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# The effect of environmental ethics awareness, ecological intelligence and the love of nature on sustainable consumption behavior*

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**ABSTRACT**

Sustainability means taking into account the needs of future generations while meeting our own needs. In order for societies and countries to achieve their sustainability goals, individuals, companies and governments have responsibilities. Sustainable consumption behavior is defined as the behaviors that consumers perform in a way to use scarce resources in the most effective way with minimal damage to natural life and eco-system. In order to develop an understanding of sustainability among consumers, it is necessary to know the antecedents that push individuals towards sustainable consumption behavior. Therefore, it is thought that this study will contribute to the marketing managers and the literature. Accordingly, in this study, the effects of environmental ethics awareness, ecological intelligence and love of nature (passion for nature, intimacy with nature, commitment to nature) on sustainable consumption behavior (environmental sensitivity, non-need purchasing, saving, reusability) were examined. The data obtained as a result of the survey conducted on 531 consumers selected by convenience sampling method in Kayseri were analyzed through Structural Equation Modeling. The results show that passion for nature, commitment to nature, environmental ethics awareness and ecological intelligence effect environmental sensitivity; passion for nature and intimacy with nature effect unnecessary purchasing; passion for nature and ecological intelligence effect reusability. It was observed that none of the independent variables were effective on the saving behavior.

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# Çevre etiği farkındalığı, ekolojik zekâ ve doğa sevgisinin sürdürülebilir tüketim davranışı üzerindeki etkisi

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**ÖZ**

Toplumların ve ülkelerin sürdürülebilirlik hedeflerine ulaşabilmeleri için, bireylerin, firmaların ve devletlerin sorumlulukları bulunmaktadır. Sürdürülebilir tüketim davranışı, tüketicilerin kıt kaynakları en etkin biçimde kullanarak, doğal yaşama ve eko-sisteme en az düzeyde zarar vererek gerçekleştirdikleri davranışlar olarak tanımlanmaktadır. Tüketiciler arasında sürdürülebilirlik anlayışının geliştirilebilmesi için, bireyleri sürdürülebilir tüketim davranışına iten öncüllerin bilinmesi gerekmektedir. Çalışmanın bu yönüyle pazarlama yöneticilerine ve alan yazınına katkı sağlayacağı düşünülmektedir. Bu doğrultuda bu çalışmada, çevre etiği farkındalığı, ekolojik zekâ ve doğa sevgisinin (doğa tutkusu, doğaya yakınlık, doğaya bağlılık) sürdürülebilir tüketim davranışı (çevre duyarlılığı, ihtiyaç dışı satın alma, tasarruf, yeniden kullanılabilirlik) üzerindeki etkileri incelenmiştir. Kayseri ilinde, kolayda örnekleme yöntemiyle seçilen 531 tüketici üzerinde gerçekleştirilen anket çalışması sonucunda elde edilen veriler Yapısal Eşitlik Modellemesi aracılığıyla analiz edilmiştir. Sonuçlar, doğa tutkusunun, doğaya bağlılığın, çevre etiği farkındalığının ve ekolojik zekânın çevre duyarlılığı üzerinde; doğa tutkusu ve doğaya yakınlığın ihtiyaç dışı satın alma üzerinde; doğa tutkusu ve ekolojik zekânın yeniden kullanılabilirlik üzerinde etkili olduğunu göstermektedir. Sürdürülebilir tüketim davranışı boyutlarından tasarruf davranışı üzerinde ise araştırmanın bağımsız değişkenlerinden herhangi birisinin etkili olmadığı gözlemlenmiştir.

## 1. Introduction

Environmental problems mostly arise from unconscious behavior carried out by humans. If necessary precautions are not taken, the earth will become uninhabitable due to reasons such as global warming, climate change, environmental pollution and unconscious consumption of scarce resources. At this point, companies and consumers, as well as governments, have a great responsibility. Countries carry out many activities to encourage sustainable consumption behavior. In order for these activities to be effective, it is important to reveal the reasons that push consumers to behave with a sustainability approach.

Sustainable consumption behavior is multidimensional and affected by many factors. Sustainable consumption behavior is defined as the efforts made by consumers to enhance personal well-being, mindfully use natural resources, consider the needs of future generations, and lessen waste's negative effects on the environment. The adoption of these actions by consumers is of great importance for the well-being of individuals and societies. Some examples of sustainable consumption behaviors are as follows: choosing energy-saving products, purchasing environmentally friendly products, not purchasing unnecessary products as much as possible, applying recycling methods, conducting waste management consciously, minimizing the use of energy resources, extending the lifespan of products by reusing and reusing them over and over again… In order to ensure sustainable consumption, it is necessary to determine under what conditions consumers tend to engage in these behaviors. Because a sustainable world will only be possible by the help of conscious individuals.

In this context, this study aims to investigate the effect of environmental ethics awareness, ecological intelligence and love of nature dimensions (passion for nature, intimacy with nature, commitment to nature) on sustainable consumption behavior dimensions (environmental sensitivity,

unnecessary purchasing, savings, reusability). In the study conducted by Tekiroğlu and Hayır-Kanat (2021) on teachers, it was found that the degree of environmental ethics awareness and sustainable environmental attitude were significantly correlated. According to the results of Hettiarachchi's (2020) study, ecological intelligence plays a mediating role between ecological intention and ecological behavior. In the study conducted by Dong, Liu, Li, Yang, Liang and Deng (2020), it was shown that several aspects of sustainable consumption behavior were influenced by the dimensions of environmental love. However, since there is no study in the literature that examines the effects of environmental ethics awareness, ecological intelligence and love of nature variables together on the dimensions of sustainable consumption behavior, this study is expected to be an original study and will contribute to the literature. The study provides a comprehensive strategy by examining the interactions between ecological intelligence, love of nature, environmental ethics awareness, and sustainable consumption behavior. This can close gaps in the literature that currently exist because these components are frequently studied separately. The study presents a thorough framework that connects practical actions (sustainable consumption) with emotional, ethical, and cognitive elements (love of nature, environmental ethics awareness, and ecological intelligence). This can provide as a starting point for further studies looking into related multidimensional relationships. Through the breakdown of sustainable consumption into distinct behaviors (such as environmental sensitivity, unnecessary purchasing, saving and reusing), the study offers comprehensive insights into the ways in which different factors impact distinct facets of consumer behavior.

Furthermore, consumers' participation in sustainable consumption is a prerequisite for businesses to succeed in their sustainable marketing initiatives. Thus, it's critical for businesses to determine the factors that encourage sustainable consumption in order to implement sustainable marketing strategies. It is expected that this study will broaden the understanding of marketing in sustainability area. By knowing what motivates sustainable consumption, companies may better target their marketing efforts towards environmentally concerned customers. Insights into the various characteristics of sustainable behavior can help organizations create products that promote reusing, saving, and environmental sensitivity. For example, products intended for lifetime and reusability can be efficiently sold to environmentally conscious consumers. This study's conclusions can also help companies improve their corporate social responsibility programs. Emphasizing environmental principles and encouraging consumers to develop a stronger connection with nature can boost corporate reputation and customer loyalty. The results of the study can be used by businesses to create training courses that raise staff members' ecological intelligence and understanding of environmental ethics. As a result, the workforce may become more in line with the company's sustainability objectives. The study's conclusions can help organizations plan strategically so they can anticipate and adapt to changes in customer behavior toward more environmentally friendly activities. Reducing the impact on the environment can involve making changes to distribution channels, packaging, and supply chains. Companies can create more complex metrics to evaluate their sustainability performance by utilizing the study's elements of sustainable consumption behavior. This can assist in establishing more focused and useful sustainability objectives.

This research has the potential to enhance scholarly comprehension about the connections among ecological intelligence, love of nature, environmental ethics awareness, and sustainable consumption behavior. It will provide useful information to companies that can boost sustainability initiatives, increase customer involvement, and eventually lead to more environmentally friendly business operations. Researchers, politicians, and marketing managers can all gain from an understanding of the factors that encourage customers to act sustainably.

