

T.R.
GEBZE TECHNICAL UNIVERSITY
SOCIAL SCIENCES INSTITUTE

**SUSTAINABLE SUPPLY CHAIN MANAGEMENT
IMPLEMENTATIONS**

AHMET TARIK USTA
MASTER THESIS
DEPARTMENT OF BUSINESS ADMINISTRATION

GEBZE

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GTÜ Sosyal Bilimler Enstitüsü Yönetim Kurulu'nun tarih ve sayılı kararıyla oluşturulan jüri tarafından tarihinde tez savunma sınavı yapılan'ın tez çalışması Anabilim Dalında YÜKSEK LİSANS tezi olarak kabul edilmiştir.

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ÖZET

Çevre kirliliği, doğal kaynakların tükenmesi, fakirlik, besin ve temiz suya erişim gibi çevresel ve sosyal sorunlar, uzun süredir dünya gündemi meşgul eden ve acilen çözüm aranan en önemli konular arasındadır. Tüketiciler, ulusal ve uluslararası sivil toplum örgütleri, hükümetler ve çeşitli baskı grupları işletmelerin bu konulardaki sorumluluklarını yerine getirmeleri için, giderek artan bir baskı uygulamaktadırlar. Bu baskılara ilaveten, toplumsal farkındalığın artmasının da etkisiyle günümüzde işletmeler bu konuya stratejik bir perspektiften yaklaşmakta ve çevresel-toplumsal sorunlara yoğun bir ilgi göstermektedirler. Bu çerçevede, çevreye ve topluma duyarlı sürdürülebilir tedarik zinciri uygulamaları, iş dünyası için son derece önemli bir sorumluluk alanı haline gelmiştir.

Tedarik zinciri yönetimindeki sürdürülebilirlik uygulamalarının tüketicilere nasıl, ne derece tesir ettiği ve hangi değişkenlerin ürün tercihlerine etki ettiği işletmeler için önemli bir araştırma alanıdır. Bu çalışmada sürdürülebilir tedarik zinciri uygulamalarının, tüketicilerin çevresel farkındalıklarına, öznel normlarına, satın alma niyetlerine, sürdürülebilir ürünlere karşı tutumlarına ve ürün tercihlerine etkilerinin incelenmesi amaçlanmaktadır. Bu bağlamda, tüketicilerden ürün tercihlerine etki eden faktörleri saptamak amacıyla anket yoluyla veriler toplanmıştır. Toplanan verilerin analiz edilmesi sonucunda, tüketicilerin çevresel farkındalıklarının, öznel normlarına, satın alma niyetlerine, sürdürülebilir ürünlere karşı tutumlarına ve ürün tercihlerine anlamlı etkisi olduğu belirlenmiştir. Ankete katılan bireylerin sosyal çevresi tarafından maruz kaldığı baskıların satın alma niyetlerine doğrudan etki etmediği ancak satın alma niyetlerinin şekillenmesinde aracı etkisi olduğu saptanmıştır. Benzer şekilde tutumların da satın alma niyetleri üzerinde anlamlı derecede etkili olduğu sonucuna ulaşılmıştır. Ayrıca tüketicilerin ürün tercihlerinde tutumların, satın alma niyetlerinin ve demografik özelliklerin de etkili olduğu görülmüştür. Bulgulara ilişkin teorik ve yönetici uygulamalarına yönelik değerlendirmeler yapılarak çalışma sonlandırılmıştır.

SUMMARY

Environmental and social problems such as environmental pollution, depletion of natural resources, poverty, access to food and clean water are among the most significant issues that have long been on the world agenda and are urgently searched for solutions. Consumers, national and international non-governmental organizations, governments, and various pressure groups are increasingly putting pressure on businesses to fulfill their responsibilities. In addition to these pressures, business enterprises are approaching these issues from a strategic perspective and show intense interest in environmental-social problems due to the increasing social awareness. In this context, sustainable supply chain implementations that are sensitive to the environment and society have become an important area of responsibility for the business world.

How, to what extent the sustainability implementations in supply chain management affect consumers and which variables affect product preferences is an essential research area for businesses. This study aims to explain the responses of consumers to sustainable supply chain implementations by examining consumers' environmental awareness, subjective norms, purchasing intentions, attitudes towards sustainable products, and product choices variables. In this context, data were collected through questionnaires to determine the factors that affect the product preferences from consumers. As a result of analyzing the collected data, it has been determined that the environmental awareness of consumers has a significant effect on their subjective norms, purchasing intentions, attitudes towards sustainable products, and product choices. It has been determined that the pressures exposed from the social environment of the individuals surveyed do not directly affect their purchasing intentions, but these pressures have a mediated effect in shaping their purchasing intentions. Similarly, it was concluded that attitudes were significantly influential on purchasing intentions. Moreover, it was observed that attitudes, purchase intentions, and demographic features were significantly effective in consumers' product choices. The study was concluded by evaluating the theoretical and managerial implementations regarding the findings.

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TABLE OF CONTENTS

	<u>Page</u>
ÖZET	iv
SUMMARY	v
ACKNOWLEDGEMENTS	vi
TABLE OF CONTENTS	vii
LIST OF FIGURES	x
LIST OF TABLES	xi
1 INTRODUCTION	1
2 SUSTAINABLE SUPPLY CHAIN MANAGEMENT	4
2.1 Sustainable Development Evolution	4
2.1.1 The Limits of Growth	5
2.1.2 United Nations Environment Conference	5
2.1.3 The World Conservation Strategy	6
2.1.4 The Brundtland Report	6
2.1.5 Rio Summit	7
2.1.6 Agenda 21	7
2.1.7 Johannesburg Declaration on Sustainable Development	8
2.1.8 2030 Sustainable Development Goals	9
2.2 Sustainability and Sustainable Development	11
2.3 Dimensions of Sustainable Development	15
2.3.1 Environmental Sustainability	15
2.3.2 Social Sustainability	17
2.3.3 Economic Sustainability	18
2.4 Stakeholders of Sustainable Development	19
2.4.1 Consumers	19
2.4.2 Companies	20
2.4.3 Governments	21

2.4.4	Non-governmental Organizations	22
2.5	Supply Chain Management Evolution	22
2.6	Concept and Scope of Supply Chain	24
2.6.1	Structure of the Supply Chain	28
2.6.2	Supply Chain Flows	29
2.7	Concept and Scope of Supply Chain Management	30
2.8	Supply Chain Management Benefits	33
2.9	Supply Chain Management Processes	34
2.9.1	Customer Relations Management	35
2.9.2	Customer Service Management	36
2.9.3	Demand Management	36
2.9.4	Order Fulfillment	37
2.9.5	Manufacturing Flow Management	37
2.9.6	Supplier Relationship Management	37
2.9.7	Product Development and Commercialization	38
2.9.8	Returns Management	38
2.10	Sustainable Supply Chain Management Evolution	39
2.11	Concept and Scope of Sustainable Supply Chain Management	40
2.12	Sustainable Supply Chain Management Implementations	42
2.12.1	Sustainable Procurement	43
2.12.2	Sustainable Distribution	43
2.12.3	Sustainable Design	44
3	CONSUMER BEHAVIOR	45
3.1	Consumer	45
3.2	Consumer Behavior Concept and Features	46
3.3	Factors Affecting Consumer Behavior	48
3.3.1	Personal Factors Affecting Consumer Behavior	49
3.3.2	Sociological Factors Affecting Consumer Behavior	51
3.3.3	Psychological Factors Affecting Consumer Behavior	53
3.4	Consumer Behavior Models	56

3.4.1	Explanatory Consumer Behavior Models	56
3.4.2	Descriptive Consumer Behavior Models	57
3.5	Consumer Purchase Process	61
3.5.1	Realizing the Need	61
3.5.2	Gathering Information and Creating Alternatives	61
3.5.3	Choosing Between Alternatives	62
3.5.4	Implementation of the Purchase Decision	62
3.5.5	Post-Purchase Behavior	62
3.6	Sustainable Consumption	63
4	METHODOLOGY	65
4.1	Purpose and Significance of the Study	65
4.2	Assumptions and Limitations	66
4.3	Research Methodology	66
4.3.1	Statement of the Problem	66
4.3.2	Research Model and Hypotheses	67
4.3.3	Population and Sampling Strategy	69
4.3.4	Survey Instrument	69
4.3.5	Data Collection and Research Process	70
4.3.6	Details of Analysis and Results	70
4.3.7	Analysis of Sustainable Product Choice Behavior Arising from Demographic Features	80
5	DISCUSSION AND CONCLUSION	87
5.1	General Evaluation of Research Results	87
5.2	Discussion and Recommendations	90
5.3	Recommendations for Managerial Implementations	92
5.4	Directions for Future Studies	94
6	REFERENCES	96
7	APPENDIX- SURVEY FORM	106

LIST OF FIGURES

<u>Figure No:</u>	<u>Page</u>
Figure 2.1: Concentric Circles for Sustainable Development	10
Figure 2.2: The Three Spheres of Sustainability	12
Figure 2.3: The Three Pillars of Sustainable Development	15
Figure 2.4: Evolution of SCM	24
Figure 2.5: Basic Supply Chain Processes	28
Figure 2.6: An Example of Supply Chain	29
Figure 2.7: Three Flow Types in Supply Chain	29
Figure 2.8: Supply Chain Network Structure	35
Figure 3.1: Nicosia Model of Consumer Behavior	58
Figure 3.2: Engel-Blackwell-Kollat Model of Consumer Behavior	59
Figure 3.3: Howard and Sheth Model of Buyer's Behavior	60
Figure 4.1: Research Model	68
Figure 4.2: Model Emerging as a Result of Research	79

LIST OF TABLES

<u>Table No:</u>	<u>Page</u>
Table 4.1: Scale References	70
Table 4.2: Participants Gender Distribution	71
Table 4.3: Participants Age Distribution	71
Table 4.4: Participants Education Status Distribution	72
Table 4.5: Participants Marital Status Distribution	72
Table 4.6: Participants Profession Distribution	73
Table 4.7: Participants Income Status Distribution	73
Table 4.8: Reliability Results of the Model Tested	74
Table 4.9: Factor Loadings	75
Table 4.10: Correlation, Average and Standard Deviation Values for Variables	76
Table 4.11: Effect of Environmental Awareness on Variables	77
Table 4.12: Effect of Subjective Norms on Variables	78
Table 4.13: Relationships of Other Variables	78
Table 4.14: Summary of Research Findings	78
Table 4.15: Results Of Hypothesis Testing	80
Table 4.16: Arithmetic Mean, Standard Deviation and t-Test Results Related to Sustainable Product Choice Behavior of Male and Female Consumers	81
Table 4.17: Arithmetic Mean, Standard Deviation and t-Test Results Related to Marital Status and Sustainable Product Choice Behavior of the Participants	82
Table 4.18: Arithmetic Mean, Standard Deviation and t-Test Results Related to Age and Sustainable Product Choice Behavior of the Participants	82
Table 4.19: Arithmetic Mean, Standard Deviation and t-Test Results Related to State of Education and Sustainable Product Choice Behavior of the Participants	83
Table 4.20: Arithmetic Mean and Standard Deviation Values Related to Consumers' Professions and Sustainable Product Choice Behavior	84
Table 4.21: One-Way ANOVA Test Results Regarding Sustainable Product Choice Behavior According to Consumers' Professions	84
Table 4.22: Arithmetic Mean and Standard Deviation Values Related to Consumers' State of Income and Sustainable Product Choice Behavior	85

Table 4.23: One-Way ANOVA Test Results Regarding Sustainable Product Choice Behavior According to Consumers' State of Income



INTRODUCTION

Today's world faces problems such as global warming, resource, scarcity of food and water, decreased species diversity, poverty, and unemployment. Issues such as global warming, climate changes, and the release of greenhouse gases create hard-to-correct damage to humans and nature. Also, population growth makes these problems almost irreversible. Consumers, businesses, politicians, and NGOs now understand and acknowledge that social and economic standards and poor environmental conditions are becoming unsustainable.

Sustainability logic has been created to solve these problems affecting the whole world. Sustainability is defined as the management of all kinds of resources to maintain an average quality of life for our and future generations (Elkington, 1994). This logic offers that while using resources, we should also avoid resource depletion and find ways better, cleaner resources so that future generations can have the same opportunities as us.

Sustainable development, which requires unity and solidarity to achieve common goals, is a phenomenon that concerns all states, societies, organizations, and individuals. The concept of sustainability offers an approach to make better and long-term decisions on issues that affect our lives.

Although the concept of sustainability appears in many areas today, when we look at the past, it is seen that environmental disasters experienced in the eighties have a grand share in bringing sustainability to the agenda and creating a public opinion (Bozdoğan, 2010). Sustainability includes not only the environment but also the economic and social dimensions.

The concept of sustainability aims to create a balance between nature, humans, and the economy. The current rate of using resources in our world is unsustainable size, and this situation creates some adverse effects on the environment. Responsible or sustainable behavior is to use existed all kinds of resources in a way that does not affect the natural environment so that future generations have the quality of life we have (Gulio, Fischer, Schäfer, & Blättel-Mink, 2014). Companies have significant responsibilities as sustainable development strategies address how we need to change production systems and processes to improve our quality of life.

The principal purpose of the companies is to make a profit by producing and serving that will meet the demands and needs of the intended population. However, while developing products or providing services to meet these needs, business enterprises benefit from several natural resources such as air, water, soil and people who are a part of the society. In return for all this, society provides products, services, and economic returns from business enterprises. In return for all this, society provides products, services, and economic returns from businesses. Briefly, business enterprises are affected by the community, and the community is affected by business enterprises (Bayraktaroğlu & Özgen, 2008). In this context, it is not possible to distinguish between business and society.

An enterprise that cannot get the support of consumers cannot reach its goals and cannot survive for a long time. For this reason, it cannot say that the duties of business enterprises are limited only to production or service. Enterprises also have environmental and social responsibilities towards employees, customers, partners, competitors, suppliers, and the society they live in to fulfill their economic goals. Enterprises that have this sense of environmental and social responsibility and act following the code of business ethics, which is accepted in the society, both increase their values and supports sustainability by adding value to the community.

Enterprises buy, produce, sell, cooperate, take responsibility for the financial and moral damages they may cause to their environment, and act briefly as individuals. In this case, they should also be held responsible for the damages they will lead to their employees, customers, investors, society, government, nature, and economy. These groups that businesses are responsible for are called stakeholders (Laplume, Sonpar, & Litz, 2008).

Enterprises are exposed to intense pressure by the public and stakeholders to clearly define and implement the goals related to sustainability in supply chains. Social and environmental criteria in sustainable supply chains must implement by members in the supply chain to maintain their presence. Competitiveness should strengthen by adding customer needs and requests to the economic criteria of sustainability (Seuring & Müller, 2008).

Turkey is a salient country among developing countries. Investigation of Turkish consumer behavior is of great importance not only for local companies but also for

multinational companies. Therefore, sustainable supply chain implementations of companies operating in Turkey need to examine in several ways: (1) What is the response of consumers to sustainable supply chain implementations in a developing country? (2) How do sustainable supply chain implementations affect consumers' purchasing behavior? (3) Does the consumer's sustainable product choice behavior vary according to demographic characteristics? Answers to these questions can help managers understand consumers' responses to sustainability implementations and provide guidance on sustainability strategies implemented/will implement in developing countries such as Turkey.

This study aims to examine the above questions on the Turkish market. The first part of the research contains a literature review on sustainable supply chain and implementations, consumer behavior, and hypotheses to be tested. Afterward, the methodology adopted in the research and empirical results had presented. Finally, the findings of the study had discussed, managerial implications had shared, new directions for future studies had recommended, and the research had put to an end.

CHAPTER 2

SUSTAINABLE SUPPLY CHAIN MANAGEMENT

2.1 Sustainable Development Evolution

The pressures and problems caused by the production activity and the rapid increase in the world population, which have accelerated with the industrial revolution, had not been recognized for a long time. Development models, built on the assumption that natural resources are unlimited, have targeted economic growth for a long time without taking into account the environmental and social problems.

The development model offered by the classical capitalist view to us is to increase the income per capita only in line with the economic growth in today's societies. The classical capitalist model predicts that increasing the purchasing power of individuals will enhance the economic mobility in the market, and thus the increase in the gross national product will reflect on the individuals. The development defined by this model base on limitless production and unlimited consumption(Kartal, 2019). Similarly, in the period after the Second World War, Keynesian economists focused on issues such as accelerating economic development, preventing unemployment, or controlling inflation and aimed to increase production.

Considering environmentally and socially, the sustainability of such models is only possible with unlimited resources. However, as stated in the most basic definitions of economics, the resources are limited. Among these limited resources, non-renewable resources are gradually decreasing due to overuse. Besides, the damage caused by environmental waste as a result of the unlimited consumption stipulated by the model is quite destructive. In other words, this system has two effects as the depletion of limited resources as a result of excessive consumption and environmental wastes caused by excessive consumption, resulting in damages (Mebratu, 1998).

Until the 1970s, economic growth aimed at increasing production by assuming that natural resources are unlimited based on the development policies of the countries. In this period, world production has increased several times compared to the beginning of the century. However, it had observed that social and environmental problems such as the disappearance of natural resources above their self-renewal capacities, increased

poverty, destruction of green areas, decreased biodiversity and climate change begin to occur (Baumgartner, 2011).

Environmental and social problems resulting from the implementation of development policies based on increasing production saw as the natural and necessary results of development. Solution policies had adopted to eliminate environmental and social problems rather than prevent them. In light of this approach, the method called reaction and treatment in environment management aimed at removing the pollution resulting from development policies after contamination occurs. In this approach, the priority gives to development, and the solution to problems discuss later. The environmental and social harms, which consider local in this period, exceeded the borders of the countries and also resulting in the need to develop solutions from a global perspective.

In the 1970s, environmental and economic growth began to be discussed together on international platforms, and environmental policies adopted to predict and prevent natural problems before they occur. The international organizations that led to the birth of sustainable development discussed in the next section under the headings.

2.1.1 The Limits of Growth

The report *The Limits of Growth*, published by the Club of Rome in 1972, clearly emphasizes that the environmental and social dependence of the economy should take into account in development policies (Bozdoğan, 2010). The report states that if the current growth trend in the world population, industrialization, environmental pollution, food production, and resource depletion continue at the same pace, growth will reach its absolute limits within a century. As a result of this situation, it predicts that the population and industrial production capacity are likely to drop rapidly (Graham, 2008).

2.1.2 United Nations Environment Conference

The United Nations Conference on Human Environment was held in Stockholm in 1972, a United Nations Environment Programme (UNEP) was established and a common platform was created for environmental problems. In this organization, which is the first conference where environmental problems are evaluated internationally, first steps have been taken to ensure equality in the use of all-natural resources to continue social and economic progress in connection with the environment, to develop

the concept of sustainability, and to cooperate internationally towards environmental development. The idea of creating an appropriate environmental policy for developed countries was raised, and the need to assist developing countries in this regard was addressed. The Declaration of Human Environment, adopted at the conference was the principles that draw attention to the carrying capacity of the environment, consider intergenerational equity in resource use, link economic and social development with the natural environment (Handl, 2012). After this date, the response and treatment strategy had replaced by the prediction and prevention strategy based on the prediction and prevention of natural environmental problems before they arise (Yıkmaz, 2011).

2.1.3 The World Conservation Strategy

The rapid increase of global environmental problems could not be prevented for a while, and the destruction of the natural environment continued to increase. As a result of these developments, the concept of sustainable development was first defined by the International Union for Conservation of Nature (IUCN) in 1980 in The World Conservation Strategy for the UNEP as to conserve the natural resources for future generations (Yaylı, 2007). This strategy, design as a result of the establishment of international cooperation, had been one of the most significant studies in the historical development of the concept of sustainable development. It maintained that the protection of nature and economic growth are activities that are not opposite but supporting each other, and the importance of getting support from governments and non-governmental organizations (Mebratu, 1998).

2.1.4 The Brundtland Report

The concept of sustainability after the World Protection Strategy had expanded with the Brundtland Report, which was also published by the United Nations World Commission on Environment and Development (WCED) in 1987 and has become a widely used concept since then. Sustainable Development is defined as in this report, the development that meets the needs of the present without compromising the ability of future generations to meet their own needs. This concept reconciles the environmentalist approaches of the 1970s and with the developmental accessions of the 1960s. Within the scope of this definition needs to be handled extensively, and intergenerational equity maintained by transferring natural resources to future generations by using them in a balanced way.

Again, the report also touched upon the critical goals of environmental and economic development. These objectives are listed as follows:

- Stimulating growth
- Changing the understanding of growth
- Meeting the basic needs for work, energy, water, food, and health
- Creating a sustainable population level
- Conserve and increase resources
- To be able to manage risk and use technology according to needs
- To make decisions by thinking about the environment and the economy together (WCED, 1987)

The Brundtland Report, in general, directly links the end of poverty, equality in the distribution of the utilization rate of natural resources, population control, and the development of environmentally friendly strategies with the sustainable development model. In this context, the report argued that starting from the assumption that economic growth can be achieved with an environmentally friendly perspective, it is necessary to enter a long-term growth era in which developing countries will play an important role and ensure restructuring, both to overcome environmental problems in the world and to prevent poverty (Keeble, 1998). The report did not examine the technological constraints in detail and did not include clear statements regarding environmental quality, ecosystem balance, or biodiversity.

2.1.5 Rio Summit

The main goal of the summit, which was held in Rio de Janeiro, Brazil in 1992, was to find solutions to environmental and development problems by reaching an agreement on common strategies and practices. An international five-point agreement on sustainability and sustainable development was signed at the conference. The statement of principles of these five significant points has been agreed upon, as are the conventions on climate change and biodiversity, Agenda 21, the Rio Declaration of Environment and Development, and the Forest Principles (Bozdoğan, 2010).

