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The Impact of Normative Social Influence on Sustainable Consumption Behavior: The Mediating Role of Eco-Friendly Behavior and Environmental Awareness

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ABSTRACT

Sustainable consumption has gained importance through social, economic and environmental platforms and social norm communication triggered and empowered eco-environmental behavior. This study aims at investigating the impact of normative social influence on sustainable consumption behavior built on a comprehensive theoretical and practical framework with special reference given to the role of environmental awareness and the eco-friendly behavior. This study investigates the process by which social norms transform into sustainable consumption behavior by carefully selecting relevant scales within the Turkish context. 1418 participants completed the questionnaire online. The study concluded that the effect of normative social influence on sustainable consumption behavior (H_1) and the effect of normative social influence on environmentally friendly behaviors (H_2) was found to be positive and significant. However, it was found that the effect of normative social influence on environmental awareness was not statistically significant (H_3). The study revealed that environmentally friendly behaviors (H_4) and that environmental awareness has a positive and significant effect on sustainable consumer behavior (H_5). It is also found that environmentally friendly behaviors mediate the relationship between normative social influence and sustainable consumption behavior (H_6). This study is an attempt to provide a solid foundation for investigating the psychological and social drivers of sustainable consumption behavior.

Keywords: Sustainability, Normative Social Influence, Sustainable Consumption Behavior, Environmental Awareness, Eco-Friendly Behavior
JEL Classifications: M3, M31, M371

1. INTRODUCTION

The increasing environmental degradation led to the awareness of the sustainable consumption as a major global trend. Sustainability has been at the center of the global business environment as a means of planet preservation, poverty reduction, prosperity and peace (United Nations Development Program UNDP, 2015). Fostering unsustainable consumption patterns were created by globalization and technological advancements (Hidalgo-Crespo and Amaya-Rivas, 2024) prompting key stakeholders such as policy makers, consumers and business organizations. Human activities are identified as the primary driver of global warming, environmental pollution, and biodiversity loss (Albayrak et al., 2013). Consumer behavior has become the environmental footprint of human activities threatening the sustainable discourse as about 40% of environmental decline can be linked directly to residential non-green consumption (Yang et al., 2021). Despite augmented awareness on sustainable consumption, a major "attitude and behavior gap" endures, as eco-friendly values often fail to reflect in actual purchasing behavior (Sargın and Dursun, 2023).

Sustainable development has become a global concern with individuals from different sectors contribute to the mission of protecting the environment (Wang and Lin, 2017) as putting sustainable consumption as a central cornerstone in this framework. Sustainable consumption is a kind of consumption

that meets the needs of the present without compromising the ability of future generations to meet their own. Sustainable consumption has various dimensions of social, ecological and economic issues (Balderjahn et al., 2013; Geiger et al., 2018) to motivate consumers towards more sustainable consumption (Pristl et al., 2021). The reason of consumers undertaking sustainable behavioral patterns needs an in-depth understanding of the effects of norms on behavioral change addressing environmental problems (Fang et al., 2017). Social influence emerges through normative mechanisms for behavioral change (Salazar et al., 2021) as it appears to transform behavior through environmental and social sustainability domains (Yamin et al., 2019). Social influence has been a vital ingredient in the modern marketing studies (White et al., 2019).

Thus, social norms play a fundamental role in determining what is considered as an acceptable sustainable behavior (Thøgersen, 2006) reflecting the mechanism of determining individual awareness for ecological issues (Yang et al., 2021). There have been research proving the fact that social normative influence positively effects eco-friendly behavior (Vermeir and Verbeke, 2006; Park and Ha, 2012). Some other studies could not reach to certain results claiming that social normative influence is not associated with environmental behavior (Viscusi et al., 2011). These equivocal results imply that the relationship of normative social influence and sustainable consumption behavior mediated and moderated by other variables (Taylor and Todd, 1995). This study considers social influence theory as an effort to structure a bridge between attitude-behavior gap.

The aims of the research were to examine how the effect of social normative influence on sustainable consumption behavior and furthermore whether environmental awareness and eco-friendly behavior can be used as a mediator in this relationship through understanding of behavioral drivers in emerging market contexts.

2. LITERATURE REVIEW

2.1. Sustainable Consumption Behavior

Industrial revolution has started the era of fast urbanization and wild industrial production by exploiting natural resources, leading to global warming and serious waste accumulation issues (Zaman and Lehmann 2011) (Ekmekçioğlu and Ekmekçioğlu, 2024). Sustainable consumption is well known as the meeting present needs of people today without compromising the rights of the future generations to meet their needs (Brundtland Report, 1987). Sustainable consumption behavior is also used as green behavior and pro-environmental behavior encompassing actions through environmental preservation (Krajhanzl, 2010). Sustainable consumption behavior has been stressed as the key to the preserving environment (Sargın and Dursun, 2023).

The hyper-consumption era of the consumers has caused global environmental problems as people's habits and behavior determine the amount of consumption of natural resources and the generation of waste being considered to have the greatest environmental impact in depletion of the ozone layer (Caeiro et al., 2012). This challenge would mean favoring desirable sustainable development scenarios, including transforming consumer lifestyles towards sustainability, reducing excessive consumption and evaluating the sustainability of growth processes. Empirical studies have proved evidence on the existence of sustainable consumption behavior and eco-friendly behavior from sustainable consumers with environmental protection consciousness and purchasing ecological products (Shao et al., 2017).

