

**INVESTIGATION ON TURKISH CONSUMERS' ECOLOGICAL
PURCHASING BEHAVIOURS ON CITIES BASIS IN TERMS OF
THE DEMOGRAPHIC VARIABLES**

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Abstract

With this study, it is aimed to inform about ecological products of all public and private sector administrators who offer products and services to Turkish consumers and also Turkish consumers in particular and also to raise awareness to this issue by detecting how Turkish consumers' ecological purchasing behaviours change according to their demographic variables. In Turkey, 1820 surveys from 28 cities which have populations over a number of 1% of general population rate were evaluated. From the findings of the evaluation, it was understood that in terms of demographic variables only the "income" demographic variable was showing a significant difference conversely "Gender", "Marital Status", "Age", "Profession" and "Education" were not. When we focus on this research that was conducted in 28 cities, considering the higher overall average at 4.07, it has been identified that while 11 cities were under the overall average, the other 17 cities were all over it.

Key Words: Ecological Marketing, Green Marketing, Ecological Purchasing Behaviour, Eco-labels, Eco-Consumption, Eco-Consumers

1. Introduction

Environmental pollution, pollution and destruction of the resources rapidly, global warming as a result of excessive release of greenhouse gases, finally the climate change phenomenon became a pressing issue that the world cannot ignore or wait to solve this problem. However, each delay step in this process causes the explosive growth of the problem exponentially and at the same time makes the solution ways hard and more complicated. Initially, it can be considered as a good start that everyone is discussing the research results that a limited number of sensitive scientists unearthed with their personal efforts and shared with others. Additionally, it is considered that ecological impact has started to play a role mainly on human behaviours just because of the climate change problem that started to show its effects and its frequently symptoms that are threatening humanity by the end of last century. Therefore, we can easily express that the number of ecology minded human communities or the people that under the ecological impact are rapidly increasing. They started to make pressure and they are forcing the managements and supply resources to rethink and redesign.

1.1. The Relationship between Environmental Problems and Economics

Various branches of economics are concerned with the environment in different ways. It can be examined under two headings. The first one is micro economics, and the second one is macro economics. From micro-economic view, price theory affects the selling prices of enterprises in terms of reflection of environmental

expenditure to factor prices. From macro-economic view, environmental expenditures affect sales prices by rising production costs. Thus, conditions of competition are affected not only in the country but also between the countries. It is an accepted fact that free competition is a factor that increases pollution or at least a factor that makes it difficult to reduce pollution. Also, environmental problems are the problems which have cumulative effects. Being left for later or neglecting them will cause to higher costs **(Başol and Gökalp, 1991: 46)**.

At the point of ensuring a unity of economics and the environment, one of the most important advances is that the components of Gross National Product (GNP) must be renewed.

During the calculation of GDP, not only wear and tear in the physical capital must take part as depreciation but also the changes in the amount of natural resources should be included in the account. When a new oil reserve is identified and production begins, in GNP accounts, only the amount of the annual production value will be seen. However, current source is being consumed and the renewal of this consumption is not being reflected to the GNP. Under the name of "Green National Income Accounting", environmental values should be included in national income accounts **(Yücel, 2003: 113)**.

To reveal more clearly and monitoring of environmental impacts of business operations in the accounting system provides the necessary data on the prevention of environmental damages and helps to take the right and more effective decisions on the environmental protection **(Haftacı and Soylu, 2007: 118)**.

On the other hand, a new generation of economy with disposable goods is emerged as a luxurious form of economic activity that pushes people to chronic consumption spree by both minimizing physical life of manufactured goods and also by reducing the strength of the goods to achieve low production cost. In the ultimate consumption goods, the process between offering for sale and consuming is quite short. This is a characteristic feature of the new style disposable goods economy. And in these disposable goods, repair of the product is almost impossible and after consumption the goods are disposed of. Another feature of this kind of lifestyle is fashion. In the spirit of fashion, the product life is also very short. In fact, what the world needs is to find a solution to these problems brought by this type of economy and development. By avoiding from wastage, incentive measures should be taken such as re-use and recycling of goods in the consumption and this wastefulness must be stopped **(Yücel, 2003: 109-110)**.

1.2. The Concept of Ecological Footprint

As other organisms, human also meets the full requirements from nature. "Ecological footprint" is a concept that explained how much "nature" should be necessary to meet the requirements and as a result of this to destroy the wastes. However, the current total emission is so high. It cannot be cancelled out by nature today. In fact, without changing the lifestyle so much, even if with individual efforts, footprints in nature may be able to reduce by more than half **(Akoğlu, 2009: 46)**.