## 2. Conceptual framework and literature review

### 2.1. Ecological intelligence

The concept of ecological intelligence was first proposed by McCallum (2008) and Goleman (2009). With climate change, which has been frequently mentioned in the world recently with the influence of globalization, the importance of ecological intelligence has begun to increase rapidly day by day. Ecological intelligence is defined by McCallum (2008) and Goleman (2009) as sensitivity and the ability to react to events that occur worldwide and pose a danger to the natural environment. They

revealed that ecological intelligence is not only related to nature, as suggested by Gardner (1999), but also has a psychological aspect. The mentioned psychological aspect of ecological intelligence is that individuals are aware of the effects of events in the world on human beings and react to these events.

Sustainability issues are complex and interrelated. In order to solve these problems, certain key skills are needed (Wiek, Withycombe and Redman, 2011). Some studies have emphasized that the foundations of a new ecological paradigm must be laid to solve sustainability problems (McCallum, 2008; Bowers, 2010). At this stage, researchers believe that people's discovery and growth of their ecological intelligence will lead to a fundamental shift in how environmental problems are solved. Ecological intelligence is an awareness that forces us to change our shopping patterns in order to live sustainably. It is based on how our activities affect the ecosystem.

Individual and societal responsibility in the face of ecological issues comes with the development of ecological intelligence (Goleman, 2009; Sterling, 2009; Shumba, 2011). Along with accepting responsibility for ecological issues, it's crucial to take individual precautions, participate actively in environmental activities as a group, and especially be a part of numerous non-governmental organizations (Wang, Zhu, Tang, He, Xu, Gao, and Gu, 2010; Kirchain, Gregory and Olivetti, 2017). People with ecological intelligence are those who are mindful of environmental issues, sensitive to the environment, supportive of personal and social growth processes, open to new ideas, and prepared to act to address ecological issues. Ecological intelligence, which incorporates cognitive and sensory components, is a sort of consciousness that directs our actions so that we can survive sustainably in our living environment. In reference to the idea of ecological intelligence, Goleman (2009) claims that by being aware of his/her own obligations and imparting what he/she has learned, a person can be an environmentally responsible producer and consumer. Examining Goleman's (2009) description, it can be observed that ecological intelligence encourages a person to consider the economic, social, and environmental aspects of ecological issues. Therefore, ecological intelligence, which in recent years has become crucial for sustainable development, handles environmental challenges from a variety of angles, including those mentioned above (Flower, 2006). Sustainability is also based on social, economic, and environmental elements (Fischer, Brettel and Mauer, 2020, p. 87). Accordingly, ecological intelligence is a crucial component of sustainability and a means through which we can achieve our ecological objectives (Fischer et al., 2020).

By avoiding unconscious consuming habits that contribute to the devastation of the environment, significant global sustainability can be achieved (Murphy, Illes and Reiner, 2008). Conscious consumer behavior, which demonstrates the cognitive component of ecological intelligence, is therefore crucial. Bayazıt Hayta (2009) notes that producers will need to concentrate on environmental issues that may develop during the production, transportation, and purchasing processes if customers engage in conscious behavior. Unsustainable consumption and production practices were identified as the primary contributors to environmental deterioration during the United Nations Conference on Environment and Development in 1992 (Akenji and Bengtsson, 2014). In this situation, individuals' environmentally and economically sustainable purchase decisions will be influenced by their increased ecological intelligence. In order to ascertain whether individuals' shopping behavior influences their future sustainability actions, it is crucial to first ascertain their level of conscious purchasing behavior.

The unintended effects of products on the ecology are one of the grave repercussions of modern society's rising consumption patterns (Tukker and Jansen, 2006). According to Azapagic (2003), life cycle understanding encompasses the full supply chain and calls for consideration of a product's effects on the environment and human health. People run into issues like climate change, the greenhouse effect, the thinning of the ozone layer in the stratosphere, and the loss of natural resources when they look at the unintended consequences of everything they purchase (Collins, Flynn, Wiedmann and Barrett, 2006).

Empathy must be developed in order to comprehend how nature may be sustained, how everything that makes up life is interconnected, and how ecological equilibrium endures (McCallum, 2008). Ecological intelligence thus interacts with social and emotional intelligence naturally (Goleman, Bennett and Barlow, 2012) and has a relationship to the sensory field (Sterling, 2009). Because a person who is ecologically intelligent will act responsibly when purchasing items that disturb the ecological

balance and will know how to react when necessary. This makes it possible for people to accept social and environmental responsibility and work together to combat ecological issues. According to Goleman (2009), when exchanging ecological knowledge, humans should operate in a cooperative manner like insects. He also stressed the need of communal understanding. Ecological intelligence necessitates a group effort and collaboration. Because no one mind can fully know all the fundamentals of our ecological problems and the countless adverse impacts that our actions may have on the ecosystem (Kirchain et al., 2017).

When environmental challenges became more obvious throughout the industrial revolution, this shared knowledge gained traction and gave rise to numerous environmental organizations. Within the context of this concept, global environmental efforts are still conducted today. Environmentally conscious people join national volunteer environmental organizations in their nations as well as international voluntary environmental organizations like the World Wildlife Fund (WWF) and "Greenpeace." People must work together to solve environmental issues, share ecological knowledge, and participate actively in a variety of initiatives to create a more sustainable world (UNESCO, 2012). The only way to reach this consciousness is through ecological awareness, especially acquired during the education and training process.

### 2.2. Love of nature

The need to feel connected, to be loved, and to love others is engrained in human nature. Brand love, which reflects the relationship between the consumer and the brand, has previously been explained using the interpersonal love theory. In other words, the concept of romantic love is extended to include the bond between owners of things and other people. Passion, intimacy, and commitment are the three pillars of love (Sternberg, 1986).

For the following reasons, love of nature has a direct impact on sustainable purchasing patterns (Lastovicka and Sirianni, 2011). Love of the natural world reveals people's connections to nature and their intimacy with the nature. Individuals' love of the nature embodies their connection to it, reducing the psychological gap between them and so promoting sustainable consumption habits. Reuse and recycling habits frequently seem to be influenced by the love of nature (Hoffman and Novak, 2018). There are three subdimensions of love for the nature: passion, intimacy, and commitment.

Passion is defined as "excitement, obsession, and madness" (Albert, Merunka and Valette-Florence, 2013, p. 905). According to Batra, Ahuvia and Bagozzi (2012), passion is a crucial component of emotional commitment and promotes customer loyalty. The intense emotional connection between customers and nature is shown in one's love of the environment. Marketing specialists have looked into the fervor for brands in addition to the fervor for interpersonal connections (Swimberghe, Astakhova and Wooldridge, 2014). A person's compatibility with a brand is demonstrated by their great desire for that brand. According to Belk, Ger and Askegaard (2003), this harmony provides a strong preference for brands and raises the level of brand love.

Passion is the driving force behind love. According to Albert et al. (2013), consumers who are deeply committed to a brand would invest more time, money, and effort into it. Passion drives consumers to adopt environmentally friendly purchase habits and helps companies become more integrated with their identities (Trudel, Argo and Meng, 2016). Consumers are less inclined to toss away and more likely to recycle things that they feel are tied to their sense of self, especially if those products are durable (such as cars, portable computers, and bicycles) (Trudel et al., 2016). Similarly, people who are passionate about nature develop stronger bonds with it, use it to express their personalities, and practice ecologically conscious consumption.

According to Roberts (2005), intimacy expresses the relationship between the consumer, the product, and the emotion and shows a person's sense of engagement with what they have. Over time, intimacy develops into a certain form of connection (Ahuvia, 2005). People build intimate friendships with strong emotional ties when relationships grow and interactions increase (Saavedra and Van Dyne, 1999). According to Stern (1997), intimacy is a representation of one's deepest feelings and closest physical, mental, and social connections.

Being in tune with nature comes from a person's interaction with it. Consumers experience happy emotions as a result of positive and sensory associations (Cho, Gupta and Kim, 2015). As a result, consumers and nature are becoming more intimately connected. The acquiring, using, and post-purchase phases of products are all highly impacted by the intimacy component of love. In other words, those who appreciate and feel a connection to nature are more likely to adopt a consumption style that is environmentally friendly and to support green products.