2.1.6 Agenda 21

Agenda 21 is an essential text that documents the concept of sustainable development, which is both accepted politically and economically. It is an action plan for the

implementation concept of sustainable development. Its actual purpose is to protect the ecosystem and raise the living standards of humanity. It emphasizes hunger, poverty, diseases, inequalities, and environmental problems. Collaborations had proposed at this meeting as a cure for the worse state of the world. It stated that not only the upper authorities but also the communities should give responsibilities in this regard, and thus the concept of sustainable development can prevent before it remains in theory. Agenda 21, which is also accepted as an environmental manifesto, has a notable place in the historical development of sustainability because it has adopted the necessary mechanisms and activities related to the balance it proposed to the United Nations and the governments of the country and has a political commitment.

In the 1990s, sustainable development has become a global implementation plan by determining the basic principles of sustainable development by signing the agreements formed on the search for a development strategy compatible with the environment (Yıkmaz, 2011).

2.1.7 Johannesburg Declaration on Sustainable Development

Johannesburg Declaration on Sustainable Development was the first summit, where private sector representatives also participated, and the concept of sustainable development had also addressed institutionally. At this summit, the promises set at the Rio summit had updated, and the Johannesburg Declaration, which is an action plan to achieve the goals of sustainable development, has been published. After the declaration, two documents, the Political Declaration and Implementation Plan presented. In the implementation plan, which is the first output of the summit conference, issues such as providing support to sustainable development activities, especially in small island countries and developing countries, struggling with poverty, being sustainable in terms of health, reorganizing production and consumption structures according to the sustainable development approach, conservation and effective management of resources. Emphasis is on. In the Political Declaration output, the responsibilities of countries at the local, regional, and global levels emphasize to ensure sustainable development (Handl, 2012).

2.1.8 2030 Sustainable Development Goals

The Millennium Development Goals, which complete in the 2000s, were developed in 2015 and turned into Sustainable Development Goals, which collect under 17 headings.

Sustainable development goals expected by 2030; covers issues related to sustainable consumption and production, climate change, poverty reduction, combating inequality and injustice, economic growth and prosperity, energy resources, industrialization. These new targets are essentially the anti-poverty movement and are a step forward for the Sustainable Development Agenda. 2030 Sustainable Development goals have a broad vision with 17 main topics and 169 subtitles (UNDP, 2019).

2030 Sustainable Development Goals;

- No Poverty
- Zero Hunger
- Good Health and Well-Being
- Quality Education
- Gender Equality
- Clean Water and Sanitation
- Affordable and Clean Energy
- Decent Work and Economic Growth
- Industry, Innovation, and Infrastructure
- Reduced Inequalities
- Sustainable Cities and Communities
- Responsible Consumption and Production
- Climate Action
- Life Below Water
- Life on Land
- Peace, Justice and Strong Institutions
- Partnership for the Goals determined as (UNDP, 2019).

Each activity that contributed to the historical development of the sustainable development model undoubtedly helped sustainability to be handled more seriously by businesses, non-governmental organizations, regulatory agencies, and government

bodies created awareness and contributed to global sustainable development and sustainability reporting.

The concept of sustainable development is summarized schematically in Figure 2.1. Accordingly, the region where the areas formed by the economy, society, and environment intersect sustainable development. Sustainable development; means the meeting of economy, society, and environment at the same points. In other words, it is not just economic development or social development only; It is the development where the environment and social structure are protected, as well as economic development (Lélé, 1991).

Sustainability will make sense when every partner agrees to make certain sacrifices in economic, social, and environmental areas. If human beings want to continue living on earth, they must harmonize the economic, cultural, and political structure with the environment. While the behavior of modern people is economy-centered, the priority of sustainability is nature. Increasing environmental problems, especially climate change, making it necessary to protect the environment. Sustainability also requires the transformation of the current production system. If the economic system cannot be transformed into a structure that respects the environmental values, in other words, unless people adopt a new life philosophy, searches for sustainable development will be inconclusive (Krisnaiah, 2017).

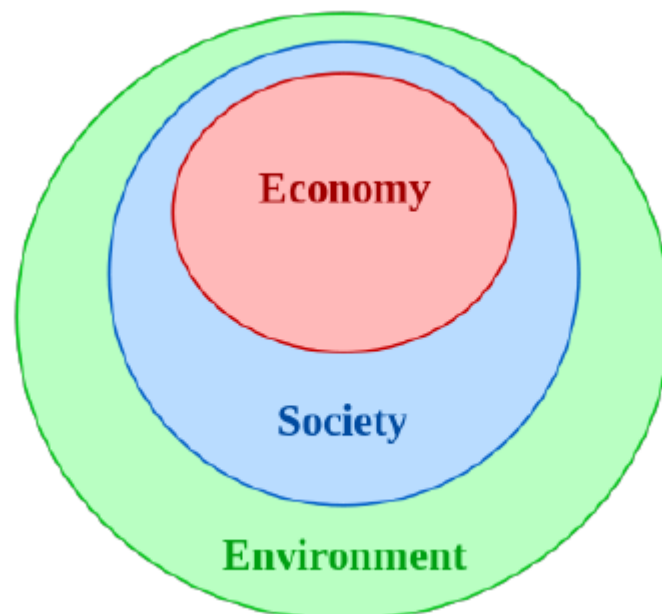


Figure 2.1: Concentric Circles for Sustainable Development (Hirsh & Glasser, 2015)

The economy, society, and environment contain a structure that is intertwined. Considering a wide circle, the broadest scope of this circle is the natural environment, the community in the natural environment, and the economy within the society. The conclusion that can draw here is that the destruction of the largest circle, that is the environment, can have consequences that will shake society and the economy. In short, if the environment is destroyed, society and the economy will suffer from this situation over time.

2.2 Sustainability and Sustainable Development

When looking at today's world problems from a broad perspective; rapid population growth, the refugee problem, terrorist incidents, hunger and poverty, natural disasters, environmental destruction, education, concerns of the disabled, global energy, health, fundamental human rights problems, media and communication, agricultural issues, problems stemming from religious differences, unemployment problem, endangered species, moral dilemmas, disbelief and insecurity towards the business world, unfairness in income distribution, extreme market conditions with free-market order, constant product development and renewal imperative, efforts to increase employment, directing the society to excessive consumption, wars and accidents can list (Diesendorf, 2019).

Humankind has succeeded in solving by using science, technology, and economic resources to all kinds of problems it has encountered until today. The ever-increasing issues of today's world force human beings to find a solution again. Sustainability and sustainable development are also new solutions that human beings find for the problems of our world but, the fact that these phenomena have a multi-component and complex structure has revealed the necessity to approach the issues with a more holistic perspective rather than a fragmented one (Di Fabio, 2017).

Sustainability, with its meaning in the dictionary, can be defined as the ability to be permanent. The report compiled by Soubbotina (2004) for the World Bank emphasized that the concept of sustainability is closely related to equality. The equality mentioned here emphasizes that everyone has similar conditions in terms of meeting their rights and needs. In the material aspect of the concept of sustainability, there are areas such as ecosystem, environment, technology, agriculture, livestock, finance, borrowing, growth, real estate, design, production, consumption. Also, its spiritual

aspect manifests itself in areas such as peace, prosperity, development, life, innovation, competition.

It is necessary to ensure equality between today's generations to protect future generations. Sustainability is a participatory process carried out to create and adopt a vision of society that uses all its resources in a respectful and measured manner (Ece Çokmutlu, 2019).

International Union for Conservation of Nature (IUCN) added the dimension of quality of life while defining the concept of sustainability and this concept had defined as improving the quality of human life while continuing to live within the current carrying capacity of the supporting ecosystems (The World Conservation Union, 1991). Although it is at the forefront with its environmental dimension in many studies, sustainability is a concept that includes economic, social, and natural dimensions. It is necessary to read this concept in all its dimensions. When these three dimensions consider together, it sees how contradicting goals can define under the same notion (Ansari & Qureshi, 2015).

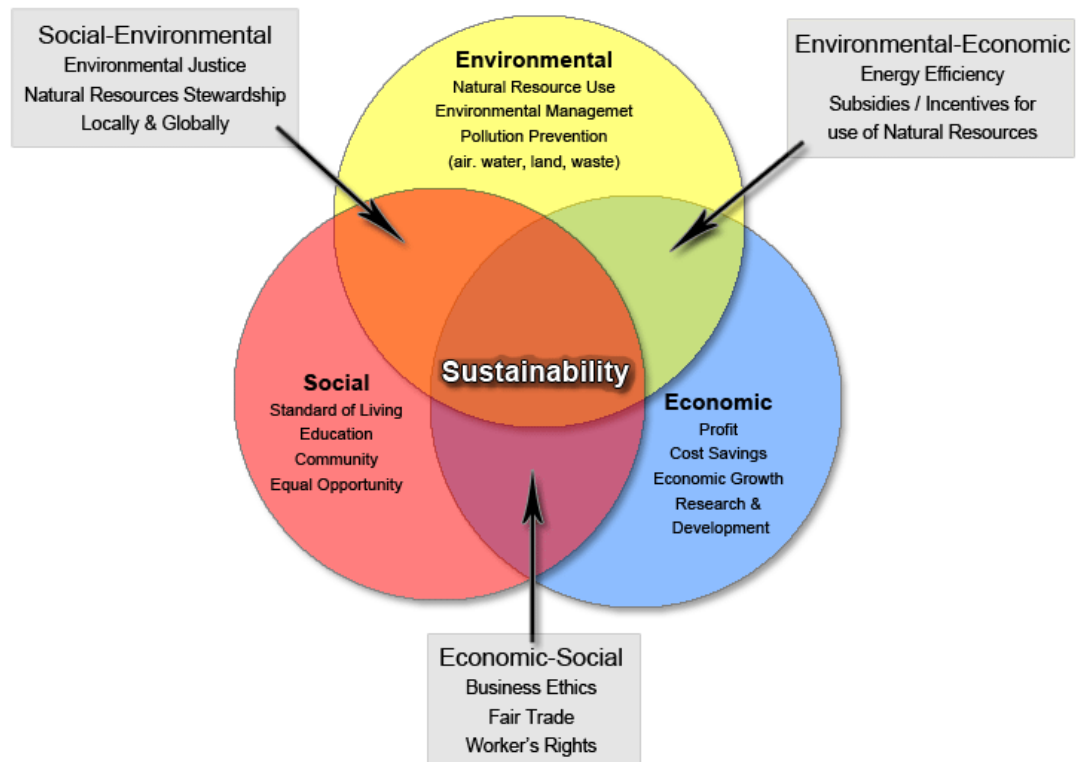


Figure 2.2: The Three Spheres of Sustainability (Juniarty & Ismail, 2015)

The concept of sustainability divides into three sub-dimensions as economic, environmental, and social sustainability. Elkington (1994) stated that sustainability could only be achieved when these three components are provided. According to this definition, sustainability; is a set of targets acting from an economic, environmental, and social-based development perspective.

He listed the basic principles and objectives of the concept of sustainability as follows:

- Protecting and improving the quality of life,
- Being economically effective and productive
- Ensuring equality / justice to cover generations,
- Protection and enhancement of environmental quality,
- It is a participatory and accommodating approach for each stage of the decision-making process (Akgül, 2010).

The search for solutions to the problems of our world has gained momentum since the 1970s. In the first stage, the concept of sustainable development, which is accepted as environmental responsibility, was born. The notion has become a multi-component and depth notion where economic, natural, and social liabilities, which have taken place in every field, are integrated with a holistic approach.

The term sustainable development has been mentioned frequently after the commission report *Our Common Future* issued by the United Nations in 1987. In this report, the concept of sustainability defined as the development model that *meets today's needs without compromising its ability to meet the needs of the future* (WCED, 1987).

Three principles are included in the definition of sustainable development by WCED. These principles are; environmental integrity, social justice, and economic well-being.

Environmental Integrity Principle: Environmental integrity defined the needs of the current generations as an economic system that transfers the natural resources to the next generations without making them irreversible and without destroying the environment (Caldwell, Lemons, Westra, & Goodland, 1998). Environmental

problems such as natural resources becoming unrenowable, increasing world population and environmental pollution brought by it, an increase of carbon dioxide gas released into the atmosphere are some of the problems threatening environmental integrity. It is emphasized in the environmental integrity principle that sustainable development could achieve if vital activities do not affect the environmental components.

Social Justice Principle: In accordance with the concept of justice, every individual and future generations in today's societies have the right to benefit equally from natural resources and opportunities. With social development, it is emphasized that the basic and all other needs of communities could fully meet, and growth could achieve only in this way. (Günel, 2017).

Economic Welfare Principle: Human beings who want to raise their living standards produce goods and services by the demands by using their capacity efficiently and present them to the market. An economic approach that takes a protective approach to the ecological system limits the use of non-renewable resources, and stands against social injustice is a part of sustainable development. When these three principles, which form the basis of sustainable development, are included in the definition, sustainable development can be defined as the economic development that will provide justice and opportunity for not only a certain segment but for all humanity by using scarce resources in the most efficient and non-destructive way (Akgül, 2010).

These three categories representing the society had been perceived as processes that must exist simultaneously but are independent of each other before the definition of sustainable development by the Brundtland Commission. The model developed after the description of sustainable development and accepted today is the idea that sustainable development only could be achieved by operating the processes in three categories: environmental, economic, and social simultaneously. This model is often referred to as the three-column model (Emamisaleh & Rahmani, 2017).

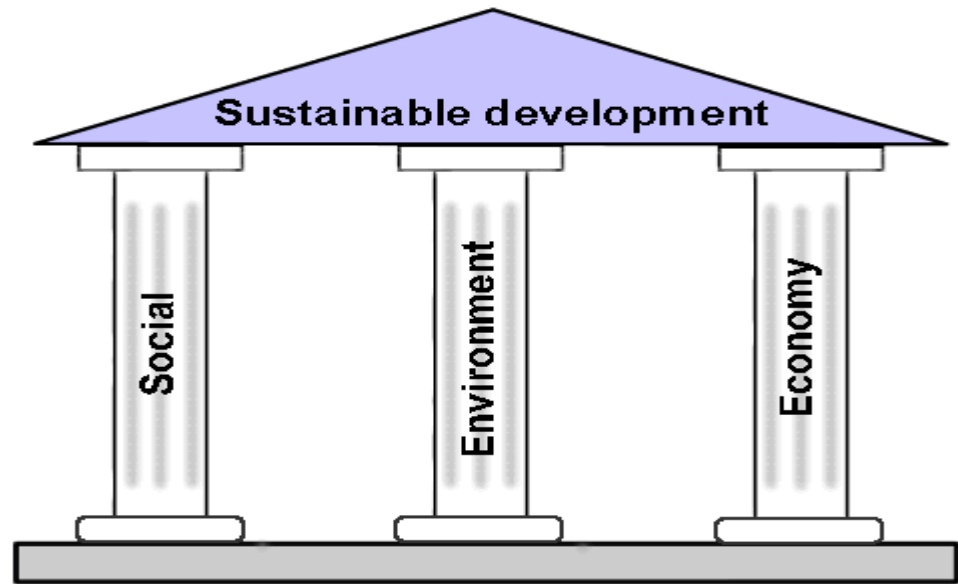


Figure 2.3: The Three Pillars of Sustainable Development (Hunt, Driver, & Velasquez, 2014)

The environmental, economic, and social dimensions that take place separately in this model, but operate in conjunction with each other, ultimately produce an extensive value for humanity, and this value emerges through sustainable development, the intersection of the three processes.

A change that occurs when the concept of sustainable development takes place in all areas of life is at the point of separating the concepts of economic growth and development and drawing the boundaries. The concept of development differs in that it emphasizes the real income factor obtained from the notion of economic growth. The growth includes economic and social development factors, as well as an increase in low-cost inputs. In this context, sustainable development is directly related to the quality of life of humanity and refers to continuity in the development of quality of life.

2.3 Dimensions of Sustainable Development

2.3.1 Environmental Sustainability

Environmental sustainability includes activities that will ensure the preservation of the environment in its most natural form in human relations with the environment and activities to improve the natural environment that has been destroyed or disappeared (Goodland, 1995).

Nature makes economic sustainability possible with the blessings it provides to us. Since these blessings of nature do not mean a mercantile cost for humanity, humanity has used these blessings as inexhaustible and continues to use them. However, when the nature problems arising today take into account, it is clear that the indirect cost of these blessings can have terrible consequences for humanity. A process that will continue in this way will render the world life unsustainable in the future. Therefore governments, institutions, and organizations have to adapt the practices that respect nature and do not harm its integrity and diversity in their processes in all goods and service production processes. Otherwise, future generations will be deprived of natural resources and forced to find alternative ways.

Human life, which is an integral part of the economic asset, is the focus of environmental sustainability. All living things and the ecological environment in the world do not exist alone. They are part of an ecosystem that interacts with each other. For this reason, if part of the ecosystem is destroyed or damaged, destruction occurs throughout the system. The feature that distinguishes humans from all other living things is that it has the power to destroy the ecosystem it is in to survive (Yeni, 2014). Environmental sustainability encourages people to behave sensitively towards the environment and to carry out responsible activities.

Vezzoli & Manzini (2008) stated that to ensure the effectiveness of environmental sustainability the following five conditions must meet;

1. To minimize natural resource consumption,
2. Provision of production inputs and consumption materials from renewable sources,
3. To ensure the recycling of waste at the highest levels,
4. Protection of energy resources and anticipation of renewable energy systems,
5. Choosing methods that will not harm the ecological environment and living things in environmentally based configurations.

Environmental sustainability includes ensuring the continuity of natural resources, giving importance to human health, and protecting animal and plant species. Business enterprises aiming to minimize and report the adverse effects of

environmental pollution caused by their activities are seen as responsible businesses in terms of sustainability (Dangelico & Pujari, 2010).

2.3.2 Social Sustainability

The social dimension of sustainable development focuses on people in the development process. In this process, it aims to bring individuals the rights they should have in the distribution of resources, social rights, and freedoms such as education, health, gender equality. Inequality in sharing among people is a concept that has been ignored and ignored in development until now. However, with the increasing importance of how sustainable development can achieve today, the social dimension of the issue has become increasingly important.

Social sustainability is a system where individuals have the presence and responsibility in every field (health, education, social rights, political participation), and the services provided by the state are at a level to meet the needs of each individual (McKenzie, 2004).

The activities carried out by businesses, and these activities must approve by society to be sustainable. Especially with the global changes/demands in recent years, it has been inevitable for business enterprises to turn to social responsibility activities. Enterprises that want to ensure their sustainability from the institutional point of view have also taken care to be socially sustainable as well as their economic and environmental sustainability (Dempsey, Bramley, Power, & Brown, 2011). Social sustainability is the state of being responsible for the whole society for the future today (Vallance, Perkins, & Dixon, 2011). Social sustainability could be expressed as an effort to provide the best standard of living. Enterprises that can produce maximum positive outputs and minimum negative outputs for society are socially sustainable. Human and social capital are two primary components of funds that make up social sustainability capital. While the scope of human capital is the loyalty, ability, and motivation of the employee and business partner, the content of social capital is composed of the quality of the education system and the quality of public services. The companies that have the approval of the benefit groups on social sustainability are those that can create added value by increasing their human and social capital (Dempsey, Bramley, Power, & Brown, 2011).

2.3.3 Economic Sustainability

The economy is the most essential factor that shapes the life of human beings. Economic resources are created and used to sustain the life of society. Transfer of the resources generated to future generations should do based on sustainability.

Creating and maintaining the financial resources necessary for the realization of environmental and social sustainability is a situation related to economic sustainability (Anand & Sen, 2000). For any environmental and social enterprise to be sustainable, it must be economically sustainable.

Economic sustainability is the balance between environmental benefits and economic costs. While maintaining economic activities in this equilibrium, it includes situations such as being careful in the use of natural resources, preserving renewable resources, using sparingly non-renewable resources, and replacing renewable resources.

While producing products and services that add value to society, economic sustainability alignment and cost-benefit analysis are related to profit-making businesses. Businesses aim to create value for stakeholders in the long term by evaluating opportunities and risks by considering economic, environmental, and social factors (Kaypak, 2011). Economic sustainability also includes operating expenses, profitability, the financial performance of the company, how it can manage human, production and natural capital, and investments.

Common & Perrings (1992) defined income as the amount that a person or nation can consume in a specific time and can be in the best condition even as a result of this consumption. Based on this definition, the capital stock must be made sustainable by the producer in the production of goods and services subject to consumption. Therefore, economic sustainability means awareness of resource use, the impact of resources on growth, technological inputs, and substitution. The value that societies place on the environment is the indicator of the sustainability degree of development and shows whether the concept of intergenerational equality is adopted (Kuşat, 2012).

2.4 Stakeholders of Sustainable Development

The term stakeholder has taken its place in the literature to express assets that have interests and rights over value-added. The term stakeholder is used to denote individuals, systemic components, for-profit or non-profit organizations, nations, social circles, and many more (Steurer, Langer, Konrad, & Martinuzz, 2005).

The contribution of stakeholders is grand in the concept of sustainability. Stakeholders are an important factor affecting the purpose and scope of a business enterprise. Sustainable development will be possible with the direct or indirect participation of all actors involved in the supply chain. For this reason, the processes, effects, and contributions become important (Voinov & Bousquet, 2010). According to Edward Freeman (1984), who put forward the Stakeholder Theory, the absolute rights of the stakeholders in the chain are protected and honored through social agreements. The summary of the theory is that considering the demands of each stakeholder who creates the general picture, it has equal value without favoritism. Some institutions map the stakeholder impact map to measure stakeholder impacts and determine the shared vision, but this awareness needs to spread to the whole (Freeman, Harrison, Wicks, Parmar, & de Colle, 2010)

The concept of sustainable development, which emphasizes the continuity of climate, human health, and biodiversity, will also be adopted by all stakeholders by integrating the “total development model” approach, which also includes social effects that increase the level of welfare of societies, and increased awareness (Ertuğrul, 2008)

2.4.1 Consumers

The three most important stakeholders of sustainable development as motivators and enforcers are non-governmental organizations, government, and consumers. It took time for consumers to become more sensitive and conscious about sustainability. However, in previous years, the environmental demands of the consumer were ignored by the supply chain components, but this was reversed in the 2000s (Buerke, Straatmann, Lin-Hi, & Müller, 2017). Companies that have reached this awareness have started to integrate their structures by adopting sustainable supply chain management. It has been understood that alternative goods, which can be used for a longer time, instead of the products brought by the disposable culture created in this

process, appeal to consumers and provide advantages for all stakeholders (Dommeyer & Gross, 2003).

