REPUBLIC OF TURKEY
BAHCESEHIR UNIVERSITY

RECYCLABLE PACKAGING PREFERENCES OF FMCG BRANDS

Master Thesis

BERK ERTOSUN

İSTANBUL, 2019

REPUBLIC OF TURKEY

BAHCESEHIR UNIVERSITY

GRADUATE SCHOOL OF SOCIAL SCIENCES

MASTER OF BUSINESS ADMINISTRATION PROGRAM

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Supervisor: ASSOC. PROF. DR. AHU ERGEN

İSTANBUL, 2019

ACKNOWLEDGMENT

I would like to greatfully and sincerely thank all my professors, collegues and friends for their assistance and support in preparation process of this study. It should be stated that they showed a tremendous patience in this period. I am also very greatful to valuable people who have joined and contributed to final section of this work with their experiences and professional perspectives. Besides all, I would like to thank to the biggest support; my family. In this period, my family members have always showed their encouragement and enthusiasm. They offered a strong patience and help in every point of this study and in most stressful times.

İSTANBUL, 2019 Berk Ertosun

ABSTRACT

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Master of Business Administration

Thesis Supervisor: Assoc. Prof. Dr. Ahu Ergen

July 2019, 120 pages

In the past years, environmental problems have increased in the World and have started to affect all livings. One of the most important factors causing the increase of environmental problems is the industries. The industrial activities have expanded in parallel with the needs of people and this has led to an increase in pollution. Millions of packagings of fast moving consumer goods turn into waste each day. This study analyses the use and preferences of the recyclable packagings of fast moving consumer brands. It includes in-depth interviews with the leading FMCG brands and packaging manufacturers in Turkey's market. Within the framework of these interviews, environmental activities, sensitivities and policies of the companies are measured. The results of the research show that FMCG brands prefer recyclable packaging in line with their environmental sensitivity and legal obligations.

Keywords: Packaging, Recycling, Sustainability, Green Marketing, Environment

ÖZET

HIZLI TÜKETİM MARKALARININ GERİ DÖNÜŞTÜRÜLEBİLİR AMBALAJ TERCİHLERİ

BERK ERTOSUN

İşletme Yüksek Lisans Programı

Tez Danışman: Doç. Dr. Ahu Ergen

Temmuz 2019, 120 sayfa

Geçtiğimiz yıllarda, çevresel sorunlar Dünya'da artış göstermiş ve bütün canlıları etkilemeye başlamıştır. Çevresel sorunların artmasına neden olan en önemli faktörlerden biri endüstrilerdir. Endüstrilerin faaliyetleri, insanların ihtiyaçlarına paralel olarak genişlemiştir ve bu durum kirliliğin artışına yol açmıştır. Hızlı tüketim ürünlerinin ambalajlarının milyonlarcası her gün atığa dönüşmektedir. Bu çalışmada hızlı tüketim markalarının geri dönüştürülebilir ambalaj kullanım ve tercihleri analiz edilmiştir. Türkiye pazarında önemli hızlı tüketim markaları ve ambalaj üreticileriyle derinlemesine mülakatlar yapılmıştır. Bu mülakatlar çerçevesinde, firmaların çevresel aktiviteleri, hassasiyetleri ve politikaları ölçümlenmiştir. Araştırmanın sonuçları göstermektedir ki, hızlı tüketim markaları çevresel hassasiyetleri ve yasal yükümlülükleri doğrultusunda geri dönüştürülebilir ambalajları tercih etmektedir.

Anahtar Kelimeler: Ambalaj, Geri Dönüşüm, Sürdürülebilirlik, Yeşil Pazarlama, Çevre

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ABBREVIATIONS

ÇEVKO	:	Çevre Koruma Ve Ambalaj Atıkları Değerlendirme Vakfı
CO2	:	Carbon Dioxide
DNA	:	Deoxyribonucleic Acid
DPT	:	Devlet Planlama Teşkilatı
FMCG	:	Fast-Moving Consumer Goods
GAP	:	Global Action Plan
H2SO4	:	Sulphuric Acid
ISO	:	International Standardization Organization
JIT	:	Just In Time
LOHAS	:	Lifestyles of Health and Sustainability)
LP	:	Lean Practices
NGO	:	Non-Governmental Organization
R&D	:	Research and Development
RPS	:	Responsive Product Strategy
SCR	:	Supply Chain Restructuring
SO2	:	Sulphur Dioxide
SPA	:	Sustainable Packaging Alliance
SPA	:	Sustainable Packaging Coalition
TEMA	:	Türkiye Erozyonla Mücadele, Ağaçlandırma ve Doğal Varlıkları Koruma Vakfı
TPM	:	Total Productive Maintenance
UNCHE	:	United Nations Conference on the Human Environment
WHO	:	World Health Organization

1. INTRODUCTION

In the last 30 years, the pollution on Earth has become one of the most dangerous factors which threaten the life conditions of all livings. The sources of this threat have been determined as the industrial applications and the world tries to take necessary measures and rehabilitate hazardous production methods by implementing new strategies. In that sense, sustainability, recycling and as a result of these two concepts, green marketing evolved and took their parts firstly in envisioning of states. After having a global perspective, the companies started to implement these concepts in their activities in order to minimise their effects on nature. Among these companies, since their impact on daily life of humans is very high, FMCG corporations carry a huge importance. The products of these companies are inseparable parts of our daily lives and they sell millions of their products every day. When we consider their volume on the global sales, their effects on pollution are irrefutable. In that concept, the eco-friendly modifications of the wastes of FMCG products are as important as the changes in manufacturing in order to preserve the balance of our planet. In this thesis, in the second section, the topics which form the base of recycling; environmental issues, problems in different areas, actions of businesses against these problems and green marketing will be reviewed. In the third section, the packagings will be studied since they become the waste after FMCG products' life cycle ends. In this frame; historical evolution of packaging, their types, the materials used in them and their intended uses will be analysed. In the last section, the results earned from FMCG companies, packaging manufacturers and NGOs will be transferred and their conclusions on the importance of recycled packagings will be translated. Within the research, semi-structured interviews have been conducted with participants. The aim of this thesis is to show the implementations and concepts of companies, packaging manufacturers and NGOs about recycling and use of recycled packages. The secondary objective of the thesis is to give an idea to FMCG brands to modify their strategies for the packagings of their goods.

2. LITERATURE REVIEW

2.1 ENVIRONMENTAL ISSUES AND GREEN MARKETING

2.1.1 Environmental Issues

Starting from the beginning of its creation, the humanity seeks to benefit from the environment. As long as the knowledge of humanity expands, the human specified its control on the environment as a parallel. In that sense, the environment is modified and used accordingly the interests of humanity. As a result of this seeking, the balance between the human and its environment is ruined and the humanity did not notice its effects for a long while. (Uyanık 2017, p.133)

It is certain that the environmental issues did not appear suddenly. These issues showed themselves slowly and took their present form by cumulation. This cumulation accelerated parallel with globalization. Technological developments and economic change in last 40-50 years are the key elements for the cumulation of environmental issues. The human need increased enormously within this period and pushed us to consume natural sources extremely. When population growth in the same era is accrued, the desires and needs in order to use the industrial products and devices of humanity reached to incredible levels. As a result of this increase, we are facing with the environmental issues which threaten all the life basis of livings. (Can 2016, p.60-61)

2.1.1.1 Definition of environment

Although describing the environment may seem clear and easy, it is complicated to determinate its bonds. Even though this definition has been on dictionaries for a long time, the use of this word commonly starts in the second half of the 20th century. (Muşmul and Yaman 2018, p.66)

The environment is a totality that covers all the livings and the lifeless on Earth and every living creature has a whole of interaction and relation to its habitat. There are two different environments, which are the living and the lifeless environment. The creatures and the other livings in direct or indirect relations that share the same physical region,

create a living environment. The lifeless elements such as rocks, soil and water, shape the physical and chemical conditions and it is called the lifeless environment. (Borras 2016, p.113)

The environment is the totality of physical, chemical and biological factors that have direct or indirect effects on livings and human beings. In other terms, the environment covers all the physical, chemical and biological factors which affect all the activities of the living creatures. (Aydoğdu 2008, p.1)

According to the Environmental Law, which was accepted in 1983, the environment is specified as "*A physical, socio-economical, cultural, biological platform that the living creatures conduct their relations and interact each other on it*." (Kızılboğa and Batal 2012, p.192)

By examining these definitions, it is seen that the environment is a composition of all living and lifeless elements that have effects on the habitats. These effects may manage the socio-economic and cultural status. In terms of environment, we can study two main groups: natural environment and artificial environment. Natural environment means the conditions that are created by the power and the natural effects the human did not create. Artificial environment covers all values and presence that the human created starting from its existence. (Leblebici Kacur 2008, p.5)

2.1.1.2 Environmental problems

Humanity has been affected from its habitat and has tried to effect its habitat starting from the first day. Unfortunately, human influence on its habitat has been a way of destruction. When humanity seeks ways of install its civilization on its habitat, perceived the nature as a limitless raw material source for production. Using these raw materials, the human did not compensate its damages. These unrecoverable damages influenced humanity alongside other living creatures. As a result of these damages, a dangerous situation for all creatures living in the same habitat is waiting for us. The sources of environmental issues, which are the extreme population growth and the fast recovery of economies in crisis, surpass the self capabilities of business and became political and social problems. (Uydacı 2011, p.24)

After the Industrial Revolution, the increase in numbers of business and the population growth pushed humanity to anxiety of existence and this situation caused an unstrained production and urbanisation. Within the scope of unstrained production, the use of chemicals, artificial fertilizers, pesticides contributed to environmental issues but they were ignored. In 1990s, environmental issues became a phenomenon around the world since these problems reached an enormous level. According to Sarkar, the industrialisation maraud the environment in four fronts;

a. By creating dust, smoke and toxic wastes,
b. By forcing people to move from hamlets to industrial areas,
c. By creating a huge need of energy,
d. By exposing the workers to a physico-chemicals environment. (Sarkar 222, p.1999)

The environmental issues are built on three reasons. The main reason is the human. The human has no environmental ethics. In other terms, the human is aware of neither its own limits nor the limits of nature. The value the human has, pushes it to meet unlimited needs but this instinct of consumption harms the nature. The second reason is the economic system on the Earth. This system is based on continuous products and the consumption of the products. The primary sources of these products are found in nature. Unplanned use of renewable and nonrenewable sources in production is a result of the pressure on the people and business that the current economic system has built. The third reason is the expansion. This expansion should be considered in economic and population-based matter. The population increase causes the reduction of fertile areas and the destruction of green-fields.

Even though the environmental pollution has been recognized in everday life, some discussions between scientists are still ongoing. Liboiron (2016, p.90) shows us in his article a part of these discussions in the frame of marine pollution as;

> *Some scientist and activists argue that any piece of plastic in the ocean is an anomaly. Others argue that something has to be scientifically demonstrated as a detriment to health before being called pollution.*

Environmental issues could be identified as the problems that the human caused while the creation of its own artificial habitat. These problems could be generalised as the

problems of unfitness of the artificial habitat to human health, destruction of natural habitat and extreme use of natural sources. (Muşmul and Yaman, 2018, 66)

2.1.1.2.1 *Air pollution*

The atmosphere is the basis of the digestion, photosynthesis and respiration processes and these processes carry vital importance. Air is a mixture of gases that forms the atmosphere. By volume, 78.09% of the air is nitrogen and 20.95% of it is oxygen. The rest of the volume is composed by CO2, argon and the other gases. (Uydacı 2011, p.35) There are two types of pollutants which affect the atmosphere; artificial and natural pollutants. The sources of natural pollution are the biogenic activities such as photosynthesis and geodetic activities such as forest fire. Anthropogenic activities such as heating the residences, transportation or industrial activities form artificial sources of air pollution. The purification of air pollutants in the atmosphere by physical, chemical and biological disintegrators is named as autopurification. If the pollutant's ratio exceeds the autopurification capacity of atmosphere, we face with air pollution. (Işıklı and Zencirci Akbulut 2012, p.26)

In order to conduct the vital activities, many living aspire the gases which are in the atmosphere. Besides these needed gases, we are also exposed to pollutants since they are also in the atmosphere. The plurality sources of these pollutant gases are vehicles, power plants, factories and cigarettes. In other terms, these gases are created by the human activities. The livings respire these gases outdoors and indoors. Respiration of these pollutants in the long term harms humans, plants, animals, metals and other elements. According to the World Health Organization (WHO)'s numbers, 3 millions of people have died because of diseases related to air pollution in 2012. (Işıklı and Zencirci Akbulut 2012, p.26)

Population growth and intensive industrial activities brought an increased energy need. This increase in energy need is met with high technical burning. The pollution ratio in cities changes according to the heating method of the residences and the number of the vehicles. The cause of industrial activity based pollution is generally not using eco-friendly technologies and the concentration of the factories in a certain area. (Keleş and Hamamcı 1993, p.87).

The pollutant which exists in the air, affects the respiratory tract by disarraying the system. Sometimes this problem is observed on animals and plants. Acid rain is one of the most notable examples of the effects of air pollution on plants. Acid rain occurs as a result of the transformation of SO2 gas to H2SO4 with the reactions and this material is washed with rain on the vast forests. Acid rain does not affect the washer rain drop points. For example, although Norway is not a country that harms the nature intensively, it is exposed to the influences of acid rain caused by the other countries. (Güney 2004, p.14-15)

In global dimension, we can mention the harmful effects of ultraviolet rays. These harmful effects are the result of the greenhouse effect. Due to the increase in CO2 levels in the atmosphere, the Earth becomes warmer and that causes a thinning in the ozone layer. In that sense, the ozone layer can not keep the harmful ultraviolet rays and the rays reach to the Earth. These rays have carcinogenic effects on livings. (Duru 2001, p.303-304) Besides that, the poles are also in danger due to the greenhouse effect. As long as the warming on Earth continues, the poles will continue to melt. The lands would be submerged since the water levels will increase. The remission of the greenhouse effect on Earth is dependent on the decrease of fossil fuel usage. (Akpan and Akpan 2012, p.22-26)

2.1.1.2.2 *Water pollution*

Water is the most important element which determines the life conditions of all living creatures. 3/4 of the Earth is covered by water and 3/4 of all living creatures' body is water. With the developments in civilizations, the intervention of the human to water intensified. This journey started with the interventions on the circulation of the waterway but today, the water sources are facing with a disappearance threat. The construction of barrages and ponds for watering and electricity purposes, decreases the water volume that the streams carry to main water sources and these sources take a direct damage. Municipal, agricultural and industrial wastes also affect the water sources and the usable and drinkable water ratio is diminishing day by day. (Aydoğdu 2008, p.136)

Ecologists define water pollution as "*every action that endamage the system by causing a decrement or a disappearance on aquatic genders*" or "*entrance of a material that affects the aquatic organisms negatively*". On the other hand, engineers describe water pollution as any harming action which could have a negative affect on water usage today or in future. (Leblebici Kacur 2008, p.16)

Besides the pollution created by the necessary input for agricultural activities, agricultural activities and animal husbandry are also some of the reasons for water pollution. Agricultural pollution could be caused by soil erosion. Another agricultural pollution is the possible mixture of plant nutrient, as nitrogen or phosphor, to water sources. Animal wastes and pesticides are also the elements for water pollution. In the European Union, the negative effects of agricultural activities on the water have been discussed and the members took action in 1991 by declaring the Nitrate Directive. With this directive, the member countries of the Union reduced 30% of the use of nitrate in their territories and contributed to have more clear water. (Boyle 2014, p.6)

The pollutants from the industries are a consequence of the chemical wastes mixed into the water sources. Even if these wastes are harmless, they may cause the disappearance of some aquatic genders. (Uydacı 2011, p.42) According to Paylan, some industries release their wastes intentionally to water sources. (Paylan 2013, p.8)

Other pollutant factors of the water sources are the cities and towns. As long as the numbers of cities and towns increase, the volume of solid and liquid wastes also rises. According to the geographical position, the liquid wastes are released into the seas, lakes or streams. (Keleş and Hamamcı 2005, p.120-124)

2.1.1.2.3 *Soil pollution*

Most of the environmental issues occur due to incorrect usage of the nature. The extreme pollution of the soil is one of the main reasons of the environmental issues. The economic and social function makes the soil important at the end of people. As a productional factor, the soil carries an undeniable importance for agriculture and industry. Besides that, the use of the soil as a settlement site places the soil in the center of settlements. (Uydacı 2011, p.43) So, the soil could not be used for its own purposes when it is serving the human's industrial, agricultural or residential needs. Satisfying

the needs of the crowded population overloads the capacity of the soil quantitatively and qualitatively. (Keleş and Hamamcı 1993, p.106).