The intention to sustain a relationship or to remain mentally devoted to the relationship is an expression of commitment, which turns exchanges from passing acquaintances into solid, long-term relationships. As the sense of loyalty develops, consumers make more effort to obtain products, are more willing to pay, and develop positive attitudes. The cognitive component of love is also represented by commitment, which depends on the caliber of the relationships. Through their interactions with nature, people develop a mutually beneficial relationship. The level of commitment increases as relationship quality increases. According to Baca-Motes, Brown, Gneezy, Keenan and Nelson (2013), a sense of commitment to nature promotes ecologically responsible behavior. Thus, a bond between people and nature is where devotion to nature comes from. This dedication is demonstrated by the practice of environmentally responsible consumerism.

### 2.3. Environmental ethics awareness

The elements that make up the environment, both living and non-living, are in balance. Scientists have noted that, after the industrial revolution, human-caused activities deteriorated the environment's delicate balance (Leggett, 2007, p. 19). Environmental problems can also be caused by people's ideas and actions (Watson and Halse, 2005). Humans have embraced the ideas of excessive consumption and destruction rather than benefiting from nature in proportion to their own needs. Humans also believed that they were the "masters of nature" (Armstrong and Botzler, 1993, p. 53) and that other creatures only mattered for their advantages (Karaca, 2007). The natural balance has been severely disrupted by this circumstance, and severe environmental issues have resulted. Environmental issues that were previously disregarded are now beginning to be recognized by people. Humans do not possess nature. People need to comprehend that they are part of the nature and that they have duties to the environment.

The importance of having an awareness of environmental ethics cannot be overstated. People who are aware of environmental ethics take an active role in preserving the environment. According to Karaca (2007), environmental ethics is a theoretical area that examines all attitudes and actions that people consider important when making judgments regarding nature, the elements of nature, or the environment. According to Freiman (2006), environmental ethics is concerned with finding solutions to the issues that people have with the environment. In other words, environmental ethics seeks to determine the proper conduct with regard to the environment by assessing people's interactions with nature within a moral framework (Özer and Keleş, 2016). In conclusion, it enables the person to recognize the worth of nature.

Human behavior forms the basis of environmental problems, and as a result of this awareness of people about the environment, "environmental ethics awareness" has become an important issue. Environmental protection is not only a problem of today, but also very important for the future. Environmental ethics awareness is the ability of individuals to see, know and be aware of everything that happens in nature and to respect all living and non-living beings. In other words, awareness of environmental ethics enables the formation of positive thoughts towards the environment and directs the actions of individuals in this direction. While all approaches except environmental ethics awareness focus on problems, here, environmental problems that may occur are foreseen and a positive attitude is displayed to prevent these problems before they arise.

### 2.4. Sustainable consumption behavior

Sustainable consumption, which is also defined as a form of consumption that causes less harm to nature compared to other forms of consumption (Paavola, 2001, p. 228), is also seen as a form of consumption that shows the sensitivity of the individuals towards themselves, the world and the environment (Sheth, Sethia and Srinivas, 2011). According to Balderjahn, Buerke, Kirchgeorg, Peyer, Seegebarth and Wiedmann (2013), concepts such as environmentally friendly consumption, ethical

consumption, sensitive consumption, voluntary simplicity, concerned consumer, and citizen consumer all interact with one another to form sustainable consumption. Each of these concepts is connected to only one aspect of sustainable consumption. Sustainable consumption is much more than these concepts and includes all of these concepts.

Both businesses and consumers have important roles in implementing sustainable consumption. For the sake of sustainability, it is crucial that consumers develop ecologically friendly consuming practices on an individual as well as societal level. Recent consumer trends in this direction, including voluntary simplicity, have been adopted (Fuchs and Lorek, 2004, p. 19). While adopting a sustainable purchase pattern, consumers nevertheless struggle to balance their personal preferences with the needs of society and the environment (Paavola, 2001). At this stage, a consumer's personal preferences may take precedence over environmentally favorable actions. The idea that "we exist as we consume" is one of the most significant aspects contributing to this, and people believe that this is the only way they can adapt to the current system (Bauman, 2006). People consume significantly more than they actually need as a result. Marcuse (1986) asserted, however, that excessive consumerism results in people losing their intellectual and spiritual ideals. Furthermore, excessive consumption leads to increased production and a variety of issues, including the employment of low-wage child labor, careless resource consumption, and a rise in greenhouse gas emissions (Rey and Ritzer, 2012).

Consumers also harm the environment as much as businesses. Environmental problems, which were considered a natural consequence of economic developments until 1960 and therefore experienced at a limited level, increased rapidly after the 1970s (Kaypak, 2011, p. 23). In order to ensure the continuation of sustainable consumption, individuals must leave minimum ecological footprint and adopt a lifestyle and consumption style that will reduce the negative effects of product choices, in other words, become ecological citizens (Seyfang, 2013).

Many studies have been conducted to date on sustainable consumption behavior and some results have been reached. In the study conducted by Özgül (2010), it was determined that sustainable consumption behavior consists of two dimensions: " savings" and "ecological sensitivity". In their study, Karalar and Kiracı (2010) revealed that the concepts of "universalism" and "security" have significant effects on the level of sustainable consumption behavior. In the study conducted by Korkmaz and Sertoğlu (2013), the findings demonstrated a substantial link between sustainable consumption intention and "attitude, social norms and perceived consumer effectiveness". In their research, Hamid, Khan, Kiani, Shah, and Kiani (2014) revealed that environmental orientation and sustainability innovation variables can lead to sustainable consumer behavior. Umut, Topuz and Velioğlu (2015) conducted in-depth interviews with the participants in their study, which was conducted in two socio-culturally opposite neighborhoods in Turkey and analyzed waste. The results show that the behavior of the participants in order to protect the environment is not correct, their awareness level regarding waste management and recycling activities is low, and therefore, the participants are not aware of the negative consequences that their behavior will cause.

Aksu and Gelibolu (2015) revealed in their study that total household income has an impact on sustainable consumption behavior. Doğan, Bulut and Çımrın (2015) created a scale to measure sustainable consumption behavior and emphasized that sustainable consumption behavior consists of 4 dimensions: "environmental sensitivity, unnecessary purchasing, saving and reusability". Theotokis and Manganari (2015) showed that the policy of opting out of consumers when providing green services is more effective than consumer participation, and this effect is stronger for consumers who are less environmentally conscious. Castaneda, Martinez, Marte, and Roxas (2015) proposed that knowledge and attitudes have a beneficial impact on eco-ability, which in turn influences consumers' propensity for sustainable consumption. Atrek and Madran (2016) determined that concepts such as behavior/intention, attitude, demographic characteristics, and environmental sensitivity are the most commonly used variables in studies on sustainable consumption behavior. Lee, Bahl, Black, Duber-Smith, and Vowles (2016) found that consumer's level of spirituality influences both sustainable and unsustainable consumer behavior. The findings obtained in the study conducted by Karaca (2018b) suggest that life style and sustainable consumption behavior vary according to demographic characteristics. In the study written by Karaca (2018a), it was revealed that emotional motivations are effective on all dimensions of sustainable clothing consumption behavior. The article written by Trudel (2019) emphasizes that the

psychological antecedents of sustainable consumer behavior are cognitive barriers, self, social influence and product features.

Khan and Hameed (2019) revealed that acquired motivation, hedonic motivation and normative motivation have significant effects on sustainable purchase intention. In the study conducted by Türkdemir (2019), significant relationships were detected between individuals' sustainable purchasing behaviors and hedonic and utilitarian consumption values. Sarı and Topçuoğlu (2019) found in their study that future-oriented individuals attach more importance to saving behavior and do not purchase unnecessary products. Polat, Akoğlu, Konak and Güçlü (2019) show that age and environmental sensitivity positively affect sustainable consumption behavior. The results of the study authored by Calderon-Monge, Pastor-Sanz and Garcia (2020) show that when consumers have a perception that their purchasing behavior has an impact on society, they act in a more socially responsible manner and adopt sustainability more easily. Hettiarachchi (2020) used the values-beliefs-norms theory and concluded that ecological intelligence plays a mediating role between the intention of ecological behavior and actual ecological behavior.

