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Sustainable Consumption Behaviors of Elementary School Parents and Their Encouragements for Their Children*

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ABSTRACT

In this study, we aim to determine the sustainable consumption behaviors of elementary school parents and their encouragement for their children in this regard. The sample of the study consisted of 571 elementary school parents who live in the western part of Turkey. Survey research and causal comparative research designs were implemented as the quantitative research methods. "Sustainable Consumption Behavior Scale" and open-ended questions were used to measure the parents' sustainable consumption behaviors as well as their encouragement of their kids to adopt similar practices. In the analysis of the data, T-test, ANOVA, and descriptive analysis were used. Findings show that the parents display sustainable consumption behaviors at the "Often" level. The saving-based behaviors in the sustainable consumption scale are at the "Always" level. We found that there is no significant difference in the sustainable consumption behaviors of parents in terms of their gender, educational status, income level, and the grade level of their children. 48.7% of the parents stated that they do activities at home with their children for the purpose of environmental education, while 43.1% of the parents stated that they do not do activities at home. The activities parents do at home are mostly regarding environmental pollution and garbage production. Parents stated that they primarily focus on the "unnecessary purchasing" sub-dimension when addressing sustainable consumption behaviors with their children. In addition, parents mostly preferred the expressions for "verbal warning" and "giving advice" in order to teach their children sustainable consumption behaviors. Suggestions for researchers and educators were provided according to our findings.

Keywords: Sustainable consumption, elementary school parents, environmental education, primary school parents, elementary education, environmental consciousness

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1. INTRODUCTION

Today, the selfish consumption behaviors of people and their growing distance from nature put the existence of future generations in danger. Many factors such as the depletion of natural resources to meet the needs of the rapidly increasing demands of the world population, increasing greenhouse gas emissions, global warming, deforestation, melting of glaciers, ozone layer depletion, acid rains, and continuous pollution, increasing energy demands and excessive consumption of fossil fuels cause environmental problems and ecological deterioration. For life to exist and for humanity to survive, people must learn that they have no choice but to live in harmony with the environment (Miser, 2019). In order to take measures in protecting environment, the Act on the Protection of the Environment (law number 2872), enacted in 1983, gives the state and individuals duties that require active participation in the name of protecting and improving the environment in Turkey. The Act on the Protection of the Environment (Law number 2872) aims to protect the natural environment in line with the principles of sustainable environment and sustainable development (Görmez, 2007).

Since the beginning of the 21st century, the concept of "Sustainable Consumption" has begun to replace the irresponsible consumption habits of people. Sustainable consumption, rather than reducing consumption; emphasizes avoiding

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consumption, developing attitude, and awareness, and creating alternatives. Sustainable consumption consists of 3 dimensions: reducing, reusing, and recycling (Doğan, Bulut, & Çımrın, 2015). The 3R concept of sustainable consumption was first used by former Japanese Prime Minister Junichiro Koizumi at the G8 summit in 2004 (Visvanathan & Kumar, 2007).

The causes of environmental problems are fundamentally based on people's lifestyles, behaviors, value-judgments, and attitudes (Şafak & Erkal, 1999). Individuals with high environmental awareness are needed for the solution of environmental problems. Environmental awareness is a combination of thoughts about the environment, the behaviors formed by the realization of these thoughts, and the reflection of the various feelings related to all these thoughts and behaviors (Şafak & Erkal, 1999). A society without environmental awareness cannot have the consciousness that the Earth will be inherited by future generations.

In the prevention of environmental problems, it is important to provide education that will shape and change people's views, values, and attitudes towards nature. The importance of educational activities in approaches to the permanent solution of environmental problems is obvious and the necessity of environmental education has gained importance since the 1970s. Environmental education was emphasized especially in the Environment Congress held in 1972 in Stockholm (Bener & Babaoğul, 2008). Particularly in the last 25 years, educational studies have started to review the connection between environmental issues and education as well as the suitability of educational and instructional practices to develop people with high environmental consciousness.

Raising individuals who are conscious about the environment is one of the most effective ways of solving environmental problems. For this reason, environmental education aims to help regulate people's behavior in this direction by including processes such as informing, raising awareness, warning, developing, and protecting (Özoğlu, 1993). Parents have a significant role in helping their kids develop into mature adults and become responsible citizens (Steinberg, 2001). In children's lives environmental education and awareness start in the family and are developed in the immediate environment and school (Nazlıoğlu, 1991; Bener & Babaoğul, 2008). Therefore, the influence of parents on the processes of children's gaining environmental awareness as a part of the society and the environment are considered to be crucial based on the fact that as parents shape their children's behaviors with their own behaviors and reactions.

Considering the sustainable consumption field, families are the most important element in providing guidance to their children and future generations in terms of protecting the environment (Matthies & Wallis, 2015). According to Hayta (2009), it will be simpler to resolve consumer issues in terms of sustainability in the future the earlier consumer education is provided. Families have an impact on children's environmental values, attitudes, and behaviors through their social impact processes (Matthies, Selge, & Klöckner, 2012). The home environment is an important area where environmentally sensitive participation can be developed. In the previous studies, parenting in the social learning or modeling tradition was examined in terms of the transfer of social norms (Bandura, 1977). Parents influence the socialization of children, especially when they communicate and interact with their children directly, and indirectly when children observe and imitate their parents' behavior (John, 1999). Therefore, children receive their first environmental education in the family by observing their parents.

Studies show the influence of families on their children and the next generations. For example, Ando, Yorifuji, Ohnuma, Matthies, and Kanbara (2015) investigated how environmental habits, particularly those relating to waste management, are passed down to the next generation in German and Japanese families. They found that parents affect their 9 to 10-year-old children, directly by acting as role models in managing waste, and indirectly by showing their expectation of their children to act in environmentally sensitive ways. As a result, they claimed that young children frequently see their families' sustainable conduct and that learning through watching their families happens even if they do not have an opinion on or awareness of environmental issues. They also found that cultural norms and cultural differences are important determinants in the transmission of environmental behavior to the next generation.