Soil pollution could be defined as chemical, biological, geological and physical degeneration of soil structure due to human activities. According to Soil Pollution Control Code, soil pollution is the space which is risky for humans and environmental health and needs to be clarified from the pollution that the human created. The unnatural materials in the soil degenerate the soil structure. The plants can not grow on polluted soil. Pollutants can reach humans via the food chain. The principal elements which cause soil pollution are domestic wastes, radioactive wastes, artificial fertilizer use at an extreme level and the pesticide usage. (Leblebici Kacur 2008, p.21)

The soil pollutants could be categorised under four categories as air, water, agricultural activities and other materials. Pollutants in the air; such as the gases, smokes from the factories, power plants and residents, congregate in the soil and harm it by reacting chemically or biologically. Industrial and municipal waste waters and seepage waters can be given as examples for pollutants. Solid or liquid fertilizers, especially which have high nitrogen rates, are pollutants of agricultural or industrial activities for soil. Petroleum, mineral oil, radioactive materials and solid wastes are other pollutant materials. (Çepel 2003, p.35-36).

Arable lands on Earth are limited and the development in agricultural technologies is needed in order to satisfy the population growth. Artificial fertilizers are used for this objective. The objective was to maximize the output in unit area. Excessive use of the soil in order to satisfy the extreme consumption caused one of the soil problems of today. (Güney 2004, p.101).

Soil pollution is identified with other pollutions like air and water. Therefore, precautions against the soil pollution also contributes to the general environmental measures. The soil is the most important element of the ecosystem in order to assure the functions of all ecosystems. The soil is the direct sources of vegetables and they create 78% of our alimentation. At the same time, the soil is the depot and the filter of the water and the life space of livings. So, the protection of the soil is a worth-stressing

subject and it also means the protection of all livings' ecological balance. (Çepel 2003, p.35-36)

2.1.1.2.4 *Radioactive pollution*

Radioactivity is the emission or transmission of the energy by the electromagnetic waves or spalls. The basis structure of the material is composed by the atoms and atoms are also generated by the neutrons, protons, the core and the electrons. If neutron quantity is more than the proton quantity in a material, these materials are unstable and the neutrons in their cores fragmentize by diffusing alpha, beta and gamma rays. These materials are radioactive materials and the rays are identified as radiation. (Aydoğdu 2008, p.156)

Radioactive wastes are wastes containing radioactive substances which arise as a result of the use of radioactive substances for various purposes. It is of great importance for environmental health that these wastes are cleaned and neutralized without polluting the environment. The problem of the control of radioactive wastes emerging in hospitals, factories, research centers and increasing numbers of nuclear power plants is becoming increasingly important. (Tekdal 2018, p.628)

Radioactive pollution is described as the meddling of the radioactive materials of wastes to the soil, water or air. It is also identified as endamaging the other materials' electron and neutron balance by some materials which diffuse electron. (Çepel 2003, p.46) The nuclear plants and the wastes made by these plants, nuclear tests and the facilities which produce nuclear weapons are the reasons of radioactive pollution. (Aydoğdu 2008, p.156)

The most dangerous characteristic of the radioactive pollution is that the electrons could easily and rapidly transfer to humans, plants, animals, air, soil and water. Excess quantity of electrons which enter livings' structures or metabolisms damages the electron balances and as a result, the cells can not function properly. The appearance of the fatal effects takes a long time. In that period, the genetic deteriorations occur. Ionisable electromagnetic radiations carry enough energy in order to crumble the genetic material of a cell, in other words, DNA. As a result of this disruption, the cells

decease and it harms fibers. Little damage in DNA can cause carcinogenic permanent changes. (Aydoğdu 2008, p.157)

Radioactive pollutants may break ecological balance and environment by having negative effects on humans, animals and plants. Besides that, radiation causes genetic changes on livings. The effect of the radiation varies depending on the age, gender and organ. The children and adolescence are the most vulnerable category and the most vulnerable organs are the eyes. The effects of radiation become visible in time and the sudden effect can be seen in case of explosion of an atomic bomb or burning in high radiation. (Aydoğdu 2008, p.157)

The methods to completely remove radioactive wastes are not found yet. The radioactivity half-life is very long and it shows us the level of the danger. (Brown 2017, p.414)

2.1.1.2.5 *Solid waste*

The wastes due to the population growth, technological developments, industrialisation and urbanisation are some of the environmental issues today with their negative effects on humans and the environment. As a result of consumption increase, the raw material and energy sources are exploited and the given damages are considered as a redemption of development. In the meantime, the quantity and quality of wastes are rising and changing day by day. Disposal of these wastes in less harmful methods became a big problem in major cities. The wastes are not only related to the consumption, they are also a part of the production. The wastes are a result of the production-consumption process. (DPT 2001, p.84) In that sense, the wastes are identified as liquid, gas, solid materials or energies which occur at the end or during the consumption or production and change the natural status or characteristics of the places. (Aydoğdu 2008, p.102)

The wastes which occur after domestic or commercial activities and are considered unusable by their owners are described as solid wastes. These materials should be detracted due to their negative effects on human health and environment but controlled due to their social benefits. (Yılmaz and Bozkurt 2010, p.13)

In literature, solid wastes are also indicated for the wastes apart from liquid, gas or radioactive wastes. Solid wastes are also described as precious materials or the wealth that needs to be recovered. In Code of Solid Waste Control, the solid wastes are defined as the unwanted and dumped materials by their manufacturers. In this code, the controlled disposal necessity of these materials is underlined. (Yılmaz and Bozkurt 2010, p.13)

The most significant effect of the solid wastes is the unpleasant odors and the reproduction of insects. Besides that, meddling of waste leakages into underwater or surface water sources; of the gases and dust to atmosphere; of the hazardous materials to plants and vegetables threaten human health.

According to their sources, the solid wastes could be classified under four subgroups. These subgroups are domestic solid wastes, industrial solid wastes, medical solid wastes and special wastes. (Sharholy, Ahmad, Mahmood and Trivedi 2007, p.459-460)

Domestic solid wastes are the wastes collected from residents, schools, parks, gardens and picnic areas. Their shares in total solid wastes quantity is very high. Storage facilities of these wastes are eligible for reproduction of vector organisms and this causes a big problem for community health care. (Yılmaz and Bozkurt 2010, p.13)

Industrial solid wastes split in two categories as hazardous and non hazardous. Hazardous wastes are explosive, inflammable, toxic, reactive, ignitable and corrosive wastes. The majority of the hazardous wastes are generated by the industries that produce chemical materials and relevants. Non hazardous wastes are also generated by the industries but they usually carry the same features as domestic wastes and considered with them. (DPT 2001, p.85)

The wastes which have pathologic, gynecologic, toxic, infectious, perforator, corrosive and inflammable effects are defined as medical solid wastes. These wastes' sources are the facilities related to dental, healthcare or veterinary services or researches, blood banks, pharmacies, analytical laboratories, clinics and infirmaries. (DPT 2001, p.85)

Special solid wastes are the wastes which their revulsion and disposal should be under control. The radioactive wastes, batteries, waste oils and excavation wastes are in this category. (DPT 2001, p.85)

At the basis level, industries may reduce the waste by developing internal processes or reprocess the wastes in order to reuse it. However, it is not possible to reprocess the wastes in the new products despite the technological developments. For example, reprocessed plastic bottles can not be used due to medical and hygienic reasons. In some cases, reprocessed wastes create new markets which the consumers are the suppliers. In the United States, some vineries pay in order to collect their production wastes and buy the processed wastes back with the aim of using them as fertilizers. (Polonsky and Rosenberger III 2001, p.25)

In the last years, the environmental services became widespread and solid waste management notion occurred. The solid waste management should be considered as a whole with transportation, stockage, recycle and recovery processes. In order to mention an effective solid waste management, these processes must be practiced at the optimum level. (Leblebici Kacur 2008, p.27)

2.1.1.3 Environment from the viewpoint of businesses

As a result of the economic development efforts after the Second World War, many countries became developed countries but at the same time, the environmental issues reached to the harmful level for human health. These issues are accepted at first in order to assure the developments but they transformed to global issues by exceeding their regional status. (Nemli Çalışkan 2010, p.41)

Today, companies are active in every region of the World and they influence the humans directly. The influence capacity of the companies puts a major role in social responsibility. The increase of the public opinion pressure pushes the companies to become more responsible and this pressure usually comes from the NGOs. Starting from the 1970s, the efforts for the balance between the development and the environment accelerated. Thus, the sustainable development model is occurred. The sustainable development model is the only model that covers all factors effective on the

human capital and the environment. It is also the only model that aims the optimal usage of the sources and gives a long-period perspective. (Nemli Çalışkan 2010, p.42)

The environmental viewpoint of the business starts with the social responsiveness notion. Until the expansion of the sphere of influence of companies, the objectives of businesses were limited as profitability, growth and sustainability. Thus, company managers gave their decisions according to the economic benefits. Since the 1980s, it has been realised that the businesses can not continue their existence without any links with their spheres. In that sense, firms are obligated to take necessary actions which could satisfy their spheres. (Nemli Çalışkan 2010, p.42)

The environmental actions of businesses are shaped among two concepts: management of natural sources and developing strategies for sustainable production.

2.1.1.3.1 *Management of natural sources*

Preventing ruthless consumption of natural sources, reducing pollution, assuring recycling, managing wastes and controlling the costs of environmental measures demand a managerial energy and time. Nowadays, paying attention to and leading for these measures are important subjects that the societies agreed on. In businesses, efficient use of natural sources and implications the eco-friendly technologies are crucial. (Uydacı 2011, p.72)

It is a fact that the energy need of industries is another phenomenon of the usage of natural sources. For a long time, ruthless consumption of natural resources has been overlooked with the economical concerns. Besides that, it should also be stated that there are some strong initiatives to equalize the situation. For example, British Petroleum made 15% of its revenues from non fossil energy resources. (Bernhagen 2012, p.364)

The companies that wish to systemize their environmental efforts, measure the performances of these efforts and implement necessary precautions; prefer installing environmental management systems and certifying them. When the companies are creating their environmental management systems, they consider;

a. Minimisation of source usage; environmental damages, risks, pollution and wastes,
b. Augmentation of competitiveness and efficiency,
c. Creation of cleaner work areas and more livable environment. (Nemli 2001, p.213-215)

The mission of preparation international standards for environmental management system has been given to International Standardization Organization (ISO). ISO was founded in 1947 as an initiative of 25 countries for the unification of industrial standards. (Prakash and Potoski 2014, p.372) Until today, ISO published over 22670 international standards which cover almost all industries. ISO 14000 standards form the basis for all environmental management systems. Around the world, the most demanded standard in ISO 14000 standards family is ISO 14001. The first version of this standard was published in 1996. ISO 14001 does not specify nominal values as performance criterias, it defines the managerial methodology. In that sense, this standard gives fundamental elements for an efficient environmental management system. These elements concern the organizational structure, planning, responsibilities, procedures, processes, development and execution of an environmental policy of the companies. ISO 14001 offers 5 elements for the creation of an environmental management system;

a. Policy and commitment,
b. Planning,
c. Implementation,
d. Measurement and valuation,
e. Review and improvement. (Nemli 2001, p.215)

Table 2.1: ISO 14000 Standart Family

Standart No	Standart Name and Content
ISO Guide 64:1997	Guide for the inclusion of environmental aspects in product standards
ISO 14001:2004, 14004:2004	Environmental management systems
ISO 14015:2001	Environmental management – Environmental assessment of sites and organizations (EASO)

ISO 14020:2000, 14021:1999, 14024:1999, 14025:2006	Environmental labels and declarations
ISO 14031:1999, ISO/TR 14032:1999	Environmental management – Environmental performance evaluation
ISO 14040:2006, 14044:2006, ISO/TR 14047:2003, 14048:2002, 14049:2000	Environmental management – Life cycle assessment
ISO 14050:2002	Environmental management – Vocabulary
ISO/TR 14062:2002	Environmental management – Integrating environmental aspects into product design and development
ISO 14063:2006	Environmental management – Environmental communication – Guidelines and examples
ISO 14064-1:2006	Greenhouse gases – Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals
ISO 14064-2:2006	Greenhouse gases – Part 2: Specification with guidance at the project level for quantification, monitoring and reporting of greenhouse gas emission reductions or removal enhancements
ISO 14064-3:2006	Greenhouse gases – Part 3: Specification with guidance for the validation and verification of greenhouse gas assertions
ISO 14065:2007	Greenhouse gases – Requirements for greenhouse gas validation and verification bodies for use in accreditation or other forms of recognition
ISO 19011:2002	Guidelines for quality and/or environmental management systems auditing

Source: https://asq.org/quality-resources/iso-14000

Following ISO 14000 standards is not obligatory for the companies, it is based on voluntariness. However, it is inevitable to follow these standards for exporting companies. If these companies wish to create an eco-sensitive image, prove the quality and the standard of their products to international markets and improve their competitiveness, these standards could help the companies. Other benefits of ISO 14000 standard family are as below;

i. Discovering the areas which could reduce energy and resource use and its economic benefits,
ii. Using operational executions efficiently,
iii. Controlling the costs systematically,
iv. Reducing risks and liabilities,
v. Adopting easily to new environmental laws and obligations,
vi. Improving the relations between the industry and the government,
vii. Taking advantage of the subventions and the rewards,
viii. Preventing pollution and wastes,
ix. Responding the environmental pressures from stakeholders,
x. Attributing positively to social benefit,
xi. Gaining technological development possibilities,
xii. Satisfying the environmental expectations of consumers,
xiii. Conserving and improving market shares,
xiv. Taking a share from green products market,
xv. Having competitive advantage in tenders,
xvi. Taking attention for creation of high quality workforce,
xvii. Improving the transformation ability for changing conditions. (Uydacı 2011, p.75)

2.1.1.3.2 *Environmental social responsibility*

For the first time in history, the majority of the world population has adopted democracy as its governmental system and is based on free market system in their economies. The dependance within different nations is augmenting with the economic, technological and political developments. In order to enhance the prosperity level and to make it sustainable, the companies have the same responsibility as the individuals. In basis, the companies have four fundamental liabilities to achieve;

Economic: Being efficient and profitable,

Legal: Obeying the law,

Ethic: Being convenient to social norms and expectations beyond the law,

Social: Contributing voluntarily in order to solve social problems. (Uzkesici 2005, p.73)

Corporate social responsibility affects last two responsibilities which has been indicated above directly. The institutions which are conform to social expectations and care social problems create happiness in society. Thus, these institutions have happier employees, customers and stakeholders. In that sense, corporate social responsibility is a voluntary contribution of companies for a better society and environment. (Argüden 2007, p.37)

In the early 1980s, social responsibility was described as "*management of businesses without harming the benefits of its stakeholders*". But today, following the increase of environmental awareness, the environmental responsibility of firms has become a part of social responsibility notion. (Kelgökmen İlic 2010, p.305)

In context of social responsibility activities, the variety of activities has been sorted under two as positive activities for society and activities against harmful effects. In that sense, the below activities could be aligned for social responsibility;

a. Being eco-friendly,
b. Having ethic values,
c. Being transparent and liable,
d. Protecting the health and safety of consumers,
e. Realising social projects. (Yılmaz 2017, p.20)

With environmental awareness in society, implementing environmental objectives as a social responsibility became inevitable for the companies. In order to repair their damages on the environment and to protect their reputations at customers' side, environmental projects and sensitiveness in companies have been launched and designed by top managements. Williamson, Lynch-Wood and Ramsay (2006, p.317) describe the environmental social responsibility of companies as "*a concept about companies extra effort integrating environment concerns in their business operations and in their interaction with their stakeholders. It is viewed as the contribution that firms make to sustainable development by balancing and improving environment impacts without damaging economic performance*" (Nik Abdul Rashid, Annuar Khalid and Abdul Rahman 2015, p.707)

Mixed or included sustainability is the addition of environmental, sanitary and social values to the core of the company without sacrificing from quality or price. In that sense, the social responsibilities of companies are as important as the market expectations. Thus, the future company objectives should be changed accordingly. It means, the companies should consider sustainability as a tool for continuity of business and should see sustainability as a part of their strategy. (Yanık and Türker 2012, p.295-296)

The most valuable benefit of the social responsibility of the companies is liability. When the companies make environmentally or socially sensitive activities, the consumers trust these companies in every situation. Reputation Institute revealed that higher gradation of social responsibility supports positive consumer behaviors. The companies which have perfect grades in social responsibility receive below advantages;

a. 89% of the consumers advise the company to others,
b. 91% of the consumers comments positively about the company,
c. 90% of the consumers trust the companies about their activities,
d. 89% of the consumers buy the services or products. (Yılmaz 2017, p.22)

