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The influence of personal motives and personal norm on purchasing sustainable products*

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Abstract

This paper investigates personal motives and their role in predicting the purchase of sustainable products. Five types of personal motives were identified and tested by applying structural equation modelling. The present research also confirms the influence of inherent constructs of the Theory of Planned Behaviour. It investigates the role of personal norms, often neglected in previous research. The results revealed that altruism, generativity, and environmental concern significantly positively influence the attitude toward purchasing sustainable products. Furthermore, a negative impact of frugality on the attitude towards purchasing sustainable products was found. It confirms that, although pro-environmental behaviour can be seen as frugal behaviour, frugality can harm the attitude towards purchasing sustainable products if consumers perceive sustainable products as more expensive. However, the impact of health consciousness on the attitude towards the purchase of sustainable products was found to be insignificant, which could be explained by the fact that consumers may not perceive all sustainable products to be healthier, indicating that this variable is category-specific. Finally, a positive impact of personal norms on the intention to purchase sustainable products was confirmed, indicating that personal norms should be included in prediction models alongside social norms.

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1. Introduction

Unsustainable consumption has been identified as a major contributor to various environmental problems. Thus, promoting change in this sense is a key to achieving sustainable development (Tanner and Kast, 2003). In other words, an evolution of consumption patterns is necessary (Alam et al., 2020).

Previous research on sustainable consumer behaviour has identified a significant gap between attitudes and behaviour as a major challenge. Prothero et al. (2011) found that consumers generally support sustainable consumption, but their actual behaviour when it comes to purchasing sustainable products often does not align with their positive attitudes (Kollmus and Agyeman, 2015). Nguyen et al. (2019) state that between 46 and 67% of UK consumers have a positive attitude towards buying sustainable products, while only 4-10% actually buy them. This phenomenon is known as the attitude-behaviour gap (Terlau and Hirsch, 2015). Therefore, it is critical to understand the influencing factors of sustainable consumer behaviour.

Numerous studies have attempted to identify predictors of sustainable consumer behaviour to narrow the gap between attitudes and behaviour. However, there is still no consensus in the literature as to which concept offers the best explanation of sustainable consumer behaviour (Marzouk and Mahrous, 2020). The theory of planned behaviour (TPB) stands out, particularly in this area of research. TPB is based on social-psychological concepts, but it overlooks some of the important factors that influence consumer behaviour. Therefore, consumer behaviour research often has the opportunity to extend this theory with additional factors, depending on the specific research context.

Many authors have extended this model by including additional psychological variables such as motivation, perception, learning, beliefs, and attitudes. In sustainable consumption research, authors often extend the existing TPB model by including environmental concerns as a crucial predictor of intention and behaviour (Chaudhary and Bisai, 2018; Lee et al., 2014; Yadav and Pathak, 2016-a; Zhang et al., 2019).

The most studied motives are those that have a positive influence on the intention to purchase sustainable products, such as altruism (Mostafa, 2009; Ryan, 2017) and health consciousness (Voon et al., 2011; Xu et al., 2020; Yadav and Pathak, 2016-a). On the other hand, although some authors (Shiel et al., 2020; Urien and Kilbourne, 2011) found a positive relationship between concern for future generations

(generativity) and sustainable purchasing behaviour, there is still a lack of research in this area.

Furthermore, one of the rarely used predictors is frugality or rational behaviour. According to Tapia-Fonllem et al. (2013), it is a basic characteristic of a sustainable lifestyle, as well as the previously mentioned altruism. Lastovicka et al. (1999) point out that frugality, although often associated with sustainable consumption, used to be neglected in previous research.

The present research aims to provide a more detailed insight into personal motives whose impact is insufficiently investigated and considers them within the complete model of TPB. Therefore, the study hypothesizes a positive influence of four types of personal motives (altruism, health consciousness, generativity, and environmental concern) and a negative influence of rationality on the attitude toward buying sustainable products. Besides investigating the impact of personal motives on attitudes towards the purchase of sustainable products, it also confirms the influence of inherent constructs of this theory e.g. attitudes towards behaviour, subjective norms, and perceived behavioural control, strengthening the predictive power of the model. A positive influence of all inherent constructs has also been hypothesised. Finally, the present research has also examined the potential direct positive impact of personal norms which is a construct often overlooked in previous studies.

The paper is structured as follows. After the introduction, a comprehensive literature review and derived hypotheses are presented, followed by the methodology, in which a conceptual model as well as the participants and the procedure are explained. Finally, the study results are presented, interpreted, and discussed in light of previous research. General conclusions are followed by the research limitations and suggestions for future research.

2. Literature review and hypotheses development

To develop a conceptual model of the study and provide the basis for the development of hypotheses, a literature review was conducted and the key findings from previous research were summarised, focusing on personal motives as well as norms, behavioural control and the intention to buy sustainable products.

2.1. Motives for purchasing sustainable products

An analysis of relevant literature has identified several personal motives that align with the values advocated by sustainable consumption. These include altruism, which is characterized by a commitment to assisting others, and health consciousness, which is linked to the benefits of sustainable products. Rationality is also recognized as an essential factor, emphasizing the rational use of resources and

thoughtful purchasing decisions. Furthermore, the concept of generativity, defined as concern for future generations, is integral to the definition of sustainability. Finally, environmental concern, which focuses on the impact on the environment, is identified as a significant motivating factor. Together, these motives reinforce the framework of sustainable consumption, addressing ethical, health-related, environmental, and future-oriented considerations.

2.1.1. Altruism

Altruism, i.e., concern for the well-being of others, is an effective motivator that encourages an individual to adopt sustainable consumption patterns (Marzouk and Mahrous, 2020; Teng et al., 2015).