As a result of the varying demands of consumers, there is evidence that consumers tend to pay more for high-quality, sustainable products and services developed based on the competitive market environment (Gulio, Fischer, Schäfer, & Blättel-Mink, 2014). The increase in information resources and information sharing in the process of growth and development in the world has created a significant increase in the intellectual level of both consumers and manufacturers as a result of education becoming more effective. In this case, awareness of the use of the only natural - unsubstituted- resources is not possible and the necessity of using renewable resources (Karalar & Kiracı, 2011). This awareness also emphasizes the importance of using recyclable materials in terms of sustainability. Since the 1990s, consumers have started to be sensitive about the use of recyclable materials and have started to consider the green labels and symbols on the packaging (Gulio, Fischer, Schäfer, & Blättel-Mink, 2014).

Consumers can prefer shortcuts with functionality, quality, integrity, confident expectation, and turn to values produced by organizations whose image is developed in the field of sustainability (Karalar & Kiracı, 2011). However, the needs that arise in line with consumers' agendas affect their general consumption trends. Thanks to information technologies, it can provide consumer choices in more practical ways. Consumers have the opportunity to analyze the supply needs from which source and how they are produced, and what advantages they have after sales, contribute to sustainable development in this respect, as well as to increase in competition and indirectly contribute to global development (Sarkis, 2012).

2.4.2 Companies

In addition to their contribution to economic growth, companies also contribute to social welfare needs, such as workforce training and employment. As one of the most important actors in the sustainable development and supply chain, companies are taking part in the supply chain circulation while building long and short-term goals for sustainable growth in the management of the decision mechanism (Schrettle, Hinz, Scherrer -Rathje, & Friedli, 2014). Short-term goals are the most efficient and fastest operation of the supply chain wheel. In the classical supply chain management

approach, it is aimed to increase the production and marketing speed while increasing efficiency and stocking in the short term. Therefore, the performance realized in the short term ensures the cash flow of the company. Long-term goals will be on increasing market share and ensuring the satisfaction of all stakeholders, including external stakeholders. In this context, the success level of the company could observe with its effects on the environment and society in the long run (Linnenluecke & Griffiths, 2013). Based on this, the importance of supply chain planning is understood.

While sustainable development approaches serve the needs of today's businesses and all other stakeholders and the country, they require social and cultural responsibilities rather than following a purely profit-oriented way (Chiappetta Jabbour, 2017). Companies that can create road maps by blending social and economic conditions in a balanced way will accept as much as they can meet the needs and will be successful in being. Companies that can convey their advantages correctly and honestly will be able to cooperate more easily with other stakeholders with the same purpose and successfully contribute to sustainable growth and development (Schrettle, Hinz, Scherrer -Rathje, & Friedli, 2014).

In general, companies with a motto of sustainability can have an advantageous position with the positive image they gain, regardless of their scale. Companies that can manage bidirectional communication effectively, determine operational limits, and analyze opportunities correctly, will be successful in the sustainability of their own companies and will have a voice in the sustainable development platform (Miller, 2003).

2.4.3 Governments

Governments, which have taken the most important role as a legislator in sustainable development, contribute to the development process as an audit and law enforcement, based on the functioning of the practices, within the framework of the democratic approach, which also includes social, economic and technological developments (Alagöz, 2014). In addition to legal practices and audits, it produces all basic needs such as security, macro-level industry, employment, health, transportation, logistics, education. It also supports it by giving incentives to companies in the private sector (UNIC, 2019). In the target of development, states have to create an economic structure that respects democratic human rights and will catch up with technological

developments. The way to increase the production and technological power in the international arena is to provide the formation and employment of a specialized labor force with a high level of education. However, sustainable policies that will cover not only the capital groups or a certain segment but the whole society will be the basis for development (Soubotina, 2004).

Governments are obliged to protect social and vital values, as well as support, supervision, and incentives for businesses. They have to take regulatory, preventive, and developmental strategies to take regulatory measures for the economy of the country, to provide money supply, to support employment, to ensure the security of the country, to improve cooperation with other countries, to make regulations on education and health and similar issues (Yeni, 2014). An economically and culturally backward country will have to undergo higher costs to meet its obligations. For example, if foreign borrowing is required for the money supply, it may have to pay heavy prices in exchange for higher rates of interest or strategic concessions than countries with stronger economies. For such reasons, strategies that can contribute to sustainable development at state levels and balance all socioeconomic conditions should adopt (Kartal, 2019).

2.4.4 Non-governmental Organizations

Non-governmental organizations and international-local organizations are structures that can develop a joint project by uniting around the elements related to their goals. These structures contribute to sustainable development by contacting ecological, environmental, socioeconomic issues (Devine, 2003).

2.5 Supply Chain Management Evolution

After the 1950s, most producers adopted a mass production strategy with few product types and narrow process flexibility as the main strategy to reduce unit production costs. During this period, the new product development process, which was dependent on the company's self-efficacy (technology, capacity, etc.), was progressing very slowly. It was up to stocks to prevent bottleneck activities and maintain a continuous line flow. This situation raised the problem of investing in stocks. Besides, sharing technology and expertise with customers or suppliers in this period was seen

as a serious security gap. Likewise, there was little interest in inter-enterprise cooperation and buyer-supplier partnership.

It can be said that the first studies that can be evaluated in the context of Supply Chain Management date back to the 1960s. In this context, the Physical Distribution Stage, which had accepted as the first stage of the Supply Chain Management process, was handled first by Bowersox, La Londe, & Smykay (1969) , and the approach to distribution functions for businesses through external integrations had been emphasized.

Supply Chain Management approach that started with the evaluation of Material Requirement Planning (MRP) activities since 1970; focused on process studies, production costs, quality activities, new product development, delivery activities, and lead times. Accordingly, companies have started to form Physical Distribution Departments to carry out their marketing, production, financing, and distribution activities together.

With the establishment of Physical Distribution Departments, instead of reducing the cost of each operation, the logistic services cost approach, which covers the system cost as a whole, was developed. As a result; Inter-warehouse, storage and transportation functions and customer service levels have been integrated and the Physical Distribution Management phase, called the first phase of Supply Chain Management development, has been initiated. Besides, the period in question was called the "Material Management Period" or "Physical Distribution Phase".

Since 1985, "Quick Response" (QR), which is accepted as the pioneer of Supply Chain Management approaches, has been developed and the QR Program has been first used in the textile industry. As of the 1990s, "Efficient Consumer Response" (ECR) programs, which are at the core of these activities, have started to be used, especially in the retail sector. Following the ECR, "Continuous Replenishment Planning" (CRP), which is seen as important in the emergence of current Supply Chain Management approaches, has been brought to the agenda.

After the 1990s, the situation has changed a lot. In this new period, managers realized that the goods and services purchased from suppliers had a significant impact on their ability to meet the needs of their customers. Managers also understood that producing quality goods alone is not enough. Thus, it was understood that they should

involve in the management of the entire network of upstream companies supplying input to them, as well as the whole network of downstream companies that deliver products to the end customer and provide after-sales services (Özdemir, 2004). (Özdemir, 2004). Customers are now at the center of business decisions, and companies have sought to develop ways of collaboration with all their members (suppliers, manufacturers, retailers, etc.) in the chain in which they are located to satisfy their customers. The name of this collaboration process has been named as Supply Chain Management (SCM) (Houlihan, 1985).

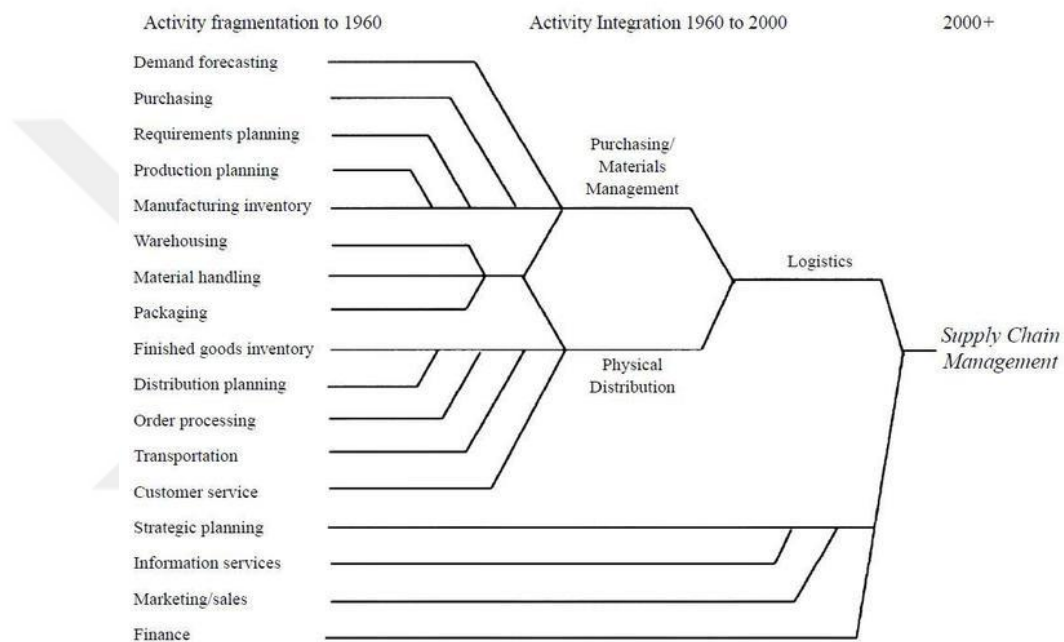


Figure 2.5: Evolution of SCM (Ballou, 2007)

2.6 Concept and Scope of Supply Chain

One of the most important paradigm shifts in modern business management is that individual businesses now compete not as autonomous organizations but as supply chains. In this emerging competitive environment, the ultimate success of a single enterprise will depend on the management's ability to integrate the company's complex business relationships network. Supply Chain Management is the way to manage complex business relations correctly and increase competitiveness in local-global markets. Enterprises should be able to manage compliance within and outside the organization in a manner to minimize the negative effects of this intensely competitive environment.

The intense competition environment in local and global markets forces businesses to find new markets, new products, new production processes, new business models, and new resources. This also required business enterprises to make their products higher than their competitors, shorten their production processes, and optimize delivery times.

The supply chain is the system that covers all activities that start from the source of the supply and take place until consumed by the end-user. The supply chain includes the businesses in the supply chain, the relationships of businesses starting from them and extending to other businesses, people, technologies, and functional processes (Lambert & Cooper, 2000). The supply chain is not only limited to the physical movement of the product, includes customer relationship management, supplier management, purchasing, product management, production management, facility planning, customer service, and physical distribution processes (Stevens, 1989).

Supply chain; information between various business units (such as suppliers, manufacturers, distributors, third-party logistics providers, and retailers) to supply raw materials or semi-finished products, convert this raw material and semi-finished product to final product, add value to these products, distribute and promote products to retailers or customers) aims to facilitate shopping. In this context, the supply chain can be defined as an integrated system that allows the harmonization of several interrelated business processes (Min & Zhou, 2002). Other definitions included in the literature within the supply chain are as follows;

Author(s), Year	Definition
(Stevens, 1989)	<i>The scope of the Supply Chain starts from the supply and ends at the point of consumption. Supply Chain is about supplier management, purchasing, material management, production management, facility planning, customer service, and information flow rather than the physical flow of material.</i>
(Lee & Billington, 1992)	<i>The supply chain is a network of producers and distributors that supply raw materials, turn them into intermediate and final products, and distribute the final products to customers.</i>

(Beamon, 1998)

Supply Chain is a structure in which many different businesses (suppliers, producers, distributors, and vendors) work together to purchase raw materials, turn them into products, and distribute them to vendors.

(Lummus & Vokurka, 1999)

Supply Chain is the whole of the activities (raw materials and parts supply, manufacturing and assembly, warehouse and inventory tracking, order entry and order management, and information systems required to track all of these activities) from the raw material to delivery to the customer.

(Mentzer, et al., 2001)

Supply Chain is a structure formed by at least three or more systems - real or legal persons - directly in the upstream and downstream of the information coming to the customer from the product, service, finance and / or source.

(Stadtler & Kilger, 2005)

The Supply Chain is broadly composed of two or more legally separated organizations that are linked to the product, information, and financial flow. These organizations can be companies that produce parts, components, and finished products, or they can also provide logistics services and even the customer themselves.

(Karabay, 2006)

Supply chain; are the tools that perform the functions of purchasing the material, converting the purchased material to intermediate or final product, and distributing these products to the customer.

(Melo, Nickel, & Da Gama, 2009)

Supply Chain concept; It is considered as a concept that covers all activities carried out within and outside the enterprise by establishing a value chain that enables suppliers and user businesses to connect, from the first raw material to the end-users' consumption of all completed products.

(Chopra &
Meindl, 2015)

Supply Chain consists of many parties that meet customer demand, directly or indirectly. Supply Chain includes not only manufacturers and suppliers, but also shippers, warehouses, retailers, and even customers themselves Supply Chain includes all functions that take and meet the demands of the customer, such as the manufacturer in each business enterprise. These functions include, but are not limited to, new product manufacturing, marketing, operations, distribution, finance, and customer service.

(Harrison, et al.,
2015)

Supply Chain is a network of partners who manage returns at every stage and turn the raw material valued with the customer into a finished product.

As can be understood from the definitions, most of the production establishments have a production and distribution network that starts from the supply of raw materials and converts them into semi-finished and finished products and reaches the end-user through distribution channels.

The supply chain covers two main processes integrated into each other; The first process is production planning and inventory control, which takes place from the procurement activity until the raw material turns into a product, and the second process is the distribution and logistics processes involving the distribution of the manufactured product to retailers or customers (Pan, 2018).

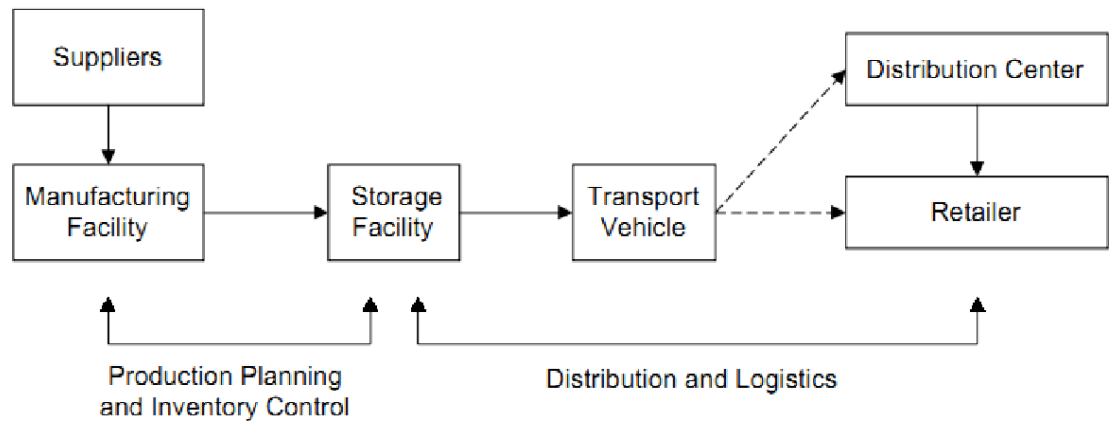


Figure 2.6: Basic Supply Chain Processes (Beamon, 1998)

2.6.1 Structure of the Supply Chain

The supply chain consists of three main functions and one auxiliary activity (Özdemir, 2004).

- Supply of raw materials, semi-finished and finished parts,
- Production of the final product on the Assembly Line.
- Delivery of the final product to the customer,
- Logistics Support System Activities created to maintain the functionality of all activities

The supply chain can consist of several members. These are (Fang, et al., 2018);

- 1- Suppliers (sub-industry, subcontractor, main industry manufacturing workshops)
- 2- Focal Company (producing the final product)
- 3- Distributors (general distributors, wholesalers), dealers (retailers)
- 4- Customer (consumer)

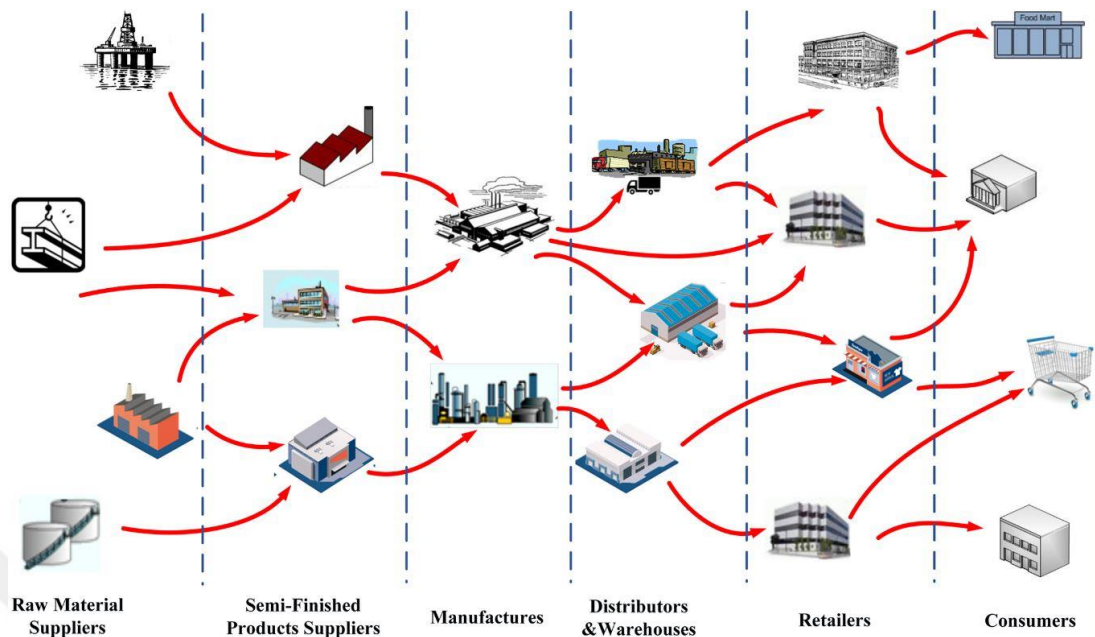


Figure 2.4.1: An Example of Supply Chain (Fang, et al., 2018)

However, not every supply chain has to include all members.

2.6.2 Supply Chain Flows

The supply chain has a very dynamic structure. For this reason, the flow between the supply chain members must ensure continuously.

There are three different streams in a supply chain. These are:

1. Information flow between all stakeholders in the chain
2. Product flow from raw material procurement to after-sales services
3. Financial flow from customers to business as a result of purchasing activity.

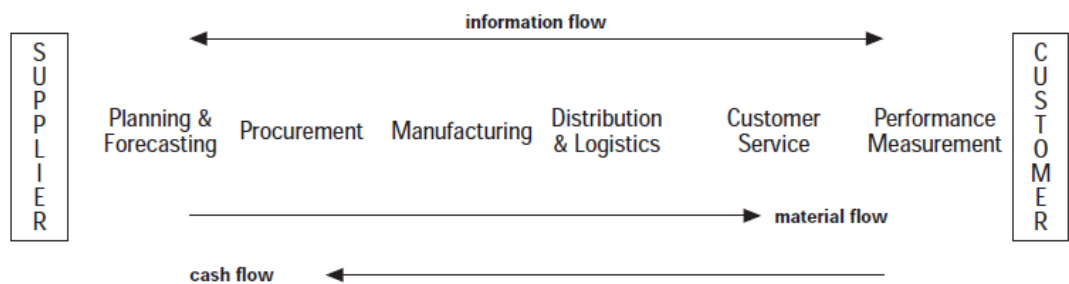


Figure 2.6.2: Three Flow Types in Supply Chain (Malindetros & Binioris, 2014)

Physical product flow is from supplier to customer; however, product returns, recycling and services have a reverse flow. It is the flow of information that

coordinates the physical flow and shows the transmission and tracking of the order (Malindretos & Binioris, 2014). For example; It includes capacity information, demand estimation information, estimated delivery date information. The financial flow, on the other hand, shows the payment schedule and credit terms of the goods and personal arrangements (Sarkis, 2012). In other words, it is related to the capital (money-capital) movement along the supply chain.

2.7 Concept and Scope of Supply Chain Management

Supply Chain Management is a management model designed to regulate the complex relationships of companies with their suppliers, increase their efficiency, and improve them. Thanks to this model, operations such as order, information exchange, shipment, logistics, quality control with the suppliers are organized and more rational decisions can be made compared to the human mind, especially with the use of computer-aided programs. Thus, businesses save time and reduce their costs by increasing their efficiency.

Supply Chain Management aims to manage this complex process most effectively way through a virtual platform and to achieve maximum efficiency in the processes between the supplier-manufacturer company and the customer. Today, companies that successfully implement Supply Chain Management provide a great competitive advantage against their competitors, reduce their costs, and bring customer satisfaction to the fore.

Today's developments have made it necessary to offer cheaper and higher quality products in the marketing of products and / or services and to make businesses take part in different fields of activity by acting out of traditional understandings. In Supply Chain Management that has emerged in line with such a perspective arises a structure that includes processes starting from the raw material source and continuing until the delivery of the products to the customer.

On this basis, Supply Chain Management; includes purchasing, production, storage, and logistics activities. It requires businesses to use their supply chains effectively and efficiently to keep pace with the changes. It is only in this way that businesses can have a sustainable competitive advantage and based on inter-enterprise cooperation, all operations can be coordinated more efficiently. In this context, it is seen that the competition among the enterprises is now among the supply chains.

