

# Knowledge, attitudes and behavior of consumers towards sustainability and ecological fashion

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## **ABSTRACT**

*The knowledge, attitudes and behavior of consumers towards sustainability and ecological fashion were explored through a survey of 476 participants and data were analyzed using descriptive statistics and correlation analysis. The attitude of participants towards sustainability was found to be positive. However, participants did not show positive behavior towards sustainability practices, meaning the positive attitude does not necessarily reflect on their behavior. Yet, participants who have positive attitudes towards environmental sustainability practices seem to reflect these attitudes relatively more toward their behavior. In addition, the knowledge level of participants was determined to be above the average in terms of ecological fashion. Their attitudes towards ecological fashion were also positive. Yet, this positive attitude, does not always reflect positively on behaviors. The results of this study provide a better understanding of the different factors that can influence consumer behavior towards sustainability, eco fashion and corresponding products, and thus will facilitate the implementation of relevant company strategies.*

## **KEYWORDS**

*Sustainability, ecological fashion, consumer attitude, consumer behavior*

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## **INTRODUCTION**

Economic, social and environmental concerns and threats can no longer be reduced to national boundaries due to the globalization phenomenon [1]. Globally emerged environmental issues in the last decades such as population increase, climate change, decrease of ground water level, destruction of agricultural areas, decrease of living species brought sustainability into the forefront of business practice and scholarly research [2].

Sustainability is defined as finding a balance between using and replacing resources while considering the environment, the economy, and social factors [3]. In contrast to sustainability and related principles, the fashion industry is known for its detrimental effects on the both human and natural resources. In addition to these detrimental effects, the low labor standards of the industry have led to a sweatshop problem [4]. Thus, for many of the fashion companies, sustainability programs addressing environmental and social problems, are implemented as a part of their managements operations and substantial budgets are allocated to

them [5]. Underlying these sustainability programs is the assumption that consumers know and care about environmental as well as social issues and thus their purchase behavior would be influenced by them. The variables which motivates individuals for environmental action were indeed found to be knowledge on issues and means of action, attitudes, verbal commitment and an individual's sense of responsibility [6]. In addition to other factors influencing purchasing decisions, environmental consciousness and attitudes are known to be the most consistent predictor of environmental purchasing behavior [7]. Also for apparel consumption, knowledge and attitudes towards social and environmental issues are significant predictors of socially and environmentally responsible purchasing behavior [8]. The more knowledge and concern related to the issues in the apparel industry results in more support for socially responsible businesses [9]. However, further research is necessary to better understand these relationships.

In this context, the hierarchical relationship between knowledge, attitudes and behaviors serves as the underlying theoretical framework of this study. The main objective is to determine knowledge, attitudes and behavior of consumers towards sustainability as well as ecological fashion and further examine the relationships between them. Specifically, this study sought to explore how knowledge and attitude would influence the behavior towards sustainable and ecological fashion practices. For this purpose, a survey was administered to consumers and data were analyzed using descriptive statistics and correlation analysis. The intent of the research is to provide a better understanding on consumer behavior which might facilitate implementation of relevant marketing strategies.

## EXPERIMENTAL

Survey method was employed as data collection technique. The questionnaire used to determine the knowledge, attitudes and behaviors of the participants towards sustainability and ecological fashion was prepared based on studies of Hustvedt [10], Kim [11] and Bostic's [12]. The questionnaire consists of five main sections. The first and second sections of the questionnaire surveyed respectively the participants' attitude and behavior towards sustainability. The third part aims to determine the knowledge of consumers about ecological fashion. The statements in the fourth section concern participants' attitudes towards the ecological fashion. In the last section participants' ecological fashion behavior is determined. The statements in the questionnaire are rated on a five-point Likert scale by which participants indicate either their degree of agreement with the statement ranging from strongly agree (5) to strongly disagree (1), or indicate the frequency with which they carry out the activity mentioned in the statement ranging from always (5) to never (1). For data analysis and interpretation purposes, results generated for attitude and behavior were categorized using the following classifications: Strongly Disagree/Never = 1–1.79, Disagree/Rarely = 1.80–2.59, Undecided = 2.60–3.39, Agree/Often = 3.40–4.19, Strongly Agree/Always = 4.20–5.0. Also, Cronbach alpha coefficient was calculated to test the reliability of the questionnaire and found to be .77. Özdamar (2004) states if Cronbach's alpha coefficient is between .60 and .80, then the measurements are "quite reliable" [13]. Additionally, the instrument included standard demographic measures such as gender, age and education level. All collected data were analyzed with SPSS 15 (SPSS Inc., Chicago, IL, USA) using descriptive statistics and correlation analysis. The analyses were conducted with a significance level ( $\alpha$ ) of ,05.