Similarly, Matthies et al. (2012) examined how parents' reuse and recycling of paper practices affect their children's behavior. In their research with 206 German children aged 8 to 10, the authors discovered that children's recycling behaviors were predicted by their parents' own actions as well as their praise or punishment. Although parents' reuse behavior did not influence children's reuse practice, it was discovered that communication between parents and children did influence children's awareness of the issue. It was believed that the low visibility of using the paper's back may be the cause of why parents' own actions are ineffective in children's behavior of recycling paper. In other words, while children can easily monitor their families' recycling, they may be less observant of their families' reuse of the used papers (Matthies et al., 2012).

Working with an older group of children compared to the aforementioned studies, Grønhøj and Thøgersen's (2009) quantitative research study examined the transfer of three behaviors including environmental consumer values, attitudes, and combating waste, purchasing sustainable-organic products, and economical electricity consumption to the next generations. The researchers specifically focused on these three behaviors to measure the daily household consumption practices that parents can participate in and apply equally with their 16-18 years-old children. In the transmission of behavior from generation to generation, it is more evident to convey visible behaviors, such as the purchase of sustainable organic products, because such purchasing processes end in the kitchen and enable parents and their children to learn about sustainable

products. The transmission of electricity consumption behavior, which is one of the invisible behaviors, from generation to generation is less common.

In the development of a child, the family plays a guiding role in all behaviors of the child (Bozyiğit & Madran, 2018). Moreover, the family is of great importance in developing environmental awareness in children. According to Bandura's (1977) social learning theory, parents have a significant impact on their children's environmental behaviors (Gronhoj & Thøgersen, 2009; 2012). The family and parents' environmental consumption habits, which are among the most significant influences on children's lives, cannot be ignored when planning the development of students' environmental consciousness and comprehension of sustainable consumption. Therefore, in order to comprehend how parents encourage their children to engage in sustainable behaviors, we must look into the actions and encouragements that parents take toward them.

1.1. Statement of the Problem

It is important to examine children's evolving environmental attitudes and knowledge during their early years (Leeming & Dwyer, 1995) because children at younger ages start to develop attitudes and acquire knowledge about their environment. Children tend to be more sensitive toward nature and become active agents in protecting the environment compared to adults (Trudel, 1995). According to the research on Turkish elementary students' opinions on environmental issues, despite their agreement with the significance of environmental education, elementary students tend to prioritize economic growth over environmental protection and have favorable attitudes toward energy conservation and population growth (Yilmaz, Boone, & Andersen, 2004). In their study investigating Turkish elementary students' environmentally friendly behaviors, Alp et al., (2008) found that elementary students' understanding of environmental issues were weak, and most students had very limited knowledge about environmental issues such as water and energy usage, recycling, and environmental pollution. However, their attitudes towards the environment were favorable. In terms of the gender difference, different studies working with Turkish students from elementary to university level show that female students indicated more favorable attitudes toward the environment than males due to the emotional bonding toward nature (Tuncer et al. 2005; Yilmaz, Boone & Andersen 2004; Alp et al., 2008). In their study involving students from 4th grade to 8th grade, Yilmaz, Boone, and Andersen (2004) discovered that urban students and students with high socioeconomic status have more positive attitudes about environmental issues than suburban students and those with low family incomes. Consumption habits of university students are formed before they come to university and consumer education appears to be insufficient in helping students gain new habits. Thus, providing education on sustainable consumption and the environment at an early age will be more effective in forming habits (Süle, 2012). Thus, in this study, we believe that elementary school is a good starting point for attaining the ultimate goal of environmental education. It is aimed that individuals gain knowledge, positive attitudes and useful behaviors towards the environment from a young age through the lessons received in different courses and activities throughout their educational life (Cordes & Miller, 1999). However, before developing an environmental education to provide students with an internalized sustainable consumption behavior and awareness, we need to examine the behavior tendencies and awareness levels of the parents in this context. Families are a child's initial source of environmental knowledge, and this education, which begins at home, continues throughout school. For this reason, parents should take the effort to raise their children's knowledge of the need for a clean, healthy environment, the need of recycling garbage, energy conservation, and the responsible use of natural resources, as well as to serve as an example for them (Kızıl, 2012). Few studies have looked at how parents shape their kids' attitudes about the environment and sustainable consumption in Turkey. For instance, Bozyiğit and Madran (2018) explored the connection between mothers' parenting practices and the socialization of children as environmentally conscious consumers and discovered that mothers are crucial to the socialization of children. They foresee that the more consciously mothers raise their children; the more conscious their children may be of the next generation. According to research, while mothers' education level did not directly affect students' environmental knowledge, dads' education level had an impact on students' environmental knowledge scores (Alp et al., 2008). Therefore, it is important that mothers and parents should be part of environmental education when planning environmental education for children. However, there are few studies investigating the importance of family influence on children's environmental supportive practices (Grønhøj & Thøgersen, 2012).

1.2. Purpose of the Study

The main objective of the study is to determine parents' sustainable consumption behaviors and the encouragement they offered on this matter to their children. In our study, we worked with parents who have elementary school aged children. We investigated parents' sustainable consumption behaviors from four different dimensions: environmental awareness, unnecessary consumption, savings, and reusability.

1.3. Problem of the Study

The research questions we investigated in this study are: what are the sustainable consumption behaviors of parents who have elementary school-aged children? And what encouragement do they offer in sustainable consumption to their children?

1.3.1. Sub-problems of the study

1. Does sustainable consumption behavior of the parents differ significantly according to their gender, educational status, income level, and grade level of their children?
2. What types of environmental education activities do parents engage in with their children at home?
3. Which sustainable consumption behaviors do parents encourage in their children to do?
4. What strategies do parents implement to encourage their children in sustainable consumption behavior?