The definitions of supply chain management in the literature are as follows;

Author (s), Year	Definition
(Houlihan, 1985)	<i>Supply chain management is the process of planning, controlling, and implementing supply chain activities to meet customer needs. Supply chain management covers all processes from every movement and storage of raw materials to stock control management and from production to consumption of the product.</i>
(Stevens, 1990)	<i>Supply chain management; is a systematic approach that manages the total flow of information, materials, and services from suppliers to factories, warehouses, and end consumers.</i>
(Scott & Wetbrook, 1991)	<i>Supply chain management; despite its institutional, political, or geographical boundaries, it is a channel structure in which all steps of the product movement are planned and managed, from the supply of raw materials to delivery to customers to satisfy a certain customer group.</i>
(Tan, Kannan, & Handfield, 1998)	<i>It is the process of designing, developing, optimizing, and managing the internal and external components of the supply system, which includes supply chain management, material supply, conversion of materials, and delivery of the final product or service to customers.</i>

Supply Chain Management is a set of approaches that are applied for efficient use of suppliers, manufacturers, warehouses to ensure that the product is produced and distributed in the right amount to ensure customer satisfaction and that it is in the right place at the right time.

(Ballou, Gilbert, & Mukherjee, 2000)

The supply chain is a term that defines how suppliers, manufacturers, distributors, retailers, and customers can act with each other, their attitudes towards each other, and the responsibilities they must share. It is a systematic approach that aims to use the resources in the most effective way for the management of the services, from the raw material suppliers to the factories and warehouses and the delivery of the processed product to the end-user customers.

(Sohal, Power, & Terziovski, 2002)

Supply chain management ensures the coordination of product, information, and financial flow with an integrated organizational structure throughout the supply chain to meet the demands of the customer to increase the competitiveness of the supply chain as a whole.

(Stadtler & Kilger, 2005)

Based on the definitions, the supply chain is a network of materials, information, and financial flow, and consisting of customers, manufacturers, suppliers, and distributors. Supply chain management is; to meet the demand in the market at the right time, in the right amount, in the right place, and at minimum cost, It can be defined as the management of its relations with all its stakeholders in the chain, covering all aspects of human, process, and technology.

2.8 Supply Chain Management Benefits

It is possible to talk about the many benefits of Supply Chain Management, especially the benefits such as unnecessary use of resources and avoiding waste of time with the information sharing provided by the cooperation between enterprises. These;

- Decrease of costs along the chain
- Increased productivity along the chain
- Improved delivery performance
- Decreased inventories
- Cycle time is shortened
- Increased accuracy of prediction
- Increased capacity realization rate
- To respond to changes in the market in a short time
- Increased customer satisfaction

(Lambert & Cooper, 2000) can be counted as.

These benefits and more are set up in full communication between the companies (suppliers, manufacturers, distributors, retailers, etc.) in the same chain, thanks to the coordination and control of activities throughout the chain, reducing costs, increasing productivity, profitability, and customer satisfaction. can be achieved to achieve such goals.

Thanks to the coordination and sharing of information among companies in the supply chain, uncertainties in demand reduce. So, the stock level of companies in the chain decrease. This will bring ease in planning and a reduction in costs. Also, as a result of the trust and cooperation to be established among companies, great advantages will obtain against competitors by shortening the time of developing new products and introducing them to the market by sharing risks, reducing barriers between companies, and increasing flexibility (Ballou, 2007). In this way, customer satisfaction levels can be increased by meeting customer needs. As a monetary equivalent of all these, cash flows along the chain become regular and companies' costs decrease and their profitability increases.

2.9 Supply Chain Management Processes

It is the Supply Chain that integrates processes such as purchasing, production, finance, marketing, and distribution, making a series of parts look and function as a single whole. Institutional integration levels determined by the process approach help the organization's decision making and activation stages to be fast and efficient (Karabay, 2006).

In today's conditions, where competition is intense and customer preferences change rapidly, it is essential to respond to the demands quickly and with the desired quality. The inputs of the production processes must be ready at the right time. For this, all units of companies must fulfill their duties by the requirements and completely. In this sense, it is the supply chain that provides coordination between all units within this integrated structure.

The Supply Chain Management process, although essentially includes some basic principles, aims to manage supply chain processes well, deliver products to customers at the most accurate time and low prices, shorten supply times, meet consumer demands as much as possible, adapt to technological developments, and reduce total costs. it is placed.

With the development of the concept of supply chain management, firms are engaged in the context of the planning process, procurement process, delivery process, and return process. With this understanding, business enterprises, by using these processes more efficiently, are acting to maximize customer satisfaction and to reduce costs. Therefore, transportation methods and storage methods have become more important than ever and businesses have started to have a sustainable competitive advantage in the direction of good management of materials, information, and cash flows.

Mainline supply chain management processes include the following items (Lambert & Cooper, 2000);

1. Customer Relationship Management
2. Customer Service Management
3. Demand Management
4. Order Processing (Order Fulfillment)

5. Manufacturing Flow Management
6. Procurement
7. Product Development and Commercialization
8. Returns (Returns)

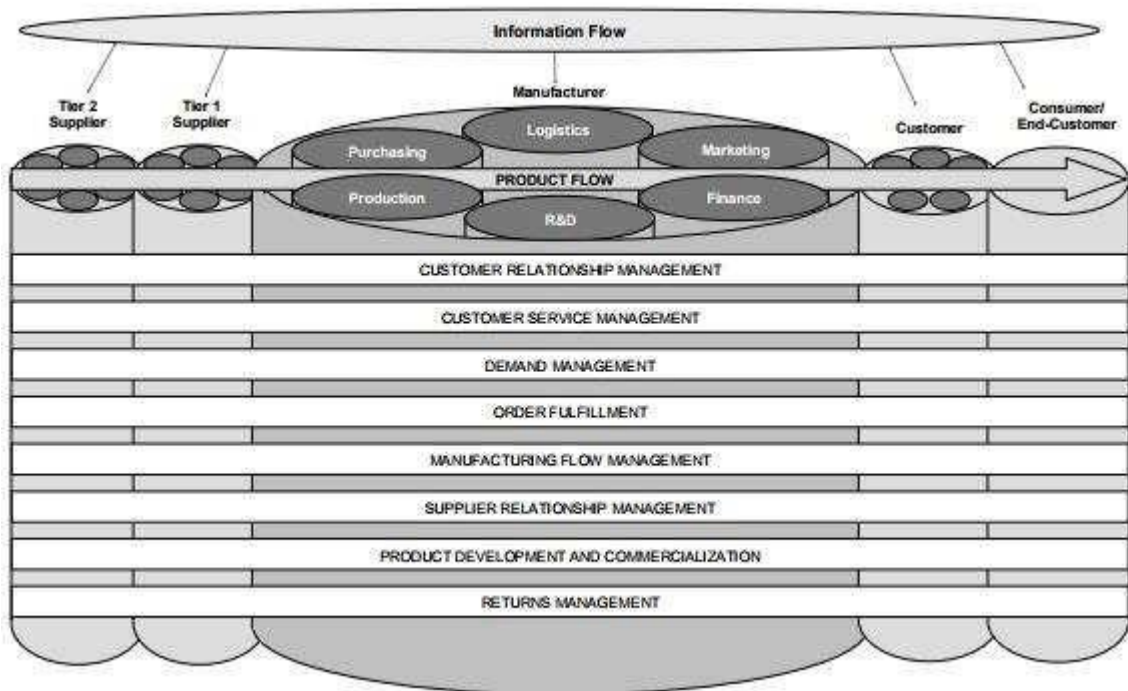


Figure 2.9: Supply Chain Network Structure (Lambert & Cooper, 2000)

2.9.1 Customer Relations Management

In the contemporary marketing approach, it is no longer necessary to find customers by-product, but to produce products according to the needs and expectations of customers (Kotler & Armstrong, 2007). The first business process of supply chain management is to determine the target customer and customer groups. While managing this process, companies design how the relationships to establish with the target customers will realize and how the relations will be developed and maintained.

Customer managers work with designated customer and customer groups to improve processes, reduce demand variability and value-added activities. Also, performance reports are prepared by the department that manages this process to measure the profitability of individual customers as well as the company's financial

impact on these customers (Kuşat, 2012). For improving the product or service performance is offered to the customer, customer service teams analyze for customer needs and demand changes.

2.9.2 Customer Service Management

In the customer service management process; the delivery time of the product after the product is sold covers the informative and supportive activities of the customer, especially in cases such as making the delivery when the customer wants, quickly solving the problems experienced by the customer regarding the product after the delivery, providing all kinds of support to the customers regarding the products requested to return. It has an important place especially in terms of after-sales support services, which is a part of customer relations. It is aimed to ensure the maximum satisfaction of customers not only during the use of the product but also after-sales.

Activities performed within the scope of customer service management (Hong, Zhang, & Ding, 2017);

- Delivery Order
- Order Cycle Time
- Trust in Delivery
- Flexibility in Reordering
- Accuracy in Order Fulfillment
- The Accuracy of The Documents
- Conformity of Documents to Organizational Requirements
- Continuity of Supply
- Supply-Related Problems and Consultation Opportunities
- Ensuring Quality in Sales, Technical and Service of The Business it is

listed as.

2.9.3 Demand Management

Demand management within the supply chain provides an efficient and accurate flow of products and services by providing complete and accurate information from sales places and customers. Besides, the information is transmitted to all members of the chain for effective stock management. The demand management process aims to harmonize the demand forecasting and production, purchasing, and distribution

channels with this forecast (El-Halwagi, 2012). Raw material and semi-product requirements, spare part requirements, machine usage, manpower support, and investment amount decisions are made in line with the demand forecast data.

Companies that are successful in demand management fairly predict which product the customer will demand when. This management reduces uncertainty and ensures that supply chain flow continues effectively (Ansari & Qureshi, 2015). This process is also concerned with developing and managing alternative plans for unexpected situations. In summary, the demand management process tries to balance the needs of customers with the company's supply opportunities.

2.9.4 Order Fulfillment

The order processing process has an important place in the supply chain. The correct processing of the orders means that customer demand is met correctly (Seuring & Müller, 2008). For carrying out this process effectively, the production, distribution, and transportation systems of the enterprise should integrate. With the right order processing activities, businesses will also be able to reduce delivery costs.

2.9.5 Manufacturing Flow Management

The production flow management process includes all activities required for product flow management related to manufacturing activities and product acquisition, implementation, and management of flexibility. In production flow management, the company tries to give the flexibility to meet changing customer needs and demands (Akgül, 2010). This process covers activities related to production activities, obtaining the product, and providing flexibility.

2.9.6 Supplier Relationship Management

Supplier relationship management includes how to establish relationships with which suppliers throughout the supply chain, and which product and service agreements to be concluded. Companies need to improve their relationships with their suppliers as well as their relationships with their customers. Improving the relations with the suppliers will also improve the production and marketing functions of the companies, and as a result, it will provide customer satisfaction and positively affect the performance of the company (Hong, Zhang, & Ding, 2017). Also, companies are trying to establish long-term partnerships with suppliers to ensure standardization, and they are reducing the number of suppliers to achieve this (Freeman, 1984).

2.9.7 Product Development and Commercialization

In this process, the companies carry out the activities of developing new products and placing them on the market by communicating intensely with the suppliers and customers. Management decisions should be carried out in coordination with the customer relations management process, appropriate materials should be selected, and a correct product-market harmony should be established (Kuşat, 2012). Thanks to the feedback received from customers, customers' attitudes towards existing products should be examined; change demands in existing products should be perceived well and new product demands should be evaluated, and product development should be pursued (El-Halwagi, 2012). Managers must be able to accurately analyze the needs of their current and potential customers. Besides, production technologies should be developed and integrated into the supply chain.

2.9.8 Returns Management

Although some companies do not pay due attention, return management plays an important role in the competitive advantage of businesses. Returns may also result from inaccuracies in the address and errors in the goods shipped. Companies who want to provide a sustainable competitive advantage for whatever reason should pay attention to return management. The better the processes related to reverse logistics and product returns within return management, the more advantage will be provided to businesses and supply chains in ensuring the efficiency of reverse product flow, reducing product returns, and benefiting from the opportunity to recycle (Karabay, 2006).

The process includes the company's logistics capabilities, new product development, and information management. Organizational structure, on the other hand, is organizational structures that include total vertical integration relationships of companies in the network, as well as performance measurement and management approaches. Technology includes process and information technologies. In other words, process optimization will provide benefits such as designing business processes by today and future requirements, decreasing process costs, increasing process efficiency, quality, and flexibility. Providing the support of top management, associating the targets of the employees with the main performance indicators, and providing training are among the methods applied for successful change management.

Technological infrastructure and systems to complement the optimized processes are indispensable elements of the supply chain (Akgül, 2010).

2.10 Sustainable Supply Chain Management Evolution

The role of the countries that are shown as the source of the world problems and the companies that have the role of locomotives in the country's economies, and the international organizations that have a complier-regulatory power, are very important.

For the continuation of all living species, increasing the quality of human life and a world heritage where the needs of future generations can meet; switching to an economic, social, and environmental order in which all resources protect and making this situation sustainable has seen as a remedy. Sustainable development, which is a product of this necessity, has become a representative of a structure that tries to find solutions to interrelated problems such as income imbalance caused by today's economic development approach, ecological destruction, social inequality, and ignoring future generations.

Today, the concept of sustainability is reached when the concept of sustainability is handled from a macro perspective, and the concept of corporate sustainability is reached when it is considered from a micro perspective. With the acceptance of free-market understanding, it is seen that businesses have had a say in many issues that were the responsibility of governments in the past. The fact that businesses have taken such a strong position has led to an increase in responsibilities due to the sustainability concept. Since businesses are responsible for all interest groups, it has been inevitable for them to consider the concept of sustainability while creating their managerial policies and strategies. The realization of macro-level targets of sustainable development has become directly proportional to the achievement of micro-level targets of businesses that have the duty of locomotive (Ahi & Searcy, 2013).

Businesses especially internalize the concept of sustainability for the following reasons:

- Climate changes, global warming, and environmental disasters have brought businesses to the point where they cannot perform their activities.
- Sustainability criteria are now taking place in commercial treaties.

- The concept of sustainability has begun to take place among the credit lending conditions of international financial authorities.

- Environmental, economic, and social indicators have started to be established in supply chain management.

- In addition to financial performance, non-financial performance has become an important element for investors.

- Concepts such as sustainable, responsible investment have emerged in international financial markets.

- Consumers / Customers now expect environmental and social sensitivity from businesses

- The obligation to share environmental and social indicators to operate in the capital markets and to be listed on the stock exchanges

- It has been predicted that the environmental and social sensitivity of businesses will increase the corporate reputation and brand value (Abdul-Rashid, Ghazilla, Novita, & Thurasamy, 2017).

2.11 Concept and Scope of Sustainable Supply Chain

Management

In today's business environment, sustainability has been the new focus of organizations competing on cost and profitability (Kaypak, 2011). Many studies have concluded that companies with a sustainable culture perform better than other companies in the long run (Pagell & Wu, 2009).

Companies should use their resources not only for production but also for the benefit of society when using their economic, environmental, and social resources. Businesses are expected to implement and maintain such activities. In this way, companies will both increase internal prosperity and satisfy external stakeholders in the long term. Thanks to transparent reporting, customers will be able to find more realistic comments while examining the company. With the efficient use of scarce resources, companies will not have difficulty in making forward investments. To survive under these conditions, businesses must meet the demands and emerging social, environmental, and economic conditions (Perez, 2012).

In recent years, with the developments such as changing competition conditions, technological developments, increasing the complexity of the networks in the supply chain, and shortening the product lifetimes, the necessity of businesses to revise their supply chain strategies have emerged (Beamon, 1998). With higher awareness, environmental damages caused by economic activities have become even more critical for governments and economic institutions in the context of sustainable development (Yang, 2013). Environmental concerns, pressures of new regulations and competitive, complex environmental regulations have led companies towards sustainable supply chain management in recent years (Esfahbodi, Zhang, & Watson, 2016).

Sustainable Supply Chain management is individually affected by the responsibilities of the institutions, not only their activities but also the activities of the supply chains in which they are located. Sustainable Supply Chain Management is the management that manages the flow of materials, information, and capital along a Supply Chain and the collaboration of companies on the chain, while at the same time setting and achieving goals (economic, environmental and social) in three different dimensions of sustainable development based on the expectations of stakeholders and customers. Environmental and social criteria continue to exist in sustainable supply chains by meeting the members. Competitiveness, on the other hand, should be strengthened by combining the economic criteria of sustainability with customer expectations (Seuring & Müller, 2008).

The benefits expected from the sustainability approach can be listed as follows;

- Transmitting transparent information to stakeholders and customers about the company's mission and vision by making reports,
- The company's reputation increases,
- Ensuring customer trust,
- Increased loyalty of employees and customers,
- Creating a positive perception in the public,
- Measuring the performance in daily work and ensuring future precautions,
- Taking innovative approaches and gaining an advantage against competitors,
- Economic growth with long-term and solid foundations,

- Development without harming the environment,
- Governments can benefit and benefit from activities that can benefit the environment. In this context, the traditional cost-benefit idea is left behind.

- He stated that the environmental and economic factors are interconnected and that the companies making production should pay attention to this issue in terms of sustainability, otherwise they will turn into elements that threaten the developing economies.

- Provides easy access to financing data,
- Contributes to compliance with legal requirements and legislation,
- Effective risk management,
- Directing new investors to the business,
- To raise the awareness of the environment with social responsibility activities,
- Increased production volume thanks to increased company loyalty of employees

The adaptation of both external factors (governments, customer groups, society, etc.) and internal (management support, human resources management, environmental education, employee training, teamwork, reward system, etc.) to this process is very important for establishing sustainability at the enterprise level. As a result, corporate sustainability is a versatile concept that requires organizational change and adaptation at different levels (Cao, Huo, Li, & Zhao, 2015).

2.12 Sustainable Supply Chain Management

Implementations

SSCM implementations include internal and external implementations performed by a company to make the supply chain economically, environmentally, and socially more sustainable (Morali & Searcy, 2012). Sustainable companies perform their implementations by taking measures to support sustainable development while managing supply chains (Hong, Zhang, & Ding, 2017). Companies adopting the sustainable supply chain, base their strategies on sustainable orientation to increase their sustainable performance. Three main

SSCM implementations, including sustainable procurement, sustainable distribution, and sustainable design are designed as environmental and human-friendly initiatives. According to Esfahbodi, Zhang and Watson (2016); these initiatives are designed to minimize the environmental impact of a product without creating a negative balance with other performance aspects such as costs and functionality. Therefore, sustainable procurement, sustainable distribution, and sustainable design implementations are assumed to improve economic, environmental, and social performance due to their ability to reduce material consumption, waste, emissions, energy use, and excess inventory and provide competitive advantage (Zaidi, Mirza, Hou, & Ashraf, 2018; Esfahbodi, Zhang, & Watson, 2016).

2.12.1 Sustainable Procurement

Sustainable procurement is the choice of products with criteria such as reuse of materials, recyclability, and non-toxic materials when purchasing (Zsidisin & Siferd, 2001). Sustainable procurement, which ensures that these substances comply with the desired ecological characteristics, is seen as an environmental purchase approach (Esfahbodi, Zhang, & Watson, 2016). Sustainable procurement aims to minimize waste and reduce the number of hazardous substances through the supply of raw materials by sustainability (Filho, et al., 2019). According to Carter and Carter (1998); suppliers play a key role in developing environmentally and socially sustainable products or services. For this reason, most large production companies prefer to cooperate with the appropriate suppliers to provide environmentally and socially sustainable products and services (Esfahbodi, Zhang, & Watson, 2016). Sustainable procurement also improves economic performance by reducing energy, health, and environmental costs.

2.12.2 Sustainable Distribution

Economic growth and the expansion of global trade networks lead to a significant increase in distribution activities. Distribution produces numerous adverse effects, such as noise, air pollution, or accidents; it is also one of the major causes of human-caused climate change (Faulin, Grasman, Juan, & Hirsch, 2019). Sustainable distribution is the conduct of sustainable transport, storage, stock control, packaging, and plant location-allocation decisions in a manner that has the lowest possible negative environmental and social impact (Shi, Arthanari, Liu, &

Yang, 2019). According to Esfahbodi, Zhang and Watson (2016), Chinese and Iranian firms often use third-party logistics providers with green expertise, capabilities, and resources to execute effectively sustainable distribution implementations. Firms also exhibit better economic performance with rearranged loading models, as they can reduce the use of materials, increase space usage in the warehouse, and reduce the amount of transport required (Bian, 2002).

2.12.3 Sustainable Design

Sustainability in product design can be defined as the ability to work continuously while providing economic-social benefits to stakeholders while reducing the harm the designed product does to the environment (Ahmad, Wong, Tseng, & Wong, 2018). Sustainable design is essentially the activity of designing products or services with environmental awareness and social concerns (Steenis, van der Lans, van Herpen, & van Trijp, 2015). In traditional product design, issues such as product functions, quality, and costs are at the forefront to meet customer requirements, while sustainable product design focuses on projecting functional, environmental, and economic performances into the entire product life cycle (Lu, Zhang, Gu, & Xue, 2011). Sustainable design aims to reduce the negative economic, environmental, and social impacts of products over their lifetime (Seuring & Müller, 2008). Sustainable design practice also focuses on removing waste that contravenes environmental sustainability throughout the supply chain. Additionally, the sustainable design requires manufacturers to minimize their consumption of materials and energy. This leads to lower costs potentially associated with material and energy consumption. In line with all this information, it has been found that there is a significant direct link between sustainable design and economic performance, and it has been reported that sustainable design can improve environmental performance, economic performance and lead to competitiveness (Esfahbodi, Zhang, & Watson, 2016).

CHAPTER 3

CONSUMER BEHAVIOR

3.1 Consumer

Developments in the 19th century caused changes in the daily lives of people and the structure of societies. When the Industrial Revolution and urbanization added to this change, production and consumption relations came to the fore. With the development and acceleration of these relations, manufacturers started to consider consumers in the USA and some European countries (Mowen & Minor, 1997). Production and consumption continue to accelerate today. Before describing the concept of consumer, it is necessary to address the phenomenon of consumption briefly.