1.3. Ecological Consumption and Ecological Consumers

Although it seems impossible to us, it is possible to sustain our modern lives without completely running out of resources or converting our world to a huge garbage dump by only choosing eco-products in our consumptions. As a consumer, if we know perfectly where organic products in the market place and if we follow the activities and the attitudes of the businesses we receive service toward reducing their carbon emissions, and if we start to look at hybrid cars as a customer, and if we try to minimize our plastic bag usage, then that means we are ecological consumers **(Çuhadar, 2008)**.

1.4. Ecological Marketing, the Importance of Ecological Marketing from a Business Point of View and Practical Examples

It is possible to define "Eco-Marketing" as a set of activities that are built harmless as possible for the environment to satisfy the needs and demands of the society **(Varinli, 2006: 33)**.

From a different perspective we can define ecological marketing as, production and marketing of the products and services under the principles of sustainable development, social responsibility, and protection of environment. And also to aim being profitable in the long run while meeting consumers' wants and needs by reducing environmental damage to the minimum levels **(Altunışık and etc., 2007: 156)**.

Today, whether large or small, whether local or global, any business or organization cannot be insensitive to environmental issues in their production or services.

For example, in 2001, The Dutch government detected a poisonous substance, "cadmium" element in the cables of control arms that connecting arms to the consuls in Sony's PlayStation game consuls and then blocked the entry of consuls into the Europe. A study lasting in 18 months and a review process on 6000 different manufacturer factory lasted with the creation of a new procurement system administration. This seems like a small environmental problem but it led to a cost over \$ 130 million totally to Sony. As a result of this problem Sony understood that the realization of all suppliers' operations needs to be within his knowledge. And Sony made a public declaration that after this he will be never caught risks in environmental issues once more again **(Esty and Winston, 2006: 2)**.

After China had entered to world markets with cheap, imitation, and often health-risky products, consumers who live in developed countries such as the United States, The European Union countries and etc. had a negative impact on products and this forced them to interrogate almost every product and service that they bought. At the end of this interrogation process, after they reach to the right information they are buying environmentally friendly products in their subsequent purchases **(Ar and Tokol, 2010: 25)**.

There are also examples that businesses increase their market shares which are running environment-based marketing application. When the Swedish paper manufacturer Svenska-Cellulose entered the

British market with a product that does not contain non-toxic chlorine gas in, it was seen that the company's sales increased at a level of %10-13 (**Yüksel and Okumuş, 2003: 293**).

1.4.1. Ecological Products and Services

Ecological (green) product; is defined as the product that ecological approach is kept in the forefront in the context of raw material supplying, producing, packaging, designing, branding, giving services before and after sales. It is not harmful for living things, not polluting the world, consuming less natural resources, and also recyclable (**Varinli, 2006: 36**).

To be successful in the development of environmental product, there are three principles that can be moved (**Erbaşlar, 2007: 7**):

1. To make the product environmentally friendly it is required to adopt a serious and direct approach and to assess direct and environmental impacts of the product during the course of product life continuously.
2. From a Long-term perspective, to adopt an approach that on the one hand minimizing the amount of waste and waste of resources but on the other hand maximizing recycling by concentrating on the production process and technology.
3. To be in continues cooperation with consumers, to produce high-quality, always accessible and safe products.

As well as the production of new environmentalist products, re-use (second-hand products) or reproduction of products are also ecologically important thoughts and activities.

As long as welfare increases, there is no doubt that different types of people needs and demands for products and services will also increase. Today, consumers want more free time. Increasing of the need for more free time also increases the need for new services. The services are become more demandable because of the need for more travelling, eating out, and having fun and etc. The request of a healthy life, growing environmental awareness, and changes in thinking on such matters as the importance of education encourage increasing diversity of services (**İslamoğlu and etc., 2006: 3**).

Therefore, it is desirable that all service businesses must give even greater emphasis on protection of natural environment when they improve their offered services and have to be sensitive in this regard.

Briefly, within the scope of ecological products which is also known as eco-friendly products have required 4S property that means a combination of elements "Satisfaction, Sustainability, Social Acceptance and Security" (**Varinli, 2006: 37**).

1.4.1.1. Packaging of Ecological Products

Technically, packaging can be defined as the best way to meet consumer needs by enclosing the product with the most suitable and the cheaper material (**Yükselen, 2003: 199**).