2. METHODOLOGY

This study is designed with quantitative research methods. Among the quantitative research methods, descriptive survey research and causal comparative research designs were used in conducting the present study. We conceptualized the part of the study as survey research to explain what sustainable consumption behaviors parents have and what encouragement they provide in sustainable consumption to their children. Creswell (2012) explains "survey research designs are procedures in quantitative research in which investigators administer a survey or questionnaire to a sample or to an entire population of people to describe the attitudes, opinions, behaviors or characteristics of the population" (p. 376). According to Cohen, Manion, and Morrison (2009) researchers collect data with surveys "at a particular point in time with the intention of describing the nature of existing conditions" (p. 205). The survey research aims to collect data to determine certain characteristics of a group (Büyüköztürk, 2018). We conceptualized the part of study as causal comparative research design to explain whether parents' sustainable consumption behavior differs significantly according to their gender, educational status, income level, and grade level of their children. In the causal-comparative research, "there is one categorical independent variable (i.e., gender, income, socio-economic status) and one quantitative dependent variable" (i.e., math performance, sustainable consumption behavior) and "the researcher compares group means (i.e., males versus females) to see whether the groups differ on the dependent variable (math performance)" (Johnson & Christensen, 2004, p. 331). In addition, in causal comparative study, without altering settings or participants, researchers seek to identify the origins or effects of differences between or among groups of people. Causal-comparative research is a sort of non-experimental quantitative design where the researcher compares two groups or more. This comparison is made in light of a cause (which is the independent variable, in our study gender, educational statues, income level and grade level of children), which has already occurred (Creswell, 2014).

2.1. Participants

The sample of the study consisted of 571 parents who reside in the western region of Turkey and have elementary school-aged children. The demographic information of the participants was provided in Table 1. Of these participants, 65.6 % were female (mothers) and 34.4% were male (fathers). After we received permission from the Ethics committee and the Ministry of National Education (MoNE), we visited the elementary schools and reached out to the participants through teachers. We informed teachers about the purpose of the study and the procedure for completing the scale. Teachers sent the questionnaire to the students' homes for parents to fill out and return. We used a convenience-sampling method to determine two elementary schools and reached the parents of these schools. Demographics of the participants showed that the majority of parents were either high school graduates (30%) or had university-level degrees (29%), followed by elementary-level education (20%), middle school level education, (%16), postgraduate (3%) and illiterate (2%), respectively. Demographics of the parents' level of income show that the majority of the parents had 2001-3000 TL range monthly salaries (28%), followed by 1001-2000 TL (20%), 3001-4000 TL (17%) more than 5000 TL (%17), 4001-5000 TL (%13) and 0-1000 TL (5%), respectively. Demographics of the parents in terms of their children's grade level show that the majority of the participants were the 3rd-grade parents (%30), followed by the 2nd Grade parents (%27), the 4th Grade parents (24%), then the 1st Grade parents (19%), respectively.

Table 1.
Demographic Information of the Participants

	Variable	Frequency	Percentage (%)
Gender	Female	338	65.6
	Male	177	34.3
Educational Status	Illiterate	9	2
	Elementary school	104	20
	Middle school	81	16
	High school	153	30
	University	150	29
	Post graduate	18	3
Income level	0-1000	25	5
	1001-2000	102	20
	2001-3000	146	28
	3001-4000	88	17
	4001-5000	68	13
	More than 5000	86	17

Children's grade level	1. Grade	96	19
	2 Grade	137	27
	3. Grade	157	30
	4. Grade	125	24

2.2. Data Collection Tool and Data Analysis

The data collection tool in the study consists of three parts. In the first part, a personal demographic information form is used. In the second part, we included the "Sustainable Consumption Behavior Scale" developed by Doğan, Bulut, and Çımrın (2015) in order to measure participants' sustainable consumption behaviors. This Likert-type scale consists of 17-items rated on a 5-point Likert scale between "never" and "always", and has four sub-dimensions: environmental awareness, unnecessary purchasing, saving and reusability. Cronbach alpha reliability coefficient of the scale was found as 0.845. In the third part of the tool, a questionnaire consisting of open-ended questions was used. We took expert opinion and conducted a pilot implementation to design the questions in the questionnaire. We took expert opinions of three science educators who teach research methods and environmental education courses, and revised the form according to their suggestions. In this third part of the form, we asked to examine which environmental activities parents do with their children, which of the items from the given scale they encourage their children, and what strategies they implement to encourage their children in sustainable consumption behavior. The specific questions we asked were: 1. Do you do any activities related to environmental education at home with your child or children? If your answer is "Yes", then what activities do you do?, 2. Which of the items in the questionnaire do you encourage your children to practice? You can write the item numbers., 3. Following on the second question, how do you encourage your children to adopt sustainable consumption behaviors? What strategies are you doing to encourage? Could you give an example, please? For the analysis of data, we used SPSS statistical package program for Sustainable Consumption Behavior Scale and the descriptive analysis method for the open-ended questions in the third part of the questionnaire. For the analysis of open-ended questions, two researchers independently coded the responses and put them into categories. We then counted frequencies of the categories. Data from 56 parents were not included in the analysis of the survey due to the incomplete and incorrect markings in the questionnaire forms. However, we included all the responses to the open-ended section of the questionnaire from all participants. Before the analysis, a normality test was performed in order to ensure that the data is normally distributed. Details of normality test are presented in Table 2.

Table 2.
Normality Test of Sustainable Consumption Behavior Scores

N	M	Kolmogrov - Smirnov			Skewness	Kurtosis
		Value	sd	p		
515	3.94	.073	.480	.000	- .592	.572

The fact that "significance value (p)" calculated in the normality test is greater than 0.05 indicates that data does not significantly (extremely) deviate from the normal distribution, which means that data are normally distributed (Ghasemi & Zahediasl, 2012). However, even though the values of Skewness and Kurtosis are in the desired range (between -1 and +1), the "p" value was found less than 0.05 (Table 2). Tabachnick and Fidell (2007) reported that the standard error for both skewness and kurtosis values decreases in groups with a large sample size, and that even if there are insignificant (small) deviations from the normal distribution, the probability of rejection of the null hypothesis (the distribution of scores does not differ significantly from the normal distribution) increases and shows significance (p. 80). Therefore, it would be more meaningful to evaluate the histogram graph of inference tests and skewness - kurtosis values together in large samples (Öztuna, Elhan & Tüccar, 2006). The histogram graph of the participant (fig. 1) scores conforms to the normal distribution curve, meaning that, they are normally distributed. Besides, the fact that the kurtosis and skewness values are in the desired range (between -1 and +1) for the normal distribution proves that the data show a normal distribution. Since the data show a normal distribution, T-test and ANOVA tests were used and the results were analyzed at the .05 significance level.

