

Article

Digital and Green Behaviour: An Exploratory Study on Italian Consumers

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Abstract: This paper aimed to understand consumer behaviour based on different constructs of buying behaviour antecedents, which included attitudes towards social aspects, green values, the value placed on digital channels, and green advertisements. Through an online survey of 650 respondents, we investigated the characteristics that affect consumer behaviour in Italy. A structural equation modelling (SEM) method was then used to explore the effects of the identified constructs on people's buying behaviour, as well as evaluate their relative importance. On the one hand, the findings showed that among the identified constructs, attitudes towards social aspects have a direct effect on eco-friendly consumption, while green values positively impact both buying behaviour and openness to green publicity. On the other hand, green publicity only shows a weak impact on buying behaviours, while peoples' attitudes towards digital channels have a positive effect on both eco-friendly consumption and on buying behaviour. In other words, the results suggest that people's digital propensity, paired with environmental sensibility, may affect the online purchase of sustainable food. In light of the above, these results should be important for makers and experts dealing with green products, particularly sellers. In fact, sellers and marketers should consider our results as insights into their segmentation, targeting, and positioning strategies in markets.

Keywords: sustainable food; green behaviour; attitudes towards social aspects; green messages; buying behaviour; Italy

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1. Introduction

Thanks to a growing awareness of environmental issues, more and more individuals are expressing their willingness to buy green goods [1]. People's thinking regarding the environmental impacts of irresponsible actions has extended beyond classic perceptions of ecosystem protection and consumption patterns [2,3]. Thus, customers' requirements must be met by firms that are conscious and responsible because people's purchasing decisions are affected by the environmental value that they bring [4]. In other words, to support these products, it is crucial for firms to understand people's perceptions and consumption attitudes towards such products. The drivers affecting the consumption of sustainable food are very varied and range from the sociodemographic aspects of people (see, e.g., [5,6]) to attributes of food (see, e.g., [7]). According to some authors [8], the decision-making process of green buyers is primarily affected by socio-psychological factors, such as ecological concern and health consciousness. Similarly, other authors [9] showed that people choose green products by virtue of their consciousness of ecological benefits and the green appearance of the products. According to Paul and Rana [10], instead, consumers have more positive attitudes towards buying sustainable food when they are concerned about their health. In addition to this, consumers' knowledge about sustainable food has been found to affect purchase intentions [11]. However, eco-friendly products are believed to be more expensive than conventional ones [12], although the information

about the positive effects on the environment could exceed price issues and lead people to buy eco-friendly products [13].

In Italy, COVID-19 has revived consumers' attention towards green consumption, controlled supply chains, the ethical and social values of products, organic products, and, therefore, towards the shops that make it their core business [14]. In fact, according to some authors [15], during the pandemic period, people increased their purchase frequency and willingness to pay for sustainable products, showing growing attention to ecological issues. Moreover, COVID-19 has facilitated conventional food purchases through digital channels, although most sustainable food purchases (63.5%) occurred in Italian supermarkets [16]. In this framework, consumers want to purchase foods of good quality for both health- and ecosystem-related reasons [17,18], and digital tools could support people's decision making [19]. In fact, according to Chen et al. [20], digital technologies can be useful for promoting eco-friendly products. Certainly, interaction based on networking can wield a key influence on people's behaviours [21,22], such as engendering individuals' consumption of sustainable products [23]. Moreover, it is important to underline the fact that digital use could be also useful to address traceability issues while guaranteeing food quality and safety [24,25]. In other words, digital channels have become an important part of consumers' daily life, encouraging multidisciplinary studies on their link to human behaviours, including food-related attitude and consumption [26].

However, in Italy, the precise role of digital channels in modelling consumers' behaviours as concerns sustainable food remains only partially explored. Considering what is already known from the current literature, this paper seeks to understand people's behaviours based on the different constructs of buying behaviour antecedents, which include the following: attitudes towards social aspects, green values, the value placed on digital channels, and green advertisements. In other words, this work attempted to understand if (and how) the social, green, and digital aspects of some constructs affect consumer behaviour. In this framework, knowing people's behaviour (and thus identifying the factors that determine such behaviour) would lead to winning marketing strategies [27].

The manuscript is written as follows: Section 2 reports a brief literature review and presents research hypotheses; Section 3 defines the methodological aspects; the results are shown and discussed in Sections 4 and 5; and conclusions are reported in Section 6.

2. A Brief Literature Review and Research Hypotheses

To understand if (and how) the social, green, and digital aspects of some constructs affect consumer behaviour, a conceptual framework is applied. This includes an analysis of a combination of attitudes towards social aspects, green values, the value placed on digital channels, and green advertisements [24,28–31]. Below are the constructs that must be tested to support the research hypotheses.

2.1. Attitudes towards Social Aspects

Prosocial behaviours are actions enacted to protect or enhance the well-being of others [32], and, usually, individuals with higher inclinations to prosocial behaviours show a greater tendency towards holding a positive attitude over time [33]. Furthermore, prosocial behaviours are triggered by positive emotions, and this can lead to more cooperative conduct [34]. In other words, prosocial behaviours can include interventions of public utility, such as in the case of actions to safeguard the ecosystem [35]. In fact, it is no coincidence that the concept of sustainability includes social, environmental, and economic pillars [36]. Moreover, these same aspects are also considered in the 2030 Agenda for Sustainable Development [37]. In fact, among the 17 goals outlined for sustainable development, the first five goals consider social aspects in terms of the propensity to help others, whereas other goals consider environmental and economic aspects such as cleaner water, cleaner energy, sustainable consumption, and production, as well as economic growth [37]. Within this framework, the 2030 Agenda underlines the central role that research has

in creating the knowledge needed for reaching the goal of sustainability [38]. For these reasons, our research intends to study a construct in which attitudes towards social aspects, which could be referred to as general aspects of the first five goals of the 2030 Agenda [37], are linked to green consumption (which could be referred to as SDG 12 of the 2030 Agenda [35]). In other words, and in accordance with some authors [28], our research hypothesis (RH1) was as follows:

RH1: *Attitudes towards social aspects positively influence eco-friendly consumption.*

2.2. Green Consumption Values and Green Advertisements

Green consumption refers to consumers using green products [39]. According to some authors [13], eco-friendly consumption is defined as buying green goods and avoiding products that are dangerous for ecosystems—in other words, consumers using products and/or services that satisfy their needs and provide a better quality of life without threatening the needs of future generations, thus reducing the use of natural resources [38,40]. Thus, eco-friendly consumption shows responsibility for ecosystem protection by favouring eco-friendly products [40]. Sisira Neti [41] also gives a definition of green consumption, with the view that this is a social behaviour, involving the buying of sustainable food and recycling, reusing, and limiting the overuse of natural resources. In other words, green consumption is also the decision by people to buy eco-friendly products and recycled goods [40,41]. Thus, understanding the impact of eco-friendly consumption values on people's buying behaviour becomes essential for allowing firms to focus on goods and processes designed to minimize environmental impacts [35]. This concept might also hold great relevance for both academics and sellers, who are intent on understanding how green values shape and impact individuals' responses to green marketing communications [42,43]. In this regard, according to some academics [35], green values affect receptivity to green advertising; according to other authors [44], green advertising yields positive effects over consumer attitudes and intentions. However, one focal aspect involves asking whether some people are more sensitive to green advertising than others [42], and according to some authors [28], this statement is confirmed. By contrast, Shrum et al. [45] showed that people interested in buying eco-friendly products were sceptical regarding general advertising because they stated that such advertising on occasion offends their intelligence. Similarly, other academics [46] found that even those more environmentally concerned consumers were sceptical of green advertising because ads used false claims and exaggerations. However, people's receptivity to green communications may change over time [35]. Considering the above-mentioned information, and in accordance with some authors [28,29], our research hypotheses were as follows:

RH2: *Eco-friendly consumption positively drives openness to green ad messages.*

RH3: *Eco-friendly consumption positively affects buying behaviour.*

RH4: *Openness to green ad messages positively influences buying behaviour.*

RH5: *General ecological attitudes positively affect both eco-friendly consumption (RH5a) and the openness to green ad messages (RH5b).*

RH6: *General ecological attitudes positively influence buying behaviour.*

2.3. Attitudes towards Digital Channels

Digitalization can improve sustainable consumption and production in food supply chains, but the influence of the perceived effectiveness of green products on the consumption behaviours of people is sometimes not obvious [20,47]. As such, it is claimed that the effect of perceived effectiveness on the consumption behaviours of green products vary

with the technology used [20]. Nowadays, technology has both provided new digital channels useful for firms' advertisements and has changed consumer behaviour itself [29]. Thanks to technology, in fact, consumers today have more information instantly and have more purchasing options [29]. In fact, people browse multiple channels and take in different information from several devices [29,48]. It is therefore crucial for firms to thoroughly understand people's behaviour and which channels people use the most and thus tailor their marketing strategies to them [48]. In this regard, digital marketing uses electronic devices and the means of digital communication to reach potential customers and convince them to buy products [49]. In other words, digital marketing has become an effective tool for reaching customers, supporting market research, and significantly reducing the costs for both producers and customers [50]. According to some authors [49], digital marketing is also a good tool for green marketing and promoting eco-friendly products. In fact, green marketing goes beyond promoting eco-friendly goods and advocating for sustainable business practices [49]. This implies applying socially responsible programs, reducing environmental impacts, supporting local communities, and guaranteeing long-term economic sustainability [49]. Thus, by considering social, economic, and environmental aspects, green marketing seeks to create a whole-institution approach to sustainability for firms [49]. In this regard, some studies [44] have underlined the ways in which green marketing wield effects over people's attitudes and intentions. Moreover, the use of digital technology is an important element both to promote products and to drive consumer behaviour [51]. In light of the above-mentioned information, and in accordance with some authors [24,28,29], our research hypotheses were as follows:

RH7: *Attitudes towards digital channels positively affect both eco-friendly consumption (RH7a) and the openness to green ad messages (RH7b).*

RH8: *Attitudes towards digital channels positively influence buying behaviour.*

2.4. Buying Behaviour

Understanding people's buying behaviour is an important step in realizing individuals' shopping expectations [30]. Particularly, how people choose to buy lies at the root of a firm's success [30]. However, with the birth of digital channels and their entry into the market, the way people shop has been changed in terms of information searches, product and price comparison, and purchasing behaviours [30,52]. As mentioned above, consumer technology experience paired with product information, including environmental products, can have a significant effect on buying behaviour [53]. However, consumers' behaviours, including green ones, are undoubtedly complex [35]. For these reasons, as already stated above, our research hypotheses about this construct were RH3, RH4, RH6, and RH8.