Sustainable consumption stems from ethical consumer studies, as a reflection of interdisciplinary studies containing various disciplines such as sociology, philosophy, economics psychology, and administration explaining the consumer type as being conscious and concerning the effects of their consumption decisions (Newholm and Shaw, 2007). This type of consumer has been described as sustainable, eco-friendly, green, social and responsible reflecting the concern for the environment, having various types of environmentally responsible behavior being either psychological and internal or environmental and external in nature (Peattie, 2010; Kalamas et al., 2014). Consumers make their minds whether they can contribute to solve some environmental problems and if they believe that they internalize their own eco-friendly consciousness into daily consumption behavior and encourage others to apply the same practices (Wang et al., 2022).

As a result of a meta-analysis on the rise in pro-environmental behaviors, they do not necessarily increase, on the contrary, previous environmentally friendly actions may weaken individuals' intentions for eco-friendly behavior in the future (Maki et al., 2019). This finding suggests that there may be various dynamics explaining consumers' sustainable consumption behaviors as individuals having eco-friendly actions and repeating them or justifying their less eco-friendly actions for being a good customer and giving them to control eco-friendly behaviors of others (Blanken et al., 2015; Enginkaya and Sağlam, 2024). There is a risk of falling into the trap of sufficiency misconception believing that the single eco-friendly action is enough for their mission of preserving the environment, taking no further action (Heikkurinen et al., 2019).

2.2. Normative Social Influence

Earlier social norm formation discussions have focused on how norms evolved to understand whether they stemmed from cultural value or fulfilled a rational function connected with survival (Cialdini and Trost, 1998; Etzioni, 2000). Much of the literature on social norm formation has stressed the interpersonal interactions and influences as the major sources of social norms in individual environment (Mead et al., 2014). Normative behavior theory was proposed by Lapinski and Rimal (2005) focusing on the relationship between descriptive norms and behavior as adjusted by injunctive norms, outcome expectations. They further suggested that the degree to which norms have influenced behavior accounted for behavioral attributes such as anonymity in theories of conformity and degree of ambiguity (Farrow et al., 2017). The normative social behavior theory has been the most influential norm-based theory considering the peer communication perspective in social normative influences (Geber et al., 2019).

Social influence theory suggests that individuals conform to group expectations through compliance, identification, and

internalization (Kelman, 1958). Goal-framing theory further elucidates this by identifying normative goals -focused on doing what is socially right- as primary drivers of pro-environmental action (Lindenberg and Steg, 2007). Normative social influence is particularly effective when it activates these normative goal frames, making environmental protection the focus of consumer attention (Yang et al., 2021).

The social norms theory to behavior change was proposed by Perkins and Berkowitz (1986) in the case of high alcohol use among students as they see heavy drinking as the norm approved by other students. These findings led to the concepts of "perceived norm" and "actual norm" (Han and Cheng, 2020). The social norms theory claims that individual behavior is influenced by various perceptions of their social networks (Lee and Kotler, 2015; Issock et al., 2020). The normative social influence process was defined as 'conformity to a group norm with the desire to be liked by the group members' when an individual start considering the evaluations of the group as the normative influences call for a "is" or "ought" (Cialdini et al., 1990; Kallgren et al., 2000). Thus, personal norms can be the most influential factor in encouraging eco-friendly behavior in terms of water conservation, recycling, and waste reduction (Han et al., 2018).

Normative influence has become a key component of various social-psychological models of behavioral decision making. The literature on social influence suggests that, when conforming to social norms, individuals do not always refer to close friends, and relatives (Thøgersen, 2006). There are situations in which one can also decide to behave similarly to people with whom one does not share strong affective bonds or consolidated social relationships (Passafaro et al., 2019: 2). From a broader perspective, social norms encourage and inhibit actual beliefs and intrinsic motivations toward pro-environmental behaviors (Nolan et al., 2008). Previous research has rarely classified social norms into descriptive norms and injunctive norms combining social norms and information framing (Zheng et al., 2023). The findings on normative social influence show that the actions of other people strongly influence the behavior of the actor (Cialdini and Goldstein, 2004; Nolan et al., 2008). For instance, attitudes toward food waste reduction indicate that individuals internalize some norms from their social groups reinforcing their intention to reduce food waste (Al Mamun et al., 2024).

Social normative influences have been influential on human behavioral changes (Cialdini et al., 1991; Cialdini and Trost, 1998; Cialdini and Goldstein, 2004; Cialdini et al., 2006). Social norms are incorporated by major theories of human behaviors; including focus theory of normative conduct by Cialdini et al. (1991), theory of planned behavior by Ajzen (1991), or goal framing theory by Lindenberg and Steg (2007). The impact of social norms on pro-environmental behavior depends on the degree of its internalization (Thøgersen, 2006). Social norms which guide people to base their actions on symbolic-affective motives negatively affect pro-environmental behavior (Steg et al., 2001). The influence of norms on pro-environmental behavior is also mediated by anticipated emotions (Rezvani et al., 2017). Normative social influence on individual's pro-environmental behavior have been found to be effective by many researchers (Farrow et al., 2017). Social norms have been a central topic in psychological research for a long time. Researchers in this and other fields have found relevant behavioral effects of interventions based on social norms in a very wide variety of domains, from pro-environmental behaviors (Kormos et al., 2015; Pellerano et al., 2016; Yamin et al., 2019).