Altruism is usually defined as the desire to serve another person for their own sake and not for one's own benefit (Batson, 2011). Ryan (2017) emphasizes the importance of altruism as a fundamental human value that plays a key role in the issue of sustainability. Similarly, Tapia-Fonllem et al. (2017), categorize altruism as a component of sustainable behaviour that includes actions intended to help other people without expecting anything in return. In his norm activation model, Schwartz (1977) associated altruism with pro-environmental or sustainable behaviour. Researchers (Panda et al., 2020; Steg et al., 2014) also found that consumers with higher levels of altruism are more considerate of the environmental impact of their behaviour than the personal consequences.

Various studies, including Kaufmann et al. (2012) and Mostafa (2009), confirm this by demonstrating the significant positive influence of altruism on the intention to purchase sustainable products. Prakash et al. (2019) found that altruism had a positive influence on both the purchase attitude and the intention to buy sustainable products, while Bautista et al. (2020) identified altruism as an important mediator between attitudes and the intention to buy sustainable products.

Based on the above, the first hypothesis is formulated as follows:

H1: Altruism has a direct positive influence on attitudes towards buying sustainable products.

2.1.2. Health consciousness

Health is of vital importance to every individual, and health consciousness can lead to the selection of safe and healthy products (Abdulsahib et al., 2019).

Yadav and Pathak (2016-b: 123) define health consciousness as "the degree to which health concerns are integrated into a person's daily activities." Consumers who are health-conscious exhibit awareness and concern for their own well-being,

driving them to enhance or preserve their overall health and quality of life. They also actively engage in health-promoting behaviours and demonstrate a high level of knowledge regarding health issues (Michaelidou and Hassan, 2008).

Globally, the level of consumer awareness and concern about nutrition, health, and the quality of products consumed is growing (Chakrabarti, 2010). Sustainable products, which include organic food, are seen as a healthier option compared to conventional products, and health consciousness is considered one of the main factors motivating the purchase of such products (Yadav and Pathak, 2016-a). In the context of sustainable consumption, previous research has extensively investigated the relationship between health consciousness and the purchase of sustainable or organic products (Kuran and Mihic, 2014; Michaelidou and Hassan, 2008; Singh and Verma, 2017; Yadav and Pathak, 2016-a).

Based on the above, the following hypothesis was formulated.

H2: Health consciousness has a direct positive influence on the attitude towards buying sustainable products.

2.1.3. Generativity

The concept of generativity was established by Erikson (1950). According to Zhang and Mao (2008), generativity can be understood as a motivation to engage in consumer activities aimed at positively impacting future generations. Typically, it is described as being less oriented towards individual success and happiness and more towards leaving a legacy for others (Morselli and Passini, 2015).

Urien and Kilbourne (2011) defined generativity as a resource that encourages people towards the public good and maintaining continuity from one generation to the next. This definition aligns with later definitions by Shiel et al. (2020), who state that generativity concerns an individual's care about providing something useful or significant not just for themselves but also for current and future generations, as well as definition by Afridi et al. (2021-b: 1), who assert that generativity "refers to individuals' beliefs that their current behaviour has consequences that extend to future generations."

Previous research has rarely linked generativity with sustainable consumer behaviour, although it is mentioned in the very definition of sustainable development. There are only a few studies (Afridi et al., 2021-a; Afridi et al., 2021-b; Quoquab et al., 2019; Shiel et al., 2020) that have explored and confirmed a positive link between generativity and sustainable purchasing. However, none of these have investigated generativity within the TPB.

Based on the elaborated and the basic postulates of TPB, we propose the following hypothesis.

H3: Generativity has a direct positive influence on the attitude towards buying sustainable products.

2.1.4. Rationality

A definition of sustainable consumption states that "sustainable consumption does not pertain to consuming less, but rather consuming differently; it concerns efficient consumption and improved quality of life" (Manoochehri, 2001). As previously discussed, sustainable consumption aims to change consumption patterns. One approach to achieving sustainable consumption is through more frugal or rational consumption of goods and services.

Rationality or frugality is conceptualized as a lifestyle trait that reflects disciplined acquisition and resourceful use of products and services. It involves avoiding immediate, short-term consumption temptations through clever use of what is already owned or available, to achieve long-term goals (Lastovicka et al., 1999).

Michaelis et al. (2020) define frugality as an individual's general tendency towards (1) resource preservation and (2) the application of economic rationality in resource acquisition, i.e., evaluating the alternative costs of newly acquired resources. Tapia-Fonllem et al. (2017) emphasize that frugality includes the deliberate avoidance of unnecessary resource consumption and define it as the cautious use of resources and an interest in avoiding waste. According to Bove et al. (2009), frugality relates to the degree to which an individual restrains from purchasing and is resourceful in product use. This concept can elucidate consumer behaviours such as restrained product use, value awareness, price consciousness, and avoidance of impulsive purchasing (Lastovicka et al., 1999).

Despite its association with sustainable consumption, previous research has largely overlooked the consumer trait of frugality (Lastovicka et al., 1999). In their research, Evers et al. (2018) found that both materialism and frugality positively influence sustainable consumption behaviours. Fujii (2006) argues that pro-environmental behaviour should be viewed as frugal behaviour. However, Wang et al. (2021) challenge the view that frugality is a positive trait concerning sustainable consumer behaviour, presenting a research model and providing evidence of the negative impact of frugality on the intention to purchase sustainably. This is grounded in the assumption that sustainable products are often perceived as more expensive.