In the study conducted by Dong et al. (2020), the findings revealed that passion for nature, intimacy with nature and commitment to nature have positive effects on green purchasing, reusability and recycling, which are the dimensions of sustainable consumption behavior. Elhoushy and Lanzini (2021) reveal that environmental values have a strong impact on sustainable consumption behavior, while habits and socio-demographic characteristics have a low impact. Özdemir (2021) found significant relationships between the level of religiosity and sustainable consumption behavior. Wu and Zhu (2021), found that there were significant relationships between love of nature and two types of green consumer behavior. Hosta and Zabkar (2021) found that environmental and social impacts, personal norms, concerns, and ethical ideologies have significant effects on responsible sustainable consumption behaviors. Tekiroğlu and Hayır-Kanat (2021) revealed that there are significant and positive relationships between environmental ethics awareness and sustainable attitude. Taufique (2022) stated that consumers' emotional closeness towards nature and environmental values has a direct positive effect on sustainable consumer behavior. The study conducted by Rasool, Cerchione, Centobelli, and Oropallo (2022) highlights that feared self has a positive impact on consumers' sustainable behavior.

In the research conducted by Joseph, Arinaitwe and Muwaga (2022) in Uganda, it was found that the relationship between conscious awareness and sustainable consumer behavior was significantly positive. Marcon, Ribeiro, Dangelico, de Medeiros, and Marcon (2022) found in this study that consumers pay more attention to the environmentally friendly features of the products in order to achieve their own sustainable goals in the use phase compared to the production phase. Nekmahmud, Ramkissoon and Fekete-Farkas (2022) found that environmental attitudes, environmental knowledge, subjective norms, perceived behavioral control, conditional value and emotional value had a significant positive relationship with green purchasing intentions for European and non-European tourist groups. In their study, Cui, Lissillour, Chebeň, Lančarič and Duan (2022) revealed that social interaction affects sustainable consumption behavior and that social impact increases the environmental satisfaction of users and directs consumers to sustainable consumption behavior. The results of the study by De Guimarães, Severo, Klein, Dorion and Lazzari (2023) show that environmental sensitivity has a great impact on sustainable consumption, and both utilitarian and hedonic dimensions have significant impacts on sustainable consumption. According to the results of the study authored by Lin, Chien, Ou Yang, and Mao (2023), gamification positively increases customer participation in the Starbucks branded application and leads to pleasant emotions and sustainable consumption behavior. Sarkar, Sarkar, and Sreejesh (2023) demonstrate how consumers' impressions of a company's friendliness and expertise are impacted by the methodical processing of messages about sustainable business practices generated by the brand through online social networks. Consumers' responsible consumption behavior is guided by these beliefs, which also enhance brand associations.

## 3. Methodology

### 3.1. Research model and hypotheses development

In the light of the studies conducted in the literature mentioned above, the model of the research has been developed as following.

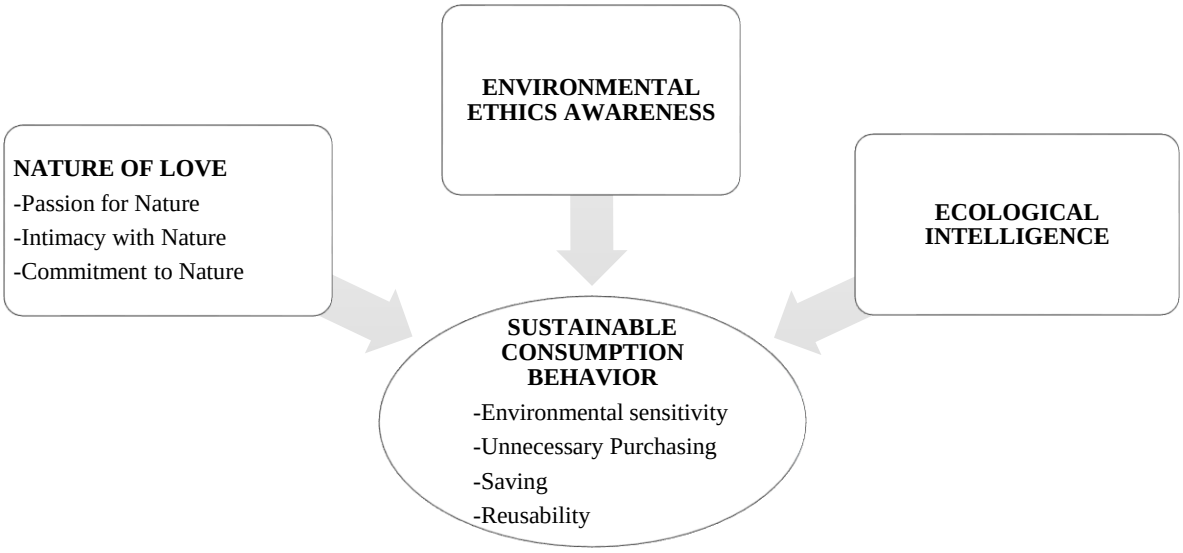


*Figure 1*. Research model

The research model, the studies mentioned in the literature review part and the following studies were taken into consideration for establishing the hypotheses of the study.

Love of nature has a direct impact on sustainable purchasing patterns (Lastovicka and Sirianni, 2011). Reuse and recycling habits frequently seem to be influenced by love of nature (Hoffman and Novak, 2018). Passion for nature drives consumers to adopt environmentally friendly purchase habits and helps companies become more integrated with their identities (Trudel et al. 2016). According to Cho et al. (2015), those who appreciate and feel a connection to nature are more likely to adopt a consumption style that is environmentally friendly and to support green products. Baca-Motes et al. (2013) mention that sense of commitment to nature promotes ecologically responsible behavior. In the study conducted by Dong et al. (2020), the findings revealed that passion for nature, intimacy with nature and commitment to nature have positive effects on green purchasing, reusability and recycling, which are the dimensions of sustainable consumption behavior. The study conducted by Wu and Zhu (2021), included love of nature as an emotional basis in the value-belief-norm model and found that there were significant relationships between love of nature and two types of green consumer behavior. Taufique (2022) stated that consumers' emotional closeness towards nature and environmental values has a direct positive effect on sustainable consumer behavior. In line with the results obtained in these studies, following hypotheses were created:

$H_1$: The dimension of "passion for nature", one of the dimensions of love of nature, has a positive significant effect on "environmental sensitivity", one of the dimensions of sustainable consumption behavior.

$H_2$: The dimension of "passion for nature", one of the dimensions of love of nature, has a negative significant effect on "unnecessary purchasing", one of the dimensions of sustainable consumption behavior.

$H_3$: The dimension of "passion for nature", one of the dimensions of love of nature, has a positive significant effect on "saving", one of the dimensions of sustainable consumption behavior.

$H_4$: The dimension of "passion for nature", one of the dimensions of love of nature, has a positive significant effect on "reusability", one of the dimensions of sustainable consumption behavior.

$H_5$: The dimension of "intimacy with nature", one of the dimensions of love of nature, has a positive significant effect on "environmental sensitivity", one of the dimensions of sustainable consumption behavior.

$H_6$: The dimension of "intimacy with nature", one of the dimensions of love of nature, has a negative significant effect on "unnecessary purchasing", one of the dimensions of sustainable consumption behavior.

$H_7$: The dimension of "intimacy with nature", one of the dimensions of love of nature, has a positive significant effect on "saving", one of the dimensions of sustainable consumption behavior.

$H_8$: The dimension of "intimacy with nature", one of the dimensions of love of nature, has a positive significant effect on "reusability", one of the dimensions of sustainable consumption behavior.

$H_9$: The dimension of "commitment to nature", one of the dimensions of love of nature, has a positive significant effect on "environmental sensitivity", one of the dimensions of sustainable consumption behavior.

$H_{10}$: The dimension of "commitment to nature", one of the love of nature dimensions, has a negative significant effect on "unnecessary purchasing", one of the dimensions of sustainable consumption behavior.

$H_{11}$: The dimension of "commitment to nature", one of the dimensions of love of nature, has a positive significant effect on "saving", one of the dimensions of sustainable consumption behavior.

$H_{12}$: The dimension of "commitment to nature", one of the dimensions of love of nature, has a positive significant effect on "reusability", one of the dimensions of sustainable consumption behavior.

Awareness of environmental ethics enables the formation of positive thoughts towards the environment and directs the sustainable actions of individuals. The article written by Elhoushy and Lanzini (2021) reveals that environmental values have a strong impact on sustainable consumption behavior. Hosta and Zabkar (2021) found that environmental and social impacts, personal norms, concerns, and ethical ideologies have significant effects on responsible sustainable consumption behaviors. Tekiroğlu and Hayır-Kanat (2021) revealed that there are significant and positive relationships between environmental ethics awareness and sustainable attitude. Accordingly, the hypotheses below were composed:

$H_{13}$: Environmental ethics awareness has a positive significant effect on "environmental sensitivity", one of the dimensions of sustainable consumption behavior.