Today, the competition between the goods is also significantly ongoing between the packages. Thus, it is expected from package to

perform some functions. The minimum functions that the packages have to fulfil are as follows (**İslamoğlu, 2008: 189-190**):

- a. Physical protection,
- b. To provide physical convenience,
- c. Promotion function,
- d. To provide convenience in the implementation of price variables,
- e. To help prevent disputes,
- f. Knowledge-making,
- g. To help in the sale and differentiation processes of goods,
- h. To provide a competitive advantage,
- i. To prevent unfair competition (prevention of imitation or copying),
- j. To provide product introduction and brand identification,
- k. Protection of consumers.

Especially, development and increase of supermarkets and other self-service stores in number installed much more marketing task to packaging than its traditional mission. Today, as a communication tool, packaging forms an important aspect of the product at the same time. Packaging besides being a sales tool is also an extension of the lifestyle (**Odabaşı and Oyman, 2002: 243**).

Dutch government has announced that businesses which are already producing packaging and also will continue to produce packaging until 2012 should make a payment over 250 million Euros for their waste management systems. The Dutch government refers that with the introduction of this practice, packaging industries which

are making sustainable production can reduce their CO² emissions **(Packaging Manufacturers Association, 2007: 60)**.

In Turkey, in 2009, under the leadership of Ministry of Environment and Forestry the General Directorate of Environmental Management, all sectors from plastic industries to hypermarkets that relevant with the usage of packaging came together in order to combine their forces for reducing the usage of plastic bags that damage the environment. Within the scope of the study it was determined some options such as **(T.R. Ministry of Environment and Forestry, 2009: 10)**.

- Instead of plastic bags there should be a return to mesh-like packages,
- To make a transition to alternative packaging technologies that does not harm the environment,
- And the plastic bags should be a paid product.

1.4.1.2. Eco-labelling

Eco-labelling can be seen as consumer information that is made for a product on its ecological development at every stage of production. According to the standards of the authorized organizations in a country that a product existed in, if it is regarded as ecologically safe by those organizations, that product is rewarded with eco-label. Another kind of eco-labelling is also available. It is called the negative eco-labelling. This informs the consumers about the harmful aspects of a product **(Alagöz, 2007: 1-2)**.



Figure: 1
Examples of Some Countries' Eco-Label Logos

Resource: www.utexas.edu/research/ceer/che302/greenproduct/pages/whatisgreenproducts.htm

In the process to date it is imposed upon a wide variety of eco-labels to identify ecological products and distinguish them from other products. Today, in general, some of these logos are being used in many countries by governments and international organizations are shown below in Figure 1.

1.4.2. Pricing of Ecological Products

We have witnessed that today's consumers' perceptions about price changed. For example, when consumers understood that some cheap products are harmful for their health or when they understood that even if the product is cheaper, the energy consumption of it costs more to them or when they comprehended that there isn't any other worlds that they can live in the future or when they noticed that they can do nothing for a better world to leave their children, then,

even if price of non-ecological products are cheaper than ecological products, consumers' short-term focus on product prices has turned into a long-term perspective **(Ar and Tokol, 2010: 155)**.

It is known that a strong relationship exists between the perceived quality and the prices. It is seen that consumers' attitudes with the increasing prices have began to change. Usually consumers want to show their financial power and prestige to other consumers and therefore they can prefer to buy expensive products to cheap ones. If famous American social scientist Veblen's famous "Veblen Theory" is examined, in such cases increasing demand can be described as "Veblen effect". Therefore, it is best explained by this theory that despite the low pricing opportunity for ecological products, high pricing is selected and nevertheless there is an increase in demand **(Wüstenhagen, 1998: 10)**.

In 1999, in a survey carried out over 323 questionnaires on customers of a supermarket in Ankara; green marketing terms were known by rather women customers and also an increase on the recognition of these terms was detected with increasing income and education level. According to the survey findings, it was found that with increasing income and education level, acceptance to pay more for the green product was also increasing. More than two thirds of the participants were agree to pay more for environmentally friendly products in their purchasing decisions. Among the participants who were willing to pay extra money, a majority agrees to pay extra money between %1-%10 **(Keleş, 2007: 34)**.

In the study of Paço and Ma'rio (2009), when evaluation of environmental and demographic variables were taken into account, it

was understood that in the market segments a significant distinction can be done in the form such as green consumers and others. Hence, it is understood from the researchers' statements that environmental behaviour may be an important criterion for market segmentation **(Paço and Raposo, 2009: 364)**.