Although most studies emphasize effects of social normative influences on sustainable consumption practices (Kim et al., 2012; Dowd and Burke, 2013; Demarque et al., 2015; Loschelder et al., 2019), there are other studies claimed that no evidence found for such a relationship (He and Kua, 2013; Chekima et al., 2019) and some writers argued that the effect is on intentions not on behaviors (Nguyen et al., 2015). Most studies on sustainable consumption behavior do not explicitly investigate the motivational route and its relevance for influences of perceived social norms on behavioral intentions (Silvi and Padilla, 2021). The literature largely emphasizes the positive influence of normative social influence on sustainable consumption behavior in different eco-friendly actions (Pristl et al., 2021).

2.3. Eco-Friendly Behavior

This study defined eco-friendly behavior as the behavior of individuals participating in green activities to promote sustainable development and reduce or eliminate negative impacts on the environment. The eco-friendly behavior is an individual's initiative to improve the sustainable environment at the expense of some self-interest (Boermans et al., 2024). The cost of making individual eco-friendly behavior is often higher than normal purchases. Individuals need to consider whether they need to limit their interests for greater social and environmental interests (Klein and Rudert, 2021). In social dilemmas, individuals need to choose between collective interests and personal interests (Van Lange et al., 2013). There is a social dilemma between individual participation in eco-friendly behavior and the public environment (Klein et al., 2017; Klein and Rudert, 2021). However, environmental protection is a long-term common social interest, and individuals can also benefit from collective interests.

Eco-friendly behavior aims at mitigating the damage to the environment for preserving the natural environment for the future generations (Ardoin et al., 2013). Such behaviors intend to promote more sustainable consumption considering their actual impact (Lange and Dewitte, 2019). However, some writers argue that eco-friendly behavior does not necessarily consider possible impact with intend-oriented approach (Whitmarsh, 2009).

Eco-friendly behavior assumes that consumers can modify their own behaviors to become more eco-friendly and navigating their businesses toward environmentally sustainable conduct through their individual purchasing power (D'Astous and Legendre, 2009). Recently, consumers started acknowledging their own partial responsibility and yet expressing their concern more and more about the ecological problems triggered by the fast-growing population and their vast consumption, (Wells et al., 2011). As eco-friendly behavior often requires additional cost, effort and time, some consumers often fail to transform their eco-friendly attitudes into behaviors (Kollmuss and Agyeman, 2002; Vermeir and Verbeke, 2006). Thus, it seems rather challenging for consumers to transform their present lifestyles into a more sustainable consumption behavior (Sargın and Dursun, 2023).

Eco-friendly behaviors, such as recycling and waste reduction behavior, act as visible displays of adopted social norms (Sargın and Dursun, 2023). The norm activation model asserts that social norms are internalized into personal norms, resulting in various eco-friendly behavior (Nayum and Klöckner, 2014). These eco-friendly attitudes serve as a bridge, leading to sustainable consumption behavior (Kim et al., 2012).

The literature contains only a small number of scales that have been developed to measure eco-friendly behaviors in Turkey. Besides, most of these measures are the adapted versions of Western-based scales (Timur and Yılmaz, 2013; Kanbur et al., 2022) or they are for particular populations like tourists (İpar, 2018; Soylu, 2019), students (Sontay et al., 2015; Ardahan, 2022) children (Özkan et al., 2020), and employees (Kanbur et al., 2022), as claimed by Akkaya et al., (2025).

2.4. Environmental Awareness

Environmental sensitivity is a dimension of environmental awareness as one of the most basic individual characteristics and is the ability to process external stimuli (Pluess, 2015). Environmental awareness drives individuals to internalize sustainability issues, as aligned with their social expectations (Filimonau et al., 2020). Normative social influence develops with subjective norms, and perceptions of common behavior as artifacts of collectivist cultures and the effectiveness can be boosted through digital messaging (Van Herpen et al., 2023; Al Mamun et al., 2024; Hermanussen and Loy, 2024). Environmental awareness encourages individuals to take positive initiatives against environmental problems. Environmental awareness determines the threshold at which social stimuli activate goal frames (Yang et al., 2021). Eco-friendly individuals are more emotionally responsive to ecological risks, making them more receptive to social messages regarding the sustainability issues (Canoğlu and Üstüner, 2025).

Social norms, representing the perceived social pressure (Ajzen, 1991; Fishbein and Ajzen, 2011) or being an accepted behavior in a group (Cialdini and Trost, 1998), play a vital role in the sustainable consumption behavior processes (Stern, 2000; Thøgersen, 2006; Schultz and Kaiser, 2012). Family members and friends' circles are the primary source of normative social influence (Collado et al., 2019). Environmental education may be a good option to increase the environmental awareness levels of the students that would be open for the normative social influence on environmental issues (Qi et al., 2025).

This study addresses this gap by exploring the effects of normative social influence on sustainable consumption behavior with mediating effects of environmental awareness and eco-friendly behavior. This study is an attempt to advance prior work beyond confirming established relationships as the behavioral mediation is stronger than cognitive-affective mediation in normative influence.

3. METHODOLOGY

This section provides information about the purpose of the study and the analyses and processes used to achieve that purpose.

3.1. Research Objective

This research aims to determine the mediating role of environmentally friendly behaviors and environmental awareness in the relationship between normative social influence and sustainable consumption behaviors.