$H_{14}$: Environmental ethics awareness has a negative significant effect on "unnecessary purchasing", one of the dimensions of sustainable consumption behavior.

$H_{15}$: Environmental ethics awareness has a positive significant effect on "saving", one of the dimensions of sustainable consumption behavior.

$H_{16}$: Environmental ethics awareness has a positive significant effect on "reusability", one of the dimensions of sustainable consumption behavior.

Hettiarachchi (2020) used the values-beliefs-norms theory and concluded that ecological intelligence plays a mediating role between the intention of ecological behavior and ecological behavior. According to Goleman's (2009) description, it can be observed that ecological intelligence encourages a person to consider the economic, social, and environmental aspects of ecological issues. Ecological intelligence is a crucial component of sustainability and a means through which we can achieve our ecological objectives (Fischer et al. 2020). In the light of these studies, following hypotheses were generated:

$H_{17}$: Ecological intelligence has a positive significant effect on "environmental sensitivity", one of the dimensions of sustainable consumption behavior.

$H_{18}$: Ecological intelligence has a negative significant effect on "unnecessary purchasing", one of the dimensions of sustainable consumption behavior.

$H_{19}$: Ecological intelligence has a positive significant effect on "savings", one of the dimensions of sustainable consumption behavior.

$H_{20}$: Ecological intelligence has a positive significant effect on "reusability", one of the dimensions of sustainable consumption behavior.

3.2. Data and measures

The universe of this study consists of consumers aged 18 and over residing in Turkey. Since more consumers can be reached in less time, consumers aged 18 and over living in Kayseri were selected as the sample of the study, using the convenience sampling method. Yazıcıoğlu and Erdoğan's (2004) sample sizes table was used to establish the sample size. As per the table, a population of 10 million or more can have a minimum of 384 individuals included in the sample. In the light of this information, 531 customers residing in Kayseri were surveyed for this quantitative study. The study used an online survey approach, and the Google Form program was used to administer the survey. The data was collected between February 1 and April 1, 2023. Before conducting the survey, Ethics Committee Project Approval dated 31.01.2023 and numbered 04 was received from Erciyes University Social and Human Sciences Ethics Committee.

In the first part of the survey form, demographic questions such as gender, age, education level, occupation, marital status, monthly income level of the family, number of family members, etc. are included. The expressions of love of nature in the second section are based on Lastovicka and Sirianni (2011) and Kals, Schumacher and Montada (1999). Environmental ethics awareness statements were prepared by adapting the scales developed by Özer and Keleş (2015), ecological intelligence statements were developed by help of the study of Okur-Berberoğlu (2020), and sustainable consumption behavior statements were adapted from the scales developed by Doğan et al. (2015). Environmental ethics awareness statements (23), love of nature statements (12), ecological intelligence statements (12) and sustainable consumption behavior statements (16) were prepared on a 5-point Likert Scale. The data obtained as a result of the survey was analyzed through SPSS and AMOS applications.

3.3. Results

In the methodology part of the research, firstly, demographic characteristics of the respondents were examined. Table 1 shows the distribution by demographic characteristics.

Table 1
*Distribution by demographic characteristics*

| Demographic Characteristics | | n | % | Demographic Characteristics | | n | % |
|---|---|---|---|---|---|---|---|
| ***Job*** | Self-employment | 105 | 19.80 | **Number of Individuals in the Family** | 1-3 | 136 | 25.60 |
| | Health employee | 34 | 6.40 | | 4-6 | 346 | 65.20 |
| | Private sector | 65 | 12.20 | | 7-9 | 49 | 9.20 |
| | Student | 44 | 8.30 | | **Total** | **531** | **100** |
| | Employee | 116 | 21.80 | **Age** | 18-23 | 76 | 14.30 |
| | Educationist | 59 | 11.10 | | 24-29 | 160 | 30.10 |
| | Civil Servant | 27 | 5.10 | | 30-35 | 98 | 18.50 |
| | Not working | 81 | 15.30 | | 36-41 | 60 | 11.30 |
| | **Total** | **531** | **100** | | 42-47 | 86 | 16.20 |
| ***Marital status*** | Married | 266 | 50.10 | | 48-53 | 33 | 6.20 |
| | Single | 265 | 49.90 | | 54-59 | 14 | 2.60 |
| | **Total** | 531 | 100 | | 60 and above | 4 | 0.80 |
| | | | | | **Total** | **531** | **100** |
| ***Gender*** | Female | 243 | 45.80 | | | | |
| | Male | 288 | 54.20 | **Educational Status** | Primary education | 92 | 17.30 |
| | **Total** | **531** | **100** | | High school | 113 | 21.30 |
| ***Total Monthly Family Income (TL)*** | 10000 and below | 161 | 30.30 | | Associate Degree | 80 | 15.10 |
| | 10001-30000 | 274 | 51.60 | | Bachelor's Degree | 171 | 32.20 |
| | 30001-50000 | 77 | 14.50 | | Postgraduate | 75 | 14.10 |
| | 50001 and above | 19 | 3.60 | | **Total** | **531** | **100** |
| | **Total** | **531** | **100** | | | | |

After the demographic characteristics of the participants were examined, reliability analyzes of the scales used in the study were conducted. Table 2 shows the Cronbach Alpha coefficients of each scale and the number of expressions in the scales.

Table 2
*Reliability analysis*

| Scales | Cronbach Alpha Coefficient | Number of Expressions |
|---|---|---|
| Environmental Ethics Awareness | 0.95 | 23 |
| Ecological Intelligence | 0.87 | 12 |
| Passion for Nature | 0.80 | 4 |
| Intimacy with nature | 0.80 | 5 |
| Commitment to Nature | 0.76 | 3 |
| Environmental sensitivity | 0.88 | 5 |
| Unnecessary Purchase | 0.90 | 5 |
| Saving | 0.85 | 4 |
| Reusability | 0.64 | 2 |

When these coefficients are examined, it is concluded that the scales are reliable. In order for the scales to be reliable, the Cronbach Alpha coefficient must be greater than 0.60 (Özdamar, 2004). Before proceeding with confirmatory factor analysis, Harman's Single-Factor Test was used to test whether there was a threat of common method bias. The results are shown in Table 3.

Table 3
*Harman's Single Factor Test results for the expressions in the scales*

| Total Variance Explained | | | | | | |
|---|---|---|---|---|---|---|
| Component | Initial Eigenvectors | | | Sum of Squares of Factor Loadings | | |
| | Total | Variance (%) | Cumulative (%) | Total | Variance (%) | Cumulative (%) |
| 1 | 19.55 | 31.03 | 31.03 | 19.55 | 31.03 | 31.03 |
| 2 | 4.54 | 7.21 | 38.23 | | | |
| 3 | 3.70 | 5.88 | 44.11 | | | |
| 4 | 2.36 | 3.74 | 47.85 | | | |
| 5 | 1.83 | 2.91 | 50.75 | | | |
| 6 | 1.74 | 2.76 | 53.51 | | | |
| 7 | 1.40 | 2.23 | 55.74 | | | |
| 8 | 1.13 | 1.80 | 57.54 | | | |
| 9 | 1.04 | 1.65 | 59.19 | | | |
| 10 | 1.03 | 1.64 | 60.82 | | | |
| 11 | 0.95 | 1.51 | 62.34 | | | |
| 12 | 0.92 | 1.46 | 63.80 | | | |
| 13 | 0.91 | 1.44 | 65.24 | | | |
| 14 | 0.85 | 1.35 | 66.58 | | | |
| 15 | 0.82 | 1.29 | 67.88 | | | |
| 16 | 0.78 | 1.23 | 69.11 | | | |
| 17 | 0.77 | 1.22 | 70.33 | | | |
| 18 | 0.74 | 1.17 | 71.50 | | | |
| 19 | 0.71 | 1.13 | 72.63 | | | |