1.4.3. Promotion of Ecological Products

It is suitable to give priority to the following topics for their promotional activities that environment-oriented businesses will do **(Varinli, 2006: 39)**:

The Subject of Donation: Business can inform the public from its activities by financially supporting environment-related projects or by donating money directly to environmental groups. There are two approaches in this issue for the business to benefit from: Firstly, business can support an environmental group directly with a monetary or physical donation. And secondly, business can explain to transfer a certain share from its product sales to an environmental welfare activity with an organized campaign.

The Subject of Environmental Protection Activities: In order to protect the natural life, business can aim to purchase land to provide the continuity of the current natural situation. It should be emphasized the result of the expenditure rather than spending itself in this type of communication.

Also, some businesses may prefer to prepare education and support programs about environmental issues.

The Subject of To Show How Business Exhibited Responsible Behaviours About Environmental Issues: To inform how changed the production environment and re-organized in order to reduce environmental pollution or how recycling is applied and recyclable materials are used in the process of production and marketing of a product, ads are used.

In the United States, by a survey of DDB Needham Lifestyle Study, it is concluded that green consumers have tried to look optimistic on green marketing activities but they are also unconvincing about the green content of the ads. It is shown that the messages are wrong or ambiguous in the ads as the main reasons of unconvincing ads. In a further study, more than half of the participants found content of environmental messages and advertisements extreme and unconvincing **(Bayramoğlu and Tuncoğlu, 2008: 8)**.

Because of some reasons shopping centres have become intense preferred retail outlets for consumers. Some of these reasons are as follows **(Akyüz and Ayyıldız, 2008: 112)**:

- Consumers began to act more sensitive and conscious about the issues such as environment, health and hygiene.
- Consumers have an increasingly rise in their income levels.
- Shopping centres have different products and brands at together to respond a wide variety of needs of consumers at the same time.
- Shopping centres give chance to their customers in whom they have an opportunity to get profit from different promotion and discount activities at the same time.

At this point, sales promotion activities will contribute to large proportions of ecological products' promoting activities.

The success of businesses depends on the success of its employees. It should not be forgotten that to ensure this success, a lot of important duties and responsibilities fall to sales managers and representatives in the promotion mix **(Taşkın, 2001: 46)**.

The role of individual sales representatives who involved in the sale of ecological products is becoming even more important particularly in the wholesales and sales for industrial buyers in addition to retail sales. Subject of ecological products is a sensitive issue. And in this subject, consumers feel greater need of convincing and trust. Ads may not give this confidence as public relations or personal selling. Thus, the power who has the best transfer opportunity to offer the requested total value to consumers with the business products in the face-to-face talks by taking into account of the instant consumer responses at the moment is business representatives. When removing the question marks that come to consumers' minds during the retail sales of ecological products and if transferring and receiving much more information at a time is needed, the most effective elements of the business are becoming sales representatives. Well-planned sales forces do not leave any free space to opponents in the marketplace. They will consistently continue on well-planned visits to transfer well-planned ecological marketing messages. They may be presented as the most effective weapons of enterprises which are marketing ecological products. They have a major impact to provide a competitive advantage to these enterprises. Businesses engaged in marketing of ecological

products start to trust electronic interaction more to facilitate marketing, sales and customer relationships.

As well as they think to develop web sites they will notice that sooner or later they need a completely different understanding model to understand the competitive dynamics of works. The studies showed that the first factor in motivating people is mentioning them that they are privileged. Especially in the United States and other developed countries, one of the main reasons to the success of direct marketing is this **(Geller, 2004: XX, 64)**.

1.4.4. Distribution of Ecological Products

Distribution is one of the main components of marketing. The main function of the distribution is to minimize the environmental costs. It is possible to collect the issues under two main headings in distribution. One of these is distribution channels, the other is logistics management. Firstly, taking the essential precautions to make product distribution for spending less fuel and taking up less space, and secondly, placement of sales points for customers' less fuel and time consume. These two precautions can be shown among the precautions that are related to distribution policy for the protection of the environment **(Varinli, 2006: 40)**.

It is too important that is there an absolute co-operation of all channel members in terms of achieving the common goal in distribution of ecological products or not. Many manufacturers consider that their mission is completed as soon as products leave the factory. But the main purpose of the production of ecological products is to be responsible for all activities from the production

process to consumption of these products. And they can only achieve this by the help of a management system. In ecological marketing, in order to satisfy the consumers and fulfil the social responsibilities, enterprises that are producing and marketing ecological products have to manage the supply chain definitely better.