Based on the above, the following hypothesis was formulated.

H4: Rationality has a direct negative influence on the attitude towards buying sustainable products.

2.1.5. Environmental concern

Environmental concern (EC) is usually defined as people's awareness of environmental issues and their readiness to support efforts to address them (Chaudhary and Bisai, 2018; Mas'od and Chin, 2014. In the context of consumer decision-making, EC is described as an evaluation or attitude towards the environmental consequences of one's own or others' behaviours (Fransson and Gärling, 1999). Its significance is emphasized in the consumer decision-making process (Yang et al., 2018), and, according to research, it is a strong motivator for purchasing (Smith and Paladino, 2010). The existing literature highlights the importance of incorporating EC in studies on the purchase of sustainable products (Goh and Balaji, 2016).

Maichum et al. (2017) found that EC significantly positively affects the intentions to purchase eco-friendly products, while Chaudhary and Bisai (2018) found that environmental concern had an indirect impact on purchase intentions through attitudes. Similarly, in the research by Yadav and Pathak (2016-a), environmental concern did not influence the intention to purchase organic food but positively correlated with consumer attitudes toward buying organic food, which is in line with the findings of Smith and Paladino (2010) and of Mostafa (2009). Based on the elaborated, the fifth hypothesis is proposed:

H5: Environmental concern has a direct positive influence on the attitude towards buying sustainable products.

2.2. Intention to buy sustainable products

In the field of human psychology and behavioural research, the concept of intention plays a crucial role, and models of behavioural intentions have received strong support in various behavioural domains (Chen, 2007). This concept involves the capacity for deliberate action and the ability to influence outcomes through such actions.

When there is an opportunity to act, intention leads to behaviour, and if measured, the intention will serve as the best predictor of behaviour (Fishbein and Ajzen, 1975, as cited in Teng and Wang, 2015). Therefore, for a comprehensive understanding of behaviour, researchers must measure intentions precisely and accurately. Generally, the stronger the intention, the greater the likelihood of executing a particular behaviour, provided that the behaviour is within the individual's volitional control (Ajzen, 1991).

Fishbein and Ajzen describe intention as the "probability that a person will perform a certain behaviour" (Fishbein and Ajzen, 1975: 288). The concept of intention serves as an indicator of future actions, directing and reflecting behaviour across various domains (Moriano et al., 2012). Within his TPB, Ajzen

(1991) argues that intention is a crucial predictor of behaviour. It encompasses motivational factors that initiate behaviour, reflecting the extent to which individuals are prepared to exert effort and strive towards performing that behaviour, often influenced by personal values, attitudes, social norms, and perceived behavioural control. Specifically, purchase intention is defined as an individual's deliberate plan to expend effort on acquiring a particular product or service (Spears and Singh, 2004).

Consumer behaviour research identifies purchase intention as a fundamental element in the purchasing process, typically seen as necessary to motivate and encourage consumers to acquire products and services (Naz, 2022). Chen et al. (2020) emphasize the importance of understanding consumer purchase intentions, noting that such insights can enable companies to analyze market trends and adjust their products or services accordingly.

Consistent with previous research on intention and behaviour, the intention to purchase sustainable products has been validated as a proxy for actual purchasing behaviour, according to Chekima et al. (2016).

Therefore, following previous investigations, purchase intention appears as a dependent variable in the present research.

2.2.1. Attitudes

According to TPB, attitudes are a key predictor of behavioural intentions. An attitude towards behaviour refers to an individual's positive or negative evaluation of that behaviour, which plays a crucial role in shaping intentions to purchase, according to the TPB. Attitudes are formed from the beliefs individuals hold about the object of the attitude (Ajzen, 1991)

An attitude can be defined as a "learned predisposition to behave in a consistently favourable or unfavourable way towards a given object" (Schiffman and Wisenblit, 2015: 172). According to Allport (1935), an attitude is conceptualised as a mental and neural state of readiness, organised through experience, which exerts an influential role in shaping an individual's responses to all related objects and situations. Similarly, Eagly and Chaiken (1993: 1) describe an attitude as "a psychological tendency that is expressed by evaluating a particular entity with some degree of favour or disfavour."

In the realm of sustainable consumer behaviour research, various types of attitudes have been examined. These include attitudes towards environment (Biswas and Roy, 2015; Leonidou et al., 2010; Maichum et al., 2017), attitudes towards sustainability (Gericke et al., 2019; Zwickle and Jones, 2018), attitudes towards morality (Arvola et al., 2008; Yadav and Pathak, 2016-a), attitudes towards

purhasing (Chan, 2001; Chaudhary and Bisai, 2018; Paul et al., 2016), and attitudes towards products (Al Zubaidi, 2020; Braga Junior et al., 2019).

Research has shown that a positive attitude towards a particular behaviour is positively associated with the intention to perform that behaviour (Ajzen, 1991; Chen and Tung, 2014; Mostafa, 2006). The attitude towards sustainable purchasing refers to the cognitive evaluation of consumers' sustainable purchasing behaviour (Joshi and Rahman, 2017). An individual's attitude towards product consumption is an important factor in predicting and understanding consumer choices over different products and services (Voon et al., 2011). However, studies have shown different results regarding the relationship between consumer attitudes and sustainable purchasing behaviours. Tanner and Kast (2003), in different studies, found both positive relationships and weak or non-existent ones. Onel (2017) suggests that sustainable consumption can be encouraged through a positive attitude towards sustainable products and behaviours. Dabbous and Tarhini (2019) confirm that although attitude is a key factor in participation, consumers' desire for sustainable engagement may not lead to actual behaviour simply because they are unaware of the benefits that such participation might offer. Therefore, this research aims to examine specifically the attitude towards behaviour as the primary predictor of behavioural intentions.