| | | | |
|---|---|---|---|
| 20 | 0.67 | 1.06 | 73.69 |
| 21 | 0.66 | 1.04 | 74.73 |
| 22 | 0.65 | 1.03 | 75.76 |
| 23 | 0.64 | 1.02 | 76,78 |
| 24 | 0.62 | 0.99 | 77.77 |
| 25 | 0.58 | 0.92 | 78.68 |
| 26 | 0.56 | 0.89 | 79.58 |
| 27 | 0.55 | 0.87 | 80.45 |
| 28 | 0.54 | 0.86 | 81.31 |
| 29 | 0.53 | 0.84 | 82.15 |
| 30 | 0.52 | 0.82 | 82.97 |
| 31 | 0.50 | 0.80 | 83.77 |
| 32 | 0.49 | 0.78 | 84.55 |
| 33 | 0.49 | 0.77 | 85.32 |
| 34 | 0.47 | 0.75 | 86.07 |
| 35 | 0.46 | 0.73 | 86.80 |
| 36 | 0.44 | 0.70 | 87.49 |
| 37 | 0.43 | 0.67 | 88.16 |
| 38 | 0.42 | 0.67 | 88.83 |
| 39 | 0.40 | 0.63 | 89.46 |
| 40 | 0.39 | 0.63 | 90.08 |
| 41 | 0.37 | 0.58 | 90.67 |
| 42 | 0.36 | 0.57 | 91.24 |
| 43 | 0.35 | 0.56 | 91.80 |
| 44 | 0.34 | 0.54 | 92.35 |
| 45 | 0.34 | 0.54 | 92.89 |
| 46 | 0.32 | 0.51 | 93.39 |
| 47 | 0.31 | 0.49 | 93.89 |
| 48 | 0.31 | 0.49 | 94.38 |
| 49 | 0.30 | 0.47 | 94.85 |
| 50 | 0.29 | 0.46 | 95.31 |
| 51 | 0.29 | 0.45 | 95.76 |
| 52 | 0.28 | 0.44 | 96.20 |
| 53 | 0.27 | 0.43 | 96.64 |
| 54 | 0.26 | 0.41 | 97.05 |
| 55 | 0.26 | 0.41 | 97.46 |
| 56 | 0.24 | 0.38 | 97.84 |
| 57 | 0.23 | 0.36 | 98.20 |
| 58 | 0.22 | 0.34 | 98.54 |
| 59 | 0.21 | 0.33 | 98.88 |
| 60 | 0.19 | 0.31 | 99.18 |
| 61 | 0.19 | 0.30 | 99.48 |
| 62 | 0.17 | 0.27 | 99.75 |
| 63 | 0.16 | 0.25 | 100.00 |

Table 3 shows that the total variance value of a factor is less than 50% and common method bias does not affect the data and results (Aguirre-Urreta and Hu, 2019). Confirmatory factor analysis was performed using the AMOS statistical package program. As a result of the confirmatory factor analysis, it was seen that the factor loadings of some expressions were 0.5 or below, so these expressions were excluded from the scope of analysis. During confirmatory factor analysis, expressions with a factor load of 0.50 or less should be excluded from the analysis (Hair, Black, Babin and Anderson, 2019, p. 681). The model was then run again. The goodness of fit values and reference values obtained as the result of running the model are given in Table 4. Reference values were prepared using the studies conducted by Bentler and Bonett (1980) and Gürbüz and Şahin (2018).

Table 4
*Goodness of Fit values obtained as a result of Confirmatory Factor Analysis*

| *Fit Indices* | *Goodness of Fit Values* | *Acceptable Values* | *Abbreviations* |
|---|---|---|---|
| *X² Value* | 2620.75 | 0.00 | CMIN |
| *Degrees of Freedom* | 1240 | 0 | DF |
| *p* | 0.00 | <0.01 | P |
| *X²/df* | 2.11 | <5 | CMIN/DF |
| *Incremental Fit Index* | 0.91 | 0.90≤IFI≤0.95 | IFI |
| *Comparative Fit Index* | 0.91 | 0.90≤CFI≤0.95 | CFI |
| *Root Mean Square Error of Approximation* | 0.05 | 0≤RMSEA≤0.08 | RMSEA |
| *Standardized Root Mean Square Residual* | 0.05 | 0≤SRMR≤0.08 | SRMR |

Chi-square statistic ($X^2$=2620.75) is significant (p=0.00). The standard chi-square value obtained by dividing the chi-square statistic by the degrees of freedom was determined as 2.11. A value below 3 indicates a perfect fit between the model and the data, and a value below 5 indicates that the model is adequately compatible with the data (Chen and Tsai, 2007). In light of this information, we can say that our model is in perfect fit with the data.

After evaluating the fit indices, the factor loadings of the statements in the scales were reviewed. As seen in Table 5, all factor loadings are above 0.50. Then, composite reliability and convergent validity analyzes of the statements of the scales were conducted. To calculate the AVE value, the calculation technique of Fornell and Lacker (1981) was preferred. Table 5 shows the factor loadings, composite reliability (CR) and convergent validity (AVE) values obtained as a result of confirmatory factor analysis. Cronbach Alpha values were recalculated and shown in Table 5 because there were expressions removed from the model during confirmatory factor analysis.

Table 5
*Factor loadings, Convergent Validity (AVE), Composite Reliability (CR) and Cronbach Alpha values obtained from Confirmatory Factor Analysis*

| Variables | | | Factor Loadings | AVE | CR | Cronbach Alpha |
|---|---|---|---|---|---|---|
| EEA1 | <--- | EEA | 0.66 | | | |
| EEA2 | <--- | EEA | 0.74 | | | |
| EEA3 | <--- | EEA | 0.69 | | | |
| EEA4 | <--- | EEA | 0.66 | | | |
| EEA5 | <--- | EEA | 0.70 | | | |
| EEA6 | <--- | EEA | 0.69 | | | |
| EEA7 | <--- | EEA | 0.62 | | | |
| EEA9 | <--- | EEA | 0.70 | | | |
| EEA10 | <--- | EEA | 0.59 | 0.48 | 0.95 | 0.95 |
| EEA12 | <--- | EEA | 0.76 | | | |
| EEA13 | <--- | EEA | 0.76 | | | |
| EEA14 | <--- | EEA | 0.68 | | | |
| EEA15 | <--- | EEA | 0.68 | | | |
| EEA16 | <--- | EEA | 0.70 | | | |
| EEA17 | <--- | EEA | 0.63 | | | |
| EEA20 | <--- | EEA | 0.74 | | | |
| EEA21 | <--- | EEA | 0.74 | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| EEA22 | <--- | EEA | 0.68 | | | |
| EEA23 | <--- | EEA | 0.69 | | | |
| PFN4 | <--- | PFN | 0.66 | | | |
| PFN3 | <--- | PFN | 0.75 | | | |
| PFN2 | <--- | PFN | 0.74 | 0.51 | 0.80 | 0.80 |
| PFN1 | <--- | PFN | 0.69 | | | |
| IWN5 | <--- | IWN | 0.68 | | | |
| IWN4 | <--- | IWN | 0.69 | | | |
| IWN3 | <--- | IWN | 0.73 | 0.48 | 0.79 | 0.79 |
| IWN2 | <--- | IWN | 0.67 | | | |
| CTN3 | <--- | CTN | 0.65 | | | |
| CTN2 | <--- | CTN | 0.76 | 0.53 | 0.77 | 0.76 |
| CTN1 | <--- | CTN | 0.76 | | | |
| EI3 | <--- | EI | 0.66 | | | |
| EI5 | <--- | EI | 0.71 | | | |
| EI6 | <--- | EI | 0.75 | | | |
| EI7 | <--- | EI | 0.62 | 0.43 | 0.84 | 0.85 |
| EI10 | <--- | EI | 0.60 | | | |
| EI11 | <--- | EI | 0.60 | | | |
| EI12 | <--- | EI | 0.67 | | | |
| ES5 | <--- | ES | 0.82 | | | |
| ES4 | <--- | ES | 0.77 | | | |
| ES3 | <--- | ES | 0.80 | 0.61 | 0.89 | 0.89 |
| ES2 | <--- | ES | 0.77 | | | |
| ES1 | <--- | ES | 0.73 | | | |
| UP5 | <--- | UP | 0.78 | | | |
| UP4 | <--- | UP | 0.83 | | | |
| UP3 | <--- | UP | 0.84 | 0.65 | 0.90 | 0.90 |
| UP2 | <--- | UP | 0.83 | | | |
| UP1 | <--- | UP | 0.75 | | | |
| SAV4 | <--- | SAV | 0.83 | | | |
| SAV3 | <--- | SAV | 0.82 | 0.65 | 0.85 | 0.85 |
| SAV2 | <--- | SAV | 0.77 | | | |
| RU2 | <--- | RU | 0.53 | 0.56 | 0.70 | 0.64 |
| RU1 | <--- | RU | 0.91 | | | |