Product submission is critical for profitable activities, when it is timely and economically. Hence physical distribution is an important part of marketing **(Timur, 1988: 57)**.

In contrast to the flow in the distribution, businesses have to incorporate the concept of reverse flow (reverse logistics) into their systems because of the reasons such as ecologically, depletion of natural resources and increasing of environmental awareness, and economically, expansion of recovery systems in manufacturing and finally laws and social responsibilities that governments put **(Akyüz, 2005: 11-18)**.

A reverse logistics system; is a process that begins from the consumption point to recover previously moved products or parts systematically by way of implementing one of the procedures which are destroying, recycling or re-manufacturing by the manufacturing facility **(Demirel, 2008: 903)**.

In recent years, in addition to the environmental effects on production and distribution, many businesses had to take into consideration assessment of environmental impacts in the procurement process of materials and components. Also, being green will be an important element of competition in the supply chain management **(Baki, 2004: 76)**.

Distribution and transportation networks are important activities that affecting the businesses while being green. Determination of the distribution points; determining which type of transport will be used; control systems; full-time production and distribution policies are the effects that affecting both the forward and reverse logistics networks. The fuel that the carrier vehicles will use; the frequency of the transports; distances to the customers; character of packaging (weight, shape, material) are some of the factors that affecting the performance of the green distribution **(Büyüközkan and Vardaloğlu, 2008: 7)**.

Businesses applied back flow that is much sought after for them in their distribution processes. Sometimes by re-adding or not adding value to the product in this back flow process they try to increase re-use of the used products. For example; the world's leader photocopy machines manufacturer Xerox has been implementing equipment re-manufacturing and component re-use and recycling programs since the beginning of the 1990s and thus, Xerox prevented the emergence of 1.5 billion pounds of waste **(Velioğlu, 2008: 9)**.

2. Consumers' Ecological Purchasing Behavior

In the literature review, in his research hypothesis, **Chan (2001)** indicates that consumers' ecological purchasing attitudes affect their ecological purchasing intentions, and also their ecological purchasing intentions affect their ecological purchasing behaviours. Also he mentions that on attitude two variables are affected which are ecological impact and ecological information.

Relevant to this subject, in the hypothesis of a similar research model, **Sihombing (2007)** mentions that ecological impact is effective on purchase intention and also the consumer value affects the ecological impact.

In their study, **Kim and etc. (2002)** mention that among the factors that are affecting buying behaviour; experience, social needs and functional requirements are more effective.

Also in this study it is indicated that consumers' own internal values and social relations have an effect on their needs affecting their purchasing behaviour.

Furthermore, **Fraj and Martinez (2006a-2006b)** in their study determined that lifestyle is effective on purchasing behaviour through a variety of factors. This and similar studies explored psychographically various influential factors in parts on consumers' ecological purchasing behaviour. And it is understood that they can shed light on marketers only in their own directions of findings but not generally.

2.1. Investigation of Turkish Consumers' Ecological Purchasing Behaviours

2.1.1. Methodology

The purpose of this study is to determine Turkish consumers' ecological purchasing behaviour and also to find out how a change it shows according to demographic variables. It is aimed with this study to inform Turkish consumers and to raise their awareness about

ecological products. Then their interest will increase and this will let them to display more intensive purchasing behaviours on ecological products. It is also intended that to provide a positive contribution to the development of ecological environment that they are located in may be marketers, business and all types of public sector managers get an idea about their consumers' ecological purchasing behaviours. The research population is formed by all consumers who are Turkish citizens and Living within the borders of the Turkey. The necessary data for research were obtained by a questionnaire that filled out by face to face. To set the sample of the research, proportional weights of the provincial population from the records of 2008 census were based on.

A survey was done on 2000 Turkish consumers who formed the research sample from selected 28 cities that each one has a 1% and above population rate of the total population through other 81 cities. About the distribution of 2000 surveys, related to city populations, the number of interviewers and the surveys that were distributed to the cities were calculated in a manner of population density of the cities. So the survey and interviewer numbers for each city were different from other. At the end of the survey process 1820 questionnaires from the whole 2000 were took into evaluation. By this time, 9 interviewers withdrew from their duties or could not perform or sent back the forms by the date requested. Survey performed between the dates 26.06.2009 and 15.01.2010. The questionnaire consisted of two parts. The first part of the questionnaire included questions to determine demographic characteristics. The second part of the questionnaire included the scale questions. The second part consisted multiple-choice questions. 5-point Likert scale used in the study. Answers to the statements

were coded in to the questionnaire form as: "1: Strongly Disagree," "2: Disagree," "3: Not Agree or Not Disagree", "4: Agree," "5: Strongly Agree". In the study, scale of ecological purchasing behaviour was measured by six variables.