2.1.1.3.3 *Sustainable production strategies*

Sustainability notion occurred for the first time from environmental science. The man benefit from nature in order to satisfy its needs. In that sense, consuming the natural sources responsibly is important in order to forward them to the next generations. In this context, sustainability is the continuation of total advantage level for the long term. In environmental science, the sustainability is consuming the natural sources carefully by overseeing the next generations' needs. (Ceran 2017, p.61) In the basis, sustainable production depends on questions as how the consumption will be supported with limited resources and review manufacturing and consumption relation in sustainability perspective. (Yıldırım Söylemez, Dil Şahin and Koç 2016, p.193)

The arise of attention for sustainability in the last decades started the discussions for sustainable manufacturing methods of companies. The pressures of stakeholders (consumers, employers, governments, non-profit or non-governmental organizations)

showed their expectations for eco-friendly manufacturing efforts. In order to assure sustainability on production phases, a few approaches developed by the authors. We may align some of these approaches as below. (Yavuz 2010, p.78-79)

Natural capitalism approach is a strategy which courages companies to develop sustainable manufacturing methods. The aim of this approach is to protect the environment while improving competitiveness and profitability. In order to reach these objectives, Hawken and others defend that the companies should make changes in their four business operations;

a. Increasing productivity of natural sources,

b. Shifting to biologically inspired production models,

c. Creating a solution-based business model and reinvesting in natural capital. (Hawken, Lovins and Lovins 1999, p.147)

Increasing Productivity of Natural Sources: At this step, the main aim is to make necessary changes in order to minimise the resources waste as materials, water and energy. In that sense, they advise two main ways to companies in their industrial designs. First, the companies may adopt a fresh design which sees the production as a whole not part-by-part. Second, the companies may make a reform on their productions by replacing old technologies by new ones which are based on natural processes and materials. (Hawken, Lovins and Lovins 1999, p.148)

Biologically Inspired Production Models: Hawken and friends mentions shift to biologically inspired production models as the second step of their approach. In this level, they design a close-loop manufacturing system for companies in order to develop new products and processes which preclude the waste. With the more efficient manufacturing system, they claim that the companies may cut their long-term material requirement more than 90%. (Hawken, Lovins and Lovins 1999, p.152)

Creating A Solution-Based Business Model: The traditional business model in most companies is still based on selling and the authors make their criticisms on that point. In that sense, Hawkin and others propose a continuous service business model rather than selling for one time. By developing this cycle, a move from the acquisition of goods as

a measure of affluence to one where well-being is measured by the continuous satisfaction of changing expectations for quality, utility, and performance would be created and a bond between company and consumer would be installed. (Hawken, Lovins and Lovins 1999, p.147)

Reinvesting in Natural Capital: This phase is final for this model and it describes repairing, supporting and enhancing the natural sources that the companies benefit. Even though the environmental effects were not recognized before, they are in our lives now and also they increase manufacturing costs of businesses. Hawken and others remark that the nature and a stable climate can not be substituted and thus, the companies should make their investments on nature in order to put back their consumptions. (Hawken, Lovins and Lovins 1999, p.158)

"Lean" notion which refers to being plain and not having any unnecessity, created a revolution for management processes and production. Lean production is a systematic approach which aims reduction on costs by leaving wastes, losses and activities which do not add value. Lean production approach has been firstly mentioned by James Womack, Daniel Jones and Daniel Roos in 1990 to describe the Toyota Production System. Nowadays, lean production approach is wastely used in different sectors by many companies. In order to implement lean production; many different manufacturing systems as Kaizen, 5S, TPM, cellular manufacturing approach, one-piece flow system, JIT system are using. The perspective of lean production of wastes is modern and describes as all defects, whether in manufacturing process or on products itself, seem as waste. Besides that, the activities that do not add any value to the product as manufacturing more than ordered or keeping raw materials, semi-finished materials in stocks are considered as waste. Avoiding waste is not an objective. It is a ceaseless process with Kaizen. These applications also make changes in corporate culture. The organizations which are focused on continuous improvement in their cultures, would start to define losses in the manufacturing process and strive to remove them. Moreover, employees would attend the continuous improvement and problem solving activities and it would help to see the whole system. (Yavuz 2010, p.78-79)

Another sustainable production strategy is developed by Nordin, Ashari and Rajemi in 2014. In their strategy, sustainable manufacturing is categorised under four points;

responsive product strategy (RPS), lean practices (LP), supply chain restructuring (SCR) and sustainable material and design. Besides that, according their design, there are three critical factors which affect the practices of sustainable manufacturing. These factors are management, internal and external factors. The management's attitude in the practices is the one of key drivers. The management factor should implement the necessary strategy and mindset for sustainable manufacturing. (Norani, Ashari and Rajemi 2014, p.14) The successful adaptation of sustainable manufacturing practices require a supportive environment. The position and the overall direction of the company affect the performance of sustainable manufacturing practices. The internal component of a supportive environment is relevant supportive policies, resources and internal infrastructure. Besides these, a well established performance evaluation system should be implemented to measure. All these factors should be enframed by an organisational policy. (Norani, Ashari and Rajemi 2014, p.13) As the external factors, the authors mention the factors that companies can not control by themselves as regulations, local laws, market trends and social pressure. These factors should push the company to take sustainable manufacturing actions. (Norani, Ashari and Rajemi 2014, p.13)

2.1.2 Green Marketing

Change in needs and desires of the human day by day, created a differentiation in consumption habits of the people. (Onurlubaş 2017, p.11). Nearly-finished natural sources, increased pollution and contagious diseases, climatic factors and awakening about environmental issues showed that there is a need in transformation for consumption habits. (Tandaçgüneş 2012, p.104) The industrial and technologic developments caused the environmental issues and the consequences of these issues made the consumers more concerned about the environment. The negative impact on the environment concentrated with the developments which we mentioned above. Following the discussion of the negative impacts, the consumers became more selective about the products that they prefer. (Onurlubaş 2017, p.11)

Green marketplaces are now developing in many countries to promote sustainable living, which includes delivering greener and cleaner alternatives to consumers based on socio-demographic segments. (Eze and Ndubisi 2013, p.414)

2.1.2.1 Definition of green marketing

This notion was used for the first time in 1975 by American Marketing Association during the "Ecological Marketing" seminar. According to this definition; green marketing is the science which studies the pollution, consumed energy sources and negative/positive effects of unrenewable energy sources' consumption. (Uydacı 2011, p.127)

Stanton and Futrell (1987) define green marketing as the marketing activities which are designed in the most ecological way of the satisfaction of needs and desires. (Rahbar and Wahid 2011, p.74)

Peattie and Crane separately from the others, cite that green marketing is an extension of social marketing notion and an answer for the green movement of today. According to them, green marketing is a management process which aims to satisfy, predict and determine the needs of the society and customers in a profitable and sustainable manner. (Rahbar and Wahid 2011, p.74)

According to Gordon, Carrigan and Hastings (2011, p.147) green marketing is a holistic application approach of companies for sustainable thinking. This holistic thinking starts from production to post-purchasing service, aiming to balance the company's need for profit with the wider need to protect the environment. After all these definitions, green marketing is briefly covers the business activities as environmental product manufacturing, price definition, product promotion and after services by satisfying the customer needs and desires at the same time. (Çabuk 2008, p.87)

According to Laheri, Dangi and Vohra (2014, p.153) green marketing is a multi-dimensional discipline. They explain these dimensions under economic, political and technological perspectives. According to them, economic dimension of green marketing defends that sustainability could be achieved by economy. In political dimensions, they state that the regulatory frameworks and decisional processes drive the companies through greening. Technological dimension of green marketing require a radical change in the technology and production process.

Green marketing is also decomposing itself from other marketing types with its solutions for private and public sectors. (Apaiwongse 1994, p.41) Green marketing concept also needs innovative marketing principles that excite customers' attentions to effective applications on manufacturing eco-friendly products. (Armağan and Karatürk 2014, p.4) The fundamental strategy is to announce the features of the eco-friendly products to green consumers which are the target audience. (Emgin and Türk 2004, p.8)

2.1.2.2 Green marketing strategies

2.1.2.2.1 *Green marketing matrix*

According to Grant (2008, p.24) who is the author of "Green Marketing Manifesto", infinite products bring infinite variance with them. But businesses may select the convenient approach for their activities in Green Marketing Matrix that Grant developed. Grant indicates three marketing in Green Marketing Matrix, as green, greener and greenest. Grant defines marketing's focus points as company, brand and product.

Table 2.2: Grant's Green Marketing Matrix

	A. Green	B. Greener	C. Greenest
1. Companies	Creating a sample; pointing and framing	Developing the market: propogandise and educate	New Business Concepts
2. Brands	Reliable partners	Clan brands	Trojan Horse Ideas
3. Products	Marketing a benefit	Change the usage	Challenging the consumption

Source: Grant, 2008, Yeşil Pazarlama Manifestosu, Mediacat Yayınları, İstanbul, pp. 156.

Green (Putting and Forwarding New Standards): The companies which follows these activities, bring a new approach to classical marketing concept with greener brands and products. The objective is being one step ahead from the suppliers and competitors in terms of green. This approach usually organize the functions as supply chain, purchasing and distribution and the objectives are constantly renovated and become outputs. The most important point is that the business should leave before washed as green. (Duru and Şua 2013, p.129)

Greener (Collobration for Sharing Responsibility): The objective is sharing the determined responsibility with the customers. The purpose exceeds the commercial "buy our brand" saying. When it is compared with the rivals, we can see the starting of the product differentiation. (Duru and Şua 2013, p.130)

Greenest (Supporting the Innovation, Shaping the Culture): The aim is making radical changes in customers' purchasing habits by creating a culture based on being totally green and by offering better products and services thanks to innovation. (Duru and Şua 2013, p.130)

A.1: The companies that show more effort on environmental and ethical issues create a sample. The businesses that define new standards in environmental issues could frame their operations or become a sample by indicating a product which they developed. Toyota company defined its objectives as zero emission and put its frame accordingly. On the other hand, Toyota indicated Prius model that is convenient for Toyota's objectives.

A.2: The companies who avoid creating a direct green image, builds reliable partnerships. In order to establish these partnerships, they get eco-labels from third parties or try to make a sponsorship with a NGO.

A.3: Being green brings a lot of advantages for businesses. Many companies try to market these advantages. As an example, being healthier and more eco-friendly are underlined to increase the number of more organic products.

B.1: The businesses which create a differentiation with far reaching sustainability programs and their green products, educate the society and try to steer the demand towards green products. In order to do that, they educate the stakeholders or challenge all the environmental issues. The ethical consumption is underlined.

B.2: Powerful brands are created by founding the relations with a certain type of consumers or clans. In the process of foundation, the Internet and verbal recommendations have a major role. In order to make desirable green products and let the customers show off with their products, the companies make the designs and features of the products superior.

B.3: Another way to decrease the footprint of a company is changing the attitudes of the customer. By collaborating with customers, the companies encourage the customers to follow eco-friendly attitudes as reducing the consumption or recycling activities. This transition offer the customer a better alternative. The customer could reach to better by showing less effort. The cut symbolises a total leaving the harmful attitudes for environment.

C.1: With new business concepts, the companies make their transitions to a different operational models with greener footprints. This transitions also covers a new world definition besides the transformation of goods and services. The transaction between the commercial initiatives and productive consumers is an amazing development of modern economy.

C.2: This covers all samples that a radical green innovation accepts. These types of approaches should be adopted quickly by people in order to overcome greenphobia. Easily accepted ideas are usually the accustomed ideas of traditional culture.

C.3: The real green marketing strategy is assuring attractive and consistent alternatives by challenging against current unsustainable consumption models. The assigned value of people and wish to use in long terms of products are the first approach. Sharing approach steers the people to common use more than possessing.

2.1.2.2.2 *Green marketing strategy matrix*

Businesses should make the best choices for themselves in the process of greening. The first thing businesses should be consider is finding answers for these questions:

a. Could a greener perception in the eyes of customers provide more income to the business or make the financial status worse?

b. Would the business become distinct against rival businesses by greening and keeping its existence in the market? (Ginsberg and Bloom 2004, p.80)

There is not only one green marketing strategy for all businesses. Thus, four different marketing strategies; as lean, defended, shaded and extreme, have been developed for businesses. (Ginsberg and Bloom 2004, p.81)

Lean Greens aims being nice citizens. They do not focus on publicizing or marketing their green initiatives. Reducing costs and improving efficiencies are other main targets in order to be more competitive. They are looking for long-term solutions and want to comply with regulations, but they do not predict a real financial income from the green market segments. Lean Greens hesitate to announce their green activities or green product attributes since they fear to be understood as a completely green company. (Ginsberg and Bloom 2004, p.81)

Defended greens use green marketing as an answer to their rivals or a precaution in case of crisis. Defended greens, who think they should keep the green consumers, try to change their brand images. They do not want to spend their sources by following an aggressive tactic, if they can not gain a competitive advantage. However, the defended greens do not have enough power to separate themselves from their rivals with their products. (Ginsberg and Bloom 2004, p.81)

Shaded greens make important financial and non-financial bonds which are long-termed and cover all the systems. They are capable of completely differentiating themselves by greening, but they do not prefer to do that since they consider that there are more money by stressing other attributes. The direct and tangible benefits provided to the customer are promoted and these businesses offer their products through mainstream channels. Environmental benefits are promoted as a secondary factor. (Ginsberg and Bloom 2004, p.82)

In extreme green businesses, the environmental issues are totally integrated to product's life circle and to the business. The holistic philosophies and values give the structure of the company. Being green is the driving force for these businesses starting from their establishments. The services and products of extreme greens address to niche market and sell through boutique stores. (Ginsberg and Bloom 2004, p.82)

In lean green strategy, environmentalism is usually used in the process of product development, design and manufacturing. For defended green strategy, environmentalism is also followed in the same processes but additionally it also uses promotion as a marketing mix factor. The public relation activities are preferred instead of advertisements. For shaded strategy, the environmentalism has secondary importance

in promotional activities. If the business sees a cost-efficient advantage, it follows to be green in pricing besides the product. In extreme green strategy, all the marketing mix elements are intensively used and the distribution methods are selected by considering the retailers' environmentalism levels. (Ginsberg and Bloom 2004, p.81)

If the business manager believes in honesty of brand and a possibility for a significant differentiation in long-term, shaded or extreme green strategies would be preferred. On the other hand, if the competitor is more powerful or the cost of being greener is higher than the expected income, lean green or defended green strategies would be adopted.

2.1.2.2.3 *Green marketing activities in three levels*

The basis of these strategies comes from the determination of Menon and Menon in 1997. They suggest that the company's green marketing activities are in three levels: strategic, quasi-strategic and tactical. (Polonsky and Rosenberger III 2001, p.22) Starting from that point Polonsky and Rosenberger III explained how the marketing activities should be designed in firms.

Tactical greening identify a limited synergy between the activities and a change. Quasi-strategic greening may cause a fundamental change in business practices and indicate a large coordination about environment. In strategic change, the company changes its corporate philosophy substantially towards environmentalist values and reorganizes all activities accordingly. (Polonsky and Rosenberger III 2001, p.23)

In below chart, Polonsky and Rosenberger III unify their analysis with the green marketing elements. They explain with examples how these elements could be used in every dimension.

Table 2.3: Green Marketing Activities in Three Levels

	Tactical Greening	Quasi-strategic Greening	Strategic Greening
Targeting	Ads mentioning green features are run in green-focused media.	A firm develops a green brand in addition to its other brands.	A firm launches a new SBU aimed at the green market.