3. Methodological Aspects

3.1. Data Gathering, the Sample, and Survey Design

The data came from a sample of 650 people in Italy, collected in the interval December 2023–January 2024 using a web-based survey. The survey was spread through websites, social media, and emails in order to reach the widest audience while reducing cost and time needs [6,26]. In particular, people were recruited through invites to participate in the online survey (made using Google drive) via social networks such as Facebook, Instagram, and Twitter ([6,26]). The choice of social network was due to some authors [26] who affirmed that these platforms (i.e., Facebook, Instagram, and Twitter) are famous for allowing people to get in touch. Moreover, according to Chan and Chan [54], these social networks are widely used by all generations. Thus, Facebook, Instagram, and Twitter were chosen because these platforms could reach a large audience [55]. Moreover, following some research about consumers' behaviour (see e.g., [6]), a snowball sampling

recruitment technique was also adopted, using the emails of our interpersonal relations to reach many respondents. The inclusion rules were age over 18 years and being the person responsible for purchasing food items in the family. However, given the recruitment procedure used, we believe that the sample in this present analysis cannot be considered representative of the entire Italian population. In addition, before starting the survey, a pre-test on 90 people was conducted to find any possible misinterpretations and mistakes, and minor changes were then made to the form accordingly.

Regarding the structured questionnaire, it is divided into four sections: (1) questions regarding consumers' prosocial attitudes; (2) questions regarding users' attitudes towards ecological aspects; (3) people's attitudes towards digital channels; and (4) questions regarding people's sociodemographic information. It is important to underline the fact that all the questions came from the current literature about people's behaviour towards digital channels and ecological issues [24,28–31]. Likert scales were applied in a 10-point format with answer anchors (i.e., from 1—totally disagree to 10—totally agree) and in which people answered by indicating their level of agreement with the statement presented [56]. Table 1 shows all the questions that were asked to assess each construct. Also, sociodemographic information was included in the questionnaire in order to allow us to derive the characteristics of the sample. However, this information is not shown in the table due to its relative irrelevance.

Table 1. The list of questions.

Items Group	Item
<i>Attitudes towards social aspects</i>	It is vital to me that others are happy.
	It is vital to me to support somebody who needs it.
	The well-being of others is vital to me.
	The needs of others are vital to me.
<i>Eco-friendly consumption</i>	I consider the environmental burden of my food choices.
	My food habits are influenced by my concern for our natural world.
	I would define myself as an ecologically responsible consumer.
	I am willing to consume foods that are more environmentally friendly.
<i>Openness to green ad messages</i>	I buy food whose brands pay attention to the environment.
	The use of green information in advertisements drives my attitude towards the ads.
	Green messages are a necessary form of publicity.
	I am willing to buy foods marketed as being green.
<i>General ecological attitudes</i>	I think about the environmental impacts of my actions when making decisions.
	The products I use save energy.
	The products I use are marketed as being green.
	The products I use are recycled goods or recyclable products.
<i>Attitudes towards digital channels</i>	I am used to watching advertisements about food and/or restaurants on social media.
	Restaurants' websites allow me to assess an offered dish.
	I am willing to obtain information about a product and/or restaurant from a website.
	I am willing to buy products on a reseller's website.
	I am used to writing recommendations, suggestions, or comments on restaurants' websites.
	When I want to go to a shop and/or restaurant, the website tells me its location.
	I am used to utilizing digital apps to buy food.
	I am used to utilizing restaurant apps to book a table.
<i>Buying behaviour</i>	I buy the product/food that causes the least environmental impact.
	I have changed goods/brands for ecological reasons.
	I have switched purchasing channels (from conventional channels to digital ones) for practical reasons.
	I buy online because of brand loyalty.
	I buy environmentally friendly food.
	I buy online for economic reasons (beneficial offers).
	I purchase products packaged in reusable or recycled boxes.
	I purchase goods that can be recycled.
	I buy online in order to have products and/or food from other Italian regions.
	When I purchase food, I try to use digital technologies for food safety reasons.
	I buy products online to reduce my environmental impacts.

Source: adapted from Abbate et al. [24], Aw et al. [30,31], do Paço et al. [28], and Pires et al. [29].

3.2. Statistical Analysis

The study is aimed at understanding whether and how some constructs about social, green, and digital aspects may affect people's behaviour. Based on the literature review above, Figure 1 shows the proposed conceptual model based on the hypothesised relationship among the constructs argued for previously. To reach our lens, an econometric model [28,29,57], using structural equation modelling (SEM), was applied. We believe that SEM was apt for this study because it allowed us to explore the complex mechanisms through which each construct transmits its effect onto others [58,59]. The analysis was carried out in two steps: first, a confirmatory factor analysis was performed to assess the latent variables, and second, a path analysis was performed to test the hypothesized causal structures between two or more constructs [56,60–62]. The analysis was performed using R Studio (version 2023.12.1).

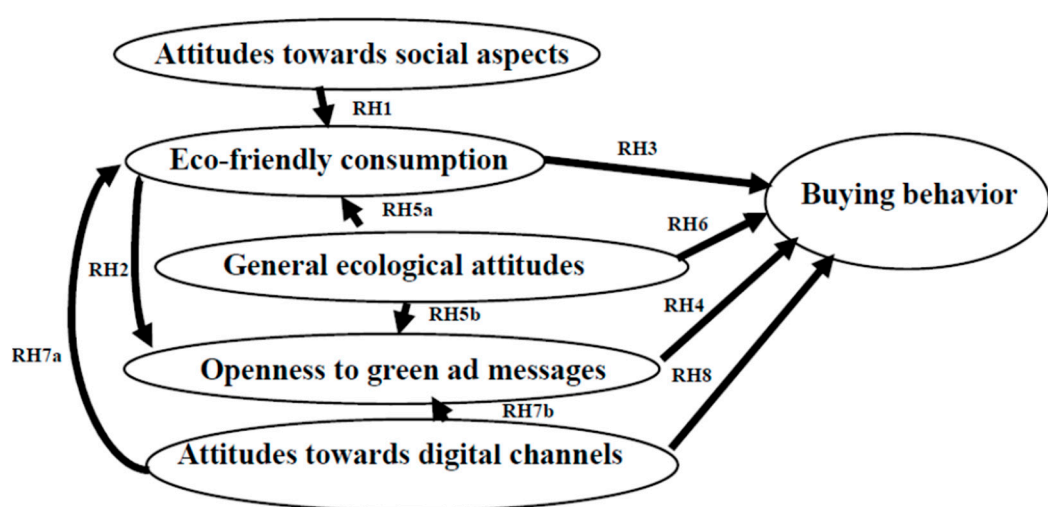


Figure 1. Research context.