3.2. Research Framework and Hypotheses

The impact of social influences on sustainable consumption behavior is well-emphasized in the literature (Goldstein et al., 2008; Nolan et al., 2008; Baum and Gross, 2017; Jansson et al., 2017; White et al., 2019; Lazaric et al., 2020; Granato and Mugge, 2025). Thus, perceived normative influence reflects through personal norms found to be effective on sustainable consumption behavior (Johnstone and Hooper, 2016; Schubert et al., 2021; Pristl et al., 2021; Canoğlu and Üstüner, 2025). Yang et al. (2021) found a strong empirical support on the relationship between social influence and green purchasing behavior as a similar concept with sustainable consumption behavior. Polyportis et al. (2025) also found a positive relationship between personal and social norms and sustainable food consumption behavior. Ekşi et al. (2021) found that social pressure and social acceptance emotions are primary drivers of sustainable consumption behavior. Salazar et al. (2021) suggested that social norms are more influential in the purchase decision of organic products. Based on these critical literature review, the following hypotheses is proposed:

H_1: Normative social influence positively and significantly affects sustainable consumption behaviors.

H_2: Normative social influence positively and significantly affects environmentally friendly behaviors.

As individuals aware of the environmental problems, they are more receptive to the normative social influence. As Kim and Seock (2019) asserts environmentally aware consumers tend to show more sustainable consumption behavior. Also, social norms push individuals to internalize environmental concern (Jansson et al., 2017). Environmental concern is considered as a mediating variable in some studies related to normative social influence (Eom et al., 2016; Yu and Lee, 2019; Vesely et al., 2020). Liu et al. (2021) concluded that in the relationship of normative influence and sustainable consumption, "environmental awareness, plays a mediating role in the analysis. Therefore, the following hypothesis may be proposed:

H_3: Normative social influence positively and significantly affects environmental awareness.

Consumers tend to internalize some eco-friendly behavior and reflect them to their sustainable consumption behavior as they encourage other people to behave in the same way (Wang et al., 2022). An extensive literature has focused on normative social influences toward the eco-friendly behavior (Lee, 2008; Tanık, 2012). Lee (2008) concluded that "peer influence" is an important driver of green purchasing behavior. Tanık (2012) concluded that specific eco-friendly behaviors act as behavioral foundation for sustainable behavior. Most of the previous studies consider environmental concern as a determinant of eco-friendly behavior and Kim et al. (2012) found that social norms and the level of environmental concern have positive influences on sustainable consumption behavior. Lazaric et al. (2020) also emphasized the

importance of environmental concern as a related variable with eco-friendly behavior mediating social influence and sustainable consumption behavior relationship. Normative social influence (social push) encourages visible eco-friendly behaviors and these behaviors spillover across society (Thøgersen and Ölander, 2003). Hence, the following hypotheses may be tested:

H_4: Environmentally friendly behaviors positively and significantly affect sustainable consumption behaviors.

H_6: Environmentally friendly behaviors mediate the relationship between normative social influence and sustainable consumption behavior.

As society can force a change in sustainability issues in action, but not if they are only emotions and feelings in the form of internal awareness. Kollmuss and Agyeman (2002), introduced the term of the "Value-Action Gap," as social pressure may lead to behavior without necessarily changing the internal environmental values of an individual. Doğan et al. (2015) investigated the relationship between environmental awareness and sustainable behavior suggesting that personal awareness is a major drive for sustainable consumption behavior.

H_5: Environmental awareness positively and significantly affects sustainable consumption behaviors.

H_7: Environmental awareness mediates the relationship between normative social influence and sustainable consumption behavior.

The research model of the study may be illustrated as follows (Figure 1).

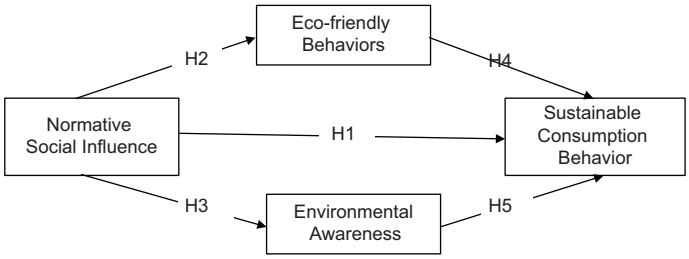
3.3. Sampling and Data Collection

The study adopts a quantitative survey design. The target sample size is 384 respondents, calculated for a 95% confidence level in a large population (Kortlik et al., 2001). Data will be collected through convenience sampling via online platforms using structured questionnaires.

3.3.1. Research sample

The population of the study consists of individuals as potential customers for the product/service at the time of data collection. The sample of the study consists of 1418 participants living on the European side of Istanbul who meet the criteria determined within the scope of the study. Convenience sampling, a non-probability sampling method, was used in the study. Data were collected online through a survey form created via Google Forms. 1418 data points were obtained from the population using the survey method (Tabachnick and Fidell, 2012). In this context, 58.7% of the participants were male (830), 74.8% were single (1058), 57.5% were between 19 and 20 years old (814), and 33.2% were university graduates (470).

Figure 1: Research model



3.3.2. Measurement instruments

All instruments utilize a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree). The reliability and validity of these scales have been established in the Turkish academic context. Research data were collected through a questionnaire consisting of two parts. The first part included four questions about the demographic characteristics of the participants, and the second part included scales for social influence, sustainable consumption behavior, environmental awareness, and environmentally friendly behaviors. All items were evaluated using a 5-point Likert scale.

