

# Online Shopping and Sustainability. Willingness to Pay a Contribution to Offset Environmental Pollution



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**Abstract** The growing development of e-commerce and the greater interest in environmental pollution issues have attracted more and more attention from researchers to study the environmental impact generated by online purchases. The present study proposed and tested a conceptual model to investigate consumers' propensity to pay a small voluntary monetary contribution to offset the pollution generated by e-shopping. An online survey with a sample of 391 consumers was conducted. The model was tested through structural equation modelling. Results showed a positive and direct effect of personal norms, sustainable behaviour, and attitude on intention to pay a contribution. In turn, personal norms were influenced only by awareness of consequences and not by the ascription of responsibility; sustainable behaviour was determined by consumers' attitude towards the environment and knowledge of environmental problems; attitude towards the contribution was positively or negatively affected by, respectively, positive or negative emotions.

The chapter provides valuable insights to online retailers to encourage the sustainable behaviour of their customers.

**Keywords** Sustainability · Online shopping · Monetary contribution · Environmental pollution · Public environmental goods

## 1 Introduction

In the last two decades, there has been an increasingly marked growth of e-commerce that has also recently undergone a strong acceleration due to the COVID-19 pandemic. The health crisis caused much damage to traditional trade, but “while many physical stores were closed down, digital retail sales soared by over 25% in a single year” (eMarketer.com, 2021). In 2020, the share of global online sales amounted to 17.8% of total retail sales (eMarketer.com, 2021).

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The success of e-commerce is the result of the many benefits it offers to the consumer: it is convenient and time saving, and offers a wide range of products and a wide range of prices that can be easily compared (Park et al., 2012; Bruce & Daly, 2010; Chen & Dubinsky, 2003). Moreover, systemic factors can drive e-commerce diffusion, such as a legal framework for consumer protection (Rodríguez-Ardura et al., 2008), an increase in trust towards online systems (Mouratidis & Cofta, 2010), and the possibility to adopt different payment systems (Mangiaracina & Perego, 2009). All these factors, together with the impossibility and/or fear of leaving home because of the pandemic, have increased the number of online shoppers and the amount of per capita e-commerce spending in this last year (Villa & Monzón, 2021).

The growing development of e-commerce and the increasing interest in sustainability have attracted more and more attention from researchers to the study of the environmental impact of this distribution channel (Mangiaracina et al., 2015). The reason is quite simple: on the one hand, a growth in online sales brings economic benefits, but, on the other hand, it generates negative consequences in terms of environmental impact. The number of trucks and vans on the road in urban areas is increasing due to the success of e-commerce and the desire for faster deliveries (Villa & Monzón, 2021; Savelsbergh & Van Woensel, 2016). In addition, the large number of small deliveries and of consumer returns entails extra warehousing operations and an increase in the complexity of sorting and packaging activities, thus using more materials and resources compared to the physical store-based business model (Matthews et al., 2002). Tertiary packaging stands out because of its negative contribution to the environmental impact of e-commerce: each product sent to the customer has an individual protective packaging necessary to deliver it by express courier (Borggren et al., 2011; Van Loon et al., 2014).

The increasing sensitivity of consumers and companies, including online operators, to the health of the planet has led to the development of several sustainability initiatives: the inclusion of sustainable clothing/goods in the range of products, sustainable and reusable packaging, and reduction in the use of plastic. Among the various actions promoted by Zalando (Europe's leading online fashion retailer) in recent years to protect the environment, was its decision to ask shoppers for their support in the fight against pollution by asking them to make a small voluntary contribution to offset the carbon emissions produced by the delivery, packaging, and possible return of a product order. The amount collected is devoted to financing projects with a high environmental impact, for example the reduction of carbon dioxide emissions.