Green Design/NPD	A firm switches from one raw material supplier to another with more eco-friendly processes.	Life-cycle analysis is incorporated into the NPD process to minimize eco-harm.	Fuji Xerox develops its Green Wrap paper to be more ecofriendly from the ground up.
Green Positioning	A mining company runs a PR campaign to highlight its green aspects and practices.	BP Amoco redesigns its logo to a sun-based emblem to reflect its view of a hydrogen/solar-based future for the energy industry.	The Body Shop pursues environmental and social change improvements and encourages its customers to do so as well.
Green Pricing	Cost savings due to existing energy-efficiency features are highlighted for a product.	A water company shifts its pricing policy from a flat monthly rate to a per-unit-of-water-used basis.	A company rents its products rather than selling them; custoners now pay only for use of the products.
Greening Logistics	A firm changes to a more concentrated detergent, which reduces package size and weight and lowers shipping costs.	Packaging minimization is incorporated as part of a firm's mdnufacturing review process.	A reverse logistics system is put into place by Fuji Xerox to reprocess and remanufacture photocopiers.
Marketing Waste	A firm improves the efficiency of its manufacturing process, which lowers its waste output.	Telstra (a phone company) has internal processes so that old telephone directories (waste) are collected and turned into cat litter products by other companies.	A Queensland sugarcane facility is rebuilt to be cogenerationbased, using sugarcane waste to power the operation.
Green Promotion	An oil company runs a PR campaign to highlight its green practices in order to counter an oil spill getting bad press coverage.	A company sets a policy that realistic product eco-benefits should always be mentioned in promotional materials.	As part of its philosophy. the Body Shop co-promotes one or more social/eco campaigns each year with in-shop and promotional materials.
Green Alliances	A company funds a competition (one-off basis) run by an environmental group to heighten community awareness on storm water quality issues.	Southcorp (a wine producer) forms a long-term alliance with the Australian Conservation Foundation to help combat landsalinity issues.	A company invites a representative of an environmental group to join its board of directors.

Source: Polonsky and Rosenberger III, 2001, Reevaluating Green Marketing: A Strategic Approach. Business Horizons, 44, pp.21-30.

2.1.2.2.4 *Generic types of competitive environmental strategies*

Generic types of competitive environmental strategies are cited by R.J. Orsato in 2006. The main aim is to ease utilization of economic retribution of environmental investments in the best matter and to help transform these investments into a competitive advantage. In that sense, Orsato puts four different environmentalist strategies. According to Orsato, the industry, the position in this industry and the market type and the capacity of the company define the competitive focus. The competitive focus could be in organizational processes, in products or in services. The competitive advantage could be differentiation or lower cost. (Orsato 2006, p.128)

Eco-efficiency: This strategy is used by the companies which try to reduce its costs and environmental effects at the same time. At first sight, it seems as every company could economize by following this strategy. The supplier companies, high cost-rate companies and waste-occurant companies could have a potential to compete with this strategy. (Orsato 2006, p.128)

Table 2.4: Generic Competitive Environmental Strategies

<table>
<tr><td rowspan="2">Competitive Advantage</td><td>Lower Cost</td><td>Eco-Efficiency</td><td>Environmental Cost Leadership</td></tr>
<tr><td rowspan="2">Differentiation</td><td>Beyond Compliance</td><td rowspan="2">Eco-Branding</td></tr>
<tr><td></td><td>Leadership</td></tr>
<tr><td colspan="2" rowspan="2"></td><td>Organizational Processes</td><td>Products and Services</td></tr>
<tr><td colspan="2">Competitive Focus</td></tr>
</table>

Source: Orsato, 2006, Competitive Environmental Strategies: When Does It Pay To Be Green?. California Management Review. 48 (2), pp. 127-143.

Since the costs are essential in this strategy, the business avoids to announce its activities within the strategy. If the announcement is made as a promotion tool, the costs would increase. (Orsato 2006, p.128)

Beyond Compliance Leadership: In this strategy, competitive focus comes from organizational process and competitive advantage comes from differentiation. This strategy could be considered as the strategy that unifies eco-efficiency with differentiation. While the businesses show effort to assure the effectiveness in

organizational processes, they want their sphere to be aware of these efforts. These businesses could make the investments in order to enhance their images but these investments do not reduce the costs because the businesses already have the buyers which are willing to pay more for these activities. Since these businesses are the first companies that apply environmental activities, they possess the advantage of being the first, in other terms being the leader. This factor contributes to differentiation of the companies at the beginning but when the competitors in the same sector start to implement the same politics, the differentiation effect disappears. In this strategy, eco-friendly activities are about enhancing the image but the image directly affects the purchasing attitudes of customers. (Orsato 2006, p.133)

Eco-Branding: This strategy briefly states the products which are in ecologic basis. In order to implement this strategy, the companies should have positive capabilities for three pre-requisite;

a. Customers should be willing to pay more for the costs of ecological differentiation

b. Trustworthy informations in terms of ecological performance about the products should be given to customer

c. The imitation of the differentiation should be difficult. (Orsato 2006, p.134)

In case of preference of the customers of these green products or services, if the customers are not aware of the benefits of the product, this unawareness could drive the customers to not prefer the product or service. Thus, the customers should have the right knowledge about the features as quality, easiness and saving. (Orsato 2006, p.134)

Environmental Cost Leadership: In this strategy, competitive focus is on the product or the service and the lower costs give competitive advantage. The products or services must be on an ecological basis. Using differentiation strategy could not be possible in cases that the market is not suitable. In some sectors, the competition is based on pricing and the customers can not afford the costs of differentiation. The innovative solutions that the businesses implement in order to reduce their environmental effects, contribute to reducing the costs. For these cases, this strategy have the potential to realise

industrial revolutions in the sectors that the customers are not willing to pay more for the services or products. (Orsato 2006, p.135)

2.1.2.3 Difficulties for green marketing

Nowadays, many businesses seek to be green, as most of the consumers desire to prefer environmental-friendly products. Moreover, the lack of credibility about the green products cause confusion among the consumers. Particularly some customers have doubts for the reliability of green products. Thus, in order to establish the trust between the consumer and green products, marketers and companies should give more transparent informations to the customer and avoid exceeding any law or standards relating to the products or business practices. The below subjects create the difficulties in application of green marketing.

Need for Standardization: According to researchers; only 5% of the marketing messages from "green" campaigns are entirely reflecting the truth and there is a lack of standardization to authenticate these claims. (Singal, Garg, Singla 2013, p.472) In order to certify a product as organic, there is no standardization. In that term, regulatory bodies should be established to provide the necessary certifications and define a standard quality control in labeling and licensing. (Kiran 2012, p.22)

New Concept: Education on the customer's side is a necessity in order to create awareness about environmental threats. The new green movements should be cited properly and this can take a lot of time and effort since the fundamental changes in consumption habits is not an easy thing to achieve unless the society is already accepting the natural products. (Özgüven Tayfun and Öçlü 2016, p.189)

Patience and Perseverance: The environment should be viewed as a major long-term investment opportunity for the investors and corporates, such as the marketers should seek their long-term benefits from the green movement. Since it is a new concept and idea, acceptance period would take some time and require a lot of effort and patience. (Kiran 2012, p.22)

Avoiding Green Myopia: Focusing on customer benefits is the priority of green marketing and the first question is about the reason why consumers buy certain

products. A proper citation and necessary motivation have to be done to persuade customers to switch brands or even pay a premium for the greener alternative. It should be remembered that every product should pass the customer satisfaction criteria no matter how green it is. If the only criteria of success is considered as green rating of the product, it will lead to green myopia. Also the pricing is important as the other criteria in order to assure market acceptability of the product. (Ottman, Stafford and Hartman 2006, p.31)

Green Washing: Despite its growing popularity, the green marketing movement faced serious setbacks in the late 1980s. Because of fraudulent green claims of many industries on their products and services, the confidence for green products has been shaken. For instance, BP Amoco made its advertisements for its "Plug in the Sun" program which cites the company's installation of solar panels in two hundred gas stations. Meanwhile, same company continued its lobby activities aggressively for oil drilling in the Arctic National Wildlife Refuge. This shows us that green marketing could be a very effective marketing strategy in multiple objectives when conducted properly. (Tinne 2013, p.82)

The environmental labeling standards are very significant for the consumers to understand which products and services are truly beneficial. Misrepresentation of the products drive the consumers to pay extra for unwanted benefits. As a result of these encountered problems caused by misrepresenting the products as green, "green washing" term occurred on the media to indicate the organizations who conducts misrepresention activities. Therefore, the increase on these claims may affect green marketing and also the companies in great measures. (Kiran 2012, p.23)

The Green Dilemma: In the last years, it is observed that forcing consumers to affect positive environmental change is easier than making it. The public does not respond to green consumer movements and do not change their habits according to them. In that sense, the lack of public consensus occurred as one more difficulty for green marketing with regard to defining what identifies as "green". This lack of consensus on consumers, marketers, activists, regulators, and influential people's side caused a retardation in the growth of green products because the firms avoid announcing their green attributes, and consumers do not have confidence in green claims. (Ephraim and Kenneth 2012, p.8)

Besides the difficulties above, the difficulties for green marketing in the future could be aligned as; the costs of renewable and recyclable materials that are required for green products; the needed R&D investments for technology and water treatment technology that are in high costs; majority of the people not being aware of green products and their uses; unwillingness to pay more for green products of customers' majority. (Kiran 2012, p.23)

2.1.2.4 Green marketing mix

Marketing is a social and managerial process that aims to satisfy the needs and desires of the target audiences by creating and exchanging the values. The focus point of the modern marketing is customer value and satisfaction of customer. The basic principles that marketing managers should decide on during the marketing activities are defined as the marketing mix. The marketing mix is a controllable tactical tool set that businesses use in order to reach its objectives in target market. (Kotler and Armstrong 2011, p.5)

The marketing mix concept which is crucial in marketing literature, was introduced for the first time by Jerome McCarthy in 1964. McCarthy explains the marketing mix as 4P's by indicating product, price, place and promotion and this concept takes its name from the initial letters of each category. (Sümer and Eser 2006, p.167).

Besides that, Grant identifies the green marketing specialities as 5I's; intuitive, integrative, innovative, inviting and informed.

Intuitive: Offering the green products as normal products, not alternatives for the existing ones.

Integrative: It defends a united concept which is composed by common commercial, technological and environmental features of today's world that could be used to increase the life quality.

Innovative: It symbolises the innovative side of green marketing. Briefly, it cites a presentation of new life styles and continuous creation of new products and services.

Inviting: This specification puts that green products are generally better, healthier, more durable and more productive goods with lower prices comparing to the others. This

concept also underlines that the purchases of the green products must be with the consent of customers, not as an obligation.

Informed: This feature could be described as information and it covers education and participation. It underlines the manipulation of customers' decisions by completing their lack of information about green products and marketing. (Grant 2004, p.71)

2.1.2.4.1 *Green product*

Environmental concerns and the increased demand for the eco-friendly products cause the re-examination of existing products and production processes and drive them to reshape themselves suitable with the environment. Beyond that, the assumption that the term 'green' indicates environmentally friendly attributes, the term is quite vague and subject to multiple interpretations, depending on any number of factors, including local, national and international business practices; market structures; societal norms; politics; and government regulations. (Sarkar 2012, p.41) Green marketing aims to supply the products which do not harm the environment, do not produce harmful wastes or are less pollutant, consume less sources, are recyclable at the same time, which could satisfy the needs of consumers. (Bikari 2017, p.37) Even though there is no product which has zero effect on nature, during the development of a green product;

a. The products have to have the same specifications with neutral materials in terms of environmental harms,
b. The products should be tested about their conformity with environment,
c. The products should contain recyclable materials,
d. The consumers should be informed about green products and oriented towards them,
e. In packaging, the necessary measures should be taken against unneeded natural source usage. (Uydacı 2011, p.188)

The products which could enter to recycling or reuse processes after the completion of their life-circles are green products. These products are eco-friendly. The eco-friendly products are manufactured in durable, nonpolluting, recyclable, nonhazardous methods and technologies. (Emgin and Türk 2004, p.8)

In order to define a product as green, it should contain below specifications;

a. Not harmful to human or animal health,
b. Does not consume extreme energy or source during the manufacturing, usage or disposal periods,
c. Does not cause unnecessary wastes due to unneeded packaging or short life circle,
d. Does not require unnecessary usage or torture animals
e. Does not contain harmful materials for nature (Moisander 2007, p.405)

According to Kotler's green product level model, there are three types of green products:

Basic Green Products: On this level of products, the usage, the consumption and the post-consumption periods of the product are considered.

Extended Green Products: The environmental features should be considered in the manufacturing process.

Total Green Product: On this level, the integration of ecological variables with internal activities of the company such as finance or purchasing should be installed and at the same time, the other firms which are in interaction such as suppliers and distributors should follow environmental policies and principles.

The green products should meet with below obligations. These obligations are also called as 4S of the green products.

Satisfaction: Satisfaction of needs and desires.

Sustainability: Protection and assurance of resources' and energy's sustainability.

Social Acceptability: Confirmation of society on product about its harmlessness on livings health.

Safety: Safety for common health. (Erbaşlar 2012, p.98)

Eco-labelling is using the labels voluntarily to indicate the ecological conformity of the product against its similars in the market. In that sense, eco labels could be seen as the rewards which indicates eco-friendliness of the product. Eco labelling occurred as a marketing tool in order to announce the environmental features of the products. The main goal of eco labelling is to show the environmental contribution of a good. (Delmas and Lessem 2015, p.319) Eco labelling also helps customers to make choices which may reduce their environmental harms and the aim of using eco-labelling mostly depends on marketing strategies. There are three types of eco-labels.

Eco-Labelling: The labels which show the product's life cycle.

Disposable Labels: These labels give information about a specific environmental benefit of the product. For instance, the products which do not harm the ozone layer carry this label. A negativity of disposable labels is that customers may suppose to have a total green product although the product has limited advantage for the nature.

Negative Labels: The objective of negative labels is indicating health and safety risks to consumers. Negative labels show specific risks of the products as disposable labels but the negative labels application is obligated by the law. For example, the cigarette packages should carry these labels. (Uydacı 2011, p.211)

2.1.2.4.2 *Green price*

The price, at its simplest terms, is the paid quantity of money in exchange for a service or a product. One of the most crucial problems of green businesses is defining the pricing. (Karafakıoğlu 2006, p.227) At first stage, the business should decide how the green product's pricing will be compared to the non-green products. The pricing of green product could be lower, same or higher than the non-green product. Application of green strategies may bring the business additional costs. In that case, the business would expect the support of the customers by reflecting the additional costs to its pricing. However, the larger market share of green products and the subventions of governments suppress the price disadvantage. Besides that, this disadvantage could be reversed by showing the savings of green applications for consumers. (Uydacı 2011, p. 213)

Pricing is important in all marketing mixes. Consumers will consent to pay more if they can be convinced of additional values of product. The customers who are willing to pay premium for the green product, expect the same performance from the green products as they received from non-green ones. Green changing in products covers physical variances in products and it naturally affects the performance. So, we can not mention a performance equality between green and non-green products for all cases. (Polonsky and Rosenberg III 2001, p.24)

Lowered prices could be encouraging with regard to customers in the sense of purchasing green products. If the demand is sensitive in pricing basis, lowering the prices would be a successful policy for businesses. In cases that the pricing is similar with non green products, the eco-friendly specifications of the product would be advantageous as a rivalry strategy. The promotions that are playing a substantial role in cases of the pricing above the usual level, should find 16 customers who could pay more for the product. A reasonable pricing for green products would be accepted by the customers and it is related to the development level of the country. For instance, in the United States, consumers are accepting to pay 6.6% more for a green product which is substitute for another. The same ratio for Chinese consumers is 4.5% and the ratios in less developed countries can be lower. (Varinli 2012, p.41).

According to Uydacı (2011, p.214-215), below points should be taken to consideration in order to assure the success of the pricing of the green product:

Quality: The products should satisfy the customers.
Credibility: The customers should believe in environmental features and the benefits of the product.
Simplicity: Consumers should easily and simply understand the green products.
Saleability: The market should be divided into fields and the marketing policies should be generated according to these fields.
Specifity: The reusable source and renovated technology should be cited to customer.
Visibility: The novelties of the product or project should be recognizable at the customers' end.

Tangibility: Besides the total benefit of the product, the personal benefit of the product should be underlined.
Society: Public awareness should be raised in terms of eco-friendly products.
Strategy: The businesses should promote the product and their manufacturing policies which are convenient to their cultural policies.
Tenacity: The businesses should continue to make their activities in order to educate the consumer, develop new green products and receive financial benefits on the long term.