For the reader's convenience and according to Figure 1, the research hypotheses (RHs) were as follows:

RH1: *Attitudes towards social aspects positively influence eco-friendly consumption* [28].

RH2: *Eco-friendly consumption positively drives openness to green ad messages* [28].

RH3: *Eco-friendly consumption positively affects buying behaviour* [28].

RH4: *Openness to green ad messages positively influences buying behaviour* [28].

RH5: *General ecological attitudes positively affect both eco-friendly consumption (RH5a) and the openness to green ad messages (RH5b)* [28,29].

RH6: *General ecological attitudes positively influence buying behaviour* [28,29].

RH7: *Attitudes towards digital channels positively affect both eco-friendly consumption (RH7a) and the openness to green ad messages (RH7b)* [24,28,29].

RH8: *Attitudes towards digital channels positively influence buying behaviour* [24,28,29].

4. Results

4.1. The Sample

The sample consisted of 335 women (52%) and 315 men (48%), with the majority being between 35 and 44 years old (58%) followed by 45 and 54 years old (20%). In terms of monthly income, 53% earned between EUR 1801 and EUR 2500, followed by 12% of the sample with a monthly income between EUR 2501 and EUR 3200. Most of the participants lived in Southern Italy (74%) and had a high education level (70% of the sample), i.e., university/college or postgraduate degrees (Table 2).

Table 2. Sociodemographic characteristics of the sample.

Variables	%
Gender	
Women	52.00
Men	48.00
Total	100.00
Age	
Between 18 and 24 years	4.00
Between 25 and 34 years	9.00
Between 35 and 44 years	58.00
Between 45 and 54 years	20.00
Between 55 and 64 years	5.00
More than 65 years	4.00
Total	100.00
Education level	
High level (University/college or postgraduate degrees)	70.00
Low level	30.00
Total	100.00
Monthly income	
Less than EUR 1800	9.00
Between EUR 1801 and EUR 2500	53.00
Between EUR 2501 and EUR 3200	12.00
Between EUR 3201 and EUR 3900	9.00
Between EUR 3901 and EUR 4600	8.00
More than EUR 4601	9.00
Total	100.00

Regarding the list of questions asked to the respondents, the construct called attitudes towards social aspects (with Cronbach's alpha coefficient equal to 0.90) shows positive answers for all items (Table 3). In fact, according to the respondents, supporting and helping others (6.6) are important aspects to consider, and the needs of others are vital to people (6.5). The construct named eco-friendly consumption has a Cronbach's $\alpha = 0.75$, and respondents reported that their food habits are affected by concern for the ecosystem (8.0), they consider the environmental burden of their food choices (7.0), and they would describe themselves as environmentally responsible consumers (7.0). Regarding the openness to green ad messages (with Cronbach's $\alpha = 0.82$), the respondents believe that green messages are a necessary form of publicity (7.8), and they are willing to purchase foods marketed as being green (7.3). Similarly, the construct called general ecological attitudes (Cronbach's $\alpha = 0.87$) shows positive values in all items. In fact, the importance of people using products that are marketed as being green (7.3) and saving energy (7.1) reached the highest values, while the use of recycled goods or recyclable products reached the lowest value (6.0). Moreover, the attitudes towards the digital channels construct (Cronbach's $\alpha = 0.93$) reached positive value scores for each item. In particular, the items indicating that the usage of restaurants' websites allows respondents to assess an offered dish (7.8) and

the usage of apps allow them to buy food (7.0) reached the highest values, while the usage of websites to write recommendations, suggestions, or comments about a restaurant reached the lowest value (5.3). Lastly, the buying behaviour construct (Cronbach's $\alpha = 0.96$) also indicated positive values for each item. In fact, the respondents reported that they buy online in order to have products and/or food from other Italian regions (7.8), as well as have beneficial offers (7.5). In addition, people switched purchasing channels for ecological (7.1) and practical reasons (7.0), and they buy environmentally friendly food (6.9) and shop online to reduce their own environmental impacts (6.9). The lowest values were reported for answers about the purchase of products that can be recycled (6.0).

Table 3. Descriptive statistics.