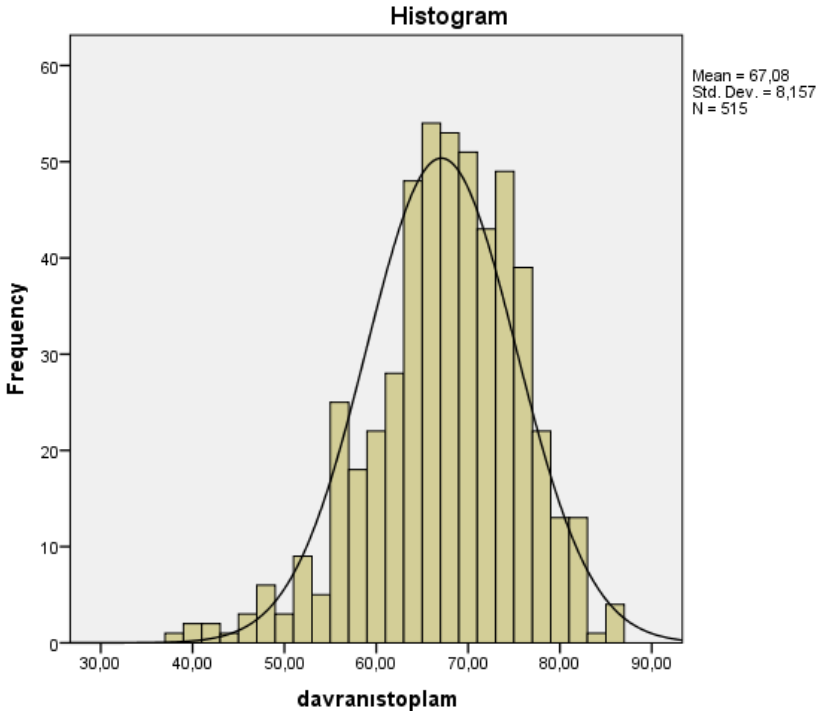

Figure 1. Histogram graph of the participants with normality curve

2.3. Validity and Reliability of the Study

We asked three science educators who specialize in teaching research methods and environmental education courses for their expert opinions on the first and third parts of the data collection tool in order to ensure the content validity of the study. The form was revised in accordance with their recommendations, and we then carried out a pilot implementation. To ensure external validity, a thorough explanation of the participants and the research procedure was also provided. To test the internal consistency of the scale, the Cronbach Alpha (α) reliability coefficient was performed and it was found as 0.845. For the analysis of open-ended questions, we compared two researchers' coding and calculated the reliability by using Miles and Huberman formula (reliability= agreements/agreements +disagreements) through dividing the number of agreements by the total number of agreements plus disagreements. We found the coders reached to %93 agreements, and differences of opinion were discussed, and consensus was reached. There is no widely acknowledged cutoff for what constitutes acceptable reliability in percentage agreement, however, Miles and Huberman (1994) suggest a standard of 80% agreement on 95% of codes, and thus 93% agreement indicates that coding is reliable between coders.

3. FINDINGS

We present findings in two sections; one related to parents' sustainable consumption behavior and the other related to the encouragement they provide to their children for sustainable behaviors.

3.1. Findings on Sustainable Consumption Behaviors Scores of Parents According to Variables

In this section, we first showed the findings based on the average scores of parents' sustainable consumption behavior (SCB) scale. Then we gave results based on the investigated variables in the sub-questions according to the results of T-test and ANOVA.

Table 3.
Parents' SCB Levels According to the Sub-Dimensions

Dimensions	N	x̄	SD	Level
Environmental Awareness	515	3.43	.86	Often
Unnecessary Purchase	515	4.39	. 57	Often
Savings	515	4.52	.68	Always
Reuse	515	3.29	.89	Often
Overall Average	515	3.95	48	
Total	515			

* Reverse coding has been made in the Out of Need Purchase Dimension.

Table 3 shows that the sub-dimension with the highest arithmetic mean is "Savings" ($\bar{x}_{saving}$ = 4.52, Always). In addition, only sub-dimension at the level of "Always" is savings. This sub-dimension is followed by the "Often" level of sub-dimensions of

Unnecessary Purchasing, Environmental Awareness, and Reuse. The overall average score of the parents' consumption behaviors was "3.95".

Examples of expressions in the "Saving" sub-dimension with the highest arithmetic average in general include "I buy energy-saving household appliances", "I buy electronic devices that consume less electricity than the others", "I pay attention to the amount of electricity consumption when purchasing electronic products" and "I use energy-saving light bulbs at home".

Gender Differences: Independent sample T-test was performed to determine whether or not the sustainable consumption behaviors of parents significantly differ by gender. Details of T-test analysis are shown in Table 4.

Table 4.
Sustainable Consumption Behaviors of Parents by Gender

Scale/Sub-Scales	Gender	N	Mean	SD	t	p
Sustainable Consumption Behaviors (SCB)	Female (F)	338	3.93	.47	.992	.322
	Male (M)	177	3.98	.50		
Environmental Awareness (EA)	F	338	3.41	.86	.716	.474
	M	177	3.47	.86		
Unnecessary Purchasing (UP)	F	338	4.39	.55	.298	.766
	M	177	4.40	.61		
Saving (S)	F	338	4.51	.73	.357	.721
	M	177	4.54	.60		
Reusability (R)	F	338	3.26	.90	1.190	.235
	M	177	3.36	.88		

Table 4 indicated that sustainable consumption behavior scores of parents did not significantly differ both in total scores (SCB=t(513) = .992, p>0.05) and sub-scales scores (EA=t(513) = .716, p>0.05; UP=t(513) = .298, p>0.05; S=t(513) = .357, p>0.05; R=t(513) = 1.190, p>0.05). All these results reveal that the gender variable is not a variable that significantly differentiates the sustainable consumer behaviors of parents.