Accordingly, the following hypothesis, H6, is proposed: Attitude towards purchasing has a direct positive influence on the intention to buy sustainable products.

2.2.2. Norms

Ajzen acknowledged the importance of social norms and reference groups in human behaviour, introducing the concept of subjective norms within the frameworks of the Theory of Reasoned Action (TRA) (Fishbein and Ajzen, 1975) and TPB (Ajzen, 1991).

Within the framework of both theories, subjective norms refer to a specific regulation of behaviour, based on what important others demand, desire, or expect regarding the performance or non-performance of a specific behaviour. Subjective norms can be described as "perceived social pressure to perform or not to perform the behaviour" (Ajzen, 1991: 188).

Onel (2017) explains that in the context of sustainable purchasing behaviour, if an individual believes that their social environment, such as family, close friends, and colleagues, approves of their decision to purchase such products, they are more likely to engage in purchasing. In other words, positive subjective norms will lead to actual behaviour through increased behavioural intentions.

Research examining the relationship between subjective norms and consumer intentions to purchase sustainable products is quite extensive. Different studies

have demonstrated that subjective norms have a significant impact on consumer behavioural intentions (Al-Swidi and Saleh, 2021; Kumar et al., 2021; Maichum et al., 2016; Vermeir and Verbeke, 2006).

Based on the above, Hypothesis H7 is proposed: Subjective norms have a direct positive influence on the intention to buy sustainable products.

Based on TPB, previous research has primarily investigated normative issues through the concept of subjective or social norms (Onel, 2017). However, besides social norms, the impact of personal norms should not be neglected (Blankenberg and Alhusen, 2019). Individuals follow social norms and integrate them into their personal value system, transforming them into specific personal norms that reflect their moral standards, which have proven to be an important motivator in studies of ecological behaviour (Arvola et al., 2008; Tanner and Kast, 2003). Schwartz (1973), as cited by Aertsens et al. (2009), defines personal norms as the internal beliefs of individuals about the rightness or wrongness of a behaviour. They are based on the general values of the individual. Personal or moral norms have been considered a key predictor of behaviour within the Norm Activation Model (NAM), proposed by Schwartz (1977). Although Ajzen (1991) states that in certain contexts it is necessary to consider not only perceived social pressures but also personal feelings and moral obligations for performing a specific behaviour, these are not included in the basic model of the TPB.

Authors have previously integrated the Norm Activation Model (NAM) with the TPB in various contexts such as buying organic food (Aertsens et al., 2009; Thøgersen, 2009), buying energy-efficient products (Wang et al., 2019), visiting green hotels (Bashir et al., 2019) etc.

Based on the above, Hypothesis H8 is proposed: Personal norms have a direct positive influence on the intention to purchase sustainable products.

2.2.3. Perceived behavioural control

Perceived behavioural control (PBC) refers to an individual's perception of the ease or difficulty of performing a particular behaviour, along with their beliefs about the presence or absence of external factors that might facilitate or hinder the behaviour (Ajzen, 1991).

The inclusion of PBC into the earlier model (TRA) was justified by its ability to predict behaviours that are not under complete volitional control (Armitage and Conner, 2001). Within the framework of the TPB, perceived behavioural control is considered a key predictor influencing the decision to engage in a behaviour.

Previous research has frequently established a significant positive relationship between PBC and intentions towards sustainable behaviour (Matharu et al., 2021),

such as purchasing sustainable products in general (Chaudhary and Bisai, 2018; Maichum et al., 2016), purchasing sustainable clothing (Kumar et al., 2021; La Rosa and Johnson Jorgensen, 2021), organic food (Carfora et al., 2021; Yadav and Pathak, 2016-b; Yadav and Pathak, 2017) etc.

Based on the above, the following hypothesis is proposed: H9: Perceived behavioural control has a direct positive influence on the intention to buy sustainable products.