In receiving a request for a voluntary contribution, consumers are faced with the environmental outcome of their purchasing behaviour but, at the same time, are given an opportunity to compensate for the negative effects generated by their online orders. This kind of pro-environmental action has never been explored by the literature and deserves to be studied. More specifically, the present study intends to investigate the propensity of individuals to remedy, through an economic contribution, the environmental impact of their purchasing choices, and to identify the factors that can favour or hinder this behaviour. Starting from the norm activation model (NAM; Schwartz, 1977), it proposes a causal model in which several

environmental concern-related and consciousness-related variables impact personal norms, sustainable behaviours, and attitudes towards the contribution, which in turn are expected to influence the consumers' propensity to pay a small voluntary contribution to offset the environmental impact generated by their online purchases. Structural equation modelling (SEM) was used to investigate the hypothesised relationships. The results will deepen knowledge about consumers' pro-environmental conduct in the e-commerce context, with significant theoretical and managerial implications.

The chapter is structured as follows. The next section reviews the theoretical framework and proposes a conceptual model. Then, the methodology and the results of the study are presented. Conclusions and theoretical and managerial implications are highlighted in Sect. 5. Limitations and future research directions are discussed in the last section.

## 2 Theoretical Framework and Conceptual Model

Clean air, unpolluted water, and biodiversity are classified as public environmental goods. Their value is commonly determined by responses to questions in surveys and contingent valuation (CV) is one of the most applied techniques (Carson & Hanemann, 2005; Cummings et al., 1986; Mitchell & Carson, 1989). In a CV survey, respondents declare the maximum amount they would be willing to pay (WTP) for a public environmental good. The contribution that some retailers ask consumers to make to reduce the CO<sub>2</sub> emissions produced by the delivery and the packaging of online shopping—through the financing of pro-environmental projects—can be identified as a form of voluntary taxation. Therefore, the intention to pay the monetary contribution may represent the WTP for public environmental goods.

In the present chapter, the intention to pay the monetary contribution is investigated through the development of a predicted model based on the NAM framework, enriched with sustainable, environmental, emotional, and attitudinal drivers.

### 2.1 NAM

Schwartz's (1977) NAM was developed to study altruistic behaviours, like volunteering or blood donation, which require the sacrifice of one's own interests for the well-being of others. Over time, NAM has also been used to study other behaviours, such as pro-environmental actions: citizens' propensity to save electricity (e.g. Wang et al., 2018), recycling (e.g. Bratt, 1999; Schultz, 1999), and purchase of sustainable packaging (Thøgersen, 1999). Therefore, it appears a valid theoretical framework for explaining consumers' willingness to pay a contribution to offset the environmental impact of their online purchases.

Personal norms, the core of the model, are actively experienced “as feelings of moral obligation” (Schwartz, 1977, p. 227) to engage in a certain action. They are determined by the awareness of the consequences of a specific behaviour and the ascription of responsibility for the welfare of other people (Harland et al., 1999; Schwartz, 1977). According to NAM, the effect of personal norms on behaviour is not direct but mediated by the intention to act.

The present study applies and extends the NAM to the e-commerce and sustainability domain, assuming that an individual’s moral obligation to reduce their individual environmental impact increases as awareness of the consequences of individual behaviours on the environment and a sense of responsibility towards environmental pollution increase. Finally, following the NAM framework, personal norms are thought to be one of the drivers of the intention to pay a contribution. More formally, the following hypotheses are stated:

- H1** Ascription of responsibility positively influences personal norms.
- H2** Awareness of consequences positively influences personal norms.
- H3** Personal norms positively influence the intention to pay a contribution.

## 2.2 *Sustainable and Environmental Drivers*

Sustainable behaviour is defined by its impact: “the extent to which it changes the availability of materials or energy from the environment or alters the structure and dynamics of ecosystems or the biosphere itself” (Stern, 2000, p. 408).

Consumers can contribute significantly to environmental sustainability through their shopping conduct, such as buying green products and preferring recycled and recyclable packaging (Chaubey et al., 2011), and through their daily routines. In turn, sustainable behaviours depend on consumers’ knowledge, values, and attitudes (Mansaray & Abijoye, 1998).

Attitude is part of the individual factors (i.e. variables) related to a specific subject resulting from personal life experiences and it is able to affect the self’s decision-making process (Joshi & Rahman, 2015). Specifically, attitudes towards the environment “are rooted in a person’s concept of self and the degree to which an individual perceives him or herself to be an integral part of the natural environment” (Zelezny & Schultz, 2000, p. 368). This is why consumers’ sustainable behaviours are often based on their environmental attitudes. Therefore, based on the literature, it is assumed that the more positive an individual’s attitude is towards the environment, the greater the likelihood of their implementing sustainable behaviours. Indeed, it is assumed that:

- H4** A positive attitude towards the environment positively influences sustainable behaviours.