## RESULTS AND DISCUSSION

A total of 476 respondents from Eskisehir, Turkey participated in the study. Table 1 provides a full summary of the sample's demographics.

Table 1. Sample Demographics

Demographics	Percentage	N (476)
Gender		
Male	42	200
Female	58	276
Age		
Below 18	10	48
18-24	42	200
25-35	34	162
36-45	10	48
Above 45	4	18
Education Level		
Below High School	7	33
High School	57	271
Bachelor	24	114
Master	9	44
PhD	3	14

In the first section of the questionnaire the participants were asked to respond 12 different statements about sustainability using a five-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). An attitude score between 3,40 and 4,19 for a given statement would indicate a positive attitude for the participant towards environmental sustainability practices. It would be possible to state that the participant who scores below 2,60 points has a negative attitude towards corresponding practices. The attitude scores of the participants were found to be above 3,40 for almost all statements. The only statement rated lower than 3,40 was: “Human beings are meant to rule the rest of nature” (Mean: 2,40). The strongest attitude statement in this section on which participants strongly agreed was: “People must be in harmony with nature to survive” (Mean: 4,26). Table 2 demonstrates the list of attitude statements. From these results, it can be stated that participants have a commitment to support the sustainability approach.

Table 2. Participant Attitudes Towards Sustainability

Attitude Statement (*Reverse Coded Items)	Mean	Standard Deviation
People must be in harmony with nature to survive.	4,26	1,04
People are recklessly destroying the nature.	4,17	1,13
I care about the environment.	4,10	,96
The balance of nature is very sensitive and fragile.	4,02	1,05
People do not need to adapt to the natural environment, since they can change it according to their needs.*	3,96	1,01
People have the right to change the natural environment according to their needs.*	3,83	1,14
I am well aware of the environmental issues.	3,70	,92
Earth is like a spaceship with limited number of rooms and resources.	3,62	1,13
I see myself as an environmentalist.	3,58	,93

The number of people on earth is approaching to the limit that earth can take can take.	3,47	1,21
Intervene of people with nature always result in disasters.	3,42	1,12
Human beings are meant to rule the rest of nature.*	2,40	1,12

The second part of the questionnaire measures sustainability behavior of participants. A 5-point Likert scale ranging from 1 (never) to 5 (always) was used to measure the frequency of 12 pre-defined sustainability behaviors. A difference value was calculated to assess participants' behavior on sustainability. This value shows the distance from the participant's response to the ideal one. Thus, when the difference value calculated for each question is 0, the participant exhibits ideal behavior, while the value of 4 means no positive behavior towards the sustainability practice. The average value between the two end points is 2. In the case of reaching small difference values than the mean value indicates positive behaviors related to sustainability. As can be seen from the Table 3, only half of the statements scored below the mean value. Thus, it is possible to conclude that participants did not show positive behavior towards sustainability practices. The statements that the participants scored closest to the ideal were: "I prefer to purchase more durable products" and "I reduce gas emission using public transport". The least ideal statements that the participants scored were: "I write to a politician about environmental issues and topics" and "I donate to environmental groups and/or organizations". See Table 3 for a complete list of the behavior statements.