In this study, Reliability and Validity Analysis, Single Factor Analysis of Variance (ANOVA) and The Independent t-Test were used for the analysis of the data. Because of the time and cost constraints, research universe didn't cover all cities in Turkey. Only the major cities that have a population of just over 1% of total population were included. However, even if the cities Van and Mugla were big enough and had to be taken in this coverage, due to some limitations and shortcomings, they were also excluded. Inclusion of all cities in Turkey into the sample will provide more useful results in the future studies that may be the continuation of this research. Also, in the future researches, the scope of research should be expanded to include the views of not only Turkish consumers but also foreigners living in Turkey.

2.1.2. Analysis and Results

1820 people participated in the survey. 49.7% of the participants were men and 50.3% of them were women. From the participants 41.3% were married and the rest 58.7% were unmarried. In this study the participants whose marital statuses were widow considered to be celibate and the rate of the respondents' age groups were composed of 19.2% between the ages of 17-20, 44.1% between the ages of 21-30, 19.3% between the ages of 31-40 and finally 17.4% at the ages 41 and over. When we looked at how the rate of income status showed a distribution in the respondents, it was

seen that level of respondents who had an income between 0-500 YTL were 26.6%, between 501-1000 YTL were 35.3%, between 1001 and 1500 YTL were 21.8% and lastly who had income 1501 YTL and over were 16.3%. The vast majority of the participants had university (47.8%) and high school graduates (35.3%). When professional status of the respondents were examined it was seen that 30.4% of the respondents were students, 22.8% were workers, 17.6% were self-employed persons, 13.4% were unemployed people, 10.1% were public servants and 5.7% were composed of retirees (Table 1).

Table: 1
Demographic Variables of the Participants

	Frequency	Percentage
Woman	916	50.3
Man	904	49.7
Married	1068	58.7
Single	752	41.3
17-20	350	19.2
21-30	803	44.1
31-40	351	19.3
41 and over	316	17.4
0-500 TL	485	26.6
501-1000 TL	643	35.3
1001-1500 TL	396	21.8
1501 TL and over	296	16.3
Primary School	254	14.0
High School	642	35.3
University	871	47.8
MB and PHD	53	2.9

Unemployment	244	13.4
Worker	415	22.8
Student	554	30.4
Public servants	184	10.1
Self-employed	320	17.6
Retiree	103	5.7

2.1.3. The Results of the Reliability and Validity Analyses

The aim of using the Reliability Analysis is to increase the internal consistency of the scale. For this reason, it is intended to determine the variables that do not share common-core equally and to leave them out of analysis (**Baş, 2005: 193**). In this study, Cronbach's Alpha will be used as the method of Reliability Analysis which is one of the methods of analysis of internal consistency. It is understood with the explained variance if items measure the same thing or not. The high correlations between variables increase the chance of measuring the same phenomenon by the related variables.

2.1.3.1. The Reliability and Validity of Ecological Products Purchasing Behaviour Scale

In Table 2, there are Cronbach's Alpha test results for ecological products purchasing behaviour scale.

Table: 2
Item-Total Statistics of Ecological Products Purchasing Behaviour Scale

Item	Mean if item	Variance	Corrected	Multiple	Alpha
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	deleted	if item deleted	item-total correlation	correlation coefficients	if item deleted
DAV1	19,5247	12,752	,651	,518	,675
DAV2	19,6044	12,637	,634	,491	,678
DAV3	19,8033	14,042	,367	,139	,753
DAV4	20,1423	15,942	,179	,045	,793
DAV5	19,6143	12,644	,603	,422	,685
DAV6	19,6132	12,831	,567	,383	,696
General Alpha: 0.753					

As it is seen, the scale question No. 4 reduces the reliability and necessary to be removed from the scale (Table: 2).

After removal of the scale question No. 4 from the scale Cronbach's Alpha test was performed again.