According to Laroche et al. (1996), an individual's knowledge of the characteristics of the environment and its problems plays a key role in their conduct. Furthermore, there is a direct relationship between the link that a person has with nature and their implementation of pro-environmental behaviours (Mayer et al., 2009). People with greater nature relatedness are more likely to act environmentally friendly than those who feel less connected. Furthermore, the degree of connection with nature can influence the extent to which an individual loves a certain place, thus determining their willingness to preserve it by implementing sustainable behaviours. Howell et al. (2011) argued that people who feel a high degree of emotional affinity with nature develop more positive life attitudes and engage in pro-environmental behaviours more frequently. Finally, several studies have shown that sustainable behaviours are positively affected by knowledge of climate change, depletion of water resources, and/or CO<sub>2</sub> emissions (e.g. Aertsens et al., 2011; De Magistris & Gracia, 2008; Teng & Wang, 2015; Thøgersen et al., 2010). In light of the evidence reported, it is hypothesised that knowledge of environmental problems increases the implementation of sustainable behaviours by individuals. The following hypothesis is proposed:

**H5** Knowledge of environmental problems positively influences sustainable behaviours.

Thomas and Sharp (2013) carried out a review on recycling behaviour, analysing whether a sustainable behaviour, such as recycling, can have a positive spillover effect on environment-friendly behaviours. Indeed, in recent years, several authors have studied recycling behaviour in the broader context of environmental sustainability to understand if it can lead to people's adoption of other sustainable actions (Jackson, 2004; Thornton, 2009; Austin et al., 2011). The results of Thomas and Sharp's analysis showed that the mechanisms that generate the spillover are complex and, indeed, this is still a contested area. Thøgersen and Crompton (2009) found weak support for a link between common pro-environmental actions and the adoption of more sustainable lifestyles. Thøgersen and Olander (2003) found weak spillover effects. Furthermore, it is not clear whether some pro-environmental behaviours are carried out simultaneously, if one influences the others, or whether they are influenced by other factors. Gatersleben et al. (2014) argued that a positive spillover effect occurs primarily with people who have environment-friendly norms and values. In summary, it is yet to be proved that the implementation of a specific sustainable behaviour acts as a stimulus to implement other similar choices in one's behaviour. The current research tackles this question while expecting that the implementation of sustainable behaviours determines the intention to pay a contribution for projects in favour of the planet's health, since this is also a sustainable action. More formally, it is stated that:

**H6** The implementation of sustainable behaviours positively influences the intention to pay a contribution.

### 2.3 *Emotional and Attitudinal Drivers*

Some paradigms, such as Construal Level Theory (Trope et al., 2007) and Prospect Theory (Kahneman & Tversky, 1979), assume that human conduct is influenced by cognitive biases and emotions (Mullainathan & Thaler, 2000). The interest in the influence of emotions on consumer behaviour began about three decades ago: the literature started to study the emotions evoked by marketing stimuli (e.g. brand, product, advertising, and their impact on the decision-making process (Holbrook & Hirschman, 1982).

Emotions are “mental states of readiness that arise from appraisals of events or one’s own thoughts” (Bagozzi et al., 1999, p. 184). Emotions are intense, brief, and focused on a referent (King & Meiselman, 2010). They are directed towards a specific stimulus, cause psychological reactions (Levenson et al., 1990), generate facial expressions (Ekman, 1993), prepare for action (Roseman et al., 1994), motivate consumers (Andrade & Cohen, 2007), and influence attitudes (Bagozzi et al., 1999; Dubé et al., 2003).