Construct	Item	Mean (SD)
<i>Attitudes towards social aspects</i> ($\alpha = 0.90$)	It is vital to me that others are happy.	5.2 (1.3)
	It is vital to me to support somebody who needs it.	6.6 (2.0)
	The well-being of others is vital to me.	5.7 (2.5)
	The needs of others are vital to me.	6.5 (1.7)
<i>Eco-friendly consumption</i> ($\alpha = 0.75$)	I consider the environmental burden of my food choices.	7.0 (2.3)
	My food habits are influenced by my concern for our natural world.	8.0 (1.3)
	I would define myself as an ecologically responsible consumer.	7.0 (2.6)
	I am willing to consume foods that are more environmentally friendly.	6.0 (1.3)
<i>Openness to green ad messages</i> ($\alpha = 0.82$)	I buy food whose brands pay attention to the environment.	5.5 (0.9)
	The use of green information in advertisements drives my attitude towards the ads.	5.3 (1.8)
	Green messages are a necessary form of publicity.	7.8 (0.4)
	I am willing to buy foods marketed as being green.	7.3 (2.1)
<i>General ecological attitudes</i> ($\alpha = 0.87$)	I think about the environmental impacts of my actions when making decisions.	6.1 (0.5)
	The products I use save energy.	7.1 (0.3)
	The products I use are marketed as being green.	7.3 (0.4)
	The products I use are recycled goods or recyclable products.	6.0 (0.2)
<i>Attitudes towards digital channels</i> ($\alpha = 0.93$)	I am used to watching advertisements about food and/or restaurants on social media.	6.0 (1.9)
	Restaurants' websites allow me to assess an offered dish.	7.8 (0.6)
	I am willing to obtain information about a product and/or restaurant from a website.	6.8 (2.5)
	I am willing to buy products on a reseller's website.	5.7 (2.1)
	I am used to writing recommendations, suggestions, or comments on restaurants' websites.	5.3 (1.8)
	When I want to go to a shop and/or restaurant, the website tells me its location.	6.0 (0.3)
	I am used to utilizing digital apps to buy food.	7.0 (0.8)
	I am used to utilizing restaurant apps to book a table.	6.8 (0.3)
	I buy the product/food that causes the least environmental impact.	6.1 (2.5)
<i>Buying behaviour</i> ($\alpha = 0.96$)	I have changed goods/brands for ecological reasons.	7.1 (1.2)

I have switched purchasing channels (from conventional channels to digital ones) for practical reasons.	7.0 (2.2)
I buy online because of brand loyalty.	6.8 (1.9)
I buy environmentally friendly food.	6.9 (1.3)
I buy online for economic reasons (beneficial offers).	7.5 (0.2)
I purchase products packaged in reusable or recycled boxes.	6.5 (1.2)
I purchase goods that can be recycled.	6.0 (2.2)
I buy online in order to have products and/or food from other Italian regions.	7.8 (0.3)
When I purchase food, I try to use digital technologies for food safety reasons.	6.7 (0.5)
I buy products online to reduce my environmental impacts.	6.9 (0.3)

4.2. The Model

In order to evaluate if (and how) the constructs influence buying behaviour, a model was applied. The used model shows good fit with the data ($\chi = 2432.11$, degrees of freedom (df) = 480, $p_value < 0.000$; GFI = 0.93; AGFI = 0.97; CFI = 0.98; NFI = 0.94; TLI = 0.97; RMSEA = 0.02; and SRMR = 0.08).

The results in Table 4 and Figure 2 demonstrate that the pathway linking the attitudes towards social aspects and eco-friendly consumption items (in RH1, $p < 0.01$) is significant, demonstrating that social aspects have a direct impact on green consumption. Moreover, eco-friendly consumption influences both openness to green publicity (in RH2, $p < 0.01$) and buying behaviour (in RH3, $p < 0.001$). Similarly, openness to green publicity is linked to buying behaviour (in RH4, $p < 0.05$). Moreover, as we expected, research hypothesis 5 (RH5a, $p < 0.01$) is significant, suggesting that general ecological attitudes have a positive impact on eco-friendly consumption. Likewise, research hypothesis 6 (RH6, $p < 0.001$) is confirmed, demonstrating that general ecological attitudes show a positive effect on people's buying behaviour. Also, the pathway linking the attitudes towards digital channels and eco-friendly consumption items (RH7a, $p < 0.001$) is confirmed. Similarly, the pathway linking the attitudes towards digital channels and buying behaviour items (in RH8, $p < 0.001$) is significant, suggesting that digital channels have a positive effect on consumers' buying behaviour. The findings further (Table 5) reveal that all the above-mentioned constructs together (i.e., attitudes towards social aspects, general ecological attitudes, and attitudes towards digital channels) explained 71.0% of the variation in eco-friendly consumption, while eco-friendly consumption explained 60.0% of the variation in openness to green publicity, suggesting that this construct has high explanatory power for openness to green advertising. Moreover, eco-friendly consumption explained 45.0% of the variation in buying behaviour, while attitudes towards digital channels explained 40.0% of variation in buying behaviour. However, we did not find confirmation supporting the pathways linking the general ecological attitudes with openness to green publicity items (in RH5b) and attitudes towards digital channels with openness to green publicity items (in RH7b).

Table 4. Findings of regression paths for the structural model.

Construct	Item	Estimate	St. Er	p_Value	Squared Multiple Correlation
Attitudes towards social aspects	It is vital to me that others are happy.	1.345	0.055	0.01 **	0.80
	It is vital to me to support somebody who needs it.	0.593	0.033	0.000 ***	0.84
	The well-being of others is vital to me.	1.590	0.032	0.000 ***	0.892
	The needs of others are vital to me.	1.454	0.067	0.01 **	0.767
	I consider the environmental burden of my food choices.	1.346	0.084	0.05 *	0.566