Consumption is the use of a product or service to meet needs (Çınar & Çubukçu, 2009). Consumption is the benefit of individuals using products and services to satisfy and meet their needs (Torlak, 2016). Consumption is not only directed to basic individual wishes and needs but has become a measure of the mechanisms that structure relations in society such as happiness, self-expression, meaning, status, national welfare, and, according to some, success (Miller, 2005). In short, consumption has become a process related to meet psychological needs rather than physiological ones. In this psychological process, the person communicates with his environment and the outside world (Çoşgun, 2012). According to another definition, consumption is a concept in which consumers in modern society are physically passive but mentally active (Azizağoğlu & Altunışık, 2012). Also, consumption consists of experience and mental activities that must solve in the human mind.

Considering the definitions, it could say that the consumption phenomenon shows an enormous change in today's conjuncture. Besides meeting the fundamental needs of people, consumption has now begun to become a different action. It is observed that people's feelings, thoughts, and attitudes change through consumption and become a means of expressing themselves. For example, a BMW branded car has a different meaning for the consumer than a car. Apart from the fundamental function of the auto, there are discrete emotions that the owners arouse. This situation desire to

satisfy the social, respect and needs for self-proof of the person stated by Abraham H. Maslow (1943) in his classification known as Hierarchy of Needs may be explained (Yanıklar, 2010). This change that consumption shows is an indicator that the consumer is in the process of change.

The consumer is the individual who potentially may or purchases the marketing components for his desires, wishes, and needs (Koç, 2013). Consumer people who have a need to be satisfied and who have the money and willingness to spend on it, families, producers and vendors, legal entities, for-profit or non-profit organizations (Mucuk, 2014). Consumer and customer are different from each other. A consumer is a real person who accepts or rejects marketing elements according to their needs in the target market. The customer is the person who permanently purchases the products or services produced by a business. Every customer is a consumer but not every consumer is customer (Karabulut, 1989).

Consumers regularly consume in a wide range of fields, from products such as food, clothing, educational materials, household goods to services such as beauty parlor, laundry, transportation. Although many goods have attractive advertisements and pleasant packaging, the reaction of consumers to them may be particular. They may have various reasons to choose each one (Keane, 1997).

Although the concept of consumer expresses the same with different definitions, the consumer is divided into two according to their desire to purchase products and services (İslamoğlu, 2010):

- **Industrial Consumers:** Those who demand and purchase a good or service for input in the production of another good or service (Gounaris & Avlonitis, 2001).

- **End Consumers:** People who demand and buy to meet their personal and family needs are end consumers (Gounaris & Avlonitis, 2001). Within the scope of the thesis, explanations will make on the behavior of end consumers.

3.2 Consumer Behavior Concept and Features

In the 1950s, the understanding of Contemporary Marketing started to prevail. The previous production understanding and the thoughts of minimizing costs were demolished partially. The modern view has emerged that makes the consumer the focal point (Paylan & Torlak, 2009). Business enterprises that adopt customer focus as a

principle in modern marketing understanding should examine and analyze in detail the behavior of consumers before, during, and after consumption (Paylan & Torlak, 2009).

Consumers want to act according to their wishes and needs and reach satisfaction. Accordingly, all behaviors in the process they carry out are defined as consumer behavior (İslamoğlu, 2010). Consumers perform consumer behavior by searching, purchasing, and evaluating goods and services that expect to satisfy their wishes and needs (Olbrich & Holsing, 2014). Also, consumer behavior examines how people evaluate, select, and consume brands' offers.

Consumer behavior is the whole of both physical and emotional activities that consumers select, buy, use, and perform to meet their demands and needs (Çınar & Çubukçu, 2009). Businesses have to be better positioned themselves in the consumer's mind than their competitors and realize market opportunities. These are possible through a detailed examination of the behavior of consumers in the target market. Business enterprises need to understand consumer needs, wishes, behaviors, habits, perceptions. An enterprise should know well what stimuli the consumer will react to (İslamoğlu, 2010).

Consumer behavior involves the decisions made by people in the face of the problems and occurs at the end of this process (Birtwistle & Tsim, 2005). Consumer behavior could be defined as the whole of the behavior consumers display during the consumption process. Business enterprises aim to create behavioral responses against marketing components by influencing consumer behavior (Mowen & Minor, 1997).

Consumer behavior is the study of how individuals, groups, and organizations choose, purchase, use, and dispose of goods, services, ideas, or experiences to meet their needs and desires. Consumer purchase behavior is a detailed process that starts with stimuli and ends with a response (Roszkowska-Hołyś, 2013).

Business enterprises need to know how consumers shape their purchasing behavior and determine their marketing strategies accordingly. Many needs are effective in purchasing behavior. Various products to meet these needs, and time to make decisions about them and there are economic constraints. More importantly, consumers have different values, personalities, and attitudes (Ajzen, 2008). Consumer behavior should examine what people buy to meet the needs and desires of groups and what they pay attention to while choosing them (Karabulut, 1989).

Businesses need to put consumer behavior at the center of every step they will take. In an environment of high market competition, companies who predict and satisfy the consumers' wishes and needs will succeed. Consumer behavior and the factors affecting them should be explained and analyzed in detail to be successful. The reason for such an exploration of consumer behavior is revealing the causes of purchasing behavior.

The characteristics of consumer behavior, which handle within the framework of an interdisciplinary approach, are listed as follows: (İslamoğlu, 2010):

- Consumer behavior is motivated
- Consumer behavior is dynamic
- Consumer behavior accommodates different activities
- Consumer behavior is complicated, and timing is important
- Consumer behavior is associated with several roles
- Consumer behavior depends on environmental factors
- Consumer behavior creates diversity due to different individuals

To position in a better place than their competitors in consumer perceptions, businesses need to know what consumers pay attention to when purchasing goods or services and what conditions they consider when buying decisions.

3.3 Factors Affecting Consumer Behavior

The consumer stimulates by immediate surroundings (need, tension, anxiety) and the external environment (advertisement, family, friend). The consumer evaluates these stimuli on a cultural, social, and economic basis and realizes their buying behavior (Gajjar, 2013). Consumers' have a structure influenced by both internal and external sources and whose conduct is very complex to understand. Examining the factors affecting consumer purchasing behavior in detail will provide useful information about consumers.

The reasons for the detailed examination of consumer behavior are listed below (Mowen & Minor, 1997):

- Consumer behavior is human behavior. For this reason, every factor affecting people is also efficient in purchasing products or services.

- Consumer behavior is not something that suddenly occurs. It occurs in a particular process. This process influence by many internal and external factors.

- Changes in individuals' social frameworks directly affect their purchasing behavior.

- Individuals who achieve a goal with purchasing sometimes are restricted to the objective of society. These restrictions also affect purchasing behavior.

Consumers' behaviors impress by attitudes, needs, motivations, perceptions, and factors such as culture, social class, family, and reference groups in society (Ramya & Ali, 2016). Consumer behavior influence by both environmental and individual factors, as well as offers through marketing. The consumer decides to purchase under all these factors.

3.3.1 Personal Factors Affecting Consumer Behavior

Personal factors that determine consumer behavior in researches shape as frequently gender, age, life cycle, profession, education, and income (Harrell & McConocha, 1992; Durmaz, Bahar Oruç, & Kurtlar, 2011). At the same time, these factors use for market segmentation (McDonald & Dunbar, 2004). herefore, it is essential to focus on personal causal agents to explain consumer behavior.

3.3.1.1 Gender

The concept of gender describes a biological and physical condition (Croson & Gneezy, 2009). Gender is classified as male and female and describes the desired attitudes and behaviors, roles, and duties in the society in which the consumer lives from a sociological point of view (Croson & Gneezy, 2009) Male and female consumers exhibit different roles and behaviors due to the cultural characteristics of the society they live in. Differences in behavior as men and women in the purchases also differentiate their needs, product and service preferences, decision-making styles, the products they buy, and consumption actions. The gender variable plays an essential role in structuring marketing strategies and practices of business enterprises.

3.3.1.2 Age

Age is very important in determining consumer behavior. Because consumers of different age groups, needs, the products they choose, the reasons for the products, the factors affecting these reasons, and the stimuli that lead to the purchase are different (Ramya & Ali, 2016). The products and services required by consumers in every age group vary. Therefore, market segmentation is made according to age groups. Market segmentation assumes that consumers in the same age group will experience the same purchase decision process (McDonald & Dunbar, 2004).

It may differ according to the socio-cultural characteristics of the society in which the consumer lives. The emotional responses of each age group and their control of these differences differ. Because needs and desires of individuals vary according to their place in life at different age periods. Therefore, this leads to the emergence of various consumer behavior. For example, a young 18-year-old consumer wants to buy colorful clothes and sophisticated technology gadgets, while an adult consumer might want to buy a simple and more functional item.

3.3.1.3 Life Cycle

Life cycle refers to the change of people's wishes, needs, purchasing behaviors, according to their age and their position in these age periods. The things that a person eats, drinks, wears, and uses in every stage of his life from birth to death vary (Durmaz, Bahar Oruç, & Kurtlar, 2011). Consumers' demands and needs differ according to their age ranges, and also, their purchasing behavior varies. Therefore, the products or services offered should be suitable for the consumers' age group and life cycle (Ajzen, 2008).

3.3.1.4 Profession and Educational Status

The profession and education status of consumers cause different desires and needs. Kotler and Armstrong (2007) point out that consumers' professions affect the products and services they purchase. Other studies that support the thinking of Kotler and Armstrong also emphasize that the profession of individuals affects the products and services to be purchased and that it is significant for marketing institutions to know the target profession. The needs of consumers vary depending on their status of education as well as their job. In this case, consumer behavior expects to differ depending on education status (McDonald & Dunbar, 2004).

3.3.1.5 Income Status

In the consumer's buying behavior, it is necessary to buy products and services after selecting them. The income level must be sufficient to make the purchase. For a consumer who does not have enough purchasing power to buy products or services, it would be unnecessary to talk about other factors. Income status causes the consumer to spend to specific standards.

It is possible to say that consumers whose income level varies have different values, behavior patterns, and lifestyles (Koç, 2013). Therefore, distinct consumption movements observe among divergent income status groups in society (Kotler & Armstrong, 2007). It is possible to focus on the information consumers have about products and services to explain these consumption movements. For example, high-income consumers seem to buy new products, scientific ideas, and complex products and services. Those with low income prefer uncomplicated products that are affected by emotional data (İslamoğlu, 2010). In these factors, it reveals different decision-making styles. For example, the research on consumers' online shopping found that price-based decision-making varies according to income level. Consumers with low-income levels were price-oriented (Odabaşı & Barış, 2011). The research on the relationship between consumer decision-making behavior and thinking observes that low-income consumers have a price-oriented decision-making style. It determined that consumers with high income also act in the habit-brand loyalty decision-making style (Paylan & Torlak, 2009).

3.3.2 Sociological Factors Affecting Consumer Behavior

Sociological factors that determine consumer behavior, reference groups are listed as family, social class, and culture (Durmaz, Bahar Oruç, & Kurtlar, 2011; Özsungur & Güven, 2017).

3.3.2.1 Reference Groups and Family

There are many groups of reference groups that in constant contact with each other, consisting of more or fewer people who feel they are a group (Childers & Rao, 1992). Reference groups shape human behavior. Since they are in communication with each other, their attitudes and behaviors constitute a norm. The norms of these groups are valuable and influential in their purchasing decisions (Yıldırım, 2016). In this context, reference groups' most essential feature is strong enough to affect the person.

Schiffman & Kanuk (2007) state that consumers exposed to information about products and brands in a globally competitive environment need reliable resources to make the right choices. These sources are the reference groups that existed in the past and are still valid today. In parallel with this idea, Yıldırım (2016) states that reference groups are sources of information. These resources may be an advantage or disadvantage for products and services by affecting the consumer's decision-making process. In short, the thoughts, feelings, and recommendations of the reference groups are considered by consumers and used as a measurement tool. At this point, it becomes necessary to examine the reference groups in more detail. Reference groups generally are divided into two:

- **Primary Group:** It's a group with close relationships. It is a group that enters the consumers' personal space, loves, and respects and influence in this direction accordingly (Kotler & Armstrong, 2007).

- **Secondary Group:** As a result of the industrial revolution, it is the group that creates itself with increasing urbanization. It is the group where the consumer is not in close relationships rather than in the immediate environment but influenced by their values, beliefs, attitudes, and behaviors (İslamoğlu, 2010).

Defined reference groups have three significant effects on consumer behavior. These effects can be listed as follows:

- **Normalizing Effects:** Every consumer in this group asks to act under the specified norms. Those who show the desired behavior remunerate by the group. Those who behave against the group punish d (Koç, 2013). It compresses and directs the consumer within the framework of specific rules.

- **Identifying Effects:** The behavior by the group members style performed by the consumer takes, and the model tries to be applied. Thus, interaction attempt with the group (Koç, 2013). Identifying effect increases the consumer's sense of belonging and the desire to gain a reputation.

- **Informative Effects:** It frequently exchanges information in line with the synergy it captures with its members in the consumer group. He perceives this information according to his capacity, and his behavior is similar to those in the group (Koç, 2013). The informative effect could interpret as the continuous circulation of

information in consumers' and the use of this information in line with the self and group members' interests.

3.3.2.2 Social Class and Culture

The social class explains a social structure created by people with the same social dignity, very close relationships, and behavioral expectations similar (Ajzen, 2008). In general, it could say that the social class differs from other groups in society and shows close characteristics in itself. It is shaped in also a hierarchical system with a homogeneous structure that exhibits the same values, behaviors, and continuity (Mucuk, 2014).

The essential feature of the culture is that it meets consumer needs, values , and beliefs. Businesses need to meet the needs of the consumer in accordance with the culture and respond with the necessary products and services (Odabaşı & Barış, 2011). Therefore, marketers should know the consumers' cultural values they want to sell their products and service. At this point, it is necessary to touch upon the importance of subcultures in the culture. Subcultures; nationality, religion, race, the geographical region could differentiate, as well as age, profession, education. Also, it separates from the point of view (Karabulut, 1989). Because of these differences, culture and subculture are significant for marketers to determine consumer behavior.

3.3.3 Psychological Factors Affecting Consumer Behavior

Psychological factors that determine consumer behavior are; personality and self, perception and involvement, attitude, beliefs and values, learning and motivation. Psychological factors help explain why and why the consumer chooses and exhibits his buying behavior.

3.3.3.1 Personality and Self

Personality causes people to behave differently in the face of cases (Odabaşı & Barış, 2011). It is a characteristic reaction of man against the same events. Personality is a distinctive, consistent and structured relationship form with the inner and outer environment of the individual than other individuals (Birtwistle & Tsim, 2005; Çınar & Çubukçu, 2009). Karabulut (1989) states that personality has consistent responses to stimuli in the outer world of man. From the definitions made, it seems the character is a unique phenomenon that distinguishes man from other people.

3.3.3.2 Perception and Involvement

In daily life, consumers permanently encounter different stimulants. However, not every actuator activates the consumer (Koç, 2013). Because consumers perceive and make choices according to their needs. While making these choices, it primarily uses its internal features. Internal properties that affect selectivity in perception are; learning and experiences, interest/needs and motives, individual differences and mental state of the person, and social factors (İslamoğlu, 2010; Ramya & Ali, 2016).

Learning and experiences affect the selectivity in the perception of the consumer's internal factors first. For example, the consumer can perceive the advertisement for a product he used before faster than the other consumers because he has experience with that product and learned about the product at the time of experimentation. Another factor is interest, needs, and motives. The consumer perceives the necessities and the products and services he is interested in more quickly. An example of this is that a student preparing for the university perceives ads or courses related to ongoing trial exams faster than others. Because the person is concerned, needs, and is motivated that way.

3.3.3.3 Attitudes and Beliefs

Attitudes are psychological factors that directly affect the consumers' perceptions and behaviors and express their positive and negative feelings and tendencies regarding a particular object (Harrell & McConocha, 1992). The definitions of the attitude, which has such an essential effect on the consumer, are as follows.

Attitude is a tendency attributed to an individual and regularly creates his thoughts, feelings, and behaviors related to a psychological object. Attitudes are phenomena that cannot observe directly and whose existence is determined based on verbal expressions or behaviors. In other words, the attitude is understood based on any act or reactions of the individual (Özsungur & Güven, 2017). According to another definition, attitude expresses the individual's positive or negative feelings and tendencies regarding a particular object or symbol. Attitude also affects beliefs. Belief covers the opinions and opinions of the right or wrong information based on personal experiments or external sources. The individual's experiences, family relations, near environment, and personality, huge affect their attitudes (Kumar, Manrai, & Manrai, 2015).

The consensus is that attitudes are composed of three main elements, which are as follows (Ajzen, 2008; Gajjar, 2013):

- Cognitive element that constitutes the factual knowledge reservoir of attitude,
- The cognitive element includes information about the object of an attitude, while the emotional one consists of emotional reactions that can be observed against the object of that attitude. Acceleration of heartbeat, sweating, all of the verbal responses are emotional elements.
- It is a behavioral element that is the verbal or operational expression of attitude.

Belief is knowledge, opinions, and thoughts based on one's personal experiences and environmental resources. Because people live based on their beliefs, they trust another person, product, or service accordingly. Although many beliefs are shared and accepted among the members of the community, people's attitudes defined as positive or negative evaluations of an idea or object are individual. Attitudes are stricter than beliefs, especially negative attitudes towards a product or service, brand, which will hinder the sale of many useful goods or services.

Consumer beliefs about a brand or product can be either real information, thought, or just emotional. As mentioned, their attitude is based on personal evaluations. In this case, there are two different ways that businesses can follow against beliefs and attitudes. The first one is to offer the goods or services that are appropriate to beliefs and attitudes to the consumer; The second is to persuade and try to change these beliefs and attitudes. (Kotler & Armstrong, 2007).

3.3.3.4 Learning and Motivation

Learning is that the behavior style of the human is permanent (Paris, 1997). It is the change in the way of movement as a result of one's experiences in life (Harrell & McConocha, 1992). In line with, Birtwistle & Tsim (2005) defines the concept of learning as the behavior and change of behaviors with the effect of events in the life cycle of people. Ajzen (2008) also states that almost every behavior, event, and concept that has been done and considered has been learned. Learning is the fact that all experiences gained in the society of the individual, with the effect of both their internal and environmental features, turn into behavior as a reaction and this behavior continues throughout its life.

The motive is the internal component of the person who takes the consumer into action and leads to a certain vision (Kotler & Armstrong, 2007). Motivation, on the other hand, is the behavior of the consumer by acting with the stimuli that encounters (İslamoğlu, 2010). According to Odabaşı & Barış (2011), motivation encompasses all of the efforts that constantly try to put more and more consumers in the community into action. It can be said that motivation will occur according to the intensity of various needs of the person or not.

3.4 Consumer Behavior Models

Firms must consider the elements of the environment in which it is located while determining the strategies. One of the most difficult environmental elements for firms is the consumers who make up the target market. The reason for this is the unpredictability of how consumers react even though they are affected before changing environmental conditions. A company that well analyzes and recognizes its target audience, provides an appropriate input by predicting how consumers will be motivated. When appropriate marketing strategies are developed for consumers that are distinguished with similar features, positive reactions come from the consumers, and these responses return to the business with the growth of sales volume, increased market share, and increasing customer loyalty.

Consumer behavior models are handled in two different ways. The first is the explanatory consumer behavior model, which explains the reason for consumer behavior and is based on motivation, while the second one; is a descriptive or modern consumer behavior model that explains how consumer behavior constitutes (İslamoğlu, 2010).

Models are not scientific tools but tools to analyze and predict. Consumer behavior models help explain consumer behavior and explain how it emerged. Thanks to these models, businesses offer the opportunity to estimate how and why consumers respond in the consumer purchasing process.

3.4.1 Explanatory Consumer Behavior Models

Explanatory behavior models were developed with an eclectic approach, based on theories of other disciplines. Explanatory behavior models explain consumers' behaviors by connecting them to motivation for any reason (İslamoğlu & Altunışık, 2017).

Marshallian Economics Model: According to the model, individuals are economical and rational. Therefore, purchasing behavior is also rational. It is stated in the model that individuals think rationally during the purchase and turn to the product that will bring them the most benefit (Mucuk, 2014).

Freudian Model: According to the model, the individual's self develops under the influence of the id, ego, and superego and acts according to the balance of these three elements. The id or primitive self consists of the most natural motives. The superego is the conscience of the individual and pushes the individual to act according to social rules. Ego, on the other hand, balances these two self-units, enabling the individual to perform behaviors that he can be happy with. While the individual's desire to purchase is formed according to id, his expression can be to the extent allowed by his upper self (Nakip, Varinli, & Gülmez, 2012).

Pavlovian Model: The model is based on four basic concepts; it is desire, stimulus, reaction, and reinforcement. Individuals' learning is linked to these four concepts. An individual's learning of something is caused by interaction with these four factors. Not every consumer reacts to the stimulus, in the same way, the learning process varies according to the degree of reward or reinforcement. If the result is positive, that is, learning or reinforcement, certain responses will become stronger. If the process ends negatively, learning does not become a habit and it disappears after a while (Demir & Kozak, 2013). This model is used in advertising, especially in marketing, and consumers are directed to purchase by offering different elements in advertising.

Veblen Model: According to the model, the wishes and needs of the individual are largely determined by the environment in which want to be a member. The individual makes purchases to be a leader in the group, to be popular, or to give the impression on own group (Papatya, 2005).

3.4.2 Descriptive Consumer Behavior Models

Descriptive behavior models have started to be developed because of insufficient explanation of consumer behavior. Descriptive models try to explain how and why consumers make purchasing decisions.

Nicosia Model

The Nicosia Model explains that consumer behavior is influenced by stimuli that emphasize emotionality. It states that concrete data is not very effective in consumer mass. It also focuses on the relationship between all consumers, from the manufacturer to the buyer (Korkmaz, Eser, & Öztürk, 2017). With a similar definition, Mucuk (2014) states that Nicosia Model emphasizes that the consumer shapes his behavior to meet his emotional motives in the purchasing decision process. However, it emphasizes that rational motives should not be ignored rather than mere emotional motives. Rational motives include making comparisons between the brands it wants to buy and gaining experience after shopping.