As Damasio (1994) stated, human beings are not thinking machines that feel; rather, they are feeling machines that think. This is why emotions shape all the behaviours of individuals. It must be said that emotions can be both positive (pleasant emotions) and negative (unpleasant emotions) (Solomon, 1980). Regardless of the sign of the relationship, all emotions contribute to the growth and well-being of an individual and influence their decision-making process. However, negative emotions can have different effects than positive ones (Gardner, 1985; Thomas & Diener, 1990): both have an impact on attitude, but in a different direction (Zablocki et al., 2019). The present study assumes that the emotions generated by a request for a contribution have an effect on the attitude towards the payment (positive for positive emotions and negative for negative ones). More formally, it is assumed that:

**H7** Positive emotions positively influence the attitude towards contribution.

**H8** Negative emotions negatively influence the attitude towards contribution.

According to Ajzen (1991) and his Theory of Planned Behaviour, attitude is a major influencer of behaviour, and the relationship between attitude and behaviour is mediated by intentions to act. The attitude–intention link has been applied and validated for various behaviours (e.g. Nystrand & Olsen, 2020; Kasilingam, 2020; Park et al., 2019; Liu et al., 2014), including sustainable ones (Rausch & Kopplin, 2021; Si et al., 2020; Liao et al., 2020). Therefore, it is an established relationship, one that could also be valid for the intention to implement eco-friendly behaviour, such as the payment of a monetary donation to preserve the environment: the more positive the attitude towards the payment of a contribution, the greater the intention to pay it. This idea forms the basis of the next hypothesis:

**H9** A positive attitude towards contribution positively influences the intention to pay a monetary donation.

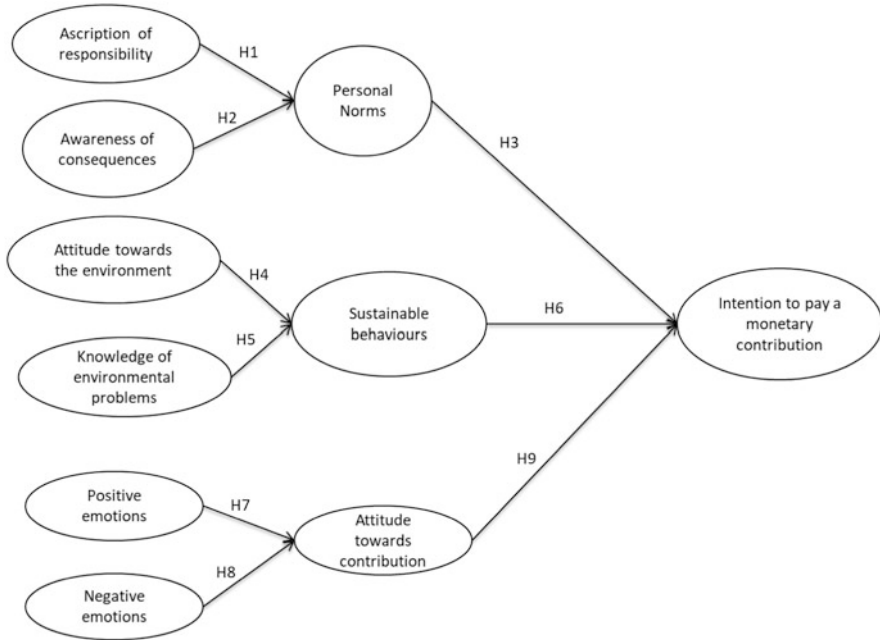


Fig. 1 Conceptual model

In summary, based on the hypotheses discussed above, the conceptual model illustrated in Fig. 1 is proposed.

### 3 Methodology

To test the model, an empirical study was conducted via an online survey. An invitation to participate in a survey was posted on social networks, such as Facebook, with the URL link to the questionnaire; participation was voluntary and non-incentivised. The distribution of the survey among the target population was facilitated through a snowball sampling procedure. In total, 391 complete responses from Italian online shoppers were collected. Of the survey participants, 71.1% were female and 28.9% male, with a mean age of 38.4 (min = 18; max = 70). The respondents were well-educated: 52% graduated or post-graduated while 41% completed high school; the remaining 7% left school after the secondary level.