<i>Eco-friendly consumption</i>	My food habits are influenced by my concern for our natural world.	1.627	0.098	0.01 **	0.899
	I would define myself as an ecologically responsible consumer.	1.177	0.145	0.01 **	0.596
	I am willing to consume foods that are more environmentally friendly.	0.699	0.090	0.000 ***	0.544
<i>Openness to green ad messages</i>	I buy food whose brands pay attention to the environment.	1.355	0.178	0.01 **	0.933
	The use of green information in advertisements drives my attitude towards the ads.	1.345	0.150	0.05 *	0.797
	Green messages are a necessary form of publicity.	0.996	0.190	0.01 **	0.988
	I am willing to buy foods marketed as being green.	0.989	0.176	0.05 **	0.987
<i>General ecological attitudes</i>	I think about the environmental impacts of my actions when making decisions.	0.992	0.045	0.000 ***	0.88
	The products I use save energy.	1.130	0.132	0.000 ***	0.745
	The products I use are marketed as being green.	1.104	0.145	0.01 **	0.667
	The products I use are recycled goods or recyclable products.	1.405	0.134	0.000 ***	0.688
<i>Attitudes towards digital channels</i>	I am used to watching advertisements about food and/or restaurants on social media.	1.179	0.184	0.000 ***	0.488
	Restaurants' websites allow me to assess an offered dish.	1.456	0.169	0.000 ***	0.822
	I am willing to obtain information about a product and/or restaurant from a website.	1.489	0.225	0.000 ***	0.856
	I am willing to buy products on a reseller's website.	1.134	0.245	0.000 ***	0.987
	I am used to writing recommendations, suggestions, or comments on restaurants' websites.	0.951	0.230	0.000 ***	0.604
	When I want to go to a shop and/or restaurant, the website tells me its location.	1.470	0.030	0.000 ***	0.706
	I am used to utilizing digital apps to buy food.	0.997	0.099	0.000 ***	0.977
	I am used to utilizing restaurant apps to book a table.	0.998	0.066	0.000 ***	0.704
	I buy the product/food that causes the least environmental impacts.	0.199	0.089	0.000 ***	0.974
<i>Buying behaviour</i>	I have changed goods/brands for ecological reasons.	1.232	0.345	0.05 *	0.981
	I have switched purchasing channels (from conventional channels to digital ones) for practical reasons.	1.453	0.555	0.01 **	0.871
	I buy online because of brand loyalty.	0.999	0.897	0.000 ***	0.981
	I buy environmentally friendly food.	1.648	0.389	0.000 ***	0.805
	I buy online for economic reasons (beneficial offers).	1.869	0.384	0.000 ***	0.888
	I purchase products packaged in reusable or recycled boxes.	1.755	0.198	0.000 ***	0.799
	I purchase goods that can be recycled.	1.880	0.298	0.000 ***	0.988
	I buy online in order to have products and/or food from other Italian regions.	1.099	0.145	0.000 ***	0.799
	When I purchase food, I try to use digital technologies for food safety reasons.	1.654	0.567	0.05 *	0.689
	I buy products online to reduce my environmental impacts.	1.986	0.657	0.01 **	0.634

***, **, * Significance at 0.001, 0.01, and 0.05 levels.

Table 5. Path analysis: effects of latent variables on the other latent variables.

Dependent Variable	Independent Variable	HRs	Estimate	Standard Error	p_Value	Squared Multiple Correlation
<i>Eco-friendly consumption</i>	Attitudes towards social aspects	RH1	0.314	0.083	0.01 **	0.71
	General ecological attitudes	RH5a	1.680	0.178	0.05 *	
	Attitudes towards digital channels	RH7a	0.481	0.010	0.000 ***	
<i>Openness to green ad messages</i>	General ecological attitudes	RH5b	0.635	0.060	0.345	-
	Eco-friendly consumption	RH2	0.060	0.075	0.01 **	0.60
	Attitudes towards digital channels	RH7b	0.386	0.256	0.764	-
<i>Buying behaviour</i>	Eco-friendly consumption	RH3	0.009	0.067	0.01 **	0.45
	General ecological attitudes	RH6	0.018	0.089	0.04 *	0.10
	Openness to green ad messages	RH4	0.204	0.086	0.001 ***	0.02
	Attitudes towards digital channels	RH8	0.783	0.077	0.001 ***	0.40

***, **, * Significance at 0.001, 0.01, and 0.05 levels.

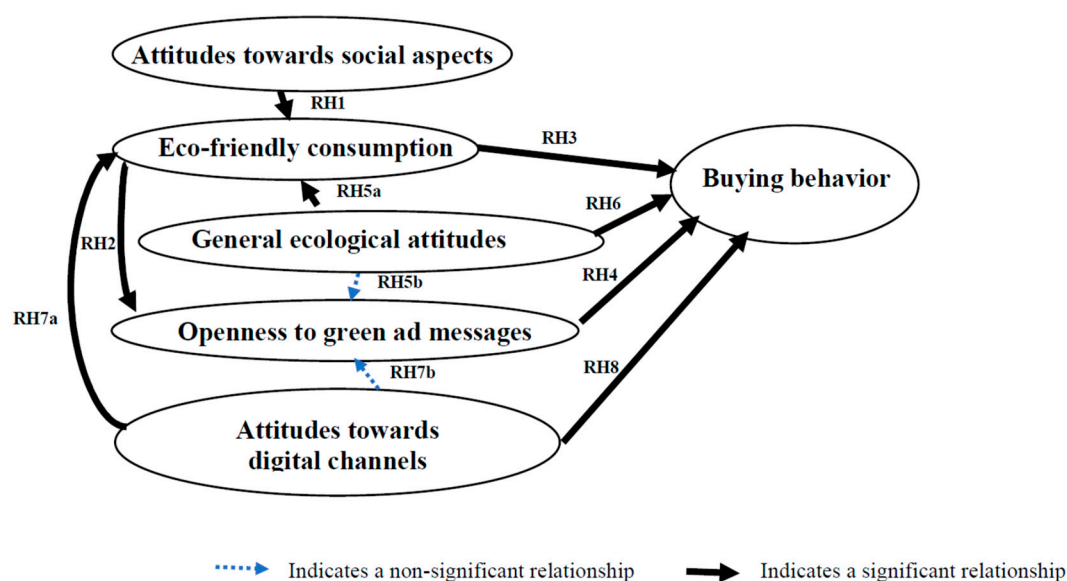


Figure 2. The results.