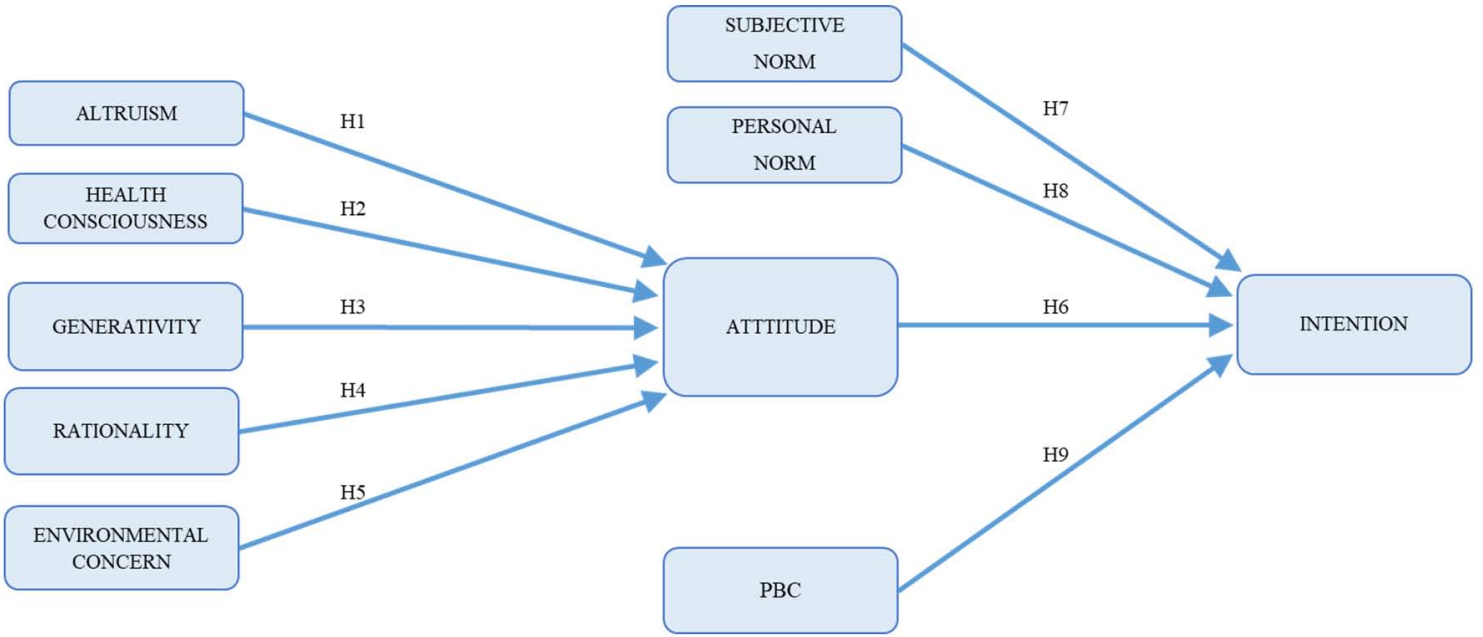
3. Methodology

All the constructs examined and the hypothesised relationships are presented in a conceptual model, which is followed by a description of the sample. Additionally, both univariate and multivariate statistical methods were employed. Specifically, exploratory and confirmatory factor analysis (CFA), and Structural Equation Modelling (SEM).

3.1. Conceptual model

A conceptual model was developed for the present study (Figure 1), which aims to explore the personal motives that play a decisive role in the formation of consumer attitudes and purchase intentions. The study will examine five types of personal motives: altruism, health consciousness, rationality, generativity, and environmental concern. These personal motives have been examined within the TPB theoretical framework with the addition of personal norms along with subjective norms.

Figure 1: Research conceptual model



Source: Author's construction

3.2. Participants and procedure

A highly structured questionnaire was employed, created using the online platform Alchemer which was also used for data collection. The survey was conducted from May to June 2023, in five Slavonian counties in Croatia (Virovitica-Podravka County, Požega-Slavonia County, Brod-Posavina County, Osijek-Baranja County and Vukovar-Srijem County), on a total sample of 485 respondents (Table 1).

Table 1: Demographic and socioeconomic characteristics of survey participants (N=485)

		n	%
Gender	Male	228	47.0
	Female	257	53.0
	Total	485	100.0
Age	18-31	163	33.6
	32-45	68	14.0
	46-59	172	35.5
	60+	82	16.9
	Total	485	100.0
Education	Primary School	34	7.0
	High School	268	55.3
	College (Associate)	68	14.0
	University (Bachelor)	81	16.7
	Master's Degree	28	5.8
	Phd	6	1.2
	Total	485	100.0
Employment Status	Student	5	1.0
	Unemployed	80	16.5
	Employed	47	9.7
	Retired	256	52.8
	Student	97	20.0
	Total	485	100.0
Average Monthly Income (€)	do 400 €	47	9.7
	401 - 800 €	78	16.1
	800 – 1,200 €	117	24.1
	1,201 – 1,600 €	88	18.1
	1,600 – 2,000 €	59	12.2
	More than 2,000 €	96	19.8
	Total	485	100.0

Source: Authors' calculation

Univariate and multivariate statistical methods were employed, including exploratory (EFA) and confirmatory factor analysis (CFA) in SPSS and Structural equation modelling (SEM) in AMOS to test the hypotheses.

A total of 10 variables were examined. Using the desired ratio (20:1) proposed by Kline (2005), the sample size in this study is deemed appropriate for conducting SEM analysis. Factor loadings and Cronbach's alpha values for individual scales are presented in Table 2.

Table 2: Results of exploratory factor analysis

Variables and source	Item	Item statement	Communality	Mean
Altruism (Mas'od and Chin, 2014)	ALT_1	I would help a stranger find their way or an address.	0.522	4.40
	ALT_2	I would give money to a charity.	0.404	3.99
	ALT_3	I would donate goods or clothes for charitable purposes.	0.557	4.40
	Cronbach's Alpha: 0.769			
	Variance: 2.07%			
	Mean: 4.26			
Health Consciousness (adapted based on: Tarkiainen and Sundqvist, 2005)	HC_1	I take care of my health.	0.519	3.85
	HC_2	I think a lot about my health.	0.554	3.65
	HC_3	I'm very self-conscious about my health.	0.590	3.88
	HC_4	I carefully choose the products I buy to ensure good health	0.571	3.55
	Cronbach's Alpha: 0.852			
	Variance: 5.58%			
	Mean: 3.73			
Generativity (Morselli and Passini, 2015)	GEN_1	I carry out activities in order to ensure a better world for future generations	0.448	3.71
	GEN_2	I have a personal responsibility to improve the area in which I live	0.550	3.76
	GEN_3	I give up part of my daily comforts to foster the development of next generations	0.468	3.30
	GEN_4	I think that I am responsible for ensuring a state of well-being for future generations	0.476	3.69
	Cronbach's Alpha: 0.803			
	Variance: 3.22%			
	Mean: 3.62			
Rationality (Quoquab et al., 2019)	RAT_1	I purchase product that I really need	0.504	3.81
	RAT_2	I purchase the product that is within my budget	0.515	4.03
	RAT_3	I avoid being extravagant in my purchase	0.493	3.87
	RAT_4	I purchase only to fulfil my basic needs and wants	0.570	3.84
	Cronbach's Alpha: 0.832			
	Variance: 7.75%			
	Mean: 3.89			