In addition to collecting socio-demographic data, the questionnaire included measurement items from the established literature, adapted to fit the present research context, which represented the research variables. Awareness of consequence was assessed with five items adapted from Landon et al. (2018). Ascription of responsibility and personal norms were measured through, respectively, the 3-item and the 5-item scales proposed by Steg and de Groot (2010). The 6-items scale for attitude

towards the contribution was derived from Sánchez et al. (2018), while sustainable behaviour was operationalised with the 8-item scale by Taufique et al. (2017). The three items for environmental knowledge were adapted from Darnall et al. (2018). The concept of attitude towards the environment was assessed using the six items proposed by Grunert and Juhl (1995). To measure the emotions felt by the consumer in response to the request for the monetary contribution, the positive and negative affect schedule (Watson et al., 1988) was used, consisting of 10 items for positive emotions and 10 items for negative emotions. Finally, three items adapted from Alleyne and Lavine (2013) were used to assess the intention to pay a monetary contribution. All items were rated on a 7-point Likert-type scale, ranging from strongly disagree (1) to strongly agree (7).

For the analysis of the measurement model and of the conceptual model, SEM was performed using IBM SPSS statistical software (SPSS Inc., Chicago, IL; release 27.0) and the LISREL software (release 8.80), employing the maximum likelihood method.

## 4 Results

### 4.1 Measurement Model

The data were analysed using SEM in a two-step approach (Anderson & Gerbing, 1988). Firstly, the measurement model and then the structural one were examined. As the skew and kurtosis statistics showed that the normality assumption was violated ( $\chi^2 = 4184.777$ ,  $p < 0.001$ ), the model was estimated using the Satorra–Bentler method (Satorra & Bentler, 1994). After examining the reliability of each of the constructs, the measurement model showed a good fit: Satorra–Bentler scaled  $\chi^2 = 3517.819$ ,  $df = 1550$ ,  $p = 0.000$ ; comparative fit index (CFI) = 0.971; root mean square error of approximation (RMSEA) = 0.057; non-normed fit index (NNFI) = 0.969; and standardised root mean square residual (SRMR) = 0.067. All the fit indices exceeded the recommended threshold (CFI > 0.95, RMSEA < 0.06, NNFI > 0.95, SRMR < 0.08) cut-off values (Hu & Bentler, 1995; Hooper et al., 2008).

The significant factor loadings (>0.50), the high composite reliability (>0.70), the high average variance extracted (>0.50), and Cronbach's alpha (>0.70) demonstrated the convergent validity of the constructs (Fornell & Larcker, 1981; Cronbach, 1951; Steenkamp & Van Trijp, 1991). Table 1 shows the psychometric properties of all the scales and the items used.



**Table 1** Measurement scales and reliability indices

Variables	Items (1 = completely disagree; 7 = completely agree)	CR	AVE	Cronbach's alpha
Ascription of responsibility (Steg & de Groot, 2010)	<ul style="list-style-type: none"> <li>- It is my responsibility to minimise my impacts on the environment as an online consumer.</li> <li>- I feel jointly responsible for the impacts of online commerce on the environment.</li> <li>- Minimising my impacts of my online purchases on the environment is in part my responsibility.</li> </ul>	0.779	0.542	0.781
Awareness of consequences (Landon et al., 2018)	<p>To what extent do you think that the following phenomena are problems created by people's behaviour?</p> <ul style="list-style-type: none"> <li>- Carbon emissions from transportation (airplanes, cars, etc.).</li> <li>- Pollution of local environments.</li> <li>- Destruction of native species' habitats.</li> <li>- Waste (trash, sewage, etc.) coming from tourists.</li> <li>- Water security and overuse.</li> </ul>	0.912	0.676	0.911
Personal norms (Steg & de Groot, 2010)	<ul style="list-style-type: none"> <li>- As an online consumer, I feel morally obligated to do whatever I can to minimise my environmental impact.</li> <li>- As an online consumer, I would feel guilty if I were responsible for damage to the environment.</li> <li>- Minimising my impact on the environment is the right thing to do.</li> <li>- I am obligated to do my part to reduce my impact on the environment as a tourist.</li> <li>- People like me should do what they can to minimise their impact on the environment when shopping online.</li> </ul>	0.849	0.532	0.836
Attitude towards the environment (Grunert & Juhl, 1995)	<ul style="list-style-type: none"> <li>- I would donate a day's pay to a foundation to help improve the environment.</li> <li>- I think the government is doing enough to control pollution.</li> <li>- I would be willing to stop buying products from companies guilty of polluting the environment, even though it might be inconvenient for me.</li> <li>- I often discuss environmental issues with my friends.</li> <li>- I become incensed when I think about the harm being done to plant and animal life by pollution.</li> <li>- When I think of the ways industries are polluting the environment, I get frustrated and angry.</li> </ul>	0.838	0.500	0.762