In summary, research hypotheses verification is shown in Table 6 and indicates that all the research hypotheses are confirmed, except for RH5b (i.e., general ecological attitudes positively affect openness to green ad messages) and RH7b (i.e., attitudes towards digital channels positively affect openness to green ad messages). It is also worth noting that all the observed constructs yielded a positive link to the other variables, and it is not startling to find a positive link between constructs and buying behaviour.

Table 6. Hypothesis results.

Hypothesis	Support (Yes/No)
RH1: Attitudes towards social aspects positively influence eco-friendly consumption.	Yes
RH2: Eco-friendly consumption positively drives openness to green ad messages.	Yes
RH3: Eco-friendly consumption positively affects buying behaviour.	Yes
RH4: Openness to green ad messages positively influences buying behaviour.	Yes
RH5a: General ecological attitudes positively affect eco-friendly consumption.	Yes
RH5b: General ecological attitudes positively affect openness to green ad messages.	No
RH6: General ecological attitudes positively influence buying behaviour.	Yes
RH7a: Attitudes towards digital channels positively affect eco-friendly consumption.	Yes
RH7b: Attitudes towards digital channels positively affect openness to green ad messages.	No
RH8: Attitudes towards digital channels positively influence buying behaviour.	Yes

5. Discussion of Findings

People's behaviour has been, over time, a hot topic in marketing [29]. In fact, marketing is a useful tool for informing and influencing people, both to stimulate their interests and to drive their behaviour [63]. Recently, companies have changed their services and sell mostly to digital channels [29,64], developing new business models [65] and using new marketing strategies [29,64]. Digital channels offer important advantages for both firms and clients [29,64]. In fact, through digital channels, sellers can reach clients at lower costs [66], while for buyers, digital channels allow for faster service and more beneficial offers, leading to better-informed decision making generally [66]. On the other hand, firms face another challenge, green transition [67], which means a sustainable and environmentally friendly economy aiming to reduce environmental impacts [67,68]. In other words, companies must shift from the use of non-renewable sources to the use of renewable sources [67,69], the supply chain must be green [67], and product design and production must be sustainable [62,67,70,71]. Pushing for the ecological transition of the economy

might necessitate an emerging development model [72], and the digital economy has been identified as a new engine for economic growth [73–75]. In this framework, this paper aimed to understand people's behaviour based on different constructs of buying behaviour antecedents, which include attitudes towards social aspects, green values, the value placed on digital channels, and green advertisements. Data came from a sample of 650 people in Italy, with the two genders well balanced, and the mean age was about 41 years (S.D. = 13 years), with participants reporting a high education level and high level of income. Numerous authors [76–79] have drawn a profile of the green consumer [76,77]. In fact, according to Meentemeyer et al. [80], among the socio-economic characteristics of people, gender, education, and income level positively affect green purchasing intentions. Similarly, in our case, an educated sample with a high-income level reported a positive attitude towards both general ecological aspects and eco-friendly consumption. However, although sustainable consumption choices could be linked to gender, economic aspects, and education levels in the past [81]; nowadays, it is harder to associate this type of behaviour with the socio-economic features of people, as other variables and trends come into play, next to the increasing existence of and publicity for green products [76]. Socio-economic aspects also affect the use of new digital technologies [82,83]. In fact, some authors [84] found that high-income, high-educated, female, young, and public-institution-associated personnel are willing to use new digital technologies. Similarly, in our case, the well-educated sample with a high level of income reported a positive attitude towards digital channels, except for the item about recommendations, suggestions, or comments on websites. These results could provide interesting insights and discussions, given that most of the participants were of an age range of 35–54 years, and, thus, the sample did not comprise young people. In other words, although the usage of digital technologies creates generational differences [54], our results suggested that these differences might have been eliminated [54] as a consequence of the pandemic period.

Regarding the list of questions asked to respondents, it is important to observe that all the constructs concerning green and digital aspects showed positive answers for all the items. Also, these findings could be due to the pandemic period. In fact, as mentioned above, on the one hand, COVID-19 has revived consumers' attention towards green consumption, controlled supply chains, and organic products [14]; on the other hand, COVID-19 has facilitated conventional food purchases through digital channels [16]. Thus, consumers can buy products through digital channels [85], and all sorts of brands interact with consumers on social networks [86]. According to Ziyadin et al. [87], the use of social networks in the marketing sphere could improve brand loyalty and drive people's purchasing behaviour. In fact, in our case, attitudes towards digital channels positively influence buying behaviour. The respondents reported that they bought online for brand loyalty, used restaurants' websites to assess an offered dish, and used digital channels (i.e., apps) when they want to buy food. Moreover, the respondents reported having switched purchasing channels (from conventional channels to digital ones) for ecological and practical reasons. In fact, the convenience of online searching is due to the perceived ease and speed by which clients can gather product information online [57,88]. According to Dekimpe et al. [89], online channels are positively viewed as search channels due to the practicality they offer, aiding in the ease of navigation, price comparison, and individual-tailored offers [57]. In fact, prices in physical stores are generally higher than that of online stores [57], and if such a price difference is over than what is expected, people will ultimately continue their purchasing journey online [57,90,91]. Similarly, the respondents reported buying online because of beneficial offers. Moreover, our findings showed that attitudes towards digital channels have a positive impact on eco-friendly consumption and on buying behaviour. In other words, these findings suggest that green consumers may buy food through digital channels. In fact, according to some authors [92], product attributes and platform characteristics significantly impact the intention to purchase fresh food in e-commerce platforms. In this framework, our results could provide some interesting insights and discussions, given that in Italy, most of the green food purchases are not

made through digital channels [48]. Moreover, we did not find confirmation to support the pathways linking the attitudes towards digital channels with openness to green publicity items. This result may be due to the composition of the sample; most of the participants were of an age range of 35–54 years. In other words, the underrepresentation of Gen Z is the reason for this unsupported hypothesis. In fact, the attitudes of Gen Z and their receptiveness to green advertising messages are acknowledged, in addition to the fact that they are also particularly open to digital channels [93,94].