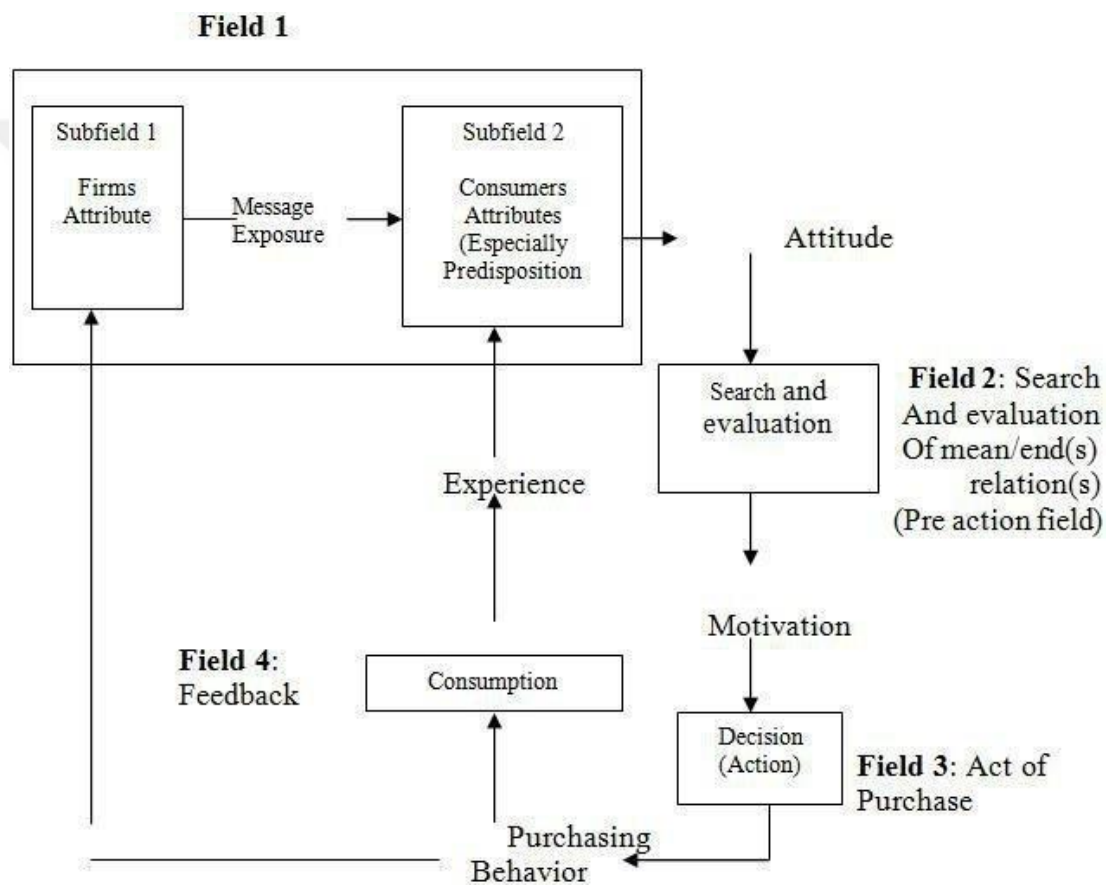


Figure 3.1: Nicosia Model of Consumer Behavior (Nicosia & Mayer, 1976)

The Nicosia model of consumer behavior consists of the message source to the consumer's attitude, the pre-behavior area, the buying behavior area, and the feedback area. When the model is analyzed, first of all, the business or brand must introduce itself to the consumer through advertising or various activities. In the second stage, the consumer takes an attitude towards the message that reaches him due to the effects of his characteristics. The consumer compares the product or service that comes to it with other options and makes an evaluation. At the end of this evaluation, it reaches the

level of motivation. When it comes to the decision stage, it performs the purchase process. This process gives the consumer an experience and takes place in the consumption storage area. At the last stage, it conveys this experience to the business or brand with positive or negative feedback. In short, in this model, the consumer reveals himself irrationally and rationally effectively. It is also observed that there is a purchase decision process similar to that in the general consumer behavior model.

Engel-Kollat-Blackwell Model

The model consists of five main parts: Inputs, information process, decision process, decision process variables, and external effects. Individuals are exposed to the effects of various external and internal stimuli in the purchasing process and their responses to these stimuli constitute their purchasing behavior (İslamoğlu & Altunışık, 2017).

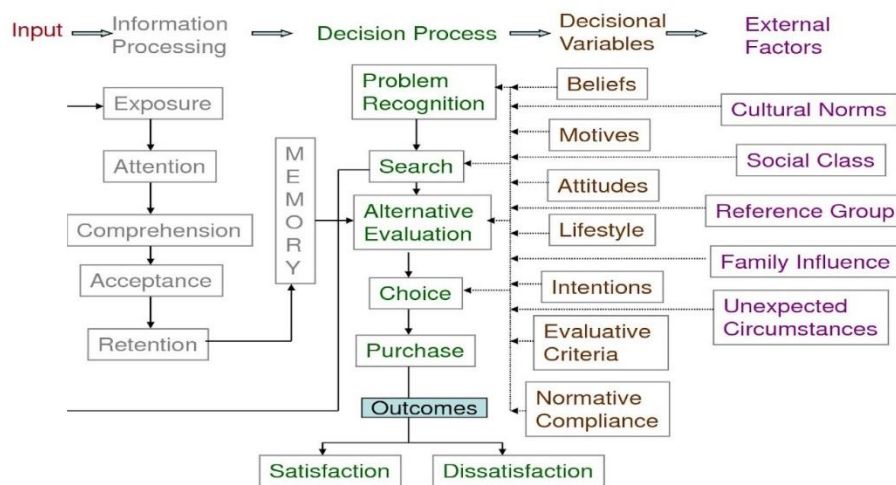


Figure 3.2: Engel-Blackwell-Kollat Model of Consumer Behavior

Howard Sheth Model

The Howard Sheht-Hs Model tries to explain its behavior by combining the social, cultural, and social factors of the consumer. It places these factors in a logical order, taking into account the effects of psychological and marketing activities on the

consumer. It performs the processing of the information obtained in this way (İslamoğlu & Altunışık, 2017).

According to the model, the individual is faced with a process consisting of several stages in the purchasing situation but shows different purchasing behavior for different products. According to the model, there are three types of purchasing behavior: Automatic purchasing is when the consumer needs little information about the product; limited problem solving is when the consumer needs little information about the product; unlimited problem solving is stated as the purchasing behavior that the consumer finds risky and needs a lot of information.

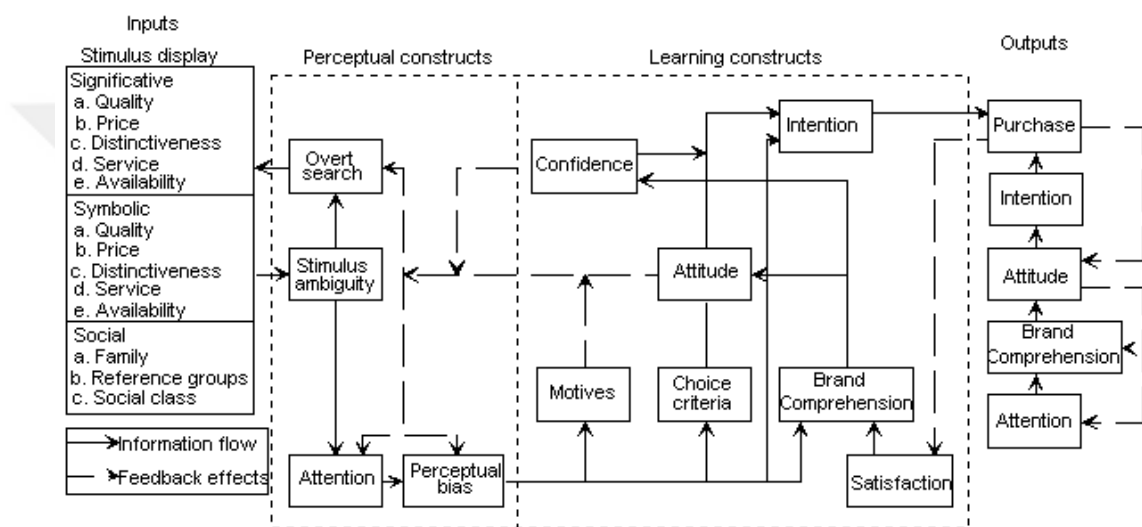


Figure 3.3: Howard and Sheth Model of Buyer's Behavior (Howard & Sheth, 1969)

Howard Sheht Consumer Behavior Model (İslamoğlu, 2010); the inputs show as stimuli, perceptual variables, learning variables, and outputs as in Figure 3.3. Output variables that show consumer behavior in the model attract attention. The five output variables to the right of the model represent consumer responses to businesses. The stage of purchase is; It includes the variables of attention, understanding, attitudes, intent, and purchasing behavior (Papatya, 2005). When the model is evaluated, the business or brand must first convince the consumer to purchase its product or service. Convinced consumers want more information about products and services. They compare the information they have acquired with their peers. As a matter of fact, at the last stage, the consumer takes an attitude and intends to purchase. The ranking comes into play at this point. The beginning of the purchase phase begins with the

consumer's attention to the product, that is, the magnitude of the information purchase. The information obtained goes through the process of understanding. The consumer enters into an attitude by evaluating the potential of the counterparty as satisfaction with the business or brand. The consumer intends to purchase and shows true buying behavior. After using the product, it may increase loyalty to the business or brand or exhibit a negative attitude.

3.5 Consumer Purchase Process

The consumer decision-making process consists of various steps that the consumer takes while making the purchase decision. The influencers of the purchasing decision mechanism of the consumer are motivation level, internal factors such as personality, perception, learning and attitude, and marketing efforts.

The purchasing decision process begins with the need to realize the need or encounter a problem, continues with the purchasing behavior that will eliminate the unrest in the consumer and continues with the emotions experienced in the consumer after the purchase (İslamoğlu, Tüketici Davranışları, 2010).

3.5.1 Realizing the Need

Whatever the need is, when the consumer presses enough to meet it, the consumer takes action and explores ways to meet the problem. Identifying the problem or realizing the need is caused by the effects of internal and external stimuli (Papatya, 2005). When the consumer feels that there is a difference between the real situation and the desired situation, he will be motivated to have the desired situation. Other stages of the decision-making process consist of activities carried out to achieve the desired need.

3.5.2 Gathering Information and Creating Alternatives

If there are multiple options for solving the identified need or problem, the consumer will begin to investigate which of them is most suitable for him/her (Nakip, Varinli, & Gülmez, 2012). To make the best decision, the consumer starts to gather information, the information to be collected can be obtained from personal sources, commercial sources, public sources, or experiences (Mucuk, 2014). The amount of information to be collected varies depending on the type of need, the past experiences of the consumer, the perceived risk of the decision, and the urgency of the need.

3.5.3 Choosing Between Alternatives

At this stage, the consumer tries to choose from different brands from different options. The evaluation principles that the consumer pays attention to at this stage are as follows (İslamoğlu & Altunışık, 2017):

- Characteristics of the goods or services
- Relative importance is given to different features of the product
- Brand image
- Consumer functions separately for each product feature of the consumer
- Attitudes developed with different evaluation methods about various brands

Which choice principle is more dominant and will be evaluated by the consumer depends on the situation the consumer is in. When the consumer reaches the option that he thinks will meet his needs in the best way, the intention to purchase will emerge.

3.5.4 Implementation of the Purchase Decision

The intention to purchase is one of the most critical stages, it can be stated as the response of the consumer to the stimuli that he has encountered so far (Korkmaz, Eser, & Öztürk, 2017). The decision to purchase is intertwined to purchase, but at the last moment, the situation of giving up the decision to purchase the product, which was decided to be purchased under the influence of other individuals or unexpected situations, may occur (Odabaşı & Barış, 2011).

Individuals can enter the purchasing process in line with a certain intention and can go into the purchasing decision process when there is no intention to purchase, this is called unplanned purchasing (Ajzen, 2008)W. When unplanned purchasing takes place, the individual purchases goods or services completely unplanned; purchases realized as a result of recall can be specified as purchases made in line with the suggestion and unplanned purchases arising from the movements made to purchase.

3.5.5 Post-Purchase Behavior

Marketing activities do not end with the purchases of individuals, the reactions of the consumers after their purchases, their evaluations, and the satisfaction they receive from the goods or services are evident at this stage. Consumers buy each product with the hope of obtaining certain benefits, consumers will be dissatisfied

when the expected benefit is greater than the perceived benefit. On the contrary, consumers will be satisfied with the purchase decision, considering that the perceived benefit is greater than the expected benefit. (Demir & Kozak, 2013).

Consumers' post-purchase trends and behavior need to be carefully analyzed and learned. The information gathered about the emotions after the purchase is guiding the marketing decision-makers on issues such as developing new products, advertising, and customer satisfaction activities (Kotler & Armstrong, 2007).

3.6 Sustainable Consumption

Consumption is an economic, physical, and social process that is affected by the nature, conditions, and psychology of individuals and the geography, culture, laws, politics, and infrastructure of the society they live in (Azizağoğlu & Altunışık, 2012). Consumption has been an important issue in international politics since the early 1970s. The term sustainable consumption entered the agenda of the policy at the Rio World Summit in 1992. In the decade following the Rio Summit, a wide variety of institutional programs on sustainable consumption were launched (UNDP, 2019).

Excessive consumption has caused significant environmental problems worldwide, according to many scientific studies researched (Lélé, 1991; Vezzoli & Manzini, 2008; Yang, 2013). In recent years, the focus of environmental issues has been on pollution control, cleaner production, and increasing resource efficiency on the production side. Beginning from the late 1990s, efforts have been initiated to collect waste consumed by the consumer and to recycle products that have completed the life of the manufacturing companies. As a result, although some concrete improvements were made in reducing resource consumption, although final consumption increased with increasing welfare of the growing population, the increase in productivity based on product became negative due to the increase in total consumption. The concept of sustainable consumption is generally related to human needs, equality, quality of life, resource efficiency, waste minimization, consumer health and safety, etc. it is used as an umbrella term on topics (Ansari & Qureshi, 2015).

The mass consumption characteristic of modern societies has devastating consequences not only for human spirituality, physical and mental health, and social relations but also for the natural environment. As Baumgartner (2011) points out,

consumption consists of continuous purchasing, consumption, use, and disposal of waste, so everything is repeated the next day. The negative consequences of excessive consumption in the form of the continuous purchase and disposal of products have led to various environmental trends and movements that harshly criticize excessive consumers and have required sustainable development implementation principles based on environmentally friendly, responsible use in our modern world. Sustainable consumption is a consumer trend towards achieving a balance between humans' natural needs and the needs that make civilization progress (Hirsh & Glasser, 2015).

It should also be emphasized that, as a response to consumption, sustainable consumption promotes the reduction of waste, resource consumption, environmental damage, and even a reduction in the number of product components and functions (Çınar & Çubukçu, 2009). Vezzoli & Manzini (2008) argue that the number of sustainable consumption promoters is increasing every year and as a result, the characteristics of this consumer trend will have more impact on the economy of consumer behavior. More and more high-end consumers follow new consumer trends, including sustainable consumption. This consumer trend is emerging to provide a new structure, new forms, and methods of consumption, but also the latest needs and satisfaction.

Thanks to the consumption and trend models, consumers contribute to the current environmental conditions. UNDP (2019) has defined sustainable consumption as economic, social, and environmental development by meeting the needs and aspirations of everyone, ensuring a better quality of life for present and future generations while respecting the boundaries of their global ecosystem.

Sustainable consumption has two distinct but related aspects and lifestyles. Improved products and services are those that require fewer resources, require less natural resource consumption and avoid unhealthy working conditions during their production, use less energy or other natural resources during their use, and are also easily recycled or harmless when disposed of. However, innovative, improved products and services are often cheaper. Consumption-based on a sustainable lifestyle, on the other hand, is a consumption model that creates fewer environmental problems and is more sensitive to social inequalities. (Buerke, Straatmann, Lin-Hi, & Müller, 2017).

CHAPTER 4

METHODOLOGY

In this part of the research, the significance and purpose of the research were defined first, and sub-problems were listed in more detail. After describing the problem, the research model and research hypotheses were put forward. How data collected to solve the research problem was described. The sampling process was explained, and the validity and reliability of the research scales were analyzed. Demographic analyses and the effects of companies' sustainability implementations on consumer perceptions are examined separately.

4.1 Purpose and Significance of the Study

As discussed in the context of the literature in the previous sections of the study, it is essential to ensure the sustainability of Supply Chain Management for companies today (Kleindorfer, Singhal, & Van Wassenhove, 2005; Seuring & Müller, 2008; Yang, 2013; Esfahbodi, Zhang, & Watson, 2016)

Kleindorfer, Singhal, & Van Wassenhove (2005) suggested that firms should make an effort to meet the different needs and interests of the supply chain members (government, suppliers, customers, local communities, and non-governmental organizations) who are the stakeholders to adapt to the changing competitive environment. In addition to increasing economic profitability, the efforts of a firm should also aim to improve relationships with the planet (environmental) and people (social) (Kleindorfer, Singhal, & Van Wassenhove, 2005).

Companies' fundamental purpose is to make a profit by producing the product or service that will meet consumers', which is its most important stakeholder, demands, and needs. In a sense, consumers, which are the base purpose of companies, are among the main interest groups affected by and affecting business activities. Consumer awareness of business activities, ideas, suggestions, and feedback about products and services are the main factors that determine the companies strategy (Kotler & Armstrong, 2007). In this sense, the role of the consumer in the realization of sustainability cannot ignore.

Although many studies conduct on Sustainable Supply Chain Management, the studies focus on case analysis and firm performance. These studies, which construct from a narrow perspective, are insufficient to establish a strong theoretical basis (Seuring & Müller, 2008). From this respect, there are many aspects of companies' supply chain implementations in achieving sustainable development that need to be investigated by consumer perceptions.

In light of all this information, the study's main objective is to examine the effects of the consumer's; environmental awareness, personal norms, purchase intention for sustainable products, and attitude towards sustainable products on sustainable product choice behavior. For this purpose, the following sub-objectives have determined in the research:

- i. Determining the sustainable product choice behavior of the Turkish consumer,
- ii. Measuring attitude towards sustainable products in a developing country,
- iii. Building a roadmap about sustainability for companies,
- iv. Contributing to sustainable supply chain management literature,
- v. Determination of the relationships between demographic variables and consumer's sustainable product choice

4.2 Assumptions and Limitations

One of the most significant limitations of the research is population constitutes from a single geographic region. As a result of this situation, the sample's explanation and generalization feature may not be sufficient. Another limitation of the research is the use of the survey method in gathering research data. It is accepted that the participants perceive the judgments mentioned in the survey correctly and answer them correctly when answering the survey questions.

4.3 Research Methodology

4.3.1 Statement of the Problem

The sub-problems that are sought to answer within the scope of the research are as follows:

- i. At what level is the environmental awareness of the Turkish consumer?
- ii. Does environmental awareness affect the attitude of the consumer's towards sustainable products?
- iii. Does environmental awareness affect the consumer's purchase intention for sustainable products?
- iv. Does environmental awareness affect the Turkish consumer's sustainable product choice behavior?
- v. Do personal norms affect the purchase intention for sustainable products?
- vi. Do personal norms affect the behavior of choosing sustainable products?
- vii. Do Turkish consumers choose sustainable products?
- viii. Does environmental awareness differ according to demographic characteristics?
- ix. Does sustainable product choice behavior differ according to demographic characteristics?

4.3.2 Research Model and Hypotheses

After a comprehensive literature review, the research model have been created. The research model includes five groups of variables related to environmental awareness, personal norms, purchase intention for sustainable products, attitude towards sustainable products, and sustainable product choice behavior. In the context of the model, schematic representation seems in Figure 4.1, the effects of environmental awareness, personal norms, purchase intention for sustainable products, and attitude towards sustainable products on sustainable product choice behavior have been examined.

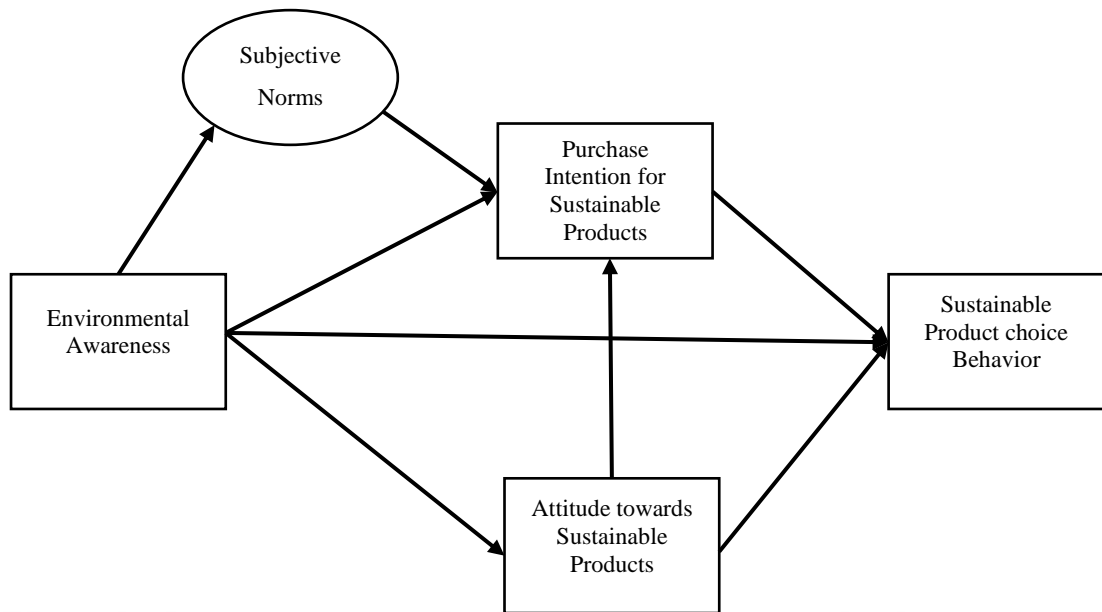


Figure 4.1: Research Model

H₁: Consumers' environmental awareness is positively related to their subjective norms.