(continued)

**Table 1** (continued)

Variables	Items (1 = completely disagree; 7 = completely agree)	CR	AVE	Cronbach's alpha
Knowledge of environmental problems (Darnall et al., 2018)	Indicate your degree of information regarding the following topics: – Climate change – Exhaustion of water resources – CO <sub>2</sub> emissions	0.946	0.853	0.946
Sustainable behaviours (Taufique et al., 2017)	– When there is a choice, I always choose the product that contributes to the least amount of pollution. – I use a recycling centre or in some way recycle some of my household trash – I make every effort to buy paper products made from recycled paper – Whenever possible, I buy products packaged in reusable containers. – I buy toilet paper made from recycled paper – I try only to buy products that can be recycled – I do not buy household products that harm the environment. – I try to buy energy efficient household appliances.	0.909	0.560	0.906
Positive emotions (Watson et al., 1988)	– Interested – Excited – Upset – Strong – Enthusiastic – Proud – Inspired – Determined – Attentive – Active	0.947	0.645	0.947
Negative emotions (Watson et al., 1988)	– Distressed – Guilty – Scared – Irritable – Alert – Ashamed – Nervous – Jittery – Afraid	0.915	0.526	0.907
Attitude towards contribution (Sánchez et al., 2018)	– I think the idea of paying a small contribution to support a reforestation project to offset the environmental impact generated by my online purchases is brilliant. – I think the idea of paying a small contribution to support a reforestation project to offset the environmental impact generated	0.968	0.858	0.967

(continued)

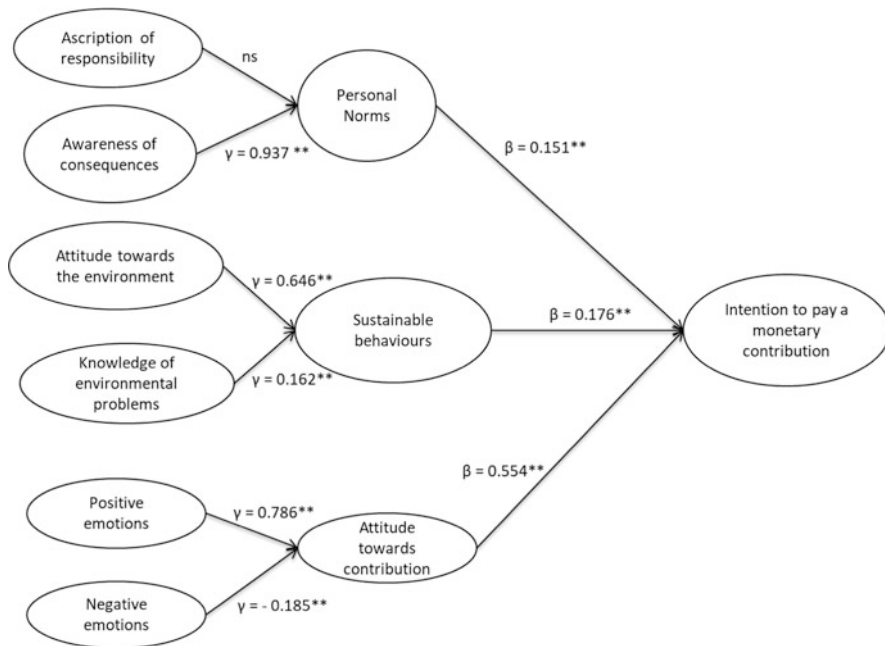
**Table 1** (continued)