Table: 3
Item-Total Statistics of Ecological Products Purchasing
Behaviour Scale 1

Item	Mean if item deleted	Variance if item deleted	Corrected item- total correlation	Multiple correlation coefficients	Alpha if item deleted
DAV1	16,0066	10,444	,683	,518	,721
DAV2	16,0863	10,350	,662	,491	,726
DAV3	16,2852	11,951	,340	,118	,829
DAV5	16,0962	10,392	,624	,421	,738
DAV6	16,0951	10,512	,594	,383	,747
General Alpha: 0.793					

In Table 3, in the findings, Cronbach's Alpha value is found as 0.793. Due to the value of scale question No. 3 is higher than alpha coefficient, this question need to be removed.

Table: 4
Item-Total Statistics of Ecological Products Purchasing
Behaviour Scale 2

Item	Mean if item deleted	Variance if item deleted	Corrected item-total correlation	Multiple correlation coefficients	Alpha if item deleted
DAV1	12,1495	7,130	,702	,515	,766
DAV2	12,2291	7,089	,670	,484	,779
DAV5	12,2390	7,042	,646	,419	,789
DAV6	12,2379	7,158	,612	,379	,806
General Alpha: 0.829					

Cronbach's alpha test was repeated again by subtracting of scale question No. 3 from the scale.

At the end of this process it is seen that all alpha values in alpha column are lower than general alpha value (0.829) (Table: 4).

Table: 5
Factor Analysis of Ecological Products Purchasing Behaviour
Scale

Component	Eigen value	% Variance	% Cumulative	Eigen value > 1	% Variance	% Cumulative
DAV1	2,654	66,355	66,355	2,654	66,355	66,355
DAV2	,552	13,797	80,152			
DAV5	,454	11,348	91,499			
DAV6	,340	8,501	100,000			
KMO: 0.794				Bartlett test: 2701.424, p<0.000		

In Table 4, it is understood that all questions made a positive contribution to scale reliability. Because of this, it can be said that ecological products purchasing behaviour scale is reliable.

Table: 6
Component Matrix of Ecological Products Purchasing Behaviour Scale

Variables	Component
	1
DAV1	,847
DAV2	,827
DAV5	,805
DAV6	,778

The results of factor analysis that determining the validity of the ecological products buying behaviour scale are shown in Table 6. It is seen in the results of factor analysis that all remaining scale items are united under a single factor (Table: 6) with a 66.355% value of total variance (Table: 5).

2.1.4. Single Factor Analysis Of Variance and Independent T-Test Results in Which Relations between the Mean of Ecological Products Purchasing Behaviour Scale and the Demographic Variables Are Evaluated

The average ecological purchasing behaviour was found based on the average obtained from the four variables as a result of the validity and reliability analysis of the dependent scale that used for determining the ecological purchasing behaviour of Turkish

consumers. These averages are investigated from the stand point of demographic variables and the results are presented in Table 7, Table 8, Table 9 and Graphic 1.

Table: 7
Independent t-Test Results

Factor	Demographic Variables	p	Significant Difference
Ecological Purchasing Behaviour	Sex	p=0,215	Not
	Marital Status	p=0,464	Not

In the Independent T-test, $p = 0.05$ significance level was taken. When the findings are evaluated, it is understood that Turkish consumers' ecological purchasing behaviours does not show any significant difference in terms of demographic variables "Gender" and "Marital Status" (Table: 7).

Single Factor Analysis Of Variance (ANOVA) was performed for the evaluation of "Age", "Income", "Professional Status" and "Education" in terms of demographic variables of Turkish consumers' ecological purchasing behaviours and in this analysis, variables were tested with LSD analysis at $p=0.05$ significance level (Table: 8).