Table 2: Results of exploratory factor analysis (continues)

Variables and source	Item	Item statement	Communality	Mean
Environmental concern (Paul et al., 2016; Piligrimiene et al., 2020)	EC_1	I am very concerned about the environment	0.558	3.74
	EC_2	It is important to change our consumption patterns in order to prevent the environment	0.634	3.98
	EC_3	I would be willing to reduce my consumption in order to protect the environment	0.609	3.84
	EC_4	It is important to me that the products I use don't harm the environment	0.594	3.79
	Cronbach's Alpha: 0.860			
	Variance: 3.67%			
	Mean: 3.84			
Attitude (Chan, 2001)	ATB_1	I like the idea of purchasing sustainable products	0.706	3.84
	ATB_2	Purchasing sustainable products is a good idea	0.785	3.95
	ATB_3	I have a favourable attitude toward purchasing sustainable version of a product	0.785	3.91
	Cronbach's Alpha: 0.918			
	Variance: 2.26%			
	Mean: 3.90			
Subjective norm (author's construction)	SN_1	My friends think I should buy sustainable products	0.629	3.15
	SN_2	My family thinks I should buy sustainable products	0.686	3.34
	SN_3	People around me think I should buy sustainable products	0.660	3.16
	Cronbach's Alpha: 0.885			
	Variance: 2.63%			
	Mean: 3.22			
Personal norm (Onwezen et al., 2013)	PN_1	I feel a moral obligation to protect the environment	0.725	3.81
	PN_2	I feel that I should protect the environment	0.740	3.93
	PN_3	I feel it is important for people in general to protect the environment	0.597	4.09
	Cronbach's Alpha: 0.881			
	Variance: 1.43%			
	Mean: 3.94			

Table 2: Results of exploratory factor analysis (continues)

Variables and source	Item	Item statement	Communality	Mean
Perceived Behavioural Control (Paul et al., 2016)	PBC_1	I believe I have the ability to purchase green products	0.621	3.65
	PBC_2	I see myself as capable of purchasing green products in future	0.672	3.71
	PBC_3	I have resources to purchase green products	0.572	3.40
	PBC_4	I have time to purchase green products	0.523	3.50
	Cronbach's Alpha: 0.858			
	Variance: 3.48%			
	Mean: 3.57			
Intention (adapted based on: Paul et al. (2016)	INT_1	I will consider switching to sustainable products for environmental reasons	0.687	3.66
	INT_2	I intend to buy a sustainable product in the coming months due to its positive impact on the environment	0.728	3.41
	INT_3	I definitely want to buy sustainable products in the near future	0.794	3.57
	INT_4	I will definitely recommend buying sustainable products to my friends and acquaintances	0.794	3.48
	INT_5	I will do my best to buy more sustainable products in the near future	0.722	3.41
	INT_6	In the future, I plan to buy sustainable products because they are more environmentally friendly	0.742	3.53
	Cronbach's Alpha: 0.946			
	Variance: 34.48%			
	Mean: 3.51			

Source: Authors' calculation

As presented in Table 2, a total of 10 factors were extracted, each with satisfactory factor loadings (> 0.4) (Costello and Osborne, 2005). In addition to factor loadings, reliability testing was conducted using the Cronbach's alpha coefficient, confirming that all measurement scales meet the minimum required threshold (> 0.70) (Lavrakas, 2008).

4. Results

In the process of obtaining results based on a conceptual model, CFA was conducted. Table 3 provides a comprehensive overview of reliability and validity indicators to ascertain discriminant validity.

Table 3: Convergent and discriminant validity of constructs

	CR	AVE	MSV	ALT	HC	GEN	RAT	EC	ATB	SN	PN	PBC	INT
ALT	0.791	0.561	0.262	0.749									
HC	0.855	0.595	0.249	0.288	0.772								
GEN	0.806	0.511	0.345	0.391	0.441	0.715							
RAT	0.833	0.556	0.249	0.347	0.499	0.356	0.745						
EC	0.863	0.611	0.590	0.512	0.395	0.587	0.480	0.782					
ATB	0.920	0.794	0.578	0.494	0.336	0.518	0.320	0.666	0.891				
SN	0.885	0.720	0.320	0.193	0.375	0.445	0.301	0.404	0.514	0.848			
PN	0.885	0.719	0.590	0.442	0.371	0.573	0.393	0.768	0.760	0.522	0.848		
PBC	0.858	0.603	0.461	0.380	0.365	0.425	0.203	0.498	0.679	0.566	0.590	0.777	
INT	0.947	0.748	0.421	0.307	0.312	0.437	0.182	0.574	0.640	0.547	0.607	0.649	0.865

Note: CR – composite reliability, AVE – average variance extracted, MSV - maximum squared variance, ALT – altruism, HC – health consciousness, GEN – generativity, RAT – rationality, EC – environmental consciousness, ATB – attitude towards behaviour, SN – subjective norms, PN – personal norm, PBC – perceived behavioural control, INT – intention.