2.1.2.4.3 *Green distribution*

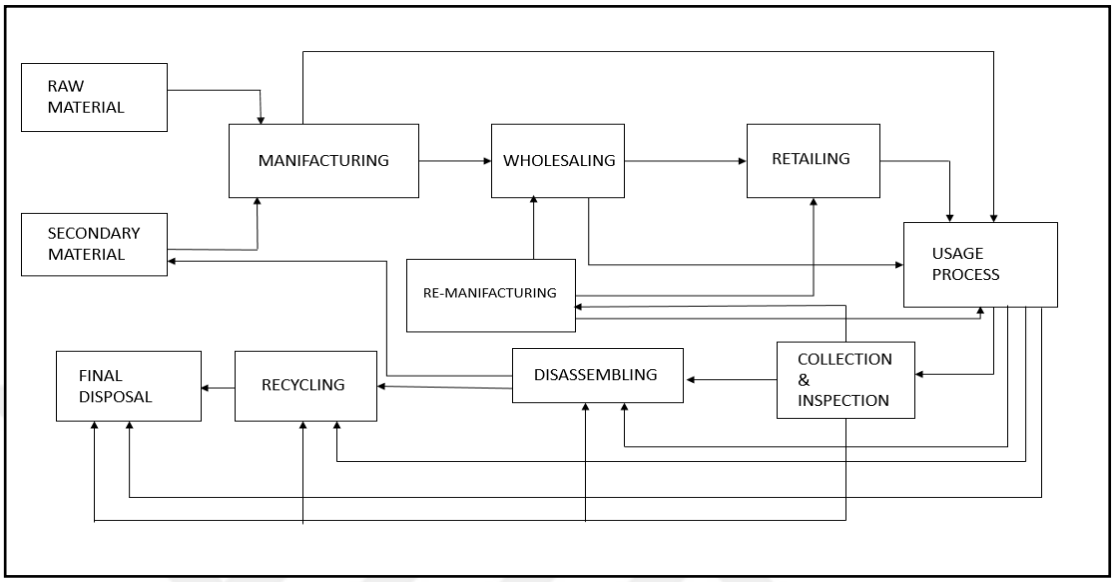
Distribution is the forwarding process of the products beginning from the sources of the products to the consumption places within the required date and place and also with the lowest costs. The demands on distribution reform itself from a unidirectional to bidirectional flow. The basis of these demands is the rejection of disposing costs for used products by consumers. In that sense, the manufacturers should install a new approach for return of used packages and products. Consumers prefer manufacturers which ensure taking back the products or packages when their life cycles are completed. (Uydacı 2011, p.215)

The main function of the distribution is reducing the environmental costs to minimum. Distribution is considered under two titles; distribution channel and logistics. (Varinli 2006, p.40) In recent years, logistics became more important for companies and thus its effect on the company image is increased. Alongside the increase of demand for green products, the necessity to be green for the logistics operations also occurred. As long as the companies make their efforts for greening, the logistics managers' would be obligated to execute eco-sensitive solutions and decisions. (Wu and Dunn 1995, p.22)

Distribution is one of the applications which worries the marketing in terms of reducing the environmental effects. The companies may reduce the raw material usage by making modifications on wrapping processes. This would reduce indirectly or directly transportation costs. For example, some concentrated laundry detergents are wrapped in small packages. This innovation in packaging is lighter and consumes less fuel in

transportation period. Thus, environmental effects would be reduced. Moreover, the energy and raw material usage is lower. (Polonsky and Rosenberger III 2001, p.25)

Figure 2.1: Green Marketing Actions



Source: Polonsky and Rosenberger III, 2001, Polonsky and Rosenberger III, 2001, Reevaluating Green Marketing: A Strategic Approach. Business Horizons, 44, pp. 21-30

One of the most crucial subjects of the green distribution is transportation. European Union cited that the transportation volume is augmented more than gross national products in the last 15 years. (Aronsson and Brodin 2006, p.394) The transportation is the most environmentally risky element. Those risky situations are the consequence of these three factors: construction of transportation network; operations of transports and elimination of transports and its parts. Transportation is the primary user of the fossil fuel as petrol or natural gas and it creates much toxic material emission. Transportation also requires pollutant infrastructure investments as ports, airports and highways. (Leblebici Kacur 2008, p.184)

Effective usage of transportation system could help to reduce the environmental issues. In that sense, the below measures could be taken. (Wu and Dunn 1995, p.32)
By adopting these points, the environmental risks could be minimised.

a. Reduction of land transportation

b. Development of alternative fuels to petroleum products

c. Increase of efficiency on energy usage and reduction on pollution

d. Decrease in operation quantities by better distribution management

e. Formation of a good information flow system

f. Effacement of traffic congestion by more efficient in loading, scheduling and course setting processes

One of the most important activities of green businesses is reprocessing the materials. These materials could be the packagings, the parts or the unused products. Integrated transportation systems and internet could be dimmer for environmental issues but the most complicated transformation on distribution systems is assuring the return of packaging materials or used products from the consumer to the company by using distribution channel. This system was identified as "Reverse Logistics System" in the early 90's and its first step is the recollection organization of german manufacturers for their wastes. The second step is the recollection of unwanted products. (Polonsky and Rosenberger III 2001, p.25) Generally, all reverse logistic operations have the processes of collection, separation, disassembly, processing and integration. (Sarkar 2012, p.495)

The reverse logistics is not only an additional cost factor for the companies, it sometimes may contribute in order to assure inputs or cash flow for new products. Xerox, starting from 1999, puts the old photocopy machines on reproduction or uses its old parts in new machines. Fuji Xerox Austria marks that the company saved millions of dollars by implicating this reproducing process. (Leblebici Kacur 2008, p.186) Starting from that point, the reverse logistics systems is important for service management activities and reusing the used materials as automobiles, white appliances, cell phones, batteries and computers.

Implementation of integrated reverse logistics systems requires the high approval in company; readiness in terms of finance or human resources and strategic focus. Giuntini and Andel suggest 6R approach in order to generate a convenient logistic strategies. This approach consists of 6 stages as recognition, recovery, review, renewal, removal and reengineering. (Polonsky and Rosenberger III 2001, p.25)

Table 2.5: Six Rs of Facilitating Reverse Logistics

Recognition	Control or surveillance of products for involvement to reverse logistics system
Recovery	Collection of the products for review
Review	Testing the materials for reusage suitability or abolishment
Renewal	Reproduction according to the original standards or separation of convenient parts for reuse
Removal	Abolishment of non reproductive products and marketing of reproduced products
Reengineering	Developing current products for better designs

Source: Polonsky and Rosenberger III, 2001, Reevaluating Green Marketing: A Strategic Approach. Business Horizons, 44, pp. 21-30.

As a review of the above information, we may define green distribution on three pillars; readiness, reformation and reduction. At the beginning, the companies should identify necessary internal and external changes starting from developing green products to return system. In that sense, the commitment of company has a significant importance. At the first phase, the company should also define the performance goals. At the second phase, the company should reform its distribution channels in order to realise the distribution and tacking back objectives. At the final phase, the company should arrive to goals which was defined at the first stage about the reduction. (Leblebici Kacur 2008, p.189)

2.1.2.4.4 *Green promotion*

Promotion is a method that companies use in order to communicate the customers about their product offers. Promotion that the businesses use to determine their profitabilities and marketing successes, have an importance in marketing mix. The promotion also helps to identify the demands and needs of the customers. At the same time, the businesses try to differentiate themselves by executing promotional activities about their services and products. Promotional activities are conducting in order to reach several objectives. These objectives could be aligned as;

a. Increasing the sales,

b. Keeping and increasing the market share,

c. Generating and increasing the brand awareness,

d. Informing the market. (Büyükbaykal 2002, p.529-531)

The convenient promotion mix should be organized according to below objectives and also the features of the company's products or services. Promotion mix is the combination of different promotion channels that helps to forward the message and it is composed by advertisement, direct marketing, sales development, public relations, publicity, personal sales and sponsorship. The businesses select one or more of these methods by considering their marketing strategies and the products or services which they want to promote. (Leblebici Kacur 2008, p.190)

In promotional activities of green marketing, the primary subject is the promotion of the environmental activities. Since the objective of promotion is creating a green business image at the customer end, the informations should be compatible with the activities of the company, should cover environmental performance and generate an integrity. (Uydacı 2011, p.229)

Businesses that conduct green marketing, should utilize sustainable marketing and communication tools in order to found the environmental credibility. As an example, using e-mails instead of traditional printed materials as a promotion tool is commonly used by companies today and it shows us electronic marketing is rapidly replacing traditional marketing techniques. In this context, retailers sell the recyclable marketing bags as a promotion activity. The first requirement of success in green marketing is credibility. Instead of making exaggerated environmental claims and unreal expectations, transmitting the green marketing activities to customers in a simple and reliable matter, would help to companies for success. (Leblebici Kacur 2008, p.190)

Integrity in philosophical and motional style of the business is important because the environmental subject may also cause negative attitudes at the customer side. This situation drives the companies to take careful steps and to avoid falling back about the environmental issues. (Uydacı 2002, p.128) One thing is certain that some companies put “ozone friendly”, “environmentally sensitive” or “recyclable” statements on their products unconsciously. The use of the same or similar statements on the products which have different specifications may also cause suspicion on customers. Therefore, companies should include their real green products into the green promotion activities. Khandelwal and Bajpai’s research in 2011 shows that, the factors as credibility, consumers’ trust, viewers’ attitudes, brand image, consumer believability towards media, green education are the key drivers which affect consumer’s decision in order to choose a green product. (Khandelwal and Bajpai 2011, p.273)

2.1.2.5 Green consumption

Eco-friendly or sustainable consumption subjects are highly considered by the businesses, non governmental organizations and states. Green marketing is offering the products that are manufactured under sustainability and social responsibility awareness to customers. Starting from that point, green consumption is defined as consuming the products under sustainability and social responsibility awareness (Tirkeş 2008, p.55) In other sense, Green consumption indicates the consumption of the products or the services that are sensitive in usage of natural sources and that aim reducing the pollution to minimum level. (Başol, Dülgeroğlu, Öztürk Başol 2016, p.5) By preferring these environmentally sensitive products and services, the green consumers believe that they may affect the production behaviours and habits of other manufacturers. (Sarıtaş 2018, p.53)

Elkington and Hailes identified the green consumption approach as avoiding below products;

a. The products that threat the consumer’s and the society’s health,
b. Harmful products for the environment in the manufacturing, consumption or after consumption periods,
c. The products which consumes excessive natural sources in its manufacturing, consumption or after consumption periods,

d. The products which create unnecessary wastes,
e. The products which are harmful to livings in its manufacturing period,
f. The products that harm other countries. (Tirkeş 2008, p.55)

When the green consumption is considered, the first aim is saving more in consumption of natural resources. In that concept, the below points could help;

a. The behaviors in order to save more fuel in transportation,
b. Savings in heating actions,
c. Savings in electricity usage,
d. Savings in water consumption. (Karalar and Kiracı 2011, p.74)

2.1.2.6 Reasons for green marketing usage for companies

2.1.2.6.1 *Opportunities*

If we follow the developments in environmental sensitiveness of the consumers, it is not possible to ignore the demand for green products. In 1992, a research which covers 16 states, put that the majority of the consumers are sensitive about the pollution and in 1994, a research in Austria indicated that 85% of the consumers are feeling responsible for the nature. In the same research, we see that, 80% of these consumers changed their purchasing behaviors according to their environmental sensitiveness. (Canım 2015, p.23) The businesses which could understand opportunity and develop their products accordingly gained a green position at the customer's end. By being pioneers in the market, these companies also gained important advantages against their rivals. (Erbaşlar 2012, p.97)

It is possible to align the opportunities of green marketing for the businesses as below;

i. The businesses could reduce their manufacturing costs by reducing the wastes, saving the energy and reusing the materials,
ii. The consumers demands the businesses that have the environmental awareness, green products and environmental management styles,

iii. As long as the businesses continue to develop their own unassimilable environmental methods, they remain as the market leader,
iv. Being an environmentalist is important for the image of the company and in terms of public relations,
v. Green approach is aiming to minimise natural resource consumption, fluctuations in energy cost, pollution and waste management with regards to the long term risks. (Toygar 2014, p.24)

The financial opportunities should not be ignored also at the companies. Health and wellness are rising concepts of our days. According to Namkung and Jang, even by doing small green changes in business operations, the companies could gain loyal and wealthy consumers. (Namkung and Jang 2014, p.330)

2.1.2.6.2 *Social responsibility*

Social responsibility was identified as managing the businesses' financial activities for the benefit of employees, customers and shareholders in the 1980s. But today, thanks to rising environmental awareness of the companies, the environmental responsibility became an ordinary factor of the social responsibility of businesses. (Aydınlıoğlu 2008, p.6)

The social responsibility in terms of environmental protection is putting environmental sensitiveness in all actions by companies as they do by considering the society, social factors and social expectations. In other terms, the companies direct their environmentally destructive activities to more eco-friendly methods by taking necessary actions, by implementing new technics or by leaving the unreformable methods. Within the scope of environmental sensitiveness, the businesses should control and follow the harmless or less harmful methods on behalf of the common future of all livings. (Leblebici Kacur 2008, p.90)

The companies are aware that they are a part of an environmentally sensitive society and therefore they conduct their activities within social responsibility. At the same time,

they find that if they apply the eco-friendly actions seriously, these companies could have benefits in return. This case gives two different perspectives to the companies;

a. Reflecting its eco-sensitiveness as a marketing tool,

b. Feeling responsible even though its eco-sensitiveness is not reflected as a marketing tool. (Uydacı 2011, p.155)

The business could naturalise these above perspectives separately or together. In the first perspective, the company which makes an environmental investment, considers it as an advertisement tool and wants to announce it to its customers. Thus, the company aims to empower its image on the customer side and its effect on market share. In the second perspective, the environmental investments are considered as ordinary behaviors at the company's side and the company undertakes these investments by not using it as a marketing tool. (Yılmaz 2009, p.19) For instance, although cosmetics companies announce their environmental activities, Coca-Cola Company made renovations in its packaging systems in order to maximize company's environmental responsibility and made big investments. Besides these investments, the company did not use its environmental change as a marketing tool and thus, the company is not perceived as a responsible company at the customer end. (Uydacı 2011, p.155)

Hopfenbeck mentioned some criterias that could be the indications of social responsibility in terms of environment for companies. These criterias are as below;

a. Divination of responsibility towards environment,

b. Acting responsibly about consumption of natural sources,

c. Actions for eco-friendly products or manufacturing process,

d. Collaboration and information transfer with environmentalist groups,

e. Attribution of the same attention to economic, social and ecologic objectives. (Leblebici Kacur 2008, p.91)

2.1.2.6.3 *Governmental pressure*

Government is one of the most efficient stakeholders which creates politic and economic pressure externally on the business. The pressure of governments could be about packaging, creation of product or distribution channels but they also affect the company strategies. Following the leadership of the USA and EU, the legal regulations are put about the environmental safety and human health and "Polluter Pays" principle is applied around the world and in Turkey. (Leblebici Kacur 2008, p.87) This principle is created by the OECD and its objective is preventing the breakdowns in commercial ties and competitive advantages by assuring the political harmony within the member countries about the environmental issues. (Dağdemir 2003, p.146-147)

About the environmental protection, the governments have three principal roles as; the regulator, supporter and buyer. (Wu and Dunn 1995, p.21) Within the frame of the regulator role, the governments define variant politics and laws in local or regional levels such as emission standards of vehicles, noise control and recycling obligations. For instance, governments in Canada and Europe, implemented strict standards for consuming natural sources, reducing material use and recycling wastes. The "Fresh Air Code" which was put in 1990 by the government of the United States could be another example. As the supporter, the governments give their support and invest in businesses in order to develop eco-friendly technologies. Since governments are the biggest purchasers in many countries, the governments could use the power of green product manufacturing of the companies and give the subventions to these companies. (Leblebici Kacur 2008, p.88)

In Turkey, environmental issues have been held constitutionally. 56th article of the current constitution of Turkey, defines the environmental responsibility and rights of the state and the people as "Everyone has the right to live in a healthy and decent environment. Environmental protection and improvement are the assignments of the state and the people." At the same time, the Turkish constitution also has articles about coasts; forests; natural, historical and cultural wealth. (Leblebici Kacur 2008, p.90) Starting from this point, this constitution handles the environmental protection of the

country as a whole and installs a cooperation between the people and the state in order to assure it.