Table 3. Participant Behavior Towards Sustainability

Behavior Statement	Mean	Standard Deviation
I prefer to purchase more durable products.	1,10	,94
I reduce gas emission using public transport.	1,56	1,29
I buy reusable products instead of disposable products.	1,81	1,01
I return bottles, cans and/or glass to a recycling center.	1,82	1,13
I buy recycled products and/or packed products with recycled packing.	1,86	1,01
I used products with refilling option.	1,88	1,02
I purchase in gross and/or big amounts.	2,02	,99
I recycle newspapers.	2,04	1,31
I read the tags on the product to see if the content is environmentally friendly.	2,08	1,15
I avoid buying products of companies ignorant to environmental issues.	2,14	1,13
I donate to environmental groups and/or organizations.	2,93	,98
I write to a politician about environmental issues and topics.	3,42	,94

In the third section of the questionnaire participants' level of knowledge about ecological fashion is measured using seven multiple choice questions. The mean knowledge score acquired by participants in this section was 65.97%. Participants scored the highest on the question "Eco Fashion is most closely associated with which concept?". Nearly 80% of participants chose the correct answer. Only 35.7% of the respondents seems to know that fair trade is one of the characteristics of eco fashion. See all the items in Table 4. According to the results obtained from this section, it is possible to state that the participants have a level of knowledge above the average in terms of ecological fashion.

Table 4. Participant Knowledge on Ecological Fashion

Knowledge Question	% of Participants Who Correctly Answered
Eco Fashion is most closely associated with which concept:	81,6
People who buy eco-friendly apparel are probably concerned with:	79,6
Green clothing refers to:	76,9
Eco Fashion focuses on clothing that:	69,2
Eco Fashion encompasses all of the concepts except:	68,7
Which of the following is not used in the construction of eco-friendly apparel?	50,1
One of the characteristics of Eco Fashion is fair trade. Fair trade is:	35,7
<b>Mean Knowledge Score</b>	<b>65,97</b>

The fourth part of the questionnaire was prepared to determine the attitudes of participants towards ecological fashion practices. The consumers were asked to respond 12 different statements about ecological fashion using a five-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). See Table 5 for a complete list of the attitude statements.

Table 5. Participant Attitudes Towards Ecological Fashion

Attitude Statement (*Reverse Coded Items)	Mean	Standard Deviation
The dyes and chemicals used in apparel production can be harmful to the environment.	3,97	1,08
Major retailers should carry environmental friendly products.	3,94	1,04
Sustainable agriculture is important to me.	3,86	,96
I feel that I have an ethical obligation to purchase eco-friendly apparel.	3,42	1,00
Eco friendly clothing is too expensive.*	3,38	,95
Eco friendly apparel is a fad that will soon go away.*	3,36	1,08
I go out of my way to buy fairly traded clothing.	3,32	,93
I would not go out of my way to purchase a garment classified as Eco Fashion.*	3,27	,95
The clothing purchases I make as an individual have an impact on the environment.*	3,18	1,04
I would buy eco-friendly apparel to help support organic farming.	3,10	,98
Eco Fashions are primarily for tree huggers.*	3,07	1,12
It takes more energy to recycle clothing than it is worth.*	2,89	,94

An attitude score between 3,40 and 4,19 for a given statement would indicate a positive attitude for the participant towards environmental sustainability practices. It would be possible to state that the participant is undecided on the given statement when the score is between 2,60 and 3,39. The strongest attitude statements in this section was: "The dyes and chemicals used in apparel production can be harmful to the environment" (3,97), "Major retailers should carry environmental friendly products." (3,94) and "Sustainable agriculture is important to me." (3,86), respectively. Participants also agree on "I feel that I have an ethical obligation to purchase eco-friendly apparel." (3,42) statement. Yet, participants were undecided on the rest of statements in this section. The lowest rated statement was: "It takes more energy to recycle clothing than it is worth." From these results, it can be concluded that participants have a mediocre level commitment to support the ecological approach to fashion.

The last section of the questionnaire identifies ecological fashion behavior of the participants. A 5-point Likert scale ranging from 1 (never) to 5 (always) was used to measure the frequency of 12 pre-defined ecological behaviors. A difference value was calculated with the same method as in the section two of the questionnaire. Smaller difference values than the mean value (2) indicates positive behaviors related to ecological fashion. As can be seen from the Table 3, only half of the statements scored below the mean value while the other behavior statements scored higher. Thus, it is possible to conclude that participants did not show positive behavior towards ecological fashion practices. The statement that the participants scored closest to the ideal is: "I prefer to wear clothes for a longer period of time instead of high fashion ones". The least ideal statement that the participants scored was: "I purchase second hand clothing". See Table 6 for a complete list of the behavior statements.