Educational Status: One-way ANOVA analysis was performed to test if educational status of parents significantly differs their sustainable consumption behavior. Before performing ANOVA, due to the low number of illiterate families (n=9), the family group graduated from primary school was combined under the name of "primary school/illiterate". A similar combination was carried out with families with a university degree due to the low number of families with postgraduate education (n=18). Details about ANOVA analysis are shown in Table 5 and Table 6.

Table 5.
Descriptions of Parents' Sustainable Consumption Behaviors Scores by Education Level

Educational Status	N	M	sd
Illiterate/Primary School	113	3.98	.494
Secondary School	81	3.92	.439
High School	153	3.95	.477
Graduate/Postgraduate	168	3.93	.493
Total	515	3.95	.480

The results of the ANOVA analysis showed that educational status of parents did not significantly differentiate the sustainable consumption behavior scores of parents (F(3, 511)= 0.421, p>.05). Although it was an interesting finding that the scores of illiterate/primary school graduate parents were higher than the scores of the parents with higher education levels, was obtained, this difference was not significant.

Table 6.
ANOVA Results of Parents' Sustainable Consumer Behavior Scores

Source of Variance	Sum of Squares	df	Mean Square	F	p
Between Groups	.291	3	.097	.421	.738
Within Groups	118.039	511	.231		
Total	118.330	514			

Income level: One-way ANOVA analysis was performed to determine whether or not the income variable differentiates the sustainable consumer behavior scores of the participating parents. Details about ANOVA analysis are shown in Table 7 and Table 8.

Table 7.
Descriptions of Parents' Sustainable Consumption Behaviors Scores by Income

Income (TL)	N	M	sd
0-1000	25	3.99	.360
1001-2000	102	4.05	.471
2001-3000	146	3.94	.489
3001-4000	88	3.84	.499
4001-5000	68	3.95	.434
5000+	86	3.92	.505
Total	515	3.95	.480

According to Table 8, income variables similarly did not significantly differentiate the sustainable consumption behavior scores of participating parents ($F(5, 509)= 1.951$, $p>.05$). However, the mean scores of the groups show that (Table 7) the groups with lower incomes (0-1000 and 1001-2000) have the highest sustainable consumer behavior scores.

Table 8.
ANOVA Results of Parents' Sustainable Consumer Behavior Scores

Source of Variance	Sum of Squares	df	Mean Square	F	p
Between Groups	2.225	5	.445	1.951	.084
Within Groups	116.105	509	.228		
Total	118.330	514			

Grade Level of Children: In order to find out if the grade level of children significantly differ the sustainable consumer behavior scores of the participating parents, one-way ANOVA analysis was performed. Details about ANOVA analysis are shown in Table 9 and Table 10.

Table 9.
Descriptions of Parents' Sustainable Consumption Behavior Scores by Children's Grade Level

Children's Grade level	N	M	sd
1.Grade	96	3.93	.499
2.Grade	137	3.91	.504
3.Grade	157	3.96	.466
4.Grade	125	3.98	.456
Total	515	3.95	.480

The results of ANOVA analysis indicated that sustainable consumption behavior scores of participating parents were not significantly differentiated by the grade level of their children ($F(3, 511)= .647$, $p>.05$).

Table 10.
ANOVA Results of Parents' Sustainable Consumer Behavior Scores

Source of Variance	Sum of Squares	df	Mean Square	F	p
Between Groups	.448	3	.149	.647	.585
Within Groups	117.882	511	.231		
Total	118.330	514			

In summary, we investigated if there is a significant difference in the sustainable consumption behaviors of parents in terms of gender, educational status, income level, and the grade level of their children. We found that there is no significant difference in terms of these variables.

3.2. Findings on Parents' Guidance of Their Children to Sustainable Consumption Behaviors

In this section, we present the results of the descriptive analysis of the open-ended questions from the third section of the data collection tool regarding the activities parents engage in with their children in terms of encouraging environmental education behaviors as well as the strategies they employ to do so. In order to learn what environmental education activities parents do with their children, we asked parents, "Do you do activities at home with your child or children about environmental education?" The distribution of the answers given by the parents to this question is given in Table 11.

Table 11.
Whether or Not Parents Do Environmental Education Activities at Home with Their Children

Response	Frequency	Percent (%)
Yes	278	48.7
No	246	43.1
No response	47	8.2
Total	571	100

While nearly half of the parents (48.7%) responded that they do environmental activities with their children at home, 43.1 percent of the parents responded that they do not do any environmental activities with their children. 47 parents (8.2%) did not answer the question. The proximity between the percentages of the "yes" and "no" responses indicates that significant attention is not given to the continuation of the students' awareness about the environment at home.

We asked which activities the parents do with their children. Among the parents who responded yes to the above question answered this section of the question. The descriptive analysis of 278 parents' responses regarding the activities they do with their children were grouped into 7 categories. The frequency and percentages of those 7 categories were given in Table 12.

Table 12.
Types of Activities Parents Do with Their Children for Environmental Education at Home

Activities	Frequency	Percent (%)
Environmental pollution and garbage	129	33
Recycling	94	24
Reusing	73	18,7
Nurturing and protecting plant and animal	56	14,3
Energy saving –electricity and water-	23	5,9
Sightseeing or having a picnic	10	2.6
Shopping for necessities	6	1.5
Total	391	100

* There are participants who give multiple activity examples.