H₂: Consumers' environmental awareness is positively related to their purchase intention for sustainable products.

H₃: Consumers' environmental awareness is positively related to their sustainable product choice behavior.

H₄: Consumers' environmental awareness is positively related to their attitude towards sustainable products.

H₅: Consumers' subjective norms is positively related to their purchase intention for sustainable products.

H₆: The relationship between consumers' environmental awareness and their purchase intention for sustainable products mediate by subjective norms.

H₇: Consumers' attitudes towards sustainable products are positively related to their purchase intention for sustainable products.

H₈: Consumers' purchase intention for sustainable products is positively related to their sustainable product choice behavior.

H₉: Consumers' attitudes towards sustainable products are positively related to their sustainable product choice behavior.

4.3.3 Population and Sampling Strategy

As the population of the research, all consumers have been determined aged 18 and over. Some surveys as printed, some have been carried out in electronic form on consumers to test the hypotheses created within the study scope. The convenience sampling method was applied to collect surveys. Six hundred people were reached via the printed and electronic survey filling method, but 383 people returned. As a result of examining the 383 questionnaires collected, 376 of them include in the analysis process. The remaining seven questionnaires have not been added to the analysis due to incomplete data entry. According to these data, the response rate of the survey is 62.66%. Considering that in the applied researches, the response rate varies between 20% and 40% over the samples selected from the population (Baruch & Holtom, 2008), a return rate of 62.66% could consider as a fair rate.

4.3.4 Survey Instrument

The efficient and balanced presentation of research results is directly related to the methodology discussed throughout the research. Therefore, the explanation of the research method is significant for the evaluation of the gathered data.

Five questions adapted from the environmental awareness scale of Severo, de Guimaraes, and Dorion (2018) were used to measure environmental awareness. For the measurement variables of Personal norms, purchase intention for sustainable products, and attitude towards sustainable products, a total of 11 questions were asked, adapted from the Kumar, Manrai, and Manrai (2017) study. Finally, eleven questions adapted from the Meutcheho (2016) study were used to measure firm performance.

Besides, to determine the demographic characteristics of the participants in the study, there are 6 demographic characteristics questions selected by taking into account the research topic and the general characteristics of the participants.

Table 4.1: Scale References

Scale Name	Reference	Number of Questions
Environmental Awareness	(Severo, de Guimaraes, & Dorion, 2018)	5
Personal Norms - Purchase Intention for Sustainable Products - Attitude towards Sustainable Products	(Kumar, Manrai, & Manrai, 2017)	3 - 4 - 3
Sustainable Products choice Behavior	(Khan & Mohsin, 2014)	6

4.3.5 Data Collection and Research Process

The main objective of using the survey method in any study is to collect and store data systematically. It will help solve the research problem and test the hypotheses discussed to determine the relationships between variables (İslamoğlu & Alnaçık, 2016). The questionnaire is preferred the data collection method in this study for reasons as; providing ease in terms of cost and time for both the researcher and the subjects, being the most useful method for obtaining attitude and numerical data, allowing each scale to be easily applied, and easily collected.

The survey consists of six chapters and a total of 26 questions. Except for the section containing demographic information, the questionnaire was arranged on a 5-point Likert scale ranging from 1 (Strongly Disagree) and 5 (Strongly Agree). Likert-type attitude scale developed by Rensis Likert (1932) is a sampling method in which participants' are asked to participate in these statements by presenting various expressions to individuals whose attitudes will be measured.

4.3.6 Details of Analysis and Results

In this study, model of the research were created after a literature review and the Partial Least Squares (PLS-Graph 3.0, Chin, 2001) approach was used to calculate measurements and structural parameters within the structural equality model (SEM). The PLS approach simultaneously evaluates the psychometric measures of model features and the parameters (the degree and significance level of the relationship between the variables) of the structural model.

After examining the relationships between the variables (environmental awareness, personal norms, purchase intention for sustainable products, and attitude towards sustainable products), the differences between the consumers' demographic

characteristics participating in the research and the sustainable product selection behavior had tested. Frequency analysis of demographic characteristics had conducted through SPSS 21.0 package program. In examining the relationships between demographic characteristics and variables, a t-test had used for gender and marital status variables. One-way analysis of variance (ANOVA) had used for other demographic variables. Tukey HSD test had used for multiple comparisons in a one-way analysis of variance.

4.3.6.1 Descriptives

The data on the consumers' demographic characteristics is given below through the frequency tables. Frequency analysis was conducted to determine the demographic characteristics of the participants, such as gender, age, educational status, marital status, profession, and income status, and the following findings are reached.

Table 4.2: Participants Gender Distribution

Gender	N	%
Male	99	26,3
Female	277	73,7
Total	376	100,0

When the distribution of consumers within the research scope by their gender is examined, the sample majority (73.7%) is female.

Table 4.3: Participants Age Distribution

Age	N	%
18-24	210	55,8
25-34	81	21,5
35-44	49	13,0
45-54	29	7,7
55 and Over	7	1,9
Total	376	100,0

The distribution of consumers by age within the scope of the study is analyzed. 55.8% of consumers are between the ages of 18 and 24, 21.5% are between the ages of 25 and 34, 13% are between the ages of 35 and 44, 7.7% are between the ages of 45 and 54, and 1.9% are in the ages of 55 and over. Based on Table 4.3, it could say that the rate of participation in the survey is higher among young consumers.

Table 4.4: Participants Education Status Distribution

Status of Education	N	%
Primary Education	1	0,3
High School	57	15,2
Academy	32	8,5
University	234	62,2
Master's Degree	43	11,4
Doctorate	9	2,4
Total	376	100,0

Distribution of consumers by educational status within the study scope is analyzed. 0.3% of the participants graduated from primary school, 15.2% from high school, 8.5% from the academy, 62.2% from university, 11.4% from master's degree, and 2.4% from doctorate. More than 75% of participation in the research could express as university and postgraduate graduates.

Table 4.5: Participants Marital Status Distribution

Marital Status	N	%
Married	95	25,3
Single	281	74,7
Total	376	100,0

Distribution of consumers by marital status within the study scope is analyzed, 25.3% of participants were married, and 74.7% were single. The proportion of single participants is close to 75%.

Table 4.6: Participants Profession Distribution

Profession	N	%
Civil Servant	61	16,2
Private Sector Employee	73	19,4
Self-Employed	27	7,2
Student	183	48,7
Housewife	15	4,0
Unemployed	17	4,5
Total	376	100,0

The distribution of consumers by profession within the study scope is analyzed. 16.2% of participants were civil servants, 19.4% were private-sector employees, 7.2% were self-employed, 48.7% were students, 4% were housewives, and 4.5% were unemployed. It seems that approximately half of the consumers participating in the research are students.

Table 4.7: Participants Income Status Distribution

Status of Income	N	%
2.000 ₺ and Below	178	48,3
2.001 ₺ - 2.500 ₺	37	9,8
2.501 ₺ - 3.500 ₺	49	13,0
3.501 ₺ - 6.000 ₺	70	18,6
6.001 ₺ - 10.000 ₺	30	8,0
10.000 ₺ and Over	12	3,2
Total	376	100,0

Distribution of the consumers by income status within the scope of the study is analyzed. Almost half of the participants (%48,3) 2.000 ₺ and below, 9.8% of the participants were 2001 ₺ - 2.500 ₺, %13 of the participants were 2.501 ₺ - 3.500 ₺, %18,6 of the participants were 3.501 ₺ - 6.000 ₺, 8% of the participants were 6.001 ₺ – 10.000 ₺ and 3,2% of the participants were 10.000 ₺ and over it is observed to have income.

4.3.6.2 Validity and Reliability

In this study, reflective scales had used for all variables (see Appendix-1). In calculating reliability, composite scale reliability (CR) and average variance extracted (AVE) was used. Table 4.8 shows that PLS based CR values for all measurements are above the acceptable threshold value (0.70) and AVE values exceed the admissible threshold value (0.50).

Table 4.8: Reliability Results of the Model Tested

Variables	α (> 0.7)	R-sq.	CR (> 0.7)	AVE (> 0.5)
Environmental Awareness	0,714	-	0,923	0,800
Subjective Norms	0,787	0,287	0,787	0,552
Purchase Intention for Sustainable Products	0,728	0,294	0,807	0,516
Attitude towards Sustainable Products	0,875	0,125	0,875	0,700
Sustainable Products Choice Behavior	0,823	0,557	0,871	0,531

Table 4.9: Factor Loadings

ITEMS	Factor Loadings				
Environmental Awareness					
EA1	0,709				
EA4	0,729				
EA5	0,789				
Subjective Norms					
SN1		0,859			
SN2		0,830			
SN3		0,820			
Purchase Intention for Sustainable Products					
PIfSP1			0,601		
PIfSP2			0,635		
PIfSP3			0,838		
PIfSP4			0,773		
Attitude towards Sustainable Products					
AtSP1				0,853	
AtSP2				0,913	
AtSP3.				0,919	
Sustainable Products Choice Behavior					
SPCB1					0.701
SPCB2					0,690
SPCB3					0,748
SPCB4					0,818
SPCB5					0,715
SPCB6					0,694

Table 4.9 contains the results of a confirmatory factor analysis of the study variables conducted in PLS 3.0. EA2 and EA3 statements that create inconsistency for the environmental awareness scale had excluded.

Table 4.10: Correlation, Average and Standard Deviation Values for Variables

		μ	δ	1	2	3	4
1	EA	3,55	,77				
2	SN	3,05	,94	0,536**			
3	PfSP	3,99	,66	0,460**	0,329**		
4	AtSP	4,43	,62	0,354**	0,175**	0,415**	
5	SPCB	3,64	,67	0,518**	0,464**	0,714**	0,365**

**Correlation Significance Level 0.01

The statistical method that helps determine the level and direction of the relationship between the variables is called correlation analysis. The correlation coefficient of 1.00 indicates a perfect positive relationship; -1.00 indicates a perfect negative relationship; 0.00 indicates no relationship. Although there are no fully agreed ranges in the correlation coefficients interpretation, the following limits frequently use. The correlation coefficient (as an absolute value) between 0.70-1.00 is the large association, 0.70-0.30 is the medium association, 0.30-0.00 is small association can be defined (Büyüköztürk, 2016).

The results of correlation analysis, in which one-to-one relations of the fundamental variables of our research had discussed; a medium positive association between environmental awareness and subjective norms ($r = 0.53$, $p < 0.01$), medium positive association between environmental awareness and purchase intention for sustainable products ($r=0,46$, $p<0,01$), medium positive association between environmental awareness and attitude towards sustainable products ($r=0,35$, $p<0,01$) and the medium positive association had observed between environmental awareness and sustainable products choice behavior ($r = 0.51$, $p < 0.01$).

According to correlation analysis, medium positive association between subjective norms and purchase intention for sustainable products ($r = 0.32, p < 0.01$), small positive association between subjective norms and attitude towards sustainable products ($r = 0.17, p < 0.01$) and the medium positive association had observed between subjective norms and sustainable products choice behavior ($r = 0.46, p < 0.01$).

Moreover, the medium positive association seems between purchase intention for sustainable products and attitude towards sustainable products ($r = 0.41, p < 0.01$), medium positive association between attitude towards sustainable products and sustainable products choice behavior ($r = 0.36, p < 0.01$) and finally large positive association seems between purchase intention for sustainable products and sustainable products choice behavior ($r = 0.71, p < 0.01$). These results reveal that purchase intention for sustainable products and sustainable products choice behavior are closely related concepts.

4.3.6.3 Model Analysis and Results

PLS path analysis, which allows a clear and sharp calculation of latent variable (LV) scores, is used to test the relationships within the theoretical model shown in Figure 4.1.

Table 4.11:Effect of Environmental Awareness on Variables

Hypotheses	Relations	<i>t</i>	Inference
H₁	EA → SN	7,27	Supported
H₂	EA → PifSP	2,38	Supported
H₃	EA → AtSP	4,06	Supported
H₄	EA → SPCB	2,47	Supported

As a result of the analysis of the impact of environmental awareness on other variables; the significant and positive relationship between subjective norms ($t = 7.27, p < 0.05$), the significantly positive relationship between environmental awareness and purchase intention for sustainable products ($t = 2.38, p < 0.05$), significant positive relations between environmental awareness and attitude towards sustainable products ($t = 4.06, p < 0.05$), and significantly positive relationship between environmental

awareness and sustainable products choice behavior ($t = 2.47, p < 0.05$) is observed. In the light of these results, H1, H2, H3, and H4 hypotheses had supported.

Table 4.12: Effect of Subjective Norms on Variables

Hypotheses	Relations	<i>t</i>	Inference
H ₅	SN → PIfSP	1,04	Not Supported
H ₆	EA → SN* → PIfSP	5,14	Supported

* Moderating Variable

It is identified that subjective norms have no significant effect statistically ($t = 1,04, p < 0.05$) on purchase intention for sustainable products. However, it is reached the end that subjective norms have a moderator effect between environmental awareness and purchase intention for sustainable products ($t = 5,14, p < 0.01$). Although the H5 hypothesis is not supported these analyzes results, the H6 hypothesis is supported.

Table 4.13: Relationships of Other Variables

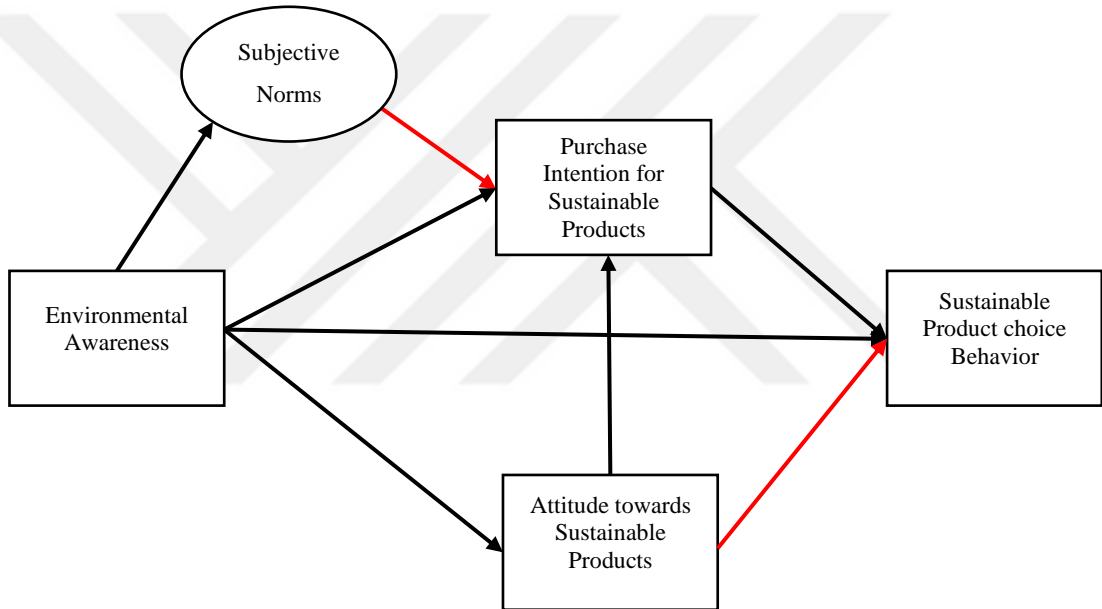
Hypotheses	Relations	<i>t</i>	Inference
H ₇	AtSP → PIfSP	2,60	Supported
H ₈	PIfSP → SPCB	6,85	Supported
H ₉	AtSP → SPCB	0,42	Not Supported

It is observed that attitude towards sustainable products on the intention to purchase intention for sustainable products ($t = 2,60, p < 0.05$) have a positive and significant effect ($t = 6,85, p < 0.05$). However, it is determined that the attitude towards sustainable products had no significant effect on sustainable product choice behavior ($t = 0,42, p < 0.05$). H7 and H8 hypotheses are supported, while the H9 is not.

Table 4.14: Summary of Research Findings

		1	2	3	4
1	EA				
2	SN	(+)√			
3	PifSP	(+)√			(+)√
4	AtSP	(+)√			
5	SPCB	(+)√		(+)√	(+)√

Figure 4.2: Model Emerging as a Result of Research



Test results of hypotheses created to determine the relationships between the mentioned variables are collectively given in Table 4.15.

Table 4.15: Results Of Hypothesis Testing

H₁: Consumers' environmental awareness is positively related to their subjective norms.	Supported
H₂: Consumers' environmental awareness is positively related to their purchase intention for sustainable products.	Supported
H₃: Consumers' environmental awareness is positively related to their sustainable product choice behavior.	Supported
H₄: Consumers' environmental awareness is positively related to their attitude towards sustainable products.	Supported
H₅: Consumers' subjective norms are positively related to their purchase intention for sustainable products.	Not Supported
H₆: The relationship between consumers' environmental awareness and their purchase intention for sustainable products mediate by subjective norms.	Supported
H₇: Consumers' attitudes towards sustainable products are positively related to their purchase intention for sustainable products.	Supported
H₈: Consumers' purchase intention for sustainable products is positively related to their sustainable product choice behavior.	Supported
H₉: Consumers' attitudes towards sustainable products are positively related to their sustainable product choice behavior.	Not Supported

4.3.7 Analysis of Sustainable Product Choice Behavior Arising from Demographic Features

In this part of the study, it has been investigated whether the responses of the consumers participating in the research for their sustainable product choice behavior differ according to their demographic characteristics.

4.3.7.1 Gender and Sustainable Product Choice Behavior

T-test had was used to determine whether sustainable product preferences differ according to the gender of consumers. The t-test analysis results carried out in this context are as follows:

Descriptive statistics and t-test results regarding the genders and sustainable product preferences of the consumers is shown in Table 4.16.

Table 4.16: Arithmetic Mean, Standard Deviation and t-Test Results Related to Sustainable Product Choice Behavior of Male and Female Consumers

Variable	Gender	N	\bar{X}	S.D.	t	p
Sustainable Product Choice Behavior	Male	99	3,6465	,78797	0,064	,949
	Female	277	3,6414	,63573		

When Table 4.16 was viewed, as a result of the t-test conducted to determine whether the composite scores of sustainable product preferences of consumers participating in the research show a significant difference according to gender variable ($t=0,064$; $p=0,949 > 0,05$), there was no statistically significant difference between the group averages. Averages of sustainable product choice behavior do not differ according to the gender of the consumers.

4.3.7.2 Marital Status and Sustainable Product Choice Behavior

T-test had was used to determine whether sustainable product preferences differ according to the gender of consumers. The t-test analysis results carried out in this context are as follows:

Descriptive statistics and t-test results regarding the genders and sustainable product preferences of the consumers is shown in Table 4.17.

Table 4.17: Arithmetic Mean, Standard Deviation and t-Test Results Related to Marital Status and Sustainable Product Choice Behavior of the Participants

Variable	Marital Status	N	\bar{X}	S.D.	t	p
Sustainable Product Choice Behavior	Single	281	3,5747	,65492	0,821	,001
	Married	95	3,8439	,70828		

When Table 4.17 was viewed, as a result of the t-test conducted to determine whether the composite scores of sustainable product preferences of consumers participating in the research shows a significant difference according to marital status variable; ($t=0,821$; $p=0,001 < 0,05$) difference between the group means was found statistically significant. Averages of sustainable product choice behavior differ according to the marital status of the consumers.

Considering the differences in marital status groups with sustainable product choice behavior, married consumers ($\bar{X} = 3,8439$) show more sustainable product choice behavior than single consumers ($\bar{X} = 3,5747$).

4.3.7.3 Age and Sustainable Product Choice Behavior

Since the spreading between the age groups of the individuals surveyed varies excessively (“18-24” =32, “24-34” =178, “35-44”=81, “45-54”=49, “55 and over”=36), the age group data has been re-coded as "18-34" and "≥ 35". T-test had was used to determine whether sustainable product preferences differ according to the age of consumers. The t-test analysis results carried out in this context are as follows:

Descriptive statistics and t-test results regarding the age and sustainable product choices of the consumers is shown in Table 4.18.

Table 4.18: Arithmetic Mean, Standard Deviation and t-Test Results Related to Age and Sustainable Product Choice Behavior of the Participants

Variable	Age	N	\bar{X}	S.D.	t	p
Sustainable Product Choice Behavior	18-34	210	3,4984	,61804	0,186	,000
	≥ 35	166	3,8211	,71352		

When Table 4.18 is examined, as a result of the t-test conducted to determine whether the composite scores of sustainable product preferences of consumers participating in the research show a significant difference according to age variable ($t=0,186$; $p=0,000 < 0,05$), the difference between the group means was found statistically significant. Averages of sustainable product choice behavior differ according to the age of the consumers.

Considering the differences in age groups with the sustainable product choice behavior seems that "18-35 age" consumers ($\bar{X} = 3,4984$) show less sustainable product choice behavior than "35 and over 35 age" consumers ($\bar{X} = 3,8211$).

4.3.7.4 Status of Education and Sustainable Product Choice Behavior

As the spreading between the state of education groups of the individuals surveyed varies excessively, had recoded the status of education data. T-test had used to determine whether sustainable product preferences differ according to the state of education of consumers. The t-test analysis results carried out in this context are as follows:

Descriptive statistics and t-test results regarding the status of education and sustainable product preferences of the consumers is shown in Table 4.19.

Table 4.19: Arithmetic Mean, Standard Deviation and t-Test Results Related to State of Education and Sustainable Product Choice Behavior of the Participants

Variable	Status of Education	N	\bar{X}	S.D.	t	p
Sustainable Product Choice Behavior	Before University	90	3,6037	,73208	0,420	,532
	University and After	286	3,6550	,66098		

When Table 4.19 is examined, as a result of the t-test conducted to determine whether the composite scores of sustainable product preferences of consumers participating in the research show a significant difference according to state of education variable; ($t=0,420$; $p=0,532 > 0,05$) there was no statistically significant difference between the group averages. Averages of sustainable product choice behavior do not differ according to the state of education of the consumers.

4.3.7.5 Profession and Sustainable Product Choice Behavior

ANOVA test had was used to determine whether sustainable product preferences differ according to the participants' profession. ANOVA test results carried out in this context are as follows.

