining Economic Frictions Between China and the European Union, in: Aggarwal V. and Newland S. (eds), 2015. Responding to China's Rise. The Political Economy of the Asia Pacific, vol 15. Springer, Cham. https://doi.org/10.1007/978-3-319-10034-0_7
- Kinoti, M.W., 2011. Green marketing intervention strategies and sustainable development: A conceptual paper. *International journal of business and social science*, 2(23), pp.263-273.
- Kotler, P., 2011. Reinventing marketing to manage the environmental imperative. *Journal of marketing*, 75(4), pp.132-135, <https://doi.org/10.1509/jmkg.75.4.132>
- Lash, J. and Wellington, F., 2007. Competitive advantage on a warming planet. *Harvard Business Manager*, 85(3), pp.94-102.
- Liu, B., Yu, Q., Bi, J., Zhang, B., Ge, J. and Bu, M., 2012. A study on the short-term and long-term corporate responses to the GreenWatch Program: evidence from Jiangsu, China. *Journal of Cleaner Production*, 24, pp.132-140. <https://doi.org/10.1016/j.jclepro.2011.11.041>
- Marquis, C. and Qian, C., 2014. Corporate social responsibility reporting in China: Symbol or substance? *Organization science*, 25(1), pp.127-148. <https://doi.org/10.1287/orsc.2013.0837>
- McDonagh, P. and Prothero, A., 2014. Sustainability marketing research: Past, present and future. *Journal of Marketing Management*, 30(11-12), pp.1186-1219. <https://doi.org/10.1080/0267257X.2014.943263>
- Mishra, P. and Sharma P., 2012, Green Marketing: challenges and opportunities for business, *Journal of Marketing Communication*, 8, pp.35-41.
- Papadas, K-K., Avlonitis, G.J. and Carrigan, M., 2017. Green marketing orientation: Conceptualization, scale development and Validation. *Journal of Business Research*, 80, pp.237-246, <https://doi.org/10.1016/j.jbusres.2017.05.024>
- Peattie, K. 2001. Towards sustainability: the third age of green marketing. *The Marketing Review*, 2(2), pp.129-146. <https://doi.org/10.1362/1469347012569869>
- Peattie, K. and Crane, A., 2005. Green marketing: legend, myth, farce or prophesy? *Qualitative Market Research*, 8(4), pp.357-370, <https://doi.org/10.1108/13522750510619733>
- Pelau, C. and Acatrinei, C., 2019. The Paradox of Energy Consumption Decrease in the Transition Period towards a Digital Society, *Energies*, 12(8), article no. 1428, <https://doi.org/10.3390/en12081428>
- Peterson, M., Minton, E.A., Liu, R.L. and Bartholomew, D.E. 2021. Sustainable Marketing and Consumer Support for Sustainable Businesses, *Sustainable Production and Consumption*, 27, pp.157-168, <https://doi.org/10.1016/j.spc.2020.10.018>
- Pocol, C.B., Marinescu, V., Dabija, D.C. and Amuza, A. 2021. Clustering Generation Z university students based on daily fruit and vegetable consumption: empirical research in an emerging market. *British Food Journal*, 123(8), pp.2705-2727. <https://doi.org/10.1108/BFJ-10-2020-0900>
- Polonsky, M.J. 2011. Transformative green marketing: Impediments and opportunities. *Journal of Business Research*, 64, pp.1311-1319. <https://doi.org/10.1016/j.jbusres.2011.01.016>

- Popa, I.D. and Dabija, D.C., 2019. Developing the Romanian Organic Market: A Producers Perspective. *Sustainability*, 11(2), article no. 467. <http://dx.doi.org/10.3390/su11020467>
- Porter, M.E. and Kramer, M.R., 2011. Creating shared value-How to reinvent capitalism - and unleash a wave of innovation and growth, *Harvard Business Review*, pp.1-17.
- Qi, G.Y., Zeng, S.X., Tam, C.M., Yin, H.T., Wu, J.F. and Dai, Z.H., 2011. Diffusion of ISO 14001 environmental management systems in China: rethinking on stakeholders' roles. *Journal of Cleaner Production*, 19(11), pp.1250-1256. <https://doi.org/10.1016/j.jclepro.2011.03.006>
- Shields, T. and Zeng, K., 2012. The reverse environmental gender gap in China: Evidence from "The China Survey". *Social Science Quarterly*, 93(1), pp.1-20. <https://doi.org/10.1111/j.1540-6237.2011.00802.x>
- Shrivastava, P., 1995. The role of corporations in achieving ecological sustainability. *Academy of Management Review*, 20(4), pp.936-960, <https://doi.org/10.5465/amr.1995.9512280026>
- Sparks, P. and Shepherd, R., 1992. Self-identity and the theory of planned behavior: Assessing the role of identification with "green consumerism". *Social Psychology Quarterly*, 55(4), pp.388-399. <https://doi.org/10.2307/2786955>
- Stoeckl, V.E. and Luedicke, M.K., 2015. Doing well while doing good? An integrative review of marketing criticism and response. *Journal of Business Research*, 68(12), pp.2452-2463. <https://doi.org/10.1016/j.jbusres.2015.06.032>
- Tantau, A. and Şanta, A.M.I. 2021. New Energy Policy Directions in the European Union Developing the Concept of Smart Cities, *Smart Cities*, 4(1), 241-252, <https://doi.org/10.3390/smartcities4010015>
- Unruh, G. and Ettenson, R., 2010. Winning in the green frenzy. *Harvard Business Review*, 88(11).
- Yang, G. and Calhoun, C., 2007. Media, civil society, and the rise of a green public sphere in China. *China Information*, 21(2), pp.211-236. <https://doi.org/10.1177/0920203X07079644>
- Yu, X., 2014. Is environment 'a city thing' in China? Rural-urban differences in environmental attitudes. *Journal of Environmental Psychology*, 38, pp.39-48. <https://doi.org/10.1016/j.jenvp.2013.12.009>
- Zhang, K.M. and Wen, Z.G., 2008. Review and challenges of policies of environmental protection and sustainable development in China. *Journal of Environmental Management*, 88(4), pp.1249-1261. <https://doi.org/10.1016/j.jenvman.2007.06.019>
- Zhu, Q. and Sarkis, J., 2016. Green marketing and consumerism as social change in China: Analyzing the literature. *International Journal of Production Economics*, 181, pp.289-302. <http://dx.doi.org/10.1016/j.ijpe.2016.06.006>