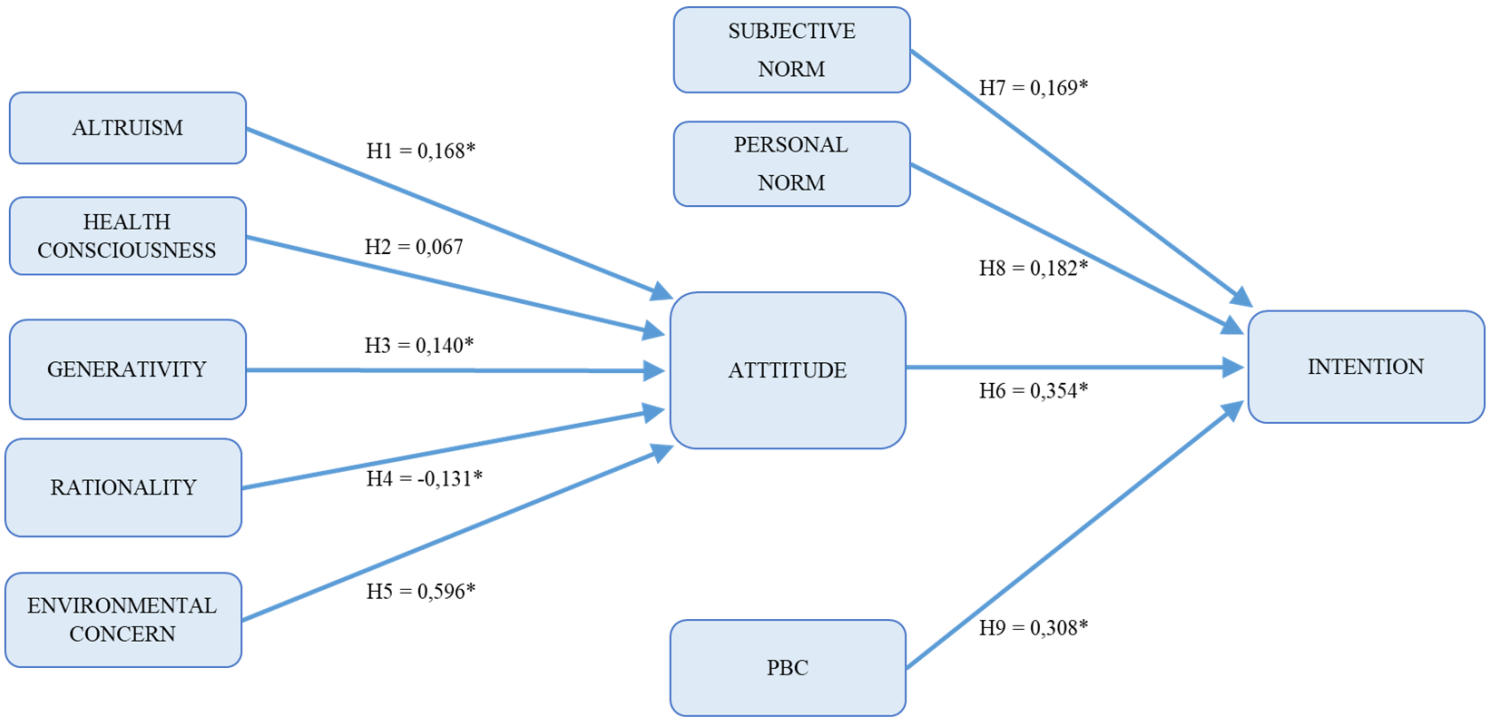
Source: Authors' calculation

The data presented in Table 3 confirms that the Composite Reliability (CR) for each construct exceeds 0.70, affirming the reliability of the constructs (Malhotra and Dash, 2016). Additionally, the Average Variance Explained (AVE) for all constructs surpasses the satisfactory level of 0.50, indicating the presence of convergent validity (Malhotra and Dash, 2016). Furthermore, in the correlation matrix, the values marked in blue along the diagonal represent the square root of the AVE, which, according to Fornell and Larcker (1981), must be greater than the correlation coefficients for discriminant validity to be met. Given that all the square root values of AVE are higher than the correlation coefficients, it can be concluded that discriminant validity is achieved.

Given that all criteria for reliability and validity of the model were met, testing of the structural model could be performed. The results showed that tested model represent a good model fit, according to the thresholds suggested by Hooper et al. (2008), Hu and Bentler (1999) and Kline (2005). All model fit indices are within the recommended or acceptable ranges affirming that the model is valid and can be interpreted (χ^2 = 1,185.74; χ^2/df =1.888; $p < 0.001$; CFI = 0.943; SRMR = 0.057; RMSEA = 0.047; TLI = 0.936; IFI =0.944).

Figure 2 presents the relationships tested in the model, including p-values and standardised regression weights. Based on Figure 2 it can be observed that all hypotheses except H2 were supported.

Figure 2: Results of the tested model



*statistically significant impact ($p < 0,05$)

Source: Author's construction

Finally, the research findings are interpreted using the percentage of variance explained, or squared multiple correlations (R^2), which indicate the extent to which the variance of a variable is explained by the latent factor (Hair et al., 2010). In the tested structural mode, the percentage of explained variance (R^2) for the dependent variables, attitudes towards purchasing, and intentions to purchase sustainable products are presented in Table 4.

Table 4: Explained Variance Values in the Model

	Attitude	Intention
R^2	0.58	0.52

Source: Authors' calculation

The model explains 58% of the variance for attitudes towards buying sustainable products and 52% for the intention to buy sustainable products.

5. Discussion and conclusion

The present research extends TPB in the context of sustainable consumer behaviour and examines the effect of some potentially important factors whose influence has so far been insufficiently investigated. This refers primarily to personal motives and their role in predicting the purchase of sustainable products. Based on the extensive review of relevant literature, five types of personal motives were identified, and their impact on the attitude toward purchasing sustainable products was examined. Besides investigating the influence of personal motives on attitudes towards the purchase of sustainable products, the present research also confirms the influence of inherent constructs of the TPB with the addition of personal norms, which have also often been neglected in previous research.