According to Henriques and Sadorsky's research, the legal regulations are the most effective element which steers the companies to make greener transformations. (Henriques and Sadorsky 1996, p.393) In order to avoid the penalties, the companies accept to follow legal regulations. In another research, which has been conducted within 20 businesses in chemistry industry, it has been found that the key directive element for suppression of pollution strategies is environmental laws. (Leblebici Kacur 2008, p.87)

The states make the legal regulations in order to protect the environment within the frame of below points;

a. Reduction of harmful materials,
b. Detention on the demands for harmful materials of businesses and consumers,
c. Education in order to enhance the environmental awareness of consumers. (Erbaşlar 2012, p.97)

2.1.2.6.4 *Competitive pressure*

The businesses conduct their commercial activities in a market that is determinated by international technological developments, quality and efficiency. (Bacak 2006, p.176) Because of the developments in technology and communication; the companies, the individuals and the countries compete or collaborate internationally. (Tenekecioğlu, 2005, p.267) The competition between the companies is identified as the activities of two or more companies in order to assure the preference of their goods against the rival products. (Yamamoto 2004, p.28) The competitive advantage could be gained with the strategies as cost leadership, differentiation or focusing on a different part of marketing. Activities which create the value are another important strategy. (Simpson, Taylor and Baker 2004, p.158) Making useful activities for society assures a benefit to the company and to environment besides its personal benefit. The ability of creation an additional value for customers and the opportunity of making environmental activities help the companies in order to gain competitive advantage. (Leblebici Kacur 2008, p.83)

The deprivation concern of current competitive position of the companies is one of the key reasons for the applications of green marketing. Thus, the businesses ceased the production of the goods that are harmful for the nature and launched to manufacture eco-friendly products. This greening of companies became a promotional instrument and started to attract the consumers towards green products. Thus, these renovated companies increased their market shares and gained a competitive advantage against their rivals. As long as the greener market demands show themselves up, other businesses will see the obligation of being green or greener in order to survive. (Erbaşlar 2012, p.97)

Green products are always open to development and therefore it is possible to produce the goods that are less harmful to the environment. Developing their own strategies makes the companies the pioneers of the market. (Toygar 2014, p.29) For instance, Xerox company became a pioneer in photocopy industry by announcing 100% recyclable and reusable papers and encouraged other companies to manufacture recyclable papers. (Somuncu 2016, p.10) As another example, Compaq introduced "Energy Star" label to the market in 1996 which indicated an energy saving system to personal computers. Within this concept, computers put themselves to sleep mode when they are not used and allow the computer operators to continue their work from the point they left. Nowadays, almost all the computer manufacturers adopted the same "Energy Star" system for their products even when they do not have a brand. (Canım 2015, p.26)

In the 21st century, the companies that want to continue their commercial activities and to have an advantage on a global level, should reduce their wastes, minimize their emissions and prevent unwanted harm. The companies which has low efficiency and are maladministrated could face bankruptcy. (Üstünay 2008, p.115)

2.1.2.6.5 *Cost-profit factor*

All the environmental actions of businesses create a cost for the environment. These costs are variable. Some of these costs are related to the actions of environmental protection and some parts of the costs are aiming to use the environmental sources. The

rest of the costs is related to the pollution that the companies caused. Within this scope, the environmental costs are examined under three subgroups as prevention, usage and damage costs. (Djaadi 2016, p.35)

Besides that, in cases that the companies do not follow their obligations and laws, the companies will face with penalties and it will cause an additional cost and financial concern for the businesses. (Üstünay 2008, p.119)

The transformation towards green marketing of businesses would accelerate with the future legal constraints, the pressure of the consumers and the difficulties in order to gain market advantage. The companies that resist this transformation, will pay more penalties, will reduce the production because of the unwillingness of customers to buy the products and will have a bad reputation among the public in the future. All these factors will cause an increase in costs, a drop in profits and bankruptcy at the final stage. (Uydacı 2011, p.183)

2.1.2.6.6 *Consumer pressure*

Environmental consciousness driven by big environmental accidents, life conditions which are getting more difficult, disasters, the need for savings, legal obligations in recent years, lead to the acceptance of the green movement by the majority of the society. (Leblebici Kacur 2008, p.92)

For customers; the 1960's were "awakening", 1970's were "reaction", 1980's were "feeling responsible" and 1990's were "market power'' periods. Within these periods, customers found that the environment was more sensitive than they thought and the natural sources may disappear eventually. (Kalafatis, Pollard, East and Tsogas 1999, p.442)

Green consumer is defined as the consumer which prefers to buy the green one and takes environmental approaches. These consumers do not consider the environmental protection as something only under the responsibility of the businesses, the governments and the scientists. They accept their responsibility for the environment and make their internal control more intensively. (Çabuk, Nakıboğlu and Keleş 2008, p.88)

As long as the environmental awareness of consumers arises, the expectations of the consumers also arise. In the past, the expectations of the consumers were high quality for low price. But nowadays, being green is more important than the old expectations. In order to satisfy this expectation, companies should change their philosophies and be greener. (Uysal 2006, p.68) Customers reward the green products by choosing them and show their intentions for environmental protection with their purchasing behaviors. (Uydacı 2011, p.169) According to "Environmental Awareness Index" of Coyle;

a. 10% of green consumers pay attention to domestic energy usage,
b. 50% of them prefer recyclable products,
c. 10% of them prefer eco-friendly products,
d. 50% of them reject the usage of harmful materials,
e. 31% of them reject the unnecessary water consumption. (Coyle 2005, p.11)

The conscious consumers make their concerns heard by boycott campaigns and they adopt a negative manner against the companies. The boycotts could cause market share loss at the businesses side. For instance, Shell company lost its sales between 20-50% during "Brent Spar" boycott. Nestle company lost 40 million dollars as a result of the consumer boycotts. The companies that face boycotts lose their images on the customer side alongside their financial losses. Therefore, ignoring the conscious customers and not manufacturing green products are not reasonable behaviors for the futures of the companies. (Leblebici Kacur 2008, p.101)

2.1.2.6.7 *NGO Pressure*

The non governmental organizations (NGO) are non-profit organisations which aim to serve the benefits of the livings. The environmental movements of today are generally conducted by these organizations and this makes the NGOs political and social power. The environmentalist NGOs undertake some objectives in order to preserve nature;

a. Raising awareness in society
b. Assuring the democratical harmony,

c. Creating a social collectivity

d. Installing an effective public opinion,

e. Addressing to legal authorities about environmental subjects,

f. Establishing close relations with public institutions,

g. Accelerating the green transformation processes of businesses,

h. Being effective on the applications of existing laws and international agreements. (Uydacı 2011, p.177)

The companies could not resist the pressures of NGOs and changed themselves since these organizations have the trust of the consumers and persuaded them. (Toygar 2014, p.29)

The primary reason for NGO's existence is the incapability of the governments at the demanded level or their failure. (Kılıç 2001, p.145) This situation steered the society to participate in the government and organise locally in order to protect the nature. For example, since 1996 in Argentina, the effects of the NGOs about the implementation of environmental codes have been essential. (Aguilar 2002, p.227)

About the direction towards green marketing strategies and their applications by the companies in behalf of the livings, the impacts of the NGOs are undeniable. The European Union has accepted a resolution about the security surveillance of thousands of chemical materials which are in daily life use. This resolution is closely monitored by companies and environmentalist groups and it was one of the biggest and most extensive resolutions of the Union. The resolution was bringing additional security obligations to more than thirteen thousand chemicals which are substantial for many industries as automotive, informatics, cleaning. The resolution was giving the responsibility for security proof directly to manufacturers. According to the resolution, the use of extremely harmful chemicals would be forbidden if they have any replacements. About the resolution, the companies defended that this limitation for chemical use would abolish the competitive power of European Union members, but the

NGOs insisted on putting stricter limitations and found the resolution as insufficient in order to preserve human health. (Leblebici Kacur 2008, p.102)

Since the NGOs reflect the public opinion directly, it may perform a greater impact than the law in some cases. Thus, the NGOs are one of the most significant factors when the companies define their green strategies. The reactions and attitudes of the NGOs should be monitored closely by businesses.

2.1.2.6.8 *Sustainable development*

The sustainable development notion is not identified clearly in terms of theoretical approach. About the notion, there are many definitions until today.
Sustainability was stated firstly in the 18th century by considering a development with the existing and future generations at the same time. In the late 18th century, according to a forestry law in Germany, the forests could get cut in order to assure the renovation after they exceed a certain age. This sustainable forestry approach gave the basis of the current notion of sustainability. (Çıvgın 2011, p.18) In that sense, the first appearance of sustainability was in forestry. The current sustainable development concept is based on the 1987 Brundtland Report. According to this concept, the sustainable development is satisfying the needs of the current generation by not threatening the satisfaction of the future generations. (Report of World Commission on Environment and Development, 1987, 16) Sustainable development is the offered development to everyone without threatening fundamental environmental, social and economic needs and the ecologic and society based systems which these needs depend on. Sustainable development is about the changes in production and consumption styles. These changes should assure an equal participation right to current and future generations within the current environmental boundaries. (Mataracı 2017, p.6)

The sustainable development started to be discussed in the 1960s after an environmental awareness arose against the devastating impacts of the Industrial Revolution on nature. Sustainable development underlines a continuous progress and development without harming ecology and the current manufacturing system. The transformation in this

approach is created by many international institutions following the United Nations. (Yavuz 2010, p.65)

The first attribution to the limits and irrevocability of natural sources was made into The Limits to Growth report by the Club of Rome in 1972. This report stated that the natural sources could be drained if the current consumption continues and discussed the possible measures against it. It is also stated that these issues are global and an international effort is needed to solve the environmental issues. The fundamental problems as extreme population and economic growth, industrialisation and investments, shortage in food consumption and pollution are also discussed. (Aksu 2011, p.12)

It is observed that the environmental disasters are transformed into an integrated structure in the world and especially in industrialised areas. In order to discuss this situation on an international level, the United Nations Conference on the Human Environment (UNCHE) was organized with the participation of 113 countries in 1972. (Bozlağan 2005, p.1015). The protection of the environment was discussed for the first time within this conference on an international level and it became a milestone for the global dimension of ecological and environmental issues. The improvements of the principals which draw attention to the relation between the environment and the economic and social developments, impacted the environmental policies of the countries. (Özmehmet 2012, p.6)

The sustainable development statement was stated officially by Gro Harlem Bruntland in “Our Common Future” in 1987. This report briefly stated below points within the frame of development model;

a. A permanent and long term economical growth,

b. An economy which balances the development and the environment,

c. The actions which consume the environment without draining it. (Özmehmet 2012, p.7)

The second important international action was the Rio Conference in 1992. The aims of this conference were;

a. Implementing Stockholm Declaration on the Human Environment,

b. Building a new and global partnership with the cooperation of states, governments, industries and NGOs.

In this conference, the common activities were underlined in order to make savings in natural sources of the World. (Özmehmet 2012, p.7-8) Within this conference, it was accepted that the environment and the economy could be developed at the same time. Within this scope;

a. The purchasing and consumption convenient to the environment,

b. Eco-efficiency and industrial efficiency,

c. Recycling,

d. Waste reduction,

e. Industrial ecology,

f. Life circle analysis,

g. Environmental management systems,

h. Eco-labelling notions were evaluated. (Korkmaz and Sertoğlu 2013, p.129)

Agenda 21 programme is a multi-industrial initiative which includes local participants. The aim was preparing a long-term strategic plan in order to solve the issues of sustainable development. This action plan consists of four parts;

a. Social and economic dimensions,

b. Preservation and management of resources for development,

c. Enhancement the roles of efficient groups,

d. Implementation mechanism. (Özmehmet 2012, p.8)

In Rio and Johannesburg Summits, the manner of application of the Rio Conference principals were evaluated. In this summit, preparation of national agendas for

sustainable development were requested from the participant countries since there are economic and social differences between developed and developing countries. A standardised development model for all countries is not useful and far from success. In that sense, each country has to develop its own sustainable development policies. (Kayhan 2013, p.72)

The individuals are important in the sustainable development process as consumers. They have the capability of influencing the behaviors of businesses and public institutions. One of the most significant stakeholders of sustainable consumption behaviors is NGOs. Many NGOs are currently making their efforts to realise the diffusion of sustainable consumption behavior around the world. In that sense, LOHAS (Lifestyles of Health and Sustainability), GAP (Global Action Plan) and New Dream Center could be the examples. (Karalar and Kiracı 2011, p.72)

2.2 PACKAGING AND RECYCLABLE PACKAGES

2.2.1 Packaging

2.2.1.1 Definition of packaging

The packaging is the container that protects the products from physical effects and eases the product's transportation and storage. The packaging also has functions as enhancing the sales and assuring convenience in use. After the product completes its life circle, the packaging could enter the recycling process or could be totally annihilated. (Tek 1999, p.372)

The packaging is the combination of swathings and coatings that preserve the products from external impacts, ease the marketing operations and inform the customer about the product. These swathings and coatings could be made of metal, paper, carton, plastic or glass. (Baydaş and Yaşar 2018, p.52)

According to Suher, the packaging is the tool for protection and carriage of the products. Originally, the word packaging entered the Turkish language from French as "emballage". The definition of packaging in Turkish Language Institution is; "the material which is used to wrap the product." In that sense the packaging is identified as a platform that offers the product to the consumer. The packaging, with the visual elements it carries, helps to differentiate a brand from the others. Through the help of these visual details, the consumer can compare the different products of the brands and choose the most convenient one which would satisfy their needs. In that sense, the packaging does not only preserve the products, it also gives variable information to customers such as the date of expiry, date of production, ingredients, terms and intended use. (Çaylak 2017, p.37)

Within this scope, the first definitions of packaging were about the functional and physical objectives of it but after that, the emotional and instrumental benefits were also added to the objectives of the packaging.

Meyers and Lubliner (2004, p.100) defend that the packaging carries a crucial importance starting from the production to the purchasing decision. In the marketing mix, packaging is considered as 5th P after product, price, place and promotion. If the right product can be rigged with the right packaging, purchasing will be guaranteed and the profitability will be increased. On the other hand, even when the product is right, the unsuccessful packaging can not persuade the customer and the purchasing can not be completed. The packaging can not be identified as a separate platform or tool from the product. The packaging conserves the emotional and functional benefits of the product. Thus, the first stage of the customer's perception about the product is the visual specifications of the packaging. At that point, the packaging has a bigger notion than its features as the shape, graphics, logos, colors, materials and typography.

2.2.1.2 Historical evolution of packaging

It is a fact that since the start of life, the human has had the concern for the preservation of different subjects. This concern showed itself as protecting the body from the cold at the beginning. The first steps of packaging started with the human being in possession of precious goods. This possession emotion brought protection, storage and preservation needs for the goods. As the first packages, humankind used leaves and animal skin in order to preserve their water and meat. Besides that some of the oldest packages were the amphoras and vases that were made from dirt and glass starting from around 1200 B.C. (Yalçın 2011, p.5)

In Ancient Greece and Rome, using wooden boxes as packages was prevalent and the bottles were used in transportation of perfume. As old packaging materials, golden or silver boxes were also used. Between the first and the second centuries B.C., mulberry leaves in China and glass containers in Egypt were other examples for packaging in ancient times. (Klimchuk and Kravosec 2006, p.88) Around 750 A.C., paper industry was revealed in the Middle East and after that in Europe. In the 1200s, tin plating metal boxes were used as packages in Buhima. In the 17th century, paper packaging industry was moved to America. (Soroka 1998, p.326)

In the 1800s, the manufacturers met with a new concept called “brand” and this century became a milestone for the packaging industry. In this era, manufacturers started to put their names and informations on the packaging. The cardboards were invented around 1850. (Becer 2014, p.133) In cardboard history, the first patent belongs to Edward E. Allen and Edward G. Healy but as the packaging material, Albert L. Jones got the patent for cardboard in 1871 in the United States. (Yalçın 2011, p.10) In the late 1800s, the carton packaging of Coca Cola and glass packaging of Pepsi Cola increased the sales and both brands printed their names on their packagings. Around the same era, in 1825, British pharmacist defined the regulations in order to mark the containers for toxic materials and they used aluminum containers for these materials. (Soroka 1998, p.288) In the early 1900s, the first metal boxes for products appeared in the United States and in the United Kingdom and the automatic filling systems were also introduced with the impact of commercial competition (Becer 2014, p.133). With the invention of aluminum cans in 1950, the beverage industry rapidly started to use these cans and these packages are still in use today.

In the middle of the 19th century, the majority of packages were glass, carton or metal. Following the developments in polymer in the 1960’s, the packaging industry faced with a fast transaction towards polymer. The polybags offered a better option for liquid products than the glass containers since they are more flexible and lighter. Also, the nonbreakable feature of polymer contributed to the security concepts of liquid products. Polymer coating appeared for the first time in the 1970’s. Single and after that, double coatings were developed for the protection. At the beginning cellulose and polymer coatings were used instead of waxed paper. At the end of the 20th century, many producers transformed their packagings from these round and hard containers to flexible and rectangle containers. This situation contributed to convenience of use and distribution and also efficiency for saving the natural sources. (Schueneman 2008, p.286)

2.2.1.3 Types of packaging

Packaging types are mainly studied under two subgroups as internal and external packagings. These subgroups are also identified as primary and secondary packages.

Besides these, transportation packages are also mentioned as tertiary packaging according to some sources in literature.