EEA: Environmental Ethics Awareness, PFN: Passion for Nature, IWN: Intimacy with Nature, CTN: Commitment to Nature, EI: Ecological Intelligence, ES: Environmental Sensitivity, UP: Unnecessary Purchase, SAV: Saving, RU: Reusability

It is possible to say that the scales used in the model are reliable and valid when the composite reliability value is over 0.70 and the convergent validity value is over 0.50 (Hair et al., 2019). However, when the composite reliability (CR) value is above 0.70, the AVE value can be accepted even if the convergent validity (AVE) value is below 0.50 (Fornell and Lacker, 1981). When the values in Table 5 are examined, it is concluded that the scales are both reliable and valid.

After proving the validity of the model and its compatibility with the data through confirmatory factor analysis, structural equation modeling was used to test the hypotheses of the research and path analysis was performed. The values obtained as the result of the path analysis are shown in Table 6.

Table 6
*Structural Equation Model Path Analysis results*

| Hypothesis | Variable | | | Estimate | Std. Path Coefficient | Std. Error | t | p | Result |
|---|---|---|---|---|---|---|---|---|---|
| **$H_1$** | **ES** | **<---** | **PFN** | **1.01** | **0.75** | **0.33** | **3.05** | **0.00**** | **Accepted** |
| **$H_2$** | **UP** | **<---** | **PFN** | **-1.27** | **-0.87** | **0.41** | **-3.10** | **0.00**** | **Accepted** |
| $H_3$ | SAV | <--- | PFN | -1.43 | -1.20 | 1.37 | -1.05 | 0.30 | Rejected |
| **$H_4$** | **RU** | **<---** | **PFN** | **0.71** | **0.61** | **0.24** | **2.90** | **0.00**** | **Accepted** |
| $H_5$ | ES | <--- | IWN | 1.77 | 1.34 | 1.10 | 1.60 | 0.11 | Rejected |
| **$H_6$** | **UP** | **<---** | **IWN** | **-3.10** | **-2.17** | **1.38** | **-2.24** | **0.03*** | **Accepted** |
| $H_7$ | SAV | <--- | IWN | 7.35 | 6.31 | 6.27 | 1.17 | 0.24 | Rejected |
| $H_8$ | RU | <--- | IWN | 0.49 | 0.43 | 0.77 | 0.63 | 0.53 | Rejected |
| **$H_9$** | **ES** | **<---** | **CTN** | **2.70** | **1.69** | **1.22** | **2.22** | **0.03*** | **Accepted** |
| $H_{10}$ | UP | <--- | CTN | -1.89 | -1.09 | 1.47 | -1.29 | 0.20 | Rejected |
| $H_{11}$ | SAV | <--- | CTN | -7.23 | -5.12 | 6.50 | -1.11 | 0.27 | Rejected |
| $H_{12}$ | RU | <--- | CTN | -1.28 | -0.94 | 0.84 | -1.51 | 0.13 | Rejected |
| **$H_{13}$** | **ES** | **<---** | **EEA** | **0.82** | **0.45** | **0.38** | **2.15** | **0.03*** | **Accepted** |
| $H_{14}$ | UP | <--- | EEA | -0.75 | -0.38 | 0.47 | -1.60 | 0.11 | Rejected |
| $H_{15}$ | SAV | <--- | EEA | -1.75 | -1.10 | 1.92 | -0.91 | 0.36 | Rejected |
| $H_{16}$ | RU | <--- | EEA | -0.30 | -0.19 | 0.27 | -1.13 | 0.26 | Rejected |
| **$H_{17}$** | **ES** | **<---** | **EI** | **1.04** | **0.70** | **0.33** | **312** | **0.00**** | **Accepted** |
| $H_{18}$ | UP | <--- | EI | 0.60 | 0.37 | 0.41 | 1.47 | 0.14 | Rejected |
| $H_{19}$ | SAV | <--- | EI | 2.09 | 1.60 | 1.57 | 1.33 | 0.18 | Rejected |
| **$H_{20}$** | **RU** | **<---** | **EI** | **0.71** | **0.56** | **0.25** | **2.91** | **0.00**** | **Accepted** |

In line with the results in Table 6, passion for nature has a positive effect on environmental sensitivity (ß=0.75; p<0.01), a negative effect on unnecessary purchasing (ß=-0.87; p<0.01) and a positive significant effect on reusability (ß=0.61; p<0.01), but does not have a significant effect on savings. Intimacy with nature has a significant and negative effect only on unnecessary purchasing (ß=-2.17; p<0.05). It is observed that commitment to nature has a positive effect only on environmental sensitivity (ß=1.69; p<0.05). While environmental ethics awareness has a positive and significant effect only on the environmental sensitivity dimension of sustainable consumption behavior (ß=0.45; p<0.05); ecological intelligence has a positive and significant effect on environmental sensitivity (ß=0.70; p<0.01) and reusability (ß=0.56; p<0.01).

Table 7
*Coefficients of Determination ($R^2$) for the dependent variables of the research*

| Dependent Variables | | Independent Variables | Coefficients of Determination ($R^2$) |
|---|---|---|---|
| **ES** | **<---** | **PFN*** | |
| ES | <--- | IWN | |
| **ES** | **<---** | **CTN*** | **0.60** |
| **ES** | **<---** | **EEA*** | |
| **ES** | **<---** | **EI *** | |
| **UP** | **<---** | **PFN *** | |
| **UP** | **<---** | **IWN *** | |
| UP | <--- | CTN | **0.20** |
| UP | <--- | EEA | |
| UP | <--- | EI | |

| | | | |
|---|---|---|---|
| **RU** | **<---** | **PFN *** | |
| RU | <--- | IWN | |
| RU | <--- | CTN | **0.31** |
| RU | <--- | EEA | |
| **RU** | **<---** | **EI*** | |

*Independent variables that have a significant effect on dependent variables

Table 7 shows the coefficients of determination of the dependent variables of the study. Independent variables with a significant effect increased environmental sensitivity by 60%, purchasing behavior by 20% and the reusability dimension by 31%. As a result of the research, in line with the findings, hypotheses $H_1$, $H_2$, $H_4$, $H_6$, $H_9$, $H_{13}$, $H_{17}$ and $H_{20}$ were accepted and other hypotheses were rejected.

## 4. Discussion and conclusion

### 4.1. Theoretical implications

Sustainable consumption behavior means protecting the natural environment and ecological balance, as well as consuming resources consciously, taking into account the needs of future generations. Activities such as using energy resources economically, choosing energy-saving products, purchasing long-lasting products instead of disposable products, using products of environmentally friendly companies, choosing products with eco-labels and recyclable packaging, reusing or recycling products, purchasing some products instead of purchasing them, renting products, not consuming unless needed, recycling and waste management effectively are examples of sustainable consumption behavior. Individuals exhibiting sustainable consumption behavior means that companies organize their activities accordingly. As companies determine sustainable policies, governments will support this issue more. In other words, individuals' adoption of sustainable behaviors will oblige both companies and states to move towards sustainability goals. Therefore, in terms of achieving sustainable development goals, the contribution of consumers is undeniable.

Structural Equation Modeling was used to test the hypotheses of the research. Before testing the hypotheses, confirmatory factor analysis was conducted to test the validity of the scales and the fit of the model with the data. The confirmatory factor analysis results show that the scales are valid and the model is highly compatible with the data set. After examining the convergent validity and composite reliability values of the scales, the structural equation model was run. Confirmatory factor analysis and path analysis were performed using the AMOS program. In the path analysis conducted to test the hypotheses of the research, hypotheses $H_1$, $H_2$, $H_4$, $H_6$, $H_9$, $H_{13}$, $H_{17}$ and $H_{20}$ were accepted. Passion for nature, commitment to nature, environmental ethics awareness and ecological intelligence have a significant impact on environmental sensitivity. Unnecessary purchasing behavior is affected by the variables of passion for nature and intimacy with nature. None of the independent variables included in the research are effective on saving behavior. It has been observed that the reusability dimension is affected by passion for nature and ecological intelligence.