3.3.2.1. Social influence (SI) scale

The 13-item, single-dimension scale developed by Ekşi et al. (2021) was used. In the study, the Alpha coefficient, which indicates the reliability of the scale, was calculated as 0.94. This result shows that the scale is reliable.

3.3.2.2. Sustainable consumption behavior (SCB) scale

Developed by Doğan et al. (2015), this scale, consisting of 17 statements and four dimensions, was used in the context of this study. The Alpha coefficient, indicating the reliability of the scale based on its dimensions, was calculated as a minimum of 0.72. This result shows that the scale is reliable. In this study, the sustainable consumption scale was considered as a whole and evaluated as a single dimension.

3.3.2.3. Environmental awareness (EA) scale

The environmental awareness scale, developed by Çetin and Yalçınkaya (2018) and consisting of 14 items and 4 dimensions, was used in this study to measure the concept of environmental awareness. The reliability coefficient calculated for this dimension was 0.69. This result indicates that the scale is reliable. The number of items belonging to this dimension is 4.

3.3.2.4. Environmentally friendly behaviors (EBB) scale

The environmentally friendly behaviors scale, developed by Tanık (2012) and consisting of 10 statements and 3 dimensions, was used in the study. In the study, the Alpha coefficient, which indicates the reliability of the scale based on dimensions, was calculated as a minimum of 0.68. This result shows that the scale is reliable. In this study, the sustainable work scale was considered as a whole and evaluated as a single dimension.

3.3.2.5. Control variables

In line with previous research (Aertsens et al., 2009; Brécard et al., 2009; Chekima et al., 2016; Chekima et al., 2016; Jansson et al., 2017; Wang and Lin, 2017; Lazaric et al., 2020; Canoğlu and Üstüner, 2025;) gender, education, age, and marital status factors, which are thought to influence sustainable consumption behavior, were controlled. Participants' gender was measured in five categories: Female (0), male (1); age in five categories: 18 and under (1), 19-29 years (2), 30-40 years (3), 41-51 years (4), 52 years and over (5); marital status in five categories: Married (0), single (1); education in five categories: Primary school (1), high school (2), associate degree (3), bachelor's degree (4),

postgraduate (5). The categorical variables age and education were converted into dummy variables before the analysis.

4. ANALYSES

After the data were collected, they underwent a series of analyses to test the hypotheses. Preliminary analyses were conducted first, followed by validity and reliability analyses of the data, making it suitable for hypothesis testing.

4.1. Preliminary Analyses

Research data were collected using an online survey form created via Google Forms, within the scope of the ethical committee approval dated December 25, 2025 and numbered 2025/20, given by the Kocaeli University Publication Ethics Committee. The survey link was shared with individuals who had the potential to participate in the research. The obtained data were first transferred to Excel and then uploaded to the SPSS software package to prepare for the analysis process.

A total of 1,418 valid questionnaires were obtained from the study population. Since all questions in the online questionnaire were mandatory, there were no missing data in the dataset. Prior to analysis, two reverse items in the sustainable consumption behavior scale were appropriately recoded; then, the normality assumption was tested to assess the suitability of the data for analysis.

The normality test showed that the skewness and kurtosis values were between +1.5 and −1.5, indicating that the data were normally distributed (Tabachnick and Fidell, 2012). The analysis revealed a skewness of +0.642 and a kurtosis of +0.626 for the dataset, and since all data were normally distributed, the analysis continued without any transformation.

Z-values were calculated for outlier analysis, and all data except +3.29 and −3.29 were accepted (Tabachnick and Fidell, 2012). The calculated Z-scores for the dataset showed that the largest Z-value was +2.34 and the smallest Z-value was −3.34. Therefore, the survey form with the three lowest outliers was removed from the analysis, and the outlier analysis was repeated. According to the resulting analysis, the newly calculated Z-scores showed that the largest Z-value was +2.36 and the smallest Z-value was −3.18. With the exclusion of the three survey forms, the normality test was also repeated, and the new skewness value was calculated as 0.724 and the kurtosis value as 0.500. These results showed that there was no data to be removed, that there were no outliers in the dataset, and that the data was normally distributed. Thus, the analyses continued with 1,415 data points.

Multicollinearity analysis was performed between the independent variables (normative social influence, environmentally friendly behaviors, and environmental awareness) and the dependent variable (sustainable consumption behaviors) using regression analysis. VIF, Tolerance (TV), and Condition Index (CI) values were examined, and it was concluded that there was no multicollinearity problem according to the criteria of VIF ≤10, CI <30, and TV >0.10 (Cohen et al., 2013). The calculations showed that the VIF values for environmentally friendly behaviors (EFB), environmental awareness (EA), and social influence (SE) were 1.454, 1.429, and 1.054, respectively. The TV values were 0.688, 0.700, and 0.949, respectively. Finally, the CI values were found to be 5.004, 13.871, and 21.566, respectively. The analyses concluded that there was no multicollinearity problem with the scales.

Data were collected in a single survey form, and participants were asked to self-evaluate. For these reasons, the possibility of common method variance arose in the research context (Podsakoff et al., 2003). For this reason, Harman's one-factor test, as suggested by Podsakoff et al. (2003), was applied. As a result of the exploratory factor analysis performed with four variables and a total of 44 items, the variance explained by the single factor was determined to be 27%; since this is below the recommended 50% threshold, it was concluded that common method variance does not pose a problem for the dataset.