2.2.1.3.1 *Internal packaging*

Internal or primary packaging undertakes the presentation objective of a product and impacts brand knowledge. With the images that it carries, the internal packaging conducts the communication of brand. Since this communication objectives are conducting in sales points, the internal packagings should be effectively endorsed by visual factors. (Ayar 2008, p.3)

Toyne cites that in order to be preferred by customers, the internal packaging should have the right visual and structural factors. Toyne aligns the important points in order to take customer attention as below;

a. The materials and the design of the internal packages should aim the attention of customers. In order to decide the proper design and materials, the brand should make the right measurements for the wishes and expectations of customers.
b. The brand should analyse the socio-economical status of their target audience before they define their packaging designs. The packaging should satisfy the expectations and demands that the brand created.
c. In the definition phase of packaging features, the presentation area such as the shelves should be considered. When the customer sees the product in the presentation area, the customer could see the details of the products easily. These details should be positioned on the packaging by considering this feature.
d. Internal packaging should give clear information about the product structure, features, use, storage and environmental effects. All the information which could persuade the customer should be placed on the packaging. (Toyne 1993, p.483)

2.2.1.3.2 *External packaging*

External packaging, or secondary packaging, is for the protection of the internal packaging and it has no effect on the brand communication. (Ayar 2008, p.4) It is important to evaluate the internal packaging before defining the use of secondary packaging. For instance, if the internal packagings are glass, the product can be damaged during the transportation or distribution but if the product also has an external packaging, the protection of the product's integrity could be assured. Besides its protection purpose, the external packaging also has the storage role of the products. In that sense, the external packages also have an impact on more efficient storage activities. (Ayar 2008, p.4)

On the other hand, certain opinions defend the communicational function of the external packaging. Internal packaging has a limited place in order to forward necessary information to customers. Long information could be transferred to customers by positioning them on the external packagings. Thus, the external packaging may draw the attention of the customer via the visual factors and contribute to the image of the brand. (Çaylak 2017, p.40)

2.2.1.4 Elements of packaging

2.2.1.4.1 *Material*

Although the form is the most important basic factor, it is also important to define the material which would create this form. The material would canalize the brand's perception and expectations in different manners. Besides its visual effects, the materials also impact tactile senses and thus, the materials build the brand images on the customer side that cannot be revised easily. (Mohajjel Shoja 2017, p.33)

The primary factor that affects the packaging's design is the material. The packaging can be made from metal, wood, paper-carton, plastic or glass. The preference of these materials for packaging depends on the use of the product. (Meyers and Lubnier 2004, p.22-24)

Different materials give shape to the perceptions of customers. The change in customer behavior shows that the products which have eco-friendly and recyclable packages, affect the customers' preferences positively. Hekkert and friends (2000, p.1) explain the effect of packages on the environment as;

> *Glass, plastic and paper are used in packaging manufacture. The production of these materials requires a considerable amount of energy. 20 Gigajoule/t for paper packages, 70 Gigajoule/t for plastic packages and 187 Gigajoule/t of energy is needed for the manufacturing of aluminum packages. The improvements in energy efficiency and material management may help to reduce the energy consumption and the amount of carbon dioxide released to the nature during the production phase of these packages.*

2.2.1.4.1.1 *Metal packaging*

Metal packaging is usually used for the protection of food and beverages. The total market share of metal packages is around 410 billions. 320 billions of these packages are for beverages and 75 billions of them are used in the food industry. These wide use of metal packagings take its origins from below points;

a. Metal packages protect the product from light, liquids, gasses, high temperatures and humidity. So, it helps to extend the shelf life and storage activities,

b. Metal packages offer convenience to the manufacturer in terms of design and shaping,

c. Metal packages rapidly cool the filled product, led to the implementation of fast filling systems and are efficient since they are convenient for recycling,

d. Metal packages are also suitable for decoration and storage because of their visual functions. (Erdal 2009, p.159-160)

The most preferred metal packaging type of the brands is tin. Tin is a preserver material which is made by thinning the metal. The thickness of the tin material is determined by the specifications of the material that would be put in. If the corrosion possibility is high, the tin packaging would get thicker. (Calver 2004, p.75)

Coles, McDowell and Kiwan (2003, p.278) cited below points in order for metal packages to deliver the food products properly, they should;

a. Preserve the product properly,

b. Resist chemical effect of product,

c. Resist transporting conditions,

d. Occupy a small place,

e. Be opened easily,

f. Be produced from recyclable raw materials.

2.2.1.4.1.2 *Wooden packaging*

The oldest material for packaging is wood. The wood is used for the protection of sensitive products since it is a hard material. Especially because the wooden materials let the air flow, the food products are stored and protected in them. (Çaylak 2017, p.43)

The wood is a natural and healthy raw material. Common wooden packages are boxes and chests and these packages may preserve their contents for a long period. The manufacturing process for wooden packages does not require a complexity and it may be realised by small manufacturing investments. Besides that, labor costs for wooden packages are high. Due to their heavy weight and footprint, wooden packages are not convenient for easy carriage. These packages require long processes in order to be attractive visually. (Üçüncü 2007, p.176)

2.2.1.4.1.3 *Paper-carton packaging*

Paper and carton are the packaging materials which have a wide use area. These packagings are used in many different industries such as food, beverage, cleaning, cosmetics, white appliances, electronics and clothing. Since paper and carton are easy to design, they are frequently preferred by different sectors. In the last years, paper and carton packagings have varied with the technological developments. The new packagings which are provided with the latest technology, preserve the products more efficiently against the external conditions such as air and liquid. Customers who are aware of these developments, change their brand preferences accordingly. (Çakıcı 1987,

p.100) We may align several points about the reasons of common preference for paper and carton packages;

a. Paper and carton could be shaped facilely in varied dimensions,
b. These materials are solid and resistant,
c. Recycling and reusing are available for paper and carton materials.
d. The information that customers seek could easily be placed on carton and paper packages. (Calver 2004, p.72)

According to Stewart; the paper and carton usage is increased parallel with the changing customer profile who pays more attention to eco-friendly and sustainable packaging. This increase takes its roots from the sustainable and renewable sources of paper-based packages. Paper and carton packagings are not pollutant for the environment because they can dissolve in nature. Besides these factors, it is also known that paper and carton packagings are less resistant against humidity, liquids and gases when we compare them with glass and metal packages. (Stewart 2001, p.293)

The common use areas of these types of packages are;

a. As transportation packages for products of food, beverage or furniture,
b. Presentation of food and beverages in retails,
c. As transportation packages of textile products in pre-sales and after sales periods,
d. Stockage of the shoes at retails and at homes after sales periods,
e. Storage for the tools at home. (Çakıcı, 1987, p.100-101)

2.2.1.4.1.4 *Plastic packaging*

Nowadays, the plastics packagings are the most commonly used package type. Each plastic packaging has different physical, chemical and process specifications. The costs

of these packagings vary according to these specifications. Besides that, the production costs are low. (Kipmen 1978, p.187-188)

The carriage of plastic packagings are simple and they offer durability during the transportation processes. They let the designers create attractiveness and are also a good packaging option because of its transparent structure. Easiness in carriage, being light, resistant against humidity and heat and practical usage are also some attractive points of plastic packages on the customer side. (Göbel 2008, p.28)

Çakıcı states that, there are some developments in the plastics industry, particularly about packaging. Various plastics are used in plastic packaging industry and these are;

Polyethylene (PE): This material is used in buckets, bottles and demijohn production and so, PE is the one of the most frequently used materials in plastics. It may be processed in different manners and easily colored and shaped. PE packages are light and hard to harm its structure. These types of packages block mould and bacterial growth due to its healthy form besides its conservative features against humidity, liquids and air.

Polypropylene (PP): This type of packages are particularly used for the products which are sensitive against moisture. Besides that, these packages are structurally hard but transparent. The products could be easily seen by the customer. PP packages are also resistant to heat.

Polyvinyl chloride (PVC): In packaging, soft and hard PVCs are used. Soap packages and cosmetic packages could be examples of soft PVC packages. Hard PVC is commonly used in dairy products as butter and cheese packages. The bottle form of Hard PVC is used in liquid cleaning and cosmetic products. (Çakıcı 1987, p.121)

2.2.1.4.1.5 *Glass packaging*

Glass is one of the oldest materials that we know and it is produced by melting silica sand with added substances. It is a fact that glass packages can not preserve the product

from fraction risks. In that sense, if the products have glass packages as their primary packagings, they may need a secondary packaging. On the other hand, the glass packages are natural and healthy, they protect the product from moisture effectively. They are also very suitable for recycling and reuse. (Göbel 2008, p.25)

The transparency of glass helps the promotion of the product by showing it to the customer. Besides its transparency, colorable form of the glass and developments in molding offer designers a grand field in terms of style. Another important feature of glass packagings is giving a healthy and precious perspective to customers. A good combination of glass and other packages could extend its area of utilization. (Çakıcı 1987, p.103)

Using glass as a packaging material has positive effects on social and natural structure. These effects could be aligned as;

a. Uncolored glass packages show the customer the preserved product. Therefore, the trust of the customer for the product increases,
b. Glass packages could easily be shaped according to the product. Therefore they offer a convenience in use to the customer.
c. Glass packages are sustainable. They may be used for many times after the conserved product is finished. Besides that, the glass packages preserve the product in a healthy manner by blocking micro-organismal growth. On the other hand, the glass starts to lose its recyclable feature when it is colored. (Erdal 2009, p.149-154)

2.2.1.4.2 *Visual design*

2.2.1.4.2.1 *Shape*

The packaging is a notion which exists starting from the beginning of humankind. In parallel, technological developments, the packaging and packaging design constantly changed the shape. This shape change of the packaging has a major role in the analysis of general competitiveness and needs. Nowadays, the visuals, attractiveness, colors and

shapes of the packagings of similar products create a reason for preference. It is a fact that, the design of the packaging affects the sales. Thus, the packaging design is a considered subject in industrialised countries. (Güven 1991, p.219)

The shapes and forms of packaging have an important place in visual design. According to Parise and Spence, they create the associations in customers' mind. (Parise and Spence 2012, p.18) Therefore, it is known that the little details on the packaging may create different meanings for the customers and affect the preferences. Via the shape of packaging, a meaning transfer is realised between the consumer and the product. In that sense, the packaging undertake a communication role that forwards the informations about the product. (Çaylak 2017, p.48)

The shape or form of the packaging influences the consumer preferences deeply. Consumers receive their perceptions with the forms of packaging. For instance, horizontal stripes on the packaging give the message of calmness and conformity to the customer. However, vertical stripes signify power, stability and success for the customer. In addition to this, round shapes awake an effeminate perception but cornered shapes symbolise a masculine manner. On the other hand, the form of the packaging also gives an idea about the product. The consumers may have quantitative misperceptions about the product if the product has an extraordinary packaging form. (Shimp 2007, p.198-199)

During the form design process of the packages, the needs and wishes of the consumer should be analysed properly. On the basis of packaging buying behaviors of customers, the received information are aligned as below;

a. The packaging should be held easily by customers. Especially the size of packages should be adjusted accordingly.
b. The packages should be steady when they are put in a surface.The perception that the form of the package creates for the customer should be pre-considered and it should not cause a complication.

c. The packages that have indentations and dentations on it should not make any difficulties for holding. The packages should be designed for easy hold and should prevent slipping from the hand.
d. The caps of the packages should be easily opened and locked except the products which require a safe cap. (Erdal 2009, p.34-35)

2.2.1.4.2.2 *Color*

The colors are one of the most important factors which define a brand. The colors generate different emotional reactions in customers' minds such as energy, closeness and dynamism. Hence, the chosen colors for a brand give a personality. The right color preferences assure the success of the brand positioning and communication. (Çaylak 2017, p.49)

Eye tracking and neurotic analysis on customers show that the colors awake different emotional effects. The colors are the primary visual exhorter which attract the customer. According to the warmth levels, the colors change these effects. (Meyers and Lubnier 2004, p.144) The researches has shown that the customers make their measurements and considerations between 62-90% based only on the colors. In that sense, the colors have a deep impact on the opinions, feelings and behaviors of consumers. (Mohebbi 2014, p.97)

According to Kropft's research on the effects of package colors;

a. The color is the most efficient element which separates a product and package from the others,
b. The color eases the recognition of products,
c. The presentation of the products would be more efficient and realistic with the help of colors,
d. The colors attract the intention of consumers,
e. Each person has a color preference and the colors create a common impact,
f. The colors prevent the misapprehensions. (Becer 1997, p.216)

Other important elements about color preferences in packaging could be aligned as the gender of the target audience, cultural level, age group and the market. (Güngör 1983, p.56)

The researches about colors still continues. In that sense, the physiological, environmental and cultural factors affect the color perception. Besides, the common effects of the colors could be generalised as below;

Red: This color creates the terminal effects as fire, excitement, sincerity, fear and physical remarks.
Orange: Gives dynamism, courage and aliveness. This color improves the love of life.
Yellow: Creates joy and enthusiasm.
Green: It is a calm and cool color and gives peace, satisfaction and hope emotions.
Blue: It symbolises the order ghostliness. Blue color also reveals thinking, creativity and deciding.
Purple: The color of self confidence and liberty.
White: It represents cleanliness, purity, innocence, hygiene and airiness.
Black: It recalls excellence, simplicity, nobility and luxury.
Grey: This color makes the perception of maturity and comfort. (Sünnetçioğlu 2006, p.97)

2.2.1.4.2.3 *Font*

The information on the packages has a vital importance. This information should be delivered in the right place and according to the purpose. There are some texts which should be placed on the packaging as legal necessity. These pieces of information could be aligned according to their importances as below;

a. Quantitative information such as net weight, liter or quantity,
b. If the subject is a food product, the nutrition facts
c. The texts about instructions, warnings and advises for the use are very important.

d. The information about preserving and transporting the chemical products,

e. The details for the use, opening and preservation of the package. (Meyers and Lubnier, 2004, p.31)

Wide options for fonts make it difficult to choose the correct one. The design perceptive and the effect of the font on the packaging could not be pre-assumed and also its schematic outpouring could not be seen. Therefore, the aesthetic, suitability and lucidness should be considered on font preferences. (Bilgin 1985, p.187)

The texts are a supportive element of visual design factors. These texts should give brief information about the product and packaging. In order to deliver correct information and complete the communication task of packages, there are some factors that the designers should follow;

a. The texts should be clearly differentiated from the logos and the brand name on the packaging. The texts should not overtake attractiveness of the logo and brand name,

b. To be clearly readable, the font and text color should be in harmony. On the other hand, significant tones assure the visibility of texts,

c. The sizes of the texts and brand should be different,

d. The brand name should have the biggest size on the packaging. The size ranking of visual factors should be as brand, product identity, production date, date of expiry, nutrition fact, instructions and contact details,

e. Using big sizes attracts more than little sizes on packages. The fonts of all texts should be comprehensible. The fonts which beclouds readability, fails the communication and edification functions of packaging,

f. Using dark fonts on packagings recalls the performance based perceptions at customers. Thin fonts symbolise the effeminacy and elegancy. The bold ones represent high quality sense.

g. All texts on the packaging should be brief and clear. Long and complicated sentences prevent the message that the customer should receive. If the long sentences are necessary, they should be tempered by putting spaces between them. (Erdal 2009, p.8)

According to Sünnetçioğlu (2006, p.99) the text typography is directly related to the brand identity;

Handwriting Font: Reflects that the brand is calm and has a human-oriented perspective.
Rounded Font: Represents a dynamic and amusing image for the brand.
Narrow and Long Font: Symbolises nobility and elegance.

2.2.1.4.2.4 *Picture*

The pictures and photos are the most significant visual design factors which grab the consumer. They transfer the information about the usage and functions of the product. Additionally, they generate a testing or buying wish at the customers' end with the visual excitements they cause. (Çaylak 2017, p.53)

The pictures and photos on the packages have different functions as;

a. Separating the product from the products of other brands and engaging the customers attention by embodying the discrepancy of product,

b. Explaining the use areas and instructions clearly to customers. Particularly showing installation instructions if the product requires an installation by the customer,

c. Generating an emotional benefit for the customer. For instance, it could address to the emotional side of the customer by expressing the environmental benefit of the product,

d. Showing the product after installation. (Meyers and Lubnier 2004, p.37-38)

The researches about the visual elements which are positioned on the packaging remark that the visual perceptions of the individuals are asymmetrical. Positioning the pictures and photos of the product on the left hand side of packaging and putting the texts on the left hand side increase the brand's recognizability. Hence, placing all non graphic information as brand name or product type empowers the customer perception. However, the legal warnings and instructions which are positioned on the left hand side do not cover a big spot in customer's mind and do not create confusion during the purchase. Thus, brands could receive an advantage from this situation. (Rettie and Brewer 2000, p.66)

2.2.1.4.2.5 *Logo*

Logo is a sign which is composed by unification of two or more typographic characters in a readable manner. It represents a product, a brand or an institution. Trademarks are illustrator signs that the manufacturers use in order to differentiate a product from the similar ones. (Becer 1997, p.84)

Logos can be designed from a visual or an intangible expression which states the brand. The logos that have different shapes and forms could give variable identities to brands. Whereas the triangular and handwriting logos create amusement and dynamism; italic and linear logos generate elegance, modernity and attractiveness perceptions at customers. The logos which have transparent colors symbolise effeminacy and sophistication but dark logos impersonate masculinity and power. (Meyers and Lubnier 2004, p.29)

2.2.1.5 Functions of packaging

The primary objective of the packaging is preserving the product. All products are facing with many storage and transportation phases until they reach the consumer. During these processes, the packaging prevents the external harmful effects against the product. (Karafakıoğlu 2006, p.132) Besides these, the packaging has additional functions. All these additional functions aim to forward the products to consumers in a healthy condition. (Erdal 2009, p.12) But, by adding right functions, it could be possible

to have a packaging that is more customer oriented and helpful to increase brand knowledge.