This study aimed to examine the effects of environmental ethics awareness, ecological intelligence and love of nature on sustainable consumption behavior. The studies in the literature have reached some results regarding the variables included in this study. According to the results of the study conducted by Tekiroğlu and Hayır-Kanat (2021) on teachers, a significant relationship was detected between the level of environmental ethics awareness and sustainable environmental attitude. Hettiarachchi (2020) revealed that ecological intelligence plays a mediating role between ecological intention and ecological behavior. In the study conducted by Dong et al. (2020), it was determined that the dimensions of love for nature affected different dimensions of sustainable consumption behavior. However, since there is not any study in the literature that examines the effects of environmental ethics awareness, ecological intelligence and love of nature variables together on the dimensions of sustainable consumption behavior, this study is expected to be an original study and contribute to the literature.

Wu and Zhu (2021) revealed that love of nature is positively related to types of green consumer behavior. In the study conducted by Dong et al. (2020), it was suggested that the dimensions of love of nature (passion for nature, intimacy with nature and commitment to nature) affect different dimensions

of sustainable consumption behavior (green purchasing, reusability, recycling). In this study, passion for nature, which is one of the dimensions of love of nature, has significant effects on environmental sensitivity, unnecessary purchasing and reusability, which are sustainable consumption behavior dimensions. Accordingly, hypotheses $H_1$, $H_2$ and $H_4$ were accepted and hypothesis $H_3$ was rejected. Intimacy with nature only affects unnecessary purchasing behavior, but does not affect environmental sensitivity, saving and reusability. In this context, $H_6$ hypothesis was accepted, $H_5$, $H_7$ and $H_8$ hypotheses were rejected. It has been determined that commitment to nature has a significant effect only on the environmental sensitivity dimension of sustainable consumption behavior, but commitment to nature does not affect unnecessary purchasing, saving and reusability. Therefore, hypothesis $H_9$ was accepted, hypotheses $H_{10}$, $H_{11}$ and $H_{12}$ were rejected. In this study, some similar results were obtained with the study conducted by Dong et al. (2020). However, Dong et al. (2020) used different dimensions of sustainable consumption behavior (green purchasing, reusability, recycling) in their study. In this study, environmental sensitivity, unnecessary purchasing, saving and reusability dimensions were used. For this reason, it is thought that there may be differences in some of the results obtained. Taufique (2022) found that intimacy with nature has an impact on sustainable consumption behavior. In this study, similarly, intimacy with nature has a significant effect on unnecessary purchasing dimension of sustainable consumption behavior. However, unlike the study of Taufique (2022), in this study, four different dimensions of sustainable consumption behavior were examined.

The study conducted by Tekiroğlu and Hayır-Kanat (2021) shows that there are significant and positive relationships between the environmental ethics awareness levels of Social Studies teachers and their sustainable attitudes. In this study, it was revealed that environmental ethics awareness has a significant effect on environmental sensitivity, but it does not affect unnecessary purchasing, saving and reusability significantly. Therefore, hypothesis $H_{13}$ was accepted but hypotheses $H_{14}$, $H_{15}$ and $H_{16}$ were rejected. However, while sustainable attitude was considered as a dependent variable in Tekiroğlu and Hayır-Kanat's (2021) study, this study examined the effect of environmental ethics awareness on sustainable consumption behavior dimensions.

Hettiarachchi (2020) concluded that ecological intelligence plays a mediating role between the intention of ecological behavior and ecological behavior. In this study, it was concluded that ecological intelligence has an impact on environmental sensitivity and reusability, which are dimensions of sustainable consumption behavior. However, ecological intelligence does not have an impact on unnecessary purchasing and saving dimensions of sustainable consumption behavior. Accordingly, hypotheses $H_{17}$ and $H_{20}$ were accepted but hypotheses $H_{18}$ and $H_{19}$ were rejected. However, in the study of Hettiarachchi (2020), the ecological intelligence has a mediating role in the model of the research and the dependent variable is actual ecological behavior. Differently, in this study the dependent variable is sustainable consumption behavior dimensions. Moreover, the direct effect of ecological intelligence on sustainable consumption behavior dimensions has been examined.

### 4.2. Managerial implications

To summarize the main findings of the research, environmental awareness, which is one of the dimensions of sustainable consumption behavior, is influenced by passion for nature, commitment to nature, environmental ethics awareness and ecological intelligence. Unnecessary purchasing behavior is affected by the variables of passion for nature and intimacy with nature. The reusability dimension is influenced by passion for nature and ecological intelligence. Based on this, it is possible to say that developing consumers' love for nature, awareness of environmental ethics and ecological intelligence will lead to an increase in sustainable consumption behavior such as environmental sensitivity, not consuming unnecessary products and reusing them. For this reason, instilling the love of nature, especially in children and young people at an early age, will be very beneficial in terms of raising awareness of sustainable consumption in society. Especially in nurseries, kindergartens and primary education institutions, ecology lessons should be added to lesson plans and within the scope of these lessons, children should be encouraged to deal with soil, animals and plants. Sightseeing trips and nature walks should also be organized. In this context, marketing managers of non-governmental organizations and companies should organize events that will instill love of nature in children and young people. Municipalities undoubtedly have a great responsibility in achieving a nature-loving society. Increasing

green areas, providing places where the society can spend quality time in the natural environment, protecting the natural environment, etc. activities will be effective in gaining love of nature.

Along with instilling love for nature, it is also important to increase consumers' environmental ethics awareness levels. Environmental ethics awareness is the ability of individuals to see, know and be aware of everything that happens in nature and to respect all living and non-living beings. For this reason, it is very important to frequently share public service announcements on global environmental problems and the measures that can be taken on national channels and social media. Here again, marketing managers have important duties. Undoubtedly, the active participation of consumers together with companies in the solution of environmental problems will be very effective in increasing the level of environmental sensitivity and environmental ethics. For this reason, through social media channels, which are today's communication tools, companies should share with consumers the activities they carry out to protect the environment and encourage consumers by giving discount coupons or gift certificates to consumers who actively participate in these activities.

Ecological intelligence is defined as the ability to be sensitive to and react to events that occur worldwide and pose a danger to the natural environment. In order to increase the ecological intelligence levels of consumers, it would be useful to conduct courses, seminars or educational organizations on topics such as the natural environment, climate change, biodiversity, waste management, recycling, energy saving and conscious consumption of natural resources. The basis of ecological intelligence lies in the adoption of sustainable consumption in daily life. Therefore, companies may emphasize energy saving and its importance, design energy-saving products, direct consumers to recycling activities and use recyclable materials in products, use eco-labels and nature-friendly packaging, produce nature-friendly products, and influence consumers' decision-making processes through promotional activities. Ensuring that consumers pay attention to the criteria and supporting consumers to have knowledge about the ecosystem by using social media effectively are activities that marketing managers should consider in order to achieve a society with a high level of ecological intelligence.

### 4.3. Limitations and future studies

The most important limitation of the research is that convenience sampling method was used. Therefore, caution should be exercised when generalizing the results. However, this study was only applied to consumers residing in Turkey. Some of the probability sampling methods can be used in future studies, and the sample can be expanded by participating in the application in different countries. The mediating effects of demographic characteristics can be examined. Hypotheses can be retested on different samples by using scales with different dimensions of sustainable consumption behavior.

## Author statement

**Research and publication ethics statement**

This study has been prepared in accordance with the ethical principles of scientific research and publication.

**Approval of ethics board**

Before conducting the survey, Ethics Committee Project Approval dated 31.01.2023 and numbered 04 was received from Erciyes University Social and Human Sciences Ethics Committee.

**Author contribution**

Sinem Sargın: Research idea, research design, literature review, data collection, methodology, data analysis, writing, review and control.

Yunus Dursun: Research idea, research design, review and control.

**Conflict of interest**

There is no conflict of interest arising from the study for the authors or third parties.

**Declaration of support**

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