According to some studies [76,95,96], people have a positive attitude towards ecological issues. Similarly in our case, our sample shows that a positive ecological attitude is paired with positive eco-friendly consumption. In fact, among the items belonging to the construct called general ecological attitudes, the importance of people using products that are marketed as being green and saving energy reached the highest scores. Our results are in line with those of some authors [97] who found that eco-friendly purchasing behaviour is impacted by ecological participation, environmental attitude, and the perceived effectiveness of ecological behaviour. In addition, Dagher et al. [98] show a positive relationship between green attitudes and eco-friendly purchasing behaviour. Similarly, in our case, the respondents reported that their food habits were influenced by worry for nature, and they would describe themselves as environmentally responsible consumers. In addition, the construct called eco-friendly consumption is well explained by attitudes towards social aspects. These findings are in line with those of some authors [99] who define actions that defend or enhance the well-being of others as prosocial behaviours, including in cases of environmental protection actions. According to Zabkar and Hosta [100], ecologically friendly consumption is likely to grow as prosocial status perceptions increase. In other words, prosocial status perceptions that people engaging in ecologically friendly behaviours promote would reduce the difference between the inclination to act in an environmentally friendly way and real behaviour towards an environmental issue [100]. Moreover, in our case, the construct called eco-friendly consumption is also explained by attitudes towards digital channels. These findings are in line with some authors [20] who suggest that digital technologies may support eco-friendly consumption.

In addition, in our case, the eco-friendly consumption construct affects openness to green publicity and, thus, buying behaviours. Similar findings were reached by Tucker et al. [101] who found that people who care about the natural world are receptive to environmentally themed publicity. It is clear that some consumers are more sensitive to green ad messages than others [28], and managing consumer openness to green messages is an important aspect to consider for firms [102]. In fact, openness to green ad messages might be a useful tool for firms seeking to target their communication efforts at those consumers potentially more inclined to green marketing [28]. In our case, eco-friendly consumption positively influences both openness to green publicity and buying behaviour. However, some authors [100] found that green marketing is efficacious when advertising targets customers who are already worried about the natural environment. Moreover, in our case, although general ecological attitudes drive eco-friendly consumption, we did not find evidence to validate the path linking general ecological attitudes with openness to green publicity. This scepticism may be due to common societal concern by consumers that firms are spreading false and/or ambiguous green information [103]. In fact, according to Goh and Balaji [103], despite the increase in green offerings, there is growing concern among people that companies are spreading fake environmental information to increase their sales and reputation. False advertising or fake claims about eco-friendly products or services is called “greenwashing”, which is a type of dishonest marketing [104]. Thus, greenwashing is an important problem that can reduce customer trust and undermine the effectiveness of real environmental efforts [80]. However, according to some authors [105], sceptical people can change their minds when presented with sufficient proof. Thus, a regulatory policy could be needed to support the true environmental performance communication of firms and reduce scepticism in consumers [103]. In fact, in answer to these

items, several organizations have developed certification and labelling policies to support people in the identification of real green products [106].

6. Conclusions

This research explores consumer behaviour based on the different constructs of buying behaviour antecedents. In particular, this paper attempted to fill the gaps in the research about the precise role of digital channels in shaping consumer behaviour regarding sustainable food. The findings suggest that people's digital propensity, paired with environmental sensibility, may affect the online purchase of sustainable food.

The practical/managerial implications of our study are relevant. First, as mentioned above, our results provide some interesting insights and discussions, given that in Italy, most of the green food purchases are not made through digital channels. In fact, although the usage of digital technologies creates generational differences, our results indicated that these differences might have been removed as consequences of the pandemic period. Second, it is well known that there are two digital channels that can be used for most phases in the decision-making process for purchases, and these are retailers' websites and social media. In our case, in fact, the findings suggest that retailers' websites and social media may be useful digital channels for purchasing sustainable food. In this respect, our results should become central if firms want to lead marketing strategies that are able to further nurture green consumerism in people. In other words, the results should be significant to producers and experts dealing with eco-friendly products, particularly sellers. In fact, the producers and marketers of food should develop their strategies based on the usage of digital channels for influencing buying behaviour. Certainly, digital, green, and social aspects are likely to affect consumer behaviour, and marketers can utilize all the information in their segmentation, targeting, and positioning strategies. Third, it could be useful for public policies, aimed at the promotion of sustainable food, to use digital channels. In this way, consumers would have more information about the characteristics and benefits of sustainable products, and thus, this should affect their decision-making process.

The key limitation of this research may be attributed to the geographical coverage of the survey; thus, the sample is not based on criteria of representativeness. In fact, most of the participants lived in Southern Italy and were of an age range from 35 to 54 years; thus, the considered sample was not representative of the entire Italian population. Hence, we would suggest some caution as regards the generalization of these findings.

Future studies should investigate the paths linking general ecological attitudes with openness to green publicity, as well as the link between attitudes towards digital channels and openness to green ad messages. In addition, future studies should also focus on testing the proposed model and assessing its applicability for a representative Italian sample, and/or on a sample composed of Gen Z participants, as well as those in different countries. In other words, these findings could be verified in other cultural and/or generational contexts, or a multicultural comparative study could be carried out to verify the value of our model in the future. Regarding the latter aspect, there is also the potential for some factors to vary across cultures and among different generations, which may suggest the need for changing the dimensions used in line with prevailing cultural differences.

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