Variables	Items (1 = completely disagree; 7 = completely agree)	CR	AVE	Cronbach's alpha
	by my online purchases is very responsible. – I think the idea of paying a small contribution to support a reforestation project to offset the environmental impact generated by my online purchases is very intelligent. – I think the idea of paying a small contribution to support a reforestation project to offset the environmental impact generated by my online purchases is very useful. – I think the idea of paying a small contribution to support a reforestation project to offset the environmental impact generated by my online purchases is very ecological.			
Intention to pay a monetary contribution (Alleyne & Lavine, 2013)	– I intend to pay a small contribution to support a reforestation project to offset the environmental impact generated by my online purchases whenever I have the opportunity. – I intend to pay a small contribution to support a reforestation project to offset the environmental impact generated by my online purchases whenever necessary. – To the extent possible, I would pay a small contribution to support a reforestation project to offset the environmental impact generated by my online purchases frequently.	0.917	0.787	0.918

### 4.2 Structural Model

In the second step of analysis, the structural model consisting of all the hypothesised relationships among variables was assessed. The results indicated an acceptable fit: Satorra–Bentler scaled  $\chi^2 = 3685.586$ ,  $df = 1571$ ,  $p = 0.000$ ; CFI = 0.969; RMSEA = 0.059; NNFI = 0.967; and SRMR = 0.075. The model explained 50% of variance for intention to pay the contribution. Path coefficients and levels of significance are displayed in Fig. 2.

Results from the data were found to support all hypotheses, except H1. In particular, the impacts of personal norms ( $\beta = 0.151$ ,  $p = 0.000$ ), sustainable behaviour ( $\beta = 0.176$ ,  $p = 0.000$ ), and attitude towards the contribution ( $\beta = 0.554$ ,  $p = 0.001$ ) on intention to pay a monetary contribution were positive and significant, supporting H3, H6, and H9. Considering the antecedents of personal norms, only the awareness of consequences exerted a positive and significant effect ( $\gamma = 0.937$ ,  $p = 0.000$ ), supporting H2, whereas the ascription of responsibility effect was not significant, therefore, H1 cannot be accepted ( $\gamma = 0.046$ ,  $p > 0.05$ ). The level of sustainable behaviour increased as environmental knowledge



\*  $p < 0.05$ ; \*\*  $p < 0.01$

**Fig. 2** Structural model with standardised coefficients. \*  $p < 0.05$ ; \*\*  $p < 0.01$

( $\gamma = 0.162$ ,  $p = 0.000$ ) and attitude towards the environment ( $\gamma = 0.646$ ,  $p = 0.000$ ) increased, supporting H5 and H4. Finally, attitude towards the contribution was significantly influenced by emotions both in a positive and negative way (positive emotions  $\gamma = 0.786$ ,  $p = 0.000$ ; negative emotions  $\gamma = -0.185$ ,  $p = 0.000$ ), thus supporting H7 and H8.

## 5 Conclusions and Implications

In the last few years, the scientific community's interest in the environmental impact of e-commerce has grown (Mangiaracina et al., 2015). Transport for deliveries and returns and the packaging material used are among the main causes of the environmental pollution generated by online shopping (Matthews et al., 2002; Borggren et al., 2011; Van Loon et al., 2014; Savelsbergh & Van Woensel, 2016; Villa & Monzón, 2021).

Among the various initiatives promoted by online operators, the idea of asking shoppers to pay a small voluntary monetary donation to offset the pollution generated by their online purchase appears interesting and new. Despite the large amount of research conducted in recent years on online shopping, this pro-environmental

behaviour has never been investigated in the literature. The present study proposes and tests a conceptual model in order to fill this gap and identify the factors that favour or hinder a consumer's willingness to provide a monetary contribution.

Results from the proposed structural model highlight the validity of the theoretical framework and the positive and significant impact of all the three direct predictors of the intention to pay a contribution: personal norms, sustainable behaviours, and attitude towards payment. In particular, attitude exerts the greatest effect on behavioural intention, confirming the assumption based on Ajzen's (1991) theory and the results of several studies conducted on sustainable behaviours (Rausch & Kopplin, 2021; Si et al., 2020; Liao et al., 2020). Therefore, attitude towards a behaviour plays a key role with reference to the payment of a voluntary monetary contribution to support the environment.