4.2. Validity and Reliability

The research scales are scales for which validity and reliability analyses have been previously conducted. Since they are reused in another sample, confirmatory factor analysis (CFA) is required for the entire measurement model. Therefore, CFA was performed through structural equation modeling (SEM). During CFA, the entire measurement model was analyzed as a whole (Anderson and Gerbing, 1988).

The suitability of the DFA results was evaluated according to the fit indices proposed by Gürbüz and Şahin (2016) and Meydan and Şen (2011). These indices are: χ^2/df, CFI, TLI, IFI, NFI, RMSEA, and SRMR. Values above 0.90 for CFI, IFI, and TLI, below 0.08 for RMSEA and SRMR, and below 5 for χ^2/df indicate good model fit (Gürbüz and Şahin, 2016; Meydan and Şen, 2011).

The analysis revealed that the fit index values of the measurement model were within appropriate ranges, the necessary criteria were met, and the normative social impact, environmentally friendly behaviors, environmental awareness, and sustainable consumption behavior constructs in the measurement model were validated (χ^2 = 2506.957, df = 647 P < 0.01) (χ^2/df = 3.87; CFI = 0.94; TLI = 0.94; IFI = 0.94; NFI = 0.92; GFI = 90; RMSEA = 0.04; SRMR = 0.04). Five indicators from the sustainable consumption behavior scale and one indicator from the environmentally friendly behaviors scale with factor loadings below 0.50 were excluded from the analysis (Hair et al., 2010). The standardized factor loadings of the items included in the analysis were higher than 0.50 and ranged from 0.50 to 0.88.

The Cronbach's alpha reliability value, indicating the internal consistency of the measurement model, was calculated as 0.95 for the social impact scale (SE), 0.91 for the sustainable consumption behavior (STD) scale, 0.75 for environmental awareness (CD), and 0.85 for the environmentally friendly behaviors (CDD) scale. The total reliability value was determined to be 0.93. The reliability analysis findings show that the reliabilities of the scales in the measurement model are greater than the lowest value of 0.70 (Nunnally, 1978).

The convergent validity values of items grouped under the same factor are the average variance extracted (AVE) and composite reliability (CR) values (Fornell and Larcker, 1981). For the scales used to have convergent validity, the AVE value must be <0.50 and the CR value must be >0.70 (Fornell and Larcker, 1981). Additionally, the CR value must be higher than the AVE value (Hair et al., 2010). In the study's measurement model, the AVE values were 0.64 for SE, 0.53 for STD, 0.54 for CD, and 0.64 for CDD, respectively. The CR values were 0.95 for SE, 0.93 for STD, 0.90 for CD, and 0.82 for CDD. These values indicate that the scales in the measurement model have convergent validity.

After examining the internal consistency findings of the scales, discriminant validity was investigated. For discriminant validity to exist, the square root of the AVE values for each construct must be greater than the largest correlation coefficient between the constructs (Fornell and Larcker, 1981). The correlation analysis findings and discriminant analysis findings resulting from the analyses and calculations are shown in Table 1. The results indicate that the scales in the measurement model possess discriminant validity.

5. FINDINGS

This study aimed to examine the impact of normative social influence on sustainable consumption behavior and the mediating roles of environmentally friendly behaviors and environmental awareness in this relationship. The findings offer important implications regarding how social pressure and individual environmental values shape consumption habits.

After obtaining a valid measurement model, the hypothesis testing phase was initiated. In this phase, Model 4 from the Process Macro application was used (Hayes, 2018). The results of the analyses regarding the hypothesis testing are shown in Tables 2 and 3. As seen in Table 2, the effect of normative social influence on sustainable consumption behavior was found to be positive and significant (H_1; Model 1: b = 0.25; 95% CI = [0.2101; 0.2932]; P < 0.01), and

Table 1: Discriminant validity and correlation analysis findings

Variable 1	Variable 2	Correlation	AVE 1	AVE 2	AVE 1	AVE 2 square root
EFB	NSI	0.511**	0.513	0.543	0.720	0.740
	SCB	0.700**		0.534		0.730
	EA	0.156**		0.643		0.800
EA	SCB	0.389**	0.543	0.534	0.740	0.730
	EA	−0.680*		0.643		0.800
SCB	EA	0.308**	0.534	0.643	0.730	0.800

EFB: Environmentally friendly behaviors, EA: Environmental awareness, SCB: Sustainable consumption behavior, NSI: Normative social influence **P<0.01; *P<0.05

Table 2: Key effects findings (n=1415)