Parents spend the majority of their time engaging in activities with their kids that deal with garbage and environmental pollution. In their quotes regarding this category, they wrote, "We collect garbage together," or "I do not let my children throw garbage on the floor." Some of the example quotes in the recycling category include "We collect the batteries in the house and throw them into the battery recycling box at the school" and "We do not throw the papers away but send them to the school." These statements indicate that parents send the paper and battery waste to the school for recycling.

In the reusing category, parents usually say "We make toys from cardboard in the house", "We do recycling activities such as pencil cases from toilet rolls" and "We reuse the used papers to solve questions on them". Parents' expressions showed that they used the term "recycling" instead of "reuse" as a concept, thus showing that parents use the "recycling" and "reusing" terms interchangeably, and indicating the misuse of the terms. In the category of nurturing and protecting plants and animals, parents often wrote, for example, "We planted trees together", "We plant flowers and water them together." and "We do not harm animals and plants on the street".

In the energy saving category, some of the quotes parents use include "I would say that s/he [the child] should not use electricity or water unnecessarily" and "We turn off unnecessary lights at home". In the sightseeing or having a picnic category, the parents use statements like, "We go on nature walks" and "We go to a picnic together". In the shopping for the necessities category, parents use statements such as "We prepare a list of needs for shopping ", "We do not buy unnecessary things while shopping" and "We don't do unnecessary shopping".

We asked parents questions about their encouragement for sustainable consumption behaviors in order to find out which of the sustainable consumption behaviors parents transfer to the future generations. We wanted parents to choose from the items in the questionnaire, we specifically asked, "which of the items in the questionnaire do you encourage your children to implement?" Table 13 shows the distribution of the parents' responses by the sub-dimensions of the questionnaire.

Table 13.
Distribution of the Parents' Encouragements to Their Children about Sustainable Consumption Behaviors According to Sub-Dimensions

Responses	Frequency	Percent (%)
Unnecessary purchase	628	28.1
Reusing	606	27.1
Saving	443	19,8
Environmental awareness	403	18
No response	124	5.5
All	32	1.4
None	2	0.1
Total	2238	100

* There are participants who give multiple item numbers per sub-dimensions.

According to Table 13, parents mostly wrote items from the sub dimension of "unnecessary purchasing", followed by the items from the "reusing" sub-dimension. Thus, parents expressed that they encourage their children not to do unnecessary purchasing as well as to reuse in order to transfer sustainable consumption behaviors to their children. While 32 parents stated that they encourage their children to do all the items in the questionnaire, 2 of the parents wrote that they do not encourage their children to do any of the items. As seen in the table, 124 parents did not respond to this question. Some of the parents who encourage all of the items wrote, for example, "I try to encourage her/him to implement all of them."

In order to look in detail, we provided which individual items parents chose to encourage their children in Table 14. In the table, we presented the frequency and percentages of each item according to the parents' preferences.

Table 14.
Distribution of Sustainable Consumption Behaviors that Parents Chose to Encourage Their Children

Items	Frequency	Percent (%)
1. I buy cleaning products such as detergents and shampoos that are less harmful to the environment.	*56*	*2.7*
2. I buy clothes made from natural materials.	*56*	*2.7*
3. I buy products from companies that support environmental responsibility.	59	2.8
4. I buy products with biodegradable packaging.	84	4.1
5. I persuade my family members and friends not to buy products that harm the environment.	148	7.1
6. I replace technological devices such as mobile phones etc. with new ones even though I don't need to.	145	7
7. I buy new clothes even if I don't need them.	139	6.7
8. While shopping, I also buy products that are not on my list/mind.	115	5,6
9. I buy a newfangled product, even if I have a similar product.	105	5.1
10. It happens that I buy food and beverage products that I do not need.	124	6
11. I buy energy-saving household appliances.	110	5.3
12. I buy electronic devices that consume less electricity than others.	88	4.2
13. I pay attention to the amount of electricity consumption while purchasing electronic products.	89	4.3
14. I use energy-efficient light bulbs at home.	146	7
15. I reuse the product packages such as cardboard, tin, and glass instead of throwing them away.	215	10,4
16. When I need it, I rent or borrow second-hand products (DVDs, books, etc.).	106	5.1
17. I reuse used papers for the purpose of note-taking etc.	*285*	*13,8*
Total	2070	100

Parents' encouragement according to the item numbers show that the parents mostly encourage their children to reuse papers for the purpose of note-taking. The second most chosen item by the parents was item number 15: reusing product packages such as cardboard, tin, and glass instead of throwing them away. The least chosen items with equal frequency by the parents were item numbers 1 and 2: buying cleaning products such as detergents, shampoos that are less harmful to the environment, and buying clothes made from natural materials.

In the previous sections, we presented which sustainable consumption behaviors parents encourage their children. In the following section, we present how parents aim to make their children acquire these sustainable consumption behaviors. We specifically asked, "How do you encourage your children to adopt sustainable consumption behaviors? What strategies do you use for the purpose of encouragement? Could you give an example?" The distribution of the responses given by the parents to this question is given in Table 15.

Table 15.
Strategies Parents Use to Help Their Children Acquire Sustainable Consumption Behaviors

Strategies/Ways of encouragement	Frequency	Percent (%)
Verbal warning, giving advice	397	38
Doing together	389	37,2
Setting an example with behavior	55	5.3
Giving responsibility	30	2.9
Giving examples from the immediate environment	15	1.4
Using material	12	1.1
Rewarding	7	0.7
No response	140	13,4
Total	1045	100

Table 15 shows that the parents mostly either use verbal warning or give advice on sustainable consumption to encourage their children acquire the sustainable consumption behavior. Some of the quotes parents used in this category include "I warn him about energy saving", "I tell him to share stuff he does not need with his friends" and "I give advice on not harming the environment." The second most mentioned category by the parents was "doing together." In this category, some of the quotes parents used include "We throw the waste into the recycling bin together," "we do activities together for the purpose of reusing items at home," "we go shopping together," and "we collect [plastic] blue [bottle] lids together."