Table 6. Participant Behavior Towards Ecological Fashion

Behavior Statement (*Reverse Coded Items)	Mean	Standard Deviation
I prefer to wear clothes for a longer period of time instead of high fashion ones.	1,24	1,15
I place all unwanted clothing in a box, and store it away in my home.	1,40	1,27
When I purchase clothing I am more concerned about the look and feel of the garment versus if it's environmentally friendly.*	1,60	1,12
Purchasing environmentally friendly clothing, increases my peace of mind.	1,73	1,20
I donate my old clothing to charity.	1,82	1,18
I prefer clothes that require washing at low temperature, less ironing and dry quicker.	1,84	1,16
I use worn out garments for rags to do my part in decreasing environmental problems.	2,01	1,09
I am an organic consumer.	2,18	1,17
I purchase garments that are produced in an environmentally safe manner.	2,31	,90
I purchase garments labelled and packed with environmental friendly techniques.	2,33	,96
I purchase garments produced from recycled materials.	2,42	1,02
I purchase second hand clothing.	3,06	1,02

Correlation analysis was performed to determine the relationship between knowledge, attitude and behavior of consumers towards sustainability (Table 7) and ecological fashion (Table 8). Correlation analysis is one of the most commonly used methods to assess the direction and power of relationship between two variables [14].

Table 7. Pearson Correlation Coefficient Between Attitude and Behavior of Consumers Towards Sustainability

Variables	Attitude	Behavior
Attitude	-	,215*
Behavior		-

\*Correlation is significant at the ,05 level

There was a weak ( $r = ,215$ ) yet statistically significant ( $p < ,000$ ) positive correlation between participants' positive attitudes on sustainability and the corresponding behavior. This finding is in line with previous literature in environmental and social marketing in which indeed weak linkages between attitudes and behavior have been noted [15]. Yet, participants who have positive attitudes towards environmental sustainability

practices seem to reflect these attitudes relatively more toward their behavior. This finding is also in agreement with previous literature on green purchasing behavior where it was stated that attitudes are the most consistent predictor of pro-environmental purchasing behavior [7].

Table 8. Pearson Correlation Coefficients Among Knowledge, Attitude and Behavior Towards Ecological Fashion

Variables	Knowledge	Attitude	Behavior
Knowledge	-	,334*	,221*
Attitude		-	,350*
Behavior			-

\*Correlation is significant at the ,05 level

A positive correlation was found between participants' knowledge and their positive attitudes towards ecological fashion practices ( $r = ,335$ ). Yet, there was a weak positive correlation ( $r = ,211$ ) between participants' knowledge on ecological fashion and the corresponding behavior. Also, a statistically significant, yet a weak relationship ( $r = ,350$ ) was found between participants' positive attitudes towards ecological fashion and their related behavior. All the correlations were statistically significant at the ,05 level ( $p < ,000$ ). Although participants exhibited low scores for ecological fashion behavior, in line with previous research, knowledge and attitudes seem to be significant predictors for corresponding behavior [8-9].

## CONCLUSION

The knowledge, attitude and behavior of consumers towards sustainability and ecological fashion have been studied extensively. The results demonstrate that participants have a positive attitude towards sustainability approach. However, this positive attitude of participants does not necessarily reflect on their behavior towards sustainability practices. Yet, examining the relationship closely between attitudes and behaviors shows that participants who have positive attitudes towards environmental sustainability practices seem to reflect these attitudes relatively more toward their behavior. Also, participants have a level of knowledge above the average in terms of ecological fashion. Their attitudes towards ecological fashion were also found to be positive. Yet, this positive attitude, does not reflect positively on their behaviors. In sum, consumers are well aware and supporting ecological fashion approaches, yet they do not provide sufficient support in the implementation phase. Concerning the relationship between knowledge, attitudes and behaviors, it can be concluded that the increase in knowledge level has a slight positive effect on the attitudes and behaviors related to the ecological fashion practices, and a positive increase in the attitude has also a similar effect on behaviors. It is important to note that there are limitations to this study. Only tentative conclusions should be made from the present study due to the relatively small sample size in a restricted region. Yet, the study provides a better understanding of the different factors that can influence consumer behavior towards sustainability as well as ecological fashion and thus will facilitate implementation of relevant sustainability programs and marketing strategies.

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