The results revealed that altruism, generativity, and environmental concern significantly positively influence the attitude toward purchasing sustainable products. These results validate the hypothesized relationships previously identified in the literature review section of the paper. This means that consumers who are concerned for the well-being of others (whether from present or future generations) and willing to put someone else's benefit ahead of their own will demonstrate a greater propensity towards purchasing sustainable products. Additionally, consumers more concerned about the environment will be more likely to show concern by purchasing sustainable products.

Furthermore, the negative impact of rationality (in the sense of frugal behaviour) on the attitude toward purchasing sustainable products was proven. This is in line

with the results previously presented by Wang et al. (2021), confirming their view that although pro-environmental behaviour could be viewed as frugal behaviour in the sense of rational use of resources, frugality may have a negative impact on the attitude towards purchasing sustainable products if consumers perceive sustainable products as more expensive.

On the other hand, the impact of health consciousness on the attitude towards the purchase of sustainable products was found to be insignificant, which led to the rejection of the proposed hypothesis. This is also in contrast to different previous research extensively analyzed in the literature review. This result could be explained by the fact that consumers may not perceive sustainable products as a general category to be healthier. This variable is probably category-specific and could exert different influences on different product categories (food products, cleaning products, cosmetics, household appliances, apparel products, cars, etc.).

The results of the present research also confirmed the impact of inherent factors in the TPB model, confirming once again the applicability of this theoretical framework for explaining sustainable consumption behaviour. Also, the results empirically confirmed the hypothesized positive impact of personal norms on the intention to purchase sustainable products, which has been proposed by researchers previously (Blankenberg and Alhusen, 2019), indicating that personal norms should be included in the conceptual model along with social norms.

The research limitations refer primarily to the sample, which consisted only of respondents from five Slavonian counties. Conducting research on a broader sample from different countries could lead to results that are more generalizable. Therefore, in future research, theory robustness could be evaluated by conducting transnational or intercultural research. Furthermore, based on the proven negative impact of frugality on the attitude towards the purchase of sustainable products (which contradicts some previous research), in future research, different types of frugal behaviour could be investigated, differentiating between rational or frugal behaviour towards own resources and common resources of the planet. Also, the insignificant impact of health consciousness indicates the need to further investigate this factor and its role in predicting attitudes and behaviours in sustainability purchases. One approach could be to measure the mediating role of the perceived effectiveness of sustainable products in achieving health-related objectives.

In a methodological and empirical context, the scientific contribution is presented by expanding and complementing the existing theory based on the theoretical framework of TPB by testing the impact of different personal motives that have previously been under-investigated, as well as through empirical confirmation of the importance of personal norms. Also, by adapting and testing measurement scales from different research settings and theoretical frameworks, a measurement instrument is proposed that can be used for future research in the domain.

The applicative contribution of the research on the purchase behaviour of sustainable products will benefit various stakeholders, including marketers, policymakers, managers, and entrepreneurs. It is expected that by understanding the behaviour of consumers in purchasing sustainable products, they will have more knowledge about the ways to encourage them. For example, for business entities, understanding personal motives, attitudes, norms, and perceptions of control over behaviour could help in the process of creating sustainable products that are in line with consumer values and increase demand for these products. Based on this knowledge, it is possible to adjust the product as well as the messages to consumers to fulfil the needs of consumers and thus attract a larger number of environmentally conscious consumers. Furthermore, policymakers can use the results to create policies that promote sustainable consumption, which would include incentives for companies to adopt environmentally friendly production methods, as well as incentives for consumers to purchase sustainable products.

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Utjecaj osobnih motiva i osobnih normi na kupnju održivih proizvoda

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Sažetak

Ovaj rad istražuje osobne motive i njihovu ulogu u predviđanju kupnje održivih proizvoda. Identificirano je i testirano pet vrsta osobnih motiva primjenom modeliranja strukturnim jednadžbama. Ovo istraživanje također potvrđuje utjecaj inherentnih konstrukata Teorije planiranog ponašanja i istražuje ulogu osobnih normi, koje su također često bile zanemarene u prethodnim istraživanjima. Rezultati pokazuju da altruizam, generativnost i briga za okoliš značajno pozitivno utječu na stav prema kupnji održivih proizvoda. Nadalje, utvrđen je negativan utjecaj racionalnosti (u smislu štedljivog ponašanja) na stav prema kupnji održivih proizvoda. Ovo potvrđuje stajalište da iako se pro-ekološko ponašanje može smatrati štedljivim ponašanjem zbog racionalnog korištenja resursa, štedljivost može imati negativan utjecaj na stav prema kupnji održivih proizvoda ako potrošači održive proizvode doživljavaju skupljima. S druge strane, utjecaj zdravstvene svijesti na stav prema kupnji održivih proizvoda pokazao se beznačajnim, što se može objasniti činjenicom da potrošači održive proizvode kao opću kategoriju ne percipiraju zdravijima, što ukazuje da je ovo varijabla je specifična za kategoriju. Konačno, empirijski rezultati potvrdili su pozitivan utjecaj osobnih normi na namjeru kupnje održivih proizvoda, ukazujući na to da bi osobne norme trebale biti uključene u konceptualni model uz društvene norme.

Ključne riječi*: održivi proizvodi, osobni motivi, Teorija planiranog ponašanja (TPB), osobna norma*

JEL klasifikacija: *D91, M31, Q0, Q21*

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