Another strategy parent's use is setting themselves as an example with behavior. Some of the quotes parents used were "I try to set an example with my behavior" and "I am more careful with my behaviors in front of my child." Giving children responsibility was another strategy parents used. Some of the quotes in the "giving responsibility" category were "My child turns off the lights that are left on at home", "We made our son the head of the waste-task force. He is responsible for all the waste in the house" and "I send him to go shopping alone so that he can use his pocket money sparingly." Another strategy parents used was giving examples from the immediate environment. The quotes from the parents in this category include "I give examples from his environment," "I show people in need as an example to empathize." One of the least mentioned categories parents used was "using materials." In this category the parents used quotes such as "I make them watch a video about energy saving," "There is a cartoon about recycling, for example, we watched it." The last of the least mentioned strategies parents used to encourage their children was the use of rewards. Parents who expressed that they used rewards said, for example, "I will reward her", "I will reward him by congratulating, and thanking him." In addition to all the respondents, 140 parents did not respond to this question.

4. RESULTS, DISCUSSION, AND RECOMMENDATIONS

The findings of the research showed that parents have sustainable consumption behaviors at the "often" level; indicating that their behaviors are positive. We found that there was no significant difference in the sustainable consumption behaviors of the parents in terms of the investigated variables in the research: gender, education level, income level, and grade levels of their children. Among the behaviors in the sustainable consumption scale, the behaviors in the "saving" dimension were found to be at the "always" level. The finding that the parents have high scores in the "saving" category prompted us to wonder if this is related to the sustainability of this behavior or to economic considerations.

In the literature, there are studies investigating the relationship between socio-demographic variables and consumptions of consumers who have environmental awareness (Webster, 1975; Roberts, 1996; Balderjahn, 1988; Straughan & Roberts, 1999; Samdahl & Robertson, 1989; Laroche et al., 2001; Yaraş et al., 2011). Some studies, in particular, investigated the effects of demographic characteristics. In the studies conducted by Özsoy and Madran (2015), Karaca (2018), and Ateş (2018), it was found that sustainable and environmentally friendly, and green consumption behaviors differ according to the variables such as age, gender, and income and education level. For example, in the study of Özsoy and Madran (2015), it was revealed that women care more than men in terms of sustainable consumption. In addition, it was concluded that individuals with high income have more environmentally conscious consumption than individuals with low income. In terms of age, their findings showed that young people care more about environmental problems. Findings of the Karaca's (2018) study showed that there is a significant relationship between environmentally friendly behaviors and demographic factors such as educational level, gender, income level, and profession. In the study conducted by Ateş (2018), preservice science and social studies teachers' sustainable consumption behaviors and their knowledge levels regarding the concept of sustainability were investigated. It was shown that women are more sensitive in displaying sustainable consumption behavior and more knowledgeable about the concept of sustainability compared to men. Furthermore, while preservice teachers' income levels and knowledge levels are inversely proportional, their income levels and sustainable consumption behaviors are found to be directly proportional. In our study though, we found that there was no significant difference between parents' sustainable consumption behaviors and their gender, income level as well as educational level. In this respect, the findings of these studies are in conflict with the results of our study.

In the second part of the study, we examined whether parents, who have elementary school-aged children, encourage their children to perform environmental and sustainable consumption behaviors and if so, how they do those encouragements and

what strategies they use to do that. In the literature, there are very few similar studies investigating mothers' encouragement to sustainable consumption behaviors. However, we could not find studies investigating parents' environmental bahaviour and encouragement for their kids especially at the elementary school level in Turkey. In a recent qualitative study conducted by Kestane (2020), the attitudes and behaviors of mothers towards conscious consumption and the type of warning they do to their children were examined. Through interviewing 13 mothers in different professions and ages, the researcher concluded that mothers are aware of their consumption behaviors and act consciously in their shopping and interpreted that the awareness of the mothers was mostly about considering the family budget. In our study, we found that parents particularly pay attention to the "economic" dimension of sustainable consumption behaviors and encourage their children to perform the behaviors in this dimension. In terms of considering economic aspects, our findings are similar to what Kestane (2020) found with mothers paying attention to the family budget. This finding has also similarities with the findings in the study of Şener and Hazer (2008) that Turkish women pay more attention to consumption behaviors with economic costs. Unlike Şener and Hazer's (2008) study, our study was conducted with parents who have children in elementary school, instead of just women. Nazlıoğlu (1991) stated that individuals' attitudes and habits are gained in the family through the experiences provided during early childhood. Attitudes towards consumption and behavior tendencies of children are affected by their parents (Ando et al, 2015; Matthies and others, 2012; 2017).

In terms of the environmental activities that parents do with their children at home, we found very close rates of parents' doing activities as well as parents' not doing activities with their children. Almost half of the parents (48.7%) stated that they do activities at home for environmental education. Even if they are less than those who participate in environmental activities, nearly half of them (43.1 %) stated that they do not participate in activities at home. These close numbers of parents participating in and not participating in environmental activities can be read as parents not paying attention to the continuation of increasing environmental awareness at home. On the other hand, findings showed that parents, who said that they were doing activities at home, mostly did activities related to environmental pollution and garbage. In addition, following these activities in terms of frequency, parents do more recycling and reusing activities with their children than other activities. Similar to our study in terms of the use of recycling and reusing activities, the study of Matthies et al. (2012) focused on only these two behaviors. The researchers examined how parents' behavior of reusing papers and recycling behaviors affected the behavior of their 8-10 year-old children. In addition, while Ando, et al. (2015) examined the behavior of combating waste among the environmental behaviors; Grønhøj and Thøgersen's (2009) study examined the transfer of environmental behaviors such as combating waste, purchasing sustainable-organic products and economical electricity consumption to new generations. Recently, Altikolatsi et al. (2021) found that family is an important factor in students' recycling behavior. Students perform recycling when their family recycles as well. Thus, they found that students whose family members recycle do recycle to a larger degree compared to other students whose family members do not recycle on a frequent basis.