Study results partially confirmed the NAM's relationships (Schwartz, 1977): only awareness of consequences exerts a positive, significant, and strong impact on personal norms; by contrast, the effect of ascription of responsibility is not supported by the data. This result reinforces the existence of a controversial relationship between this variable and personal norms (De Ruyter & Wetzels, 2000).

In relation to the antecedents of sustainable behaviours, the findings suggest that the more positive the attitude towards the environment and the greater the knowledge of environmental issues, the higher the probability that people will implement behaviours in support of the environment. This means that awareness of the problems that put strains on the planet's health is a strong incentive to behave in a more careful and sustainable way.

Finally, the relationships between attitude towards the contribution and emotions appear significant. Specifically, the emotions generated by the request for a contribution have a dual effect on attitude: positive emotions contribute to strengthen it, while negative emotions contribute to weaken it. These findings are in line with studies supporting the role played by emotions in consumers' decision-making processes (e.g. Gardner, 1985; Thomas & Diener, 1990; Zablocki et al., 2019).

The proposed conceptual model has significant theoretical and managerial implications. Theoretically, it explains a specific environment-friendly behaviour never investigated in the literature, deepening knowledge on this topic in the e-commerce context. While the model does not offer full support to NAM, it widens the field of investigation to sustainable, environmental, emotional, and attitudinal drivers. In so doing, the study offers a wider and solid conceptual framework to understand individuals' intention to implement eco-friendly conduct. Furthermore, the model contributes to the enrichment of the literature in the field of public environmental goods. Managerially, the study provides several implications for online operators. More and more retailers are addressing the increasingly sensitive issue of environmental sustainability through the promotion of several initiatives, such as the offer of sustainable products, reduction in packaging, and the use of recycled and recyclable materials. Some of them, like Zalando, stand out by asking shoppers to actively participate in environmental sustainability through the payment of a small voluntary contribution to invest in planet protection projects. The findings suggest that to encourage such conduct, a positive attitude towards paying the contribution must be

developed. In turn, the emotions generated by the request for the monetary contribution are a key factor that strengthens towards making a contribution. This is why retailers must pay close attention to the formulation of the contribution request because it must be able to arouse positive (and not negative) emotions in the shopper. Therefore, when constructing the message, retailers should choose images, colours, and terms that will generate positive feelings. According to the study results, the intention to pay the contribution increases if shoppers already implement sustainable behaviours, which in turn depend on their sensitivity towards the environment and its health. To leverage these behaviours and sensitivity, online operators have to work to raise customers' awareness of the consequences of their actions on the environment and their knowledge of planet health. This is a simple task because they just have to leverage on communication and information, as it is not necessary to trigger regret and guilt feelings in consumers. On e-commerce sites, for example, retailers could create sections dedicated to environmental sustainability, with news regarding problems and causes of pollution, the impact generated by everyday routines and with suggestions of pro-environmental behaviours that could be easily implemented. This informative activity would increase awareness of the consequences deriving from the implementation of sustainable behaviour, which is an essential condition for strengthening moral obligation. At the same time, information and sensitisation can also be useful for strengthening moral obligation towards minimising their own environmental impact as it acts as a significant predictor of behavioural intention.

Knowing the factors that affect consumers' propensity to adopt sustainable online purchasing behaviours is useful to identify further virtuous behaviours, in addition to paying a contribution, that consumers could be incentivised to adopt, for example, the single delivery of multiple products purchased from the same online retailer, rather than delivery at different times.

## **6 Limitations and Future Research**

Although the present chapter offers several literature and managerial contributions, there are some limits and related research directions that can be considered. First, the proposed framework does not take into consideration consumers' knowledge about the actual impact of e-commerce on the environment. In a future research perspective, this factor could enrich the conceptual framework as a direct antecedent of intention and as a moderator of the relation between drivers and intention. Second, the model considers only the intention to pay a contribution and not the actual behaviour. Therefore, further research is recommended in order to investigate whether behavioural intentions actually turn into actual behaviour. The payment of a contribution could also be measured through a field experiment. Developing an experimental design in collaboration with an online retailer would allow for precise observation and measurement of users' behaviour. Third, the research was carried out using only one type of message for the contribution request. Given the

importance of the emotions generated by the message to behavioural intention, it would be interesting to test different types of communication to identify the most effective one.

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