Variable	Model 1: SCB (Y)			Model 2: EFB (M1)			Model 3: EA (M2)			Model 4: SCB (Y)		
	B	SE	P	B	SE	P	B	SE	P	B	SE	P
Constant T.	3.2891	0.1893	0.0000	3.7995	0.1724	0.0000	4.4544	0.1331	0.0000	0.0289	0.1847	0.8758
SE (X)	0.2516	0.0212	**0.0000**	0.1289	0.0193	**0.0000**	−0.0215	0.0149	0.1497	0.1644	0.0157	**0.0000**
EAB (M1)	-	-	-	-	-	-	-	-	-	0.6995	0.0247	**0.0000**
EA (M2)	-	-	-	-	-	-	-	-	-	0.1353	0.0320	**0.0000**
Gender	−0.0158	0.0497	0.7506	−0.1052	0.0453	**0.0202**	−0.0894	0.0349	**0.0106**	0.0699	0.0360	0.0527
MS	−0.2270	0.0845	**0.0073**	−0.1731	0.0770	**0.0247**	−0.1132	0.0594	0.0569	−0.0906	0.0612	0.1395
Age 1	−0.3554	0.1541	**0.0212**	−0.2961	0.1404	**0.0351**	−0.0728	0.1084	0.5019	−0.1385	0.1116	0.2150
Age 2	−0.1406	0.1456	0.334	−0.1518	0.1326	0.2525	0.0899	0.1024	0.3801	−0.1465	0.1055	0.6590
Age 3	−0.0205	0.1437	0.8867	0.1483	0.1309	0.7123	0.2500	0.1011	**0.0135**	−0.0881	0.1042	0.3983
Age 4	−0.0633	0.1419	0.6554	0.1151	0.1293	0.3730	0.1662	0.0998	0.0960	−0.1664	0.1027	0.1056
Education 1	0.1059	0.1710	0.5359	−0.0538	0.1558	0.7299	−0.0061	0.1202	0.9598	0.1443	0.1237	0.2435
Education 2	0.2004	0.1520	0.1876	0.2154	0.1385	0.1200	0.2749	0.1069	**0.0102**	0.0125	0.1102	0.9095
Education 3	0.1668	0.1544	0.2802	0.1858	0.1406	0.1868	0.2616	0.1086	**0.0161**	0.0014	0.1119	0.9897
Education 4	0.0079	0.1526	0.9588	0.1590	0.1390	0.2528	0.2353	0.1073	**0.0285**	−0.1352	0.1106	0.2217
F		19.5978			9.3035			6.3297			130.1738	
P		<0.001			<0.001			<0.001			<0.001	
R^2		0.1332			0.0680			0.0473			0.5471	

EFB: Environmentally friendly behaviors, EA: Environmental awareness, SCB: Sustainable consumption Behavior, SE: Normative social influence, MS: Marital status

Table 3: Findings regarding the mediating effect (n=1415)

Effect	B	SE	LLCI	ULCI
Total effect	0.2516	0.0212	0.2101	0.2932
Direct effect	0.1644	0.0157	0.1335	0.1952

	Model 1: Eco-friendly behaviors				Model 2: Environmental awareness			
Effect	B	SE	LLCI	ULCI	B	SE	LLCI	ULCI
Indirect effect	0.0902	0.0140	0.0627	0.1176	−0.0029	0.0021	−0.0074	0.0009

LLCI-ULCI: Upper and lower confidence interval

similarly, the effect of normative social influence on environmentally friendly behaviors was found to be positive and significant (H_2; Model 2: b = 0.12; 95% CI = [0.0910; 0.1668]; P < 0.01). However, it was found that the effect of normative social influence on environmental awareness was not statistically significant (H_3; Model 3: b = −0.02; 95% CI = [−0.0507; 0.0077]; P > 0.05).

The study revealed that environmentally friendly behaviors have a positive and significant effect on sustainable consumer behavior (H_4; Model 4: b = 0.69; 95% CI = [0.6509; 0.7480]; P < 0.01) and that environmental awareness has a positive and significant effect on sustainable consumer behavior (H_5; Model 4: b = 0.13; 95% CI = [0.1981; 0.1353]; P < 0.01). Therefore, hypotheses H_1, H_2, H_4, and H_5 were supported, while hypothesis H_3 was not supported.

Finally, as shown in Table 3, the analysis results regarding the mediating role of environmentally friendly behaviors and environmental awareness indicate that normative social influence has an indirect effect on sustainable consumer behaviors through environmentally friendly behaviors (H_6; b = 0.09; 95% CI = [0.0902; 0.1176]), and environmental awareness has no indirect effect on this relationship (H_7; b = −0.01; 95% CI = [−0.0074; 0.0009]). Therefore, hypothesis H_6 of the study is accepted, while hypothesis H_7 is rejected. In this context, it may be said that individuals being under normative social influence causes them to exhibit environmentally friendly behavior and this leads them to exhibit sustainable consumption behavior.

The present study investigated the effect of social norms on sustainable consumption behavior with the mediation of environmental awareness and eco-friendly behaviors. The participants reflected their intention to reflect their environmentally awareness in their consumption behaviors. In conceptual models of pro-environmental behaviors, sociodemographic variables have been considered as mediating variables (Chekima et al., 2016; Chekima et al., 2016). Education level and age are important drivers of sustainable behavior through social norms and higher level of education tends to support sustainable consumption behaviors and older generations show more sustainable consumption behaviors (Brécard et al., 2009; Jansson et al., 2017; Wang and Lin, 2017; Canoğlu and Üstüner, 2025). Lazaric et al. (2020) also found age and educational levels as important for sustainable consumption behavior.