Parents mostly chose the item numbers in the "unnecessary purchasing" sub-dimension to encourage then the "Unnecessary purchasing" items followed by the "reusing" sub-dimension items. Both of these sub-dimensions demonstrate the economic implications of sustainable consumption, and we concluded that these behaviors are favored primarily because parents consider family budgets. When we delve into the specific item numbers that parents chose to indicate their encouragement for the sustainable consumption behaviors, the item "I reuse used papers such as for taking notes on etc" was selected most by the parents. In addition, we examined the most selected items according to the sub dimensions of the scale: environmental awareness, unnecessary purchasing, saving and reusability. We found that most of the parents chose the item, "I convince my family members and friends not to buy products that will harm the environment", among the behaviors under the environmental awareness sub dimension. Among the behaviors under the unnecessary purchasing sub dimension, we found that most of the parents chose the item, "I replace technological devices such as mobile phones with new ones even though I don't need them". In addition, most of the parents chose the item; "I use energy-saving light bulbs at home" among the behaviors under the savings sub dimension. Among the behaviors under the reusability sub dimension, most of the parents chose the item, "I reuse used papers such as for taking notes etc.". The parents' preferences of the behaviors for encouraging their children indicate that the parents consider the economic benefit and usefulness.

Analysis of the strategies and encouragements that parents use to help their children gain sustainable consumption behaviors show that most of the parents prefer to use verbal warning or giving advice on sustainable consumption. The least mentioned encouragement parents chose to use was the use of rewards. We also found that the strategies, which can provide more interaction and more permanent learning between parents and children, such as "doing together", "giving children responsibility" and "using materials" were less common. Previous research shows that parents' sanctioning of their children, parents' own behaviors, and their communication with their children affect the recycling and reusing behaviors of children (Matthies et al., 2012). Therefore, verbal warning and giving advice can be considered in terms of the sanctions applied by the parents and communication they have with their children. In the context of the acquisition of behaviors that support the environment, parents, who provide engagement for children's participation in sustainable behavior in their daily lives, not only transfer rules, but at the same time allow their children to develop intrinsic motivation for this behavior (Matthies et al., 2012). Therefore, in our study, parents who specifically use strategies such as "doing together" and "giving responsibility" can help their children gain sustainable consumption behaviors. Research shows that parents should pay attention to their own behaviors instead of changing their children's behaviors verbally in order to support their children's environmental behaviors (Ando et al., 2015). In our study, 55 parents also stated that they try to set an example with their own behavior for their

children. There are expectations from parents to ensure sustainability. Apart from being a good example for ensuring the participation of children in environmental behavior, parents could also provide opportunities by clearly stating the expectations about the desired behaviors such as buying environmentally friendly products and carefully sorting the household waste (Grønhøj & Thøgersen, 2017). In the study of Grønhøj and Thøgersen (2009), researchers found that the behavior of purchasing sustainable organic products among the environmental behaviors is more prominently transferred to the new generations than the behavior of electricity saving-consumption. The reason for this finding was interpreted as the transmission of visible behaviors such as purchasing in this case, is easier than the transmission of electricity consumption, which is one of the invisible behaviors, from generation to generation. In our study, the majority of parents also clearly stated which behaviors they expect their children to do through verbal warning, giving advice as well as giving responsibility.

Based on the findings of this study, we recommend increasing environmental education opportunities for parents as well as increasing opportunities for children, school, and family to collaborate together in order to ensure the continuity of education from school to home and to raise conscious consumers and individuals with sustainable consumption behaviors, to develop environmental awareness, and to make parent-child interaction more effective in this process. Sustainable environmental education can be developed (Herranen, Vesterinen, & Aksela, 2018). To develop these behaviors, we recommend long-term implementation-based lessons in environmental education can be conducted in which students can acquire behavioral habits rather than informational instruction. In addition, sustainable consumption behaviors can be moved to the school level, similar to the activities held in eco-schools or green-flagged schools. Offering elective courses and club work could be a solution for the acquisition of sustainable consumption behaviors in schools. Sustainable consumption behaviors can be highlighted in the course curricula at the elementary level and projects with students at the school level can be developed in order for students to internalize this kind of behavior. Due to its' interdisciplinary nature, sustainable consumption behavior can be included in topics at all grade levels in different subjects.

Some limitations of the research should be recognized. In this study, parents' consumption behaviors and their encouragement of their children were determined by their responses to the sustainable consumption behavior scale and open-ended questions. The use of additional methods for supporting our results is necessary in the future studies. For example, qualitative studies with parents can be considered in further research. In the subsequent studies, researchers may focus on long-term observations and ethnographic studies, and investigate how such sustainable behaviors are negotiated between children and parents at home, what kinds of practices are used to help children acquire this behavior through observations and field notes. Thus, this study could be a baseline for future studies, which investigate parents and interactions children have with their families around environmental education and sustainable consumption behaviors. In future studies, researchers may investigate how the environmental education given to the students in schools affects the behaviors of their parents, thus can examine whether there is a transfer of environmental knowledge and behavior from students to parents, which is the opposite direction of this study. Long-term action research can be conducted throughout elementary school to explore the development of sustainable consumption behaviors in the classrooms. Workshops focusing on sustainable consumption problems and solutions can be organized to inform parents and increase their awareness regarding their roles in changing their children's environmental behavior and improving sustainable consumption attitudes and lifestyles. The data and findings from this study may inform the design of future environmental education programs in schools in terms of considering the inclusion of parents' and caregivers' roles in the planned education in order to attain the environmental education goals holistically.

Research and Publication Ethics Statement

All the ethical requirements were taken into consideration from design to write up of the article. Ethics permissions were taken from the university's ethics board.

Contribution Rates of Authors to the Article

The authors state that each author made an important contribution to every stage of the study. All authors were responsible for conducting the research. Arzu Tanış Özçelik designed and conceptualized the study, Tuğba Tokgöz Özçelik was responsible for data collection, and all authors were responsible for the analysis, and writing of the paper. Arzu Tanış Özçelik and Eyüp Yılmaz made critical revisions to the paper.

Statement of Interest

There is no conflict of interest from the authors to declare.

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