Table: 8
Single Factor Analysis Of Variance (ANOVA) Results

Factor	Demographic Variables	F	p	Significant Difference
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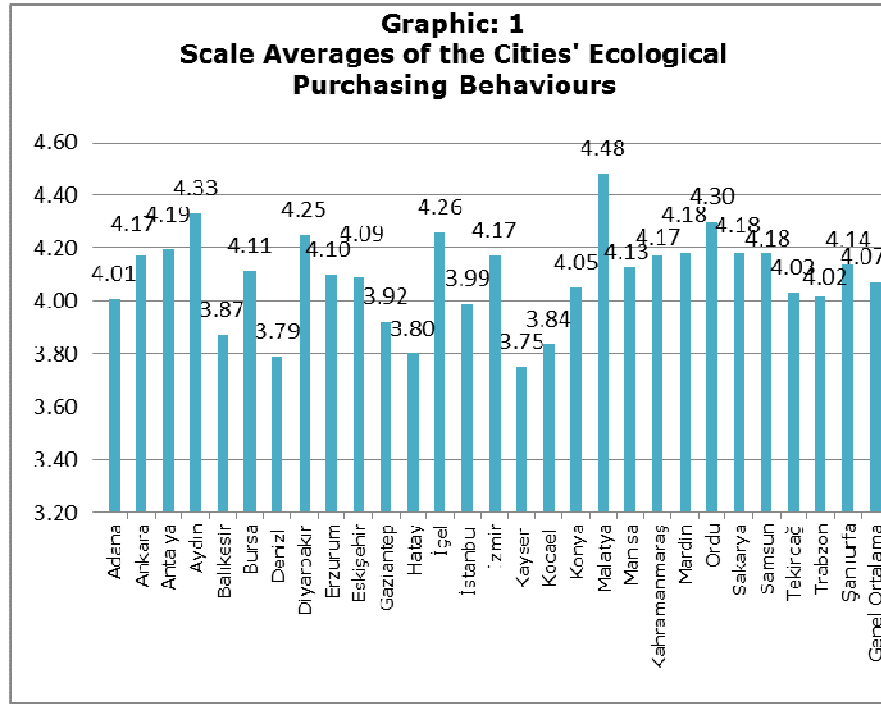
Ecological Purchasing Behaviour	Professional Status	F=3,381	p=0,753	-
	Age		p=0,525	-
	Income		p=0,018	Yes
	Education		p=0,372	-

From the obtained results, only the "income" variable showed significant differences, in terms of demographic variables of Turkish consumers' ecological purchasing behaviours (Table: 9).

Table: 9
Single Factor Analysis Of Variance (ANOVA) Results of Income

Income and Averages	Significance (p)
0-500 TL & 1501 TL and over (4,02-4,21)	0,003
501-1000 TL & 1501 TL and over (4,04-4,21)	0,006
1001-1500 TL & 1501 TL and over (4,06-4,21)	0,028

Also, in the same test, differences were detected on Turkish consumers' ecological purchasing behaviours on the basis of cities. The averages of the cities are given in Graphic 1.



It is detected that in some cities, the degree of ecological purchasing behaviour is much higher. On the other hand, in some others, it is a little under the overall average. The significant differences between cities are presented in Table 10.

According to these results, it is understood that while Malatya has the highest level of ecological purchasing behaviour, Kayseri has the lowest degree of ecological purchasing behaviour in Turkey (Graphic: 1).

2. Conclusions

In this study it was used the mean scale variables that constituted the dependent scale to determine Turkish consumers'

ecological purchasing behaviour in terms of demographic variables on the participants among Turkish consumers in the Republic of Turkey that were selected through a random sampling.

The significance level, $p=0.05$ was taken in the Independent t-Test. At the evaluation of the survey findings of the Turkish consumers' ecological purchasing behaviour. From the evaluation of the findings in terms of demographic variables it was understood that "Gender" and "Marital Status" didn't show any significant difference. In the evaluation process of Turkish consumers' ecological purchasing behaviours, The Single Factor Analysis of Variance (ANOVA) was performed with LSD Analysis at a significance level of $p=0.05$ in terms of testing demographic variables "Age, Income, Professional Status and Education".

From the obtained results of analysis of Turkish consumers' ecological purchasing behaviour, it was observed that only the "income" variable showed a significant difference. Also, possible differences of Turkish consumers' ecological purchasing behaviours on the basis of cities were identified in the same test. According to the results, it was understood that when they compared with the other 27 cities, Malatya City exhibited the highest and Kayseri City exhibited the lowest level of ecological purchasing behaviour.

When the research findings were examined it was understood that when they compared with the other income groups, only the participants who had the 1501 TL and above income level exhibited a higher level of ecological purchasing behaviour.

If focused on 28 cities that the research conducted, considering the overall average of 4.07, the highest level of ecological purchasing behaviours were seen respectively in the following cities as: With an average of 4.48 in Malatya, with 4.37 in Aydın and with 4.30 in Ordu.

On the other hand, when compared with the others, some of the cities emerged lower-level ecological purchasing behaviour with remaining below average. They were respectively; with 3.75 in Kayseri, with 3.79 in Denizli and with 3.84 in Kocaeli. Totally, 11 cities fell below the overall average and 17 were above average in all 28 cities.

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