6. CONCLUSION AND RECOMMENDATIONS

The primary objective of this study was to understand the research model in real life experiences as the participants were asked to reveal the relative importance of sustainable consumption behavior in their lives. Thus, the study tested the effect of normative social influence on both sustainable consumption behavior and eco-friendly behaviors with mediating effects. According to findings of the study, hypotheses H_1, H_2, H_4, H_5 and H_6 were accepted. Normative social influence variable significantly and positively affects sustainable consumption behavior (H_1). This result is in line with the idea that individuals sometimes adapt their consumption patterns not for the sake of sustainability, but for gaining social approval or escaping from a possible sanction by their respective groups. Social norms may encourage individuals to prefer specific eco-friendly behavior, and thus normative social influence affects eco-friendly behavior (H_2). Eco-friendly behavior also affects sustainable consumption behavior (H_4) and environmental awareness (H_5). It implies the idea that internal values of environmental awareness and external values of eco-friendly behavior are major antecedents of sustainable consumption. Eco-friendly behaviors support and integrates the relation of normative social influence and sustainable consumption behavior as social norms initiates eco-friendly behavior resulting in sustainable consumption behavior (H_6). Hypotheses H_3 and H_7 are not supported as normative social influence does not affect environmental awareness proving that environmental awareness does not mediate the relationship. This finding may be explained as pointed out by Kollmuss and Agyeman (2002) as "Value-Action Gap" that social pressure (external factor) may not change the individual's emotional state (internal factor) for environmental awareness.

The results of the analysis confirmed that normative social influence positively and significantly affects both sustainable consumption behavior (H_1) and environmentally friendly behavior (H_2). The finding parallels with social influence theory, which argues that individuals conform to group norms to gain social acceptance or avoid exclusion. The study by Ekşi et al. (2021) indicates that social approval is a critical motivator in promoting green behaviors, which supports hypotheses H_1 and H_2 of our study. Similarly, studies in the literature (Salazar et al., 2021) show that subjective norms trigger sustainable product preference more strongly than individual attitudes.

One of the most striking findings of the study is the determination that eco-friendly behaviors have a significant mediating role in the relationship between social influence and sustainable consumption (H_6). In addition to directly affecting consumption, social influence first directs individuals towards specific eco-friendly actions (recycling, energy saving, etc.), and these actions eventually transform into a general sustainable lifestyle (H_4). This result is consistent with the work of Tanık (2012), who argues that eco-friendly behaviors serve as a cornerstone in building broader sustainable identities.

The study found that normative social influence did not have a statistically significant effect on environmental awareness (H_3). This meant that environmental awareness did not play a mediating role in this relationship (H_7). As Çetin and Yalçınkaya (2018) emphasized, environmental awareness is a structure that develops more through education and intrinsic awareness, based on subjective values rather than external pressures. However, once an individual acquires environmental awareness, it has been observed that this strongly triggers sustainable consumption (H_5).

This study develops a multi-dimensional sustainable consumption model elucidating the social-psychological mechanisms. The analysis implies that normative social influence is a significant external stimulus, yet its efficacy is contingent upon internal

psychological orientations (Yang et al., 2021). The integration of environmental awareness as a mediator enabled us to fill the "motivation-behavior gap" revealing that highly aware consumers internalize social norms as moral obligations, whereas less aware individuals require stronger injunctive norms to alter their habits (Canoğlu and Üstüner, 2025). Furthermore, the transition toward a sustainable behavior is identified as a gradual process mediated by substantial eco-friendly behaviors, creating a green consumer identity (Kim et al., 2012).

The present study provides empirical evidence about the direct and indirect effects of normative social influence on sustainable consumption behavior. As Griskevicius et al. (2010) asserted social influence leads to green product choice under the sustainable consumption behavior. They found that "conspicuous conservation" as a dimension of social influence drives green purchasing behavior especially when the behavior is visible to others. Our results showed also how environmentally minded consumers contribute to this relationship as environmental awareness and eco-friendly behavior were chosen to explain the research framework in more detail.

The study has limitations due to the size of the sample, as it includes only participants using social media and that it was applied to Turkish citizens only. The study findings did not significantly differ based on gender variable, while they did based on the education level (especially in the case of the participants with graduate degrees), age (in the case of 21-30 years old participants), and the region of residence (in the case of the Marmara Region regions) of the participants. The potential cohort effects more explicitly as age concentration may influence normative susceptibility maybe acknowledged. Younger generations may be affected from each other through social media platforms.

In terms of generalizability issue, future research may replicate the research framework in diverse groups (e.g. differing by age, socioeconomic status and location). Thus, demographic variables may provide valuable findings to deepen the knowledge on consumers. More in depth analysis on various motivations for sustainable consumption behavior provides more generalizable results for both researchers and practitioners.

Also, some recommendations may be derived from the findings on the research model. The findings show that using "Social proof" and community norms is very effective in creating short-term behavioral change for policymakers and marketers who want to promote sustainability. However, value-based educational strategies that go beyond social pressure are needed to create lasting environmental awareness and internalized consumer consciousness.

Companies should use green marketing campaigns that should be based on environmental awareness. For high-aware segments, altruistic and biospheric framing should be used; for low-aware segments, descriptive norms should be leveraged to trigger social conformity. Environmental practitioners should develop more effective programs to motivate environmental behavior through social influence processes. Policy makers can use messaging to drive sustainable consumption behavior in general, as pointed out by Farrow et al. (2017). Policymakers should also collaborate with social media influencers to promote sustainable behaviors among younger generation, as they are highly responsive to digital social cues. As eco-friendly behaviors act as mediators, interventions should focus on making these acts convenient and visible through facilitating the internalization of general sustainable norms. Lastly, education institutions starting from young age should promote environmental awareness programs to increase the awareness to sustainability issues. This education process would make students more receptive to positive social influences.

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