Descriptive statistics is shown in Table 4.20 regarding the professions of consumers and sustainable product choice behavior.

Table 4.20: Arithmetic Mean and Standard Deviation Values Related to Consumers' Professions and Sustainable Product Choice Behavior

Variable	Profession	N	\bar{X}	S.D.
Sustainable Product Choice Behavior	Civil Servant	61	3,7377	,87372
	Private Sector Employee	73	3,6963	,64928
	Self-Employed	27	3,9321	,58518
	Student	183	3,5173	,61561
	Housewife	15	4,1444	,31413
	Unemployed	17	3,5196	,66375
	Total	376	3,6427	,67803

Table 4.21 shows the results of ANOVA analysis regarding the professions of consumers and sustainable product choice behavior.

Table 4.21: One-Way ANOVA Test Results Regarding Sustainable Product Choice Behavior According to Consumers' Professions

		Sum of Squares	Degree of Freedom	Mean Square	F	p
Sustainable Product Choice Behavior	Between Groups	9,933	5	1,987	4,525	,001
	Within Groups	162,462	370	,439		
	Total	172,396	375			

One-Way ANOVA test is conducted to determine whether the average scores of the consumers participating in the research regarding the sustainable product choice behavior differ significantly according to the profession variable. When the values in

Table 4.21 had viewed, the difference between group averages was found statistically significant in this test results. Sustainable product choice behavior differs according to the profession of the consumers ($F=4,525$; $p=0,001<0,05$).

The post-hoc analysis had conducted to determine the sources of differences in professional groups with sustainable product choice behavior. Games-Howell test was applied since the equal variance had not assumed among the groups. According to the analysis results, it had found that mostly housewives ($\bar{X}= 4,1444$), and the least students and unemployed chosen sustainable products ($\bar{X}= 3,5173$ and $\bar{X}=3,5196$).

4.3.7.6 State of Income and Sustainable Product Choice Behavior

ANOVA test had was used to determine whether sustainable product preferences differ according to the participants' state of income. ANOVA test results carried out in this context are as follows:

Descriptive statistics had shown in Table 4.22 regarding the state of income of consumers and sustainable product choice behavior.

Table 4.22: Arithmetic Mean and Standard Deviation Values Related to Consumers' State of Income and Sustainable Product Choice Behavior

Variable	State of Income	N	\bar{X}	S.D.
Sustainable Product Choice Behavior	2.000 ₺ and Below	178	3,5581	,60345
	2.001 ₺ - 2.500 ₺	37	3,4685	,85422
	2.501 ₺ - 3.500 ₺	49	3,6939	,55418
	3.501 ₺ - 6.000 ₺	70	3,8119	,68155
	6.001 ₺ - 10.000 ₺	30	3,6222	,83153
	10.000 ₺ and Over	12	4,2917	,68948
	Total	376	3,6427	,67803

Table 4.23 shows the ANOVA analysis results regarding the state of income of consumers and sustainable product choice behavior.

Table 4.23: One-Way ANOVA Test Results Regarding Sustainable Product Choice Behavior According to Consumers' State of Income

		Sum of Squares	Degree of Freedom	Mean Square	F	p
Sustainable Product Choice Behavior	Between Groups	9,598	5	1,920	4,363	,001
	Within Groups	162,798	370	,440		
	Total	172,396	375			

One-Way ANOVA test is conducted to determine whether the average scores of the consumers participating in the research regarding the sustainable product choice behavior differ significantly according to the state of income variable. When the values in Table 4.23 examined, the difference between group averages is found significant statistically. Sustainable product choice behavior differs according to the consumers' state of income ($F=4,363$; $p=0,001<0,05$).

The post-hoc analysis had conducted to determine the sources of differences in income groups with sustainable product choice behavior. Games-Howell test was applied since the equal variance had not assumed among the groups. According to analysis results, it had found that the most ($\bar{X} = 4,2917$), and the least "2000 ₺ and below" and "2.001 ₺-2500 ₺" groups preferred sustainable products ($\bar{X} = 3,5581$ and $\bar{X}=3,4685$).

CHAPTER 5

DISCUSSION AND CONCLUSION

The findings of the research will evaluate in this section. Also, this section contains limitations, implementations, and directions for future research.

5.1 General Evaluation of Research Results

This thesis aims to reveal the responses of consumers to sustainable supply chain implementations. In the second and third parts of the study, literature research on sustainability, supply chain management, and consumer behavior conducted and theoretical evaluations included.

The research methodology section included the research model, hypothesis development, purpose, significance, method, and findings. The study had concluded after the research findings and results discussed. Results can be summarized as follows:

When the arithmetic means of the variables that constitute the subject of the research examined, the results found as follows; The mean points of attitude towards sustainable products are 4.43, the mean of purchase intention points for sustainable products is 3.99, the sustainable product choice behavior mean is 3.64, the environmental awareness mean is 3.55, and the arithmetic average of subjective norms are 3.05 points. Arithmetic means showed that the consumers generally have a positive attitude towards sustainable products, and at the same time, the pressure about sustainable products by their social environment is low.

Other relevant findings of the research have been obtained using correlation analysis. As a result of correlation analysis to determine the relationships between environmental awareness, subjective norms, purchase intentions for sustainable products, attitude towards sustainable products, and sustainable product choice behavior, there is a significant relationship between all variables. Examining the one-to-one relations of environmental awareness and other variables;

- i. There is a medium and positive relationship between environmental awareness and subjective norms. As the environmental awareness of consumers increases, the level of pressure to which they are exposed increases. Thus, increasing

environmental awareness it may increase environmental pressure and so may change social values.

- ii. There is a medium positive relationship between environmental awareness and purchase intention for sustainable products. As consumers' environmental awareness increases, their purchase intention for sustainable products also increases.
- iii. There is a medium and positive relationship between environmental awareness and attitude towards sustainable products. Like the intention, as consumers' environmental awareness increases, their attitudes towards sustainable products also change.
- iv. There is a medium and positive one-to-one relationship between environmental awareness and sustainable product choice behavior. As the environmental awareness of consumers increases, sustainable product choice behavior increases. With action plans at raising the consumers' awareness could reduce the consumption level of products harmful to the environment and society.

These results reveal that environmental awareness is closely related to the concept of sustainable product choice and antecedents. Sustainable product choices increase as long as environmental awareness levels of consumers increase. Environmental awareness is influential in consumers' product preferences.

- v. When examining the relationship among subjective norms, purchase intention for sustainable products, and sustainable product choice behavior, it seems that there is a medium positive relationship, but a low positive relationship with the attitude towards sustainable products. The consumers' inner circle strongly affects their intentions and preferences but partially affects their attitudes.
- vi. The relationship between the purchase intention for sustainable products and sustainable product choice behavior is positive and high. It is seen that consumers' product preferences are mostly affected by their intentions and environmental awareness.

Within the survey questions scope, it was also investigated whether the consumers' answers to the variable of sustainable product choice behavior differ according to their demographic characteristics. T-test for gender, marital status, age, and education variables and one-way analysis of variance for other demographic

variables were used. A complementary Games-Howell test was conducted to determine the sources of differences in groups.

Consumers' choices for sustainable products did not differ according to the gender, age, and educational status of the participants. But according to consumers' marital status, there was a significant difference in the average of sustainable product selection behaviors. Married participants preferred sustainable products more. When sustainable product preference behavior is examined from the point of view of consumers' professions, it is observed that participants' sustainable product preference behaviors differ according to their professions. Housewives prefer sustainable products at the most, and students prefer sustainable products at least. Finally, it is determined that participants' sustainable product choice behaviors also differed according to their income, and those in the high-income group preferred more sustainable products than those in the low-income group.

Finally, within the scope of the research results, the results reached were evaluated as a result of the PLS path model analysis conducted to test the relationships in the theoretical model. The relationships between the five variables that we consider within the scope of the research are presented below. The hypothesis tests performed are as follows:

- i. As a result of the analyzing the impact of environmental awareness on other variables; significant and positive relations between environmental awareness and subjective norms ($t = 7.27$, $p < 0.05$), significant and positive relations between environmental awareness and purchase intention for sustainable products ($t = 2.38$, $p < 0.05$), significant and positive relations between environmental awareness and attitude towards sustainable products ($t = 4.06$, $p < 0.05$), and significant and positive relations between environmental awareness and sustainable products choice behavior ($t = 2.47$, $p < 0.05$) was observed. In the light of these results, **H₁**, **H₂**, **H₃**, and **H₄** hypotheses are supported.
- ii. It has been identified that subjective norms have no significant effect statistically ($t = 1,04$, $p < 0.05$) on purchase intention for sustainable products. However, it has been reached the end that subjective norms have a moderator effect between environmental awareness and purchase

intention for sustainable products ($t = 5,14$, $p < 0.01$). Although the **H5** hypothesis is not supported as a result of these analyzes, the **H6** hypothesis is supported.

- iii. It was observed that attitude towards sustainable products on the intention to purchase intention for sustainable products ($t = 2,60$, $p < 0.05$) had a positive and significant effect likewise purchase intention for sustainable products on sustainable products choice behavior ($t = 6,85$, $p < 0.05$). However, it was determined that the attitude towards sustainable products had no significant effect on sustainable product choice behavior ($t = 0,42$, $p < 0.05$). **H7** and **H8** hypotheses were supported, while the **H9** hypothesis was not supported.

5.2 Discussion and Recommendations

Today, we are about the limits of environmental problems such as climate change, global warming, desertification, and pollution of water resources. Although the trend and interest in sustainable methods have increased in conditions such as increasing population, increasing production and consumption, and competitive environment the development and implementation direction progressed slowly. Each stakeholder in the supply chain has to face environmental, social, and economic challenges. On the one hand, while sustainable development is aimed, on the other hand, there are conflicts and delays due to negative reasons such as income inequality, worsening competitive conditions, failure to provide social welfare, and developing country policies based solely on economic conditions. Despite this, the fact that information is easier and faster to access thanks to its expanding communication network provides awareness of stakeholders from every group in the supply chain, while strengthening the possibility of achieving sustainable conditions with its direct or indirect contributions. Besides, supply chain members developing new formulas and practices on sustainability and approaching sustainable policies are indications that this hope can move towards achievable stages.

Businesses enterprises that want to maintain their existence in the challenging market conditions have to make effective use of their supply chains. This study aims to enrich the relevant literature by presenting a model that explains the relationships between environmental awareness, subjective norms, purchase intention for sustainable products, attitude towards sustainable products, and sustainable product

choice behavior for both researchers and business managers. Also, this study is unique in that it is the first study to examine the mediating role of subjective norms in the relationship between environmental awareness and purchase intention for sustainable products. Research findings contribute to the literature with significant evidence, showing that subjective norms play a fully mediating role in the relationship between environmental awareness and purchase intention for sustainable products.

Consumers are affected by the environmental conditions they live in and react voluntarily or involuntarily to changing conditions. In this context, awareness, social pressure, attitude, and intentions play a role in shaping the preferences of the consumer. At the same time, the level of education, age, social status, gender group, and professional status of the people shape their perspectives and create motivation about their interests. As a result of the study, it has been observed that companies that adopt sustainable supply chain management are evaluated positively by the consumer and affect consumer choices.

In more detail, the research findings show that consumers' environmental awareness strongly and positively influences their intentions, attitudes, norms, and behaviors. This expected result shows that as consumers, individuals are conscious of using resources to increase and maintain their level of life by meeting their needs. This expected result shows that as consumers, individuals have sustainable logic conscious of using resources to increase and retain their level of life by meeting their needs. Additionally, the findings show that consumers' attitude towards sustainable products and their intention to purchase sustainable products affect their product preferences. This situation leads the consumer to sustainable products. In other words, as consumers' awareness level increases, they emphasize their sensitivity to society and the environment, satisfying their personal needs. It expects to provide goods and services that are environmentally compatible, suitable for recycling, and sensitive to environmental protection.

Interestingly, the findings do not support the existence of a direct and significant relationship between subjective norms and purchase intention for sustainable products. Contrary to the literature (Dommeyer & Gross, 2003; Çınar & Çubukçu, 2009; Buerke, Straatmann, Lin-Hi, & Müller, 2017; Kumar, Manrai, & Manrai, 2017), this result should not be perceived as there is no relationship between subjective norms and

purchase intention for sustainable products. The mediating analysis conducted reveals that environmental awareness affects the purchase intention for sustainable products through subjective norms. In other words, subjective norms play a fully mediating role in the relationship between environmental awareness and purchase intention for sustainable products, shedding light on the mechanism by which the relationship between environmental awareness and purchasing intention for sustainable products takes place. This result means that environmental awareness is shaped more intensely through social expectations and increases the interest in sustainable products through subjective norms. Thus, it becomes vitally essential to benefit from subjective norms in increases purchasing intention for sustainable products.

Finally, the study's findings confirm that sustainable product choice behavior varies according to the consumers' demographic characteristics. First, there is no significant difference in consumers' gender group, compared to average values, but both sexes have high sustainable product choices. As a result of investigations conducted according to the consumers' marital status, it is found that married consumers prefer sustainable products more than single consumers. When the sustainable product preferences according to the age criteria of the consumers are analyzed, it is determined that the consumers who are thirty-five years old and above favor the sustainable products compared to the younger consumers. Differences in consumers' education levels have not made a difference in their approach to sustainable supply chain practices and product preferences. According to this data, environmental and social problems are remarkable for consumers at all educational levels. Compared to consumers in terms of profession and income groups, it is found that sustainable products prefer by more working and high-income groups. In this respect, it can be said that firms reflect their sustainability practices on product prices and are more expensive than other products.

5.3 Recommendations for Managerial Implementations

In the light of the theoretical studies and empirical findings, it is possible to make the following suggestions in this study where the relationship between the sustainable supply chain practices of the companies operating in the production and service sector and the product preferences of the consumers are examined.

Supply chain management is a concept that connects its suppliers, internal departments, distributors, customers, and information systems and aims at the administration and coordination of activities in its chain. It is a management system that covers the supply of raw materials and materials in the process of delivering a product from its source to its end-user, production, stocking, marketing, order management, distribution, and delivery to the customer. In the light of the results obtained in our research, it has been seen that consumers support sustainable actions and products, and executives are required to perform their supply chain activities in the best way and to restructure the chain structure in order to be sustainable.

Sustainability is a spiral that feeds each other both from the point of view of companies and consumers. Consumer behavior plays a significant role in determining a roadmap for business enterprises, and the products/services offered by business enterprises and all kinds of activities they carry out support the formation of sustainable awareness in consumers. Realizing that the word resources are not sustainable with the current economic strategies, consumers and businesses have developed behaviors.

While the business enterprises' financial achievements have been considered as significant performance indicators for years, nowadays, besides these achievements, their contributions to society and their responsible behavior towards the environment have become an essential factor for consumers and other stakeholders. To reveal the factors that prevent consumers from turning to environmentally friendly behaviors (recycling, energy-saving, simplification in consumption, public transportation preference, organic, not tested on animals, ecologically packaged, recycled products) could provide many contributions to the supply chain management, companies, and social goals. Also, it may be recommended that companies research ways to produce sustainable products at a price that every segment of the society can afford.

Business enterprises should not only look business-oriented when calculating the costs of goods and services, but they should also demonstrate that a sustainable understanding of usage, delivery, and after-sales services without leaving any question marks in the minds of customers. Besides, firms must follow technological developments, raise the quality, product variety, and innovation to respond to the demands on time and in full. Speed, creativity, predictability, continuous learning, and

improvement are crucial for managers to respond in a customer-focused and intensely competitive environment to react appropriately to production and flexibility, efficient use of resources, technological developments, and changes in customer demands. Managers should continue their activities by giving importance to these factors in their activities.

Dynamic strategies are an essential factor for companies to comply with today's competitive conditions. Capturing market opportunities and responding to customer expectations is an important issue for companies. In line with the trends against practices such as efficient use of energy resources, recycling, selection of raw materials and semi-finished resources, sustainable distribution, sustainable production, sustainable design in our country as well as in the world, managers should also pay attention to these issues.

5.4 Directions for Future Studies

In this study, the relationships between environmental awareness, subjective norms, purchase intentions for sustainable products, attitude towards sustainable products, and sustainable product choice behavior were examined. It was revealed by analyzing the data obtained from consumers that the variables are related. It can be said that the study has distinct importance in terms of being the basis for other researchers and has a pioneering quality in other studies with its findings.

Another research with relevant variables may be conducted on a sectoral basis and with larger samples. This way, it can be determined whether there are differences between sustainable product choices in product groups. Also, the relationship of housewives' interest in sustainable products with their education level can be investigated as a separate study topic.

In the literature, in addition to awareness, subjective norms, attitude, and intention, many individuals, social and psychological factors are mentioned in the emergence of consumer product preference. In future studies, other factors that cause consumer product choices (such as religion, culture, social class, social media) could add to the structural model, and more detailed research could be conducted. Therefore,

consumer behavior and sustainability emerge as a rich research area for future research.



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APPENDIX- SURVEY FORM

Sayın Katılımcı,



Bu anket formu, Gebze Teknik Üniversitesi bünyesinde yürütülmekte olan “Sürdürülebilir Tedarik Zinciri Uygulamaları” isimli araştırmanın deneysel kısmı ile ilgilidir. Bu araştırma çalışması **tamamen akademik bir amaca yönelik** olup, gönderilecek cevaplar **kesinlikle gizli tutulacaktır**.

Uygulamanın kapsadığı soruları cevaplandırmak, hiç kuşkusuz zamanınızın bir kısmını alacaktır. Ancak üniversite ve iş hayatı arasındaki ilişkileri güçlendirmek ve elde edilen sonuçlardan ortaklaşa yararlanmak düşüncesi ile bize yardımcı olacağınızı düşünmekteyiz.

Katılımınız için teşekkürlerimizi sunar, çalışmalarınızda başarılar dileriz.

Saygılarımızla...

	Kesinlikle Katılmıyorum	Katılmıyorum	Kararsızım	Katılıyorum	Kesinlikle Katılıyorum
1. Evimde, geri dönüştürülebilir ve organik atıkların ayrılmasını gerçekleştiriyorum.					
2. Çalıştığım şirkette, geri dönüştürülebilir ve organik atıkların ayrılmasını gerçekleştiriyorum.					
3. Banyo yaparken, su tüketimimi en aza indirmeye çalışıyorum.					
4. Elektronik atıkları (piller, bataryalar, ampuller, cep telefonları) geri dönüştürülmesine uygun toplama noktalarına bırakıyorum.					
5. Gelecek nesiller için doğal kaynakları korumaya yönelik çevresel uygulamaları kullanıyorum.					
6. Arkadaşlarım çevresel olarak sürdürülebilir ürün kullanmamı bekliyor.					
7. Ailem çevresel olarak sürdürülebilir ürün kullanmamı bekliyor.					
8. Bulduğum toplum çevresel olarak sürdürülebilir ürün kullanmamı bekliyor.					
Çevresel olarak sürdürülebilir ürünlerin benim tarafımdan kullanılmasını,					

9. Kirliliğin azaltılmasına ve çevrenin iyileştirilmesine yardımcı olacağına inanıyorum.					
10. Doğal kaynakların gereksiz kullanımını azaltmaya yardımcı olacağına inanıyorum.					
11. Doğal kaynakların korunmasına yardımcı olacağına inanıyorum.					
12. Benzer bir fiyatın mevcut olması durumunda, ürünlerden çevresel olarak sürdürülebilir olan ürünü tercih ediyorum.					
13. Plastik poşet kullanımını azaltmak için kendi alışveriş çantamı mağazaya götürüyorum.					
	Kesinlikle Katılmıyorum	Katılmıyorum	Kararsızım	Katılıyorum	Kesinlikle Katılıyorum
14. Ürünlerin neden olabileceği çevresel zararları biliyorsam, bu ürünleri satın almam.					
15. Çevreye karşı sorumsuz davranan bir şirketin ürünlerini satın almıyorum.					
16. Geri dönüştürülmüş malzemelerden üretilen kâğıt ve plastik ürünleri satın almak için özel çaba harcıyorum.					
17. Kullanmaya alışık olduğum ürünleri ekolojik sebeplerle değiştirdim.					
18. İki eşit ürün arasında seçim yaparken, diğer insanlara ve çevreye daha az zararlı olanı satın alırım.					
19. Potansiyel olarak çevreye zararlı etkileri olan bir ürünü satın almaktan kaçınıyorum.					
20. Çevreye zarar verdiğini hissettiğim bir şirketin ürünlerini boykot ederim.					
21. Çevre dostu olan deterjan ve temizlik solüsyonları gibi ev kimyasallarını satın almak için özel çaba sarf ederim.					

Formu Dolduran Hakkında Genel Bilgiler					
Yaş	<input type="checkbox"/> 18-24	<input type="checkbox"/> 24-35	<input type="checkbox"/> 35-44	<input type="checkbox"/> 45-54	<input type="checkbox"/> 55 ve Üzeri
Cinsiyet	<input type="checkbox"/> Kadın		<input type="checkbox"/> Erkek		
Eğitim Durumu	<input type="checkbox"/> İlköğretim		<input type="checkbox"/> Lise		<input type="checkbox"/> Yüksekokul
	<input type="checkbox"/> Üniversite		<input type="checkbox"/> Yüksek Lisans		<input type="checkbox"/> Doktora

Medeni Durum	<input type="checkbox"/> Evli	<input type="checkbox"/> Bekâr	
Meslek	<input type="checkbox"/> Memur	<input type="checkbox"/> Özel Sektör Çalışanı	<input type="checkbox"/> Kendi Namına Çalışan
	<input type="checkbox"/> Öğrenci	<input type="checkbox"/> Ev Hanımı	<input type="checkbox"/> İşsiz
Gelir Düzeyi	<input type="checkbox"/> 0-2.000	<input type="checkbox"/> 2001-2.500	<input type="checkbox"/> 2.501-3.500
	<input type="checkbox"/> 3.501-6.000	<input type="checkbox"/> 6.001-10.000	<input type="checkbox"/> 10.001 ve Üzeri