Within that scope, the functions of packaging could be aligned as below;

a. Simplicity function,

b. Carriage and storage function,

c. Usage function,

d. Informative functions,

e. Brand Communication Function.

2.2.1.5.1 *Simplicity function*

The simplicity function is related to the storage, carriage and usage of the product by the consumers. These functions end in consumers' kitchen. (Tek 1999, p.373) In that sense, the packages should be carried more easily to end using places, should occupy less space and should offer a more practical and healthier usage. Consumers also consider the simplicity of the packaging and direct their purchasing accordingly. The packaging features such as easy opening and closing, simple carriage or well conservation of the product are important points that the consumers pay attention. For instance, the new zip packagings of dried nuts let the customer to consume the product many times with the same freshness. Product developments also affect the simplicity functions of the packages. The development of tablet dishwasher detergents brought smaller and lighter packages. Besides that, plastic covers of tablet dishwashers offered a healthier use opportunity to customers since the direct contact with chemicals are prevented. (Gökalp 2007, p.83)

The emergence of new consumption habits also caused developments in packagings. The necessity for the satisfaction of needs in a limited time period is one of the basic factors for this change in consumption habits. For example, in order to satisfy the consumers, Danone presents its yogurts which is 140 grams in little packages. Danone

also includes cereals and dried fruit with yogurts and the consumers could add these sweetening products if they wish. This situation requires an additional lid and volumetrical transformation when we compare it to the previous yogurt packagings. (Çaylak 2017, p.56)

2.2.1.5.2 *Carriage and storage function*

The carriage function of the packaging indicates maximizing spatial advantage of the product. This function should be considered with the weight of the packaging. The packaging should minimise the transportation costs while it is conserving the product. In this context, fragile packaging is ineligible in order to meet the reduction on transportation costs. (Çakıcı 1973, p.28)

Storage function of packaging symbolises the protection of products from external effects during storage. There is an interactional link between the packaging which wraps the product and the storage area. The conditions of the storage would affect the type of the packaging. On the other hand, the storage requests a high cost in terms of employing the necessary staff and the place. It is possible to reduce these costs by stacking the goods by pallets. Metal or wooden packages are more advantageous than the fragile packagings. In that sense, the design of the packagings which conforms for stocking should be considered. Moreover, there are some points that the designers should pay attention to. These points are the shape of the packaging, the dimensions, the features of the product and the regulations for distribution. (Erdal 2009, p.16)

2.2.1.5.3 *Protection function*

This fundamental function of packaging aims to preserve the product from physical and chemical harms as damaging, wetting, crashing, rancidity and corrosion. (Çakıcı 1973, p.23) The packaging should protect the product from considered or unconsidered possible harm. This protection definition also covers environmental protection. In that sense, the packaging should keep apart its content if it carries harmful effects for nature. Especially food has sensitivity for the factors as moisture, oxygen, light and odor. The

protection function of the packaging should be susceptible and efficient against these sensitivenesses. (Erdal 2009, p.15)

Another protection function of the packaging is against vandalism and theft. In that sense, the manufacturers try to preserve the goods against every detrimental activities during transportation, distribution or at sales points. (Tek 1999, p.373) Lately, many companies adopted first usage tapes on their products to preserve it against the risks of burglary, usage or testing.

2.2.1.5.4 *Informative functions*

Installing a contact between the consumer and the product is possible with the information function of the package. This contact takes its best form as long as the product visibility increases. (Çakıcı 1973, p.28) The packages give detailed information about the products that they conserve. In the light of this information, consumers make their healthy choices in buyings. (Erdal 2009, p.17)

The common informative function is made as putting the detailed product information on the packages. As long as the necessity to receive information augments at the customer's side, the quantity of information on the packaging increases. It is important to define which information will be putted on the packaging. The given information is related directly to the product. In that sense, we may diversify the information on two as necessary and unnecessary information. If too much unnecessary information is given, the informative function of the package would be harmed because the consumers deny reading all the information.

When we examine the packages, the informations about the products are;

a. The manufacturer company or the licenses,

b. The origin,

c. The date of expiry,

d. The date of production,

e. The contact informations,

f. The certificates which proof the conformity of necessary standarts. (Karafakıoğlu 2006, p.133)

The given information on the packages are the declarations of the brands about the products. For instance, some countries make stating the manufacturer names on the packaging obligatory. In that sense, they should forward the correct information about the features and ingredients. If incorrect information is shared on the packages, the brands can face legal sanctions. (Erdal 2009, p.17)

According to the type of the package, the labels can be used on glass packages. Today, the label, packaging and brand became an inseparable whole. The labels give information to customers about the quality, the date of expiry and production, the origin, recommended preservation while they present the brand. (Yalçın 2011, p.28)

2.2.1.5.5 *Brand communication function*

As a simple explanation, the brand is the acknowledgment of a product or a thing. If the consumers know the product, the product has a brand. The recognition period which gives a benefit to the firm is branding. This period is composed through a chain as the packaging, sales policies, market networks and promotional strategies. The packaging design is an important part of the brand and assures the maintenance of brand identity. So, in terms of communication, the packaging plays an intermediary role between the product and the consumer. Frequent occurrence of new products empowers the role of packaging day by day. (Erdal 2009, p.86)

When consumers decide to make a purchase, they face with thousands of different products. In that situation, the packaging should attract the consumer by playing its silent salesman role. The visual elements of packages such as size, shape and color could catch the consumer's attention and encourage reactional purchasing. (Dilber, Dilber and Karakaya 2012, p.165) For instance, Absolut Vodka became one of the most attractive products among alcoholic beverages. The strong support of top management for an inimitable and different packaging of Absolut Vodka is the background story. By

reshaping the packaging, Absolut Vodka differentiated itself from the other products. The same situation is also valid for the Coca-Cola brand. By continuing to offer its products with similar glass packaging for a few decades, Coca-Cola created its own packaging in customers' perception.

The perceptions of the customers about the product's quality mostly relate to the communication function of the packaging. If the packaging is premium, the consumers would be persuaded that the product is also premium or vice versa. In that sense, the packaging transmits the negative or positive opinions to customers. (Dilber, Dilber and Karakaya 2012, p.165)

2.2.2 Recyclable Packages

2.2.2.1 Sustainability and sustainable packages

In the 20th century, the economic structure affected not only the economic status of the societies, but also affected and changed the social, cultural, political, geographical and environmental areas of the communities. The negative impacts of the economic structures on the environment caused the occurrence of sustainability as an international initiative and the main objective of it is transforming the production and consumption phases into a sustainable concept. In that sense, the expansion of environmental issues to a global level played the major role. The awakening about the environmental issues of the majority of the countries gave the start of sustainability. (Gürlük 2010, p.86)

As the start point of sustainability, we have to mention the "Brundtland Report" first which was published by UN's World Commission on Environment and Development in 1987. In this report Norwegian Prime Minister Gro Harlem Brundtland explained sustainability as "Meeting the needs of the present without compromising the ability of future generations to meet their own needs." (Shi 2018, p.1) The Brundtland Report aims the abolition of poverty, maximization of natural sources efficiency, controlling populations of countries and expansion of eco-friendly technology use with the help of sustainable development concept. This report underlined that the economic development should be conducted in eco-friendly ways. In that sense, the report affirms that the

contestation against poverty and environmental issues could be gained with the assistance of developing countries and that the World could enter a development trend for a long period. (Kuşat 2013, p.4899) In the report, the necessity of global participation and the obstacles of the unsustainable industrial development were also stated. In order to remove these obstacles, Brundtland Report advices;

a. Efficient usage of natural sources in industrial activities,
b. Usage of renewable ressources instead of unrenewables,
c. Reduction of side effects on environment and human health. (Özgen and Bayazıt 2016, p.228)

Although sustainability has become a focus point which is for development, science, national or international policy makers since the 1980s; there is not any consensus about the results of development strategies. The sustainability is not only a development concept which highlights environmental protection, it also aims to harmonise all economic, financial and commercial policies related to the environment, economy and social structure. (Koçak and Balcı 2010, p.216) In that sense, sustainability is the overlap of economic, environmental and social concerns, or, in other words, the joint consideration of ‘profit’, ‘planet’, and ‘people’. A sustainable system should cover these different dimensions to aim at an environmentally sound, socially just and economically viable world. (Shi 2018, p.1)

The first definition of the sustainable packaging was made by the Sustainable Packaging Alliance (SPA) which was formed by Victoria University, RMIT University and Birubi Innovation Pty. Ltd. in 2002. According to the sustainable packaging definition of SPA, packages should carry below criterias in order to be defined as “sustainable”. (Sonneveld, James, Fitzpatrick and Lewis 2005, p.4)

Table 2.6: SPA's Sustainable Packaging Definition

Principle		***Levels at which the principle is applied***
Effective	It adds real value to society by effectively containing and protecting products as they move through the supply chain and by supporting informed and responsible consumption.	Society
Efficient	Packaging systems are designed to use materials and energy as efficiently as possible throughout the product life cycle. This should include material and energy efficiency in interactions with associated support systems such as storage, transport and handling.	Packaging Material
Cyclic	Packaging materials are cycled continuously through natural or (industrial) technical systems, minimizing material degradation and/or the use of upgrading additives.	Packaging System
Safe	Packaging components do not pose any risks to human health or ecosystems. When in doubt the precautionary principle applies.	Packaging Component

Source: Sonneveld, James, Fitzpatrick and Lewis, 2005, Sustainable Packaging: How do we Define and Measure It?, 22nd IAPRI Symposium 2005. pp. 1-9.

Other criterias were developed by the Sustainable Packaging Coalition (SPC) in the USA about the sustainable packaging definition. This definition has eight criterias in order to define a packaging as sustainable. According to SPC's definition, the sustainable packaging is;

a. Beneficial, safe and healthy at the end of its life cycle for individuals and communities,

b. Obligated to meet market criterias in terms of performance and cost,

c. Sourced, manufactured, transported and recycled by using renewable energy,

d. Aiming to maximize the use of renewable or recycled source materials,

e. Manufactured using clean production technologies and best practices,

f. Made from materials healthy in all probable end-of-life scenarios;

g. Physically designed to optimize materials and energy; and

h. Effectively recovered and utilized in biological and/or industrial cradle to cradle cycles. (Nordin and Selke 2010, p.318)

When we consider these two definitions of sustainable packaging, we can find that two common points in each definition are rising. The sustainable packages;

i. Should use eco-friendly production phases and materials,

ii. Should meet the expectations of the market. (Nordin and Selke 2010, 318)

2.2.2.2 Recycling and recyclable packages

As one part of 3R's of sustainability, recycling is a method which mankind uses for its wastes starting from early ages. Even before the rising of environmental awareness, the human has sought different ways to recycle their wastes. But the standardizations and definition of recycling take its roots from the industrial revolution and its effects on nature. As we already mentioned before, expansion of environmental issues showed the necessity and importance of ecological balance and sustainability and took the attention of different disciplines to the subjects as recycling. (Özbakır Umut, Topuz and Nurtanış Velioğlu 2015, p.265)

As a brief definition, recycling is re-implication of different wastes such as glass, carton, paper, battery, oil, cement or aluminum to the production process. In that sense, the wastes are transforming secondary raw materials with chemical and physical processes. According to another definition, the recycling is recycling process of the

products which lost their values. The recycling process covers the total or partial regain of the products which completed their life cycle or which are returned. In Waste Management Regulation (published on 02.04.2015 in official journal) the recycling is stated as the reprocessing of wastes in order to use them in or out of their original intent of use. (Öktem 2015, p.116-117)

The recycling of wastes contributes to the reduction of harmful effects on nature and human health of these wastes. Furthermore, recycling is helpful to the struggle against the global warming by assuring the decrease of CO2 rate in environment. The other positive effects of recycling activities are preserving underground water from pollution, supplying raw and residual products from recycled materials without harming the natural sources. (Çimen and Yılmaz 2012, p.65)

The European Parliament and Council Directive 94/62/EC of 20 December 1994 on packaging and packaging waste aims harmonisation of national regulations of member countries; reduction or prevention environmental effects of packaging wastes; eliciting of domestic market runnings; disposal of obstacles directed for commercial and competitiveness. Within the scope of this directive, the member countries are obligated to implement the general principles of the directive into their national regulations but they are also autonomous about the method of application. The directive obliges the member countries to increase their recycling ratios 60% at a minimum level. Minimum recycling ratios of the materials are aligned as; 60% for glass, carton or paper wastes; 22,5% for plastic wastes and 15% for wooden wastes. In Turkey, the first regulation of solid waste was published in 1991 and highlighted the responsibility of manufacturers in packaging wastes. In that date, as an initiative of 14 companies, ÇEVKO Foundation has been founded in order to perform the industrial responsiveness in packaging wastes. In 2005, following the publication of “Regulation on the Control of Packaging and Packaging Waste”, ÇEVKO Foundation has been announced as the authorised organization by Turkish Republic Ministry of Environment and Urbanization. Starting from its foundation, ÇEVKO serves the installations of recycling facilities and supports decomposing activities of local authorities. (Özsoy 2011, p.56-57)

The legal basis of the separate collection of wastes was firstly indicated in Law No. 2872 on Environment in 1983. According to the 11th Article, the separate collection of wastes and the regain of the wastes have been obligated. The responsibilities about the waste packaging collection were regulated by Law No. 5216 on Metropolitan Municipalities in 2004 and Law No. 5393 on Municipalities in 2005. The Regulation on the Control of Packaging and Packaging Waste defines the methods and principals about the waste management of packages. (Yetim 2014, p.12) The aim of the regulation is;

i. Assuring the packaging production within indicated features,

ii. Preventing the environmental harm of packages,

iii. Preventing the package wastes,

iv. Reduction of package wastes by regaining and recycling,

v. Defining the legal, managerial and technical principles about the collection, transportation and decomposition of packaging wastes.

The regulation covers all plastic, metal, glass, paper, carton or composite packages and their wastes which are offered to the internal market. In that sense, the status of wastes as domestic, industrial or commercial is not considered. According to the regulation, the responsible institutions in order to regain the packaging wastes to economy are;

a. Businesses

    i. Packaging Manufacturers

    ii. Offering Businesses

b. Sales Points

c. Packaging Waste Manufacturers

d. Licensed Businesses

e. Authorised Organizations

f. Municipals

g. Directorships of Environment and Urbanization in cities

h. Ministry of Environment and Urbanization (Kaçtıoğlu and Şengül 2010, p.94-95)

The types of recyclable packages could be categorised accordingly their materials. In that sense, these packages are; paper-carton packages, glass packages, metal packages and plastic packages. In a successful recycling, importance of waste separation at the sources should be underlined. A clean separation of wastes according to their materials facilitates the recycling process. (Akcanlı 2010, p.28)

Carton-Paper Packages: Turkey is a country which has poor cellulose sources and this material is importing from foreign countries as a raw material for carton-paper manufacturers. (Yakut 2012, p.69) The carton and paper manufacturing in Turkey is based on importing cellulose hay and waste paper except a limited production of paper-carton manufacturer SEKA. Except the carton egg boxes, paper food packages, book covers, paper towels and tissues, all carton-paper materials are recyclable. (Karagözoğlu, Özyontar, Yılmaz and Atmaca 2009, p.5) Carton-paper packaging wastes could be generally categorised under five fundamental groups as mixed wastes, corrugated package wastes, newspaper wastes, cellulose alternative wastes and printed matter wastes. (Yakut 2012, p.69) The recycle of only one ton carton-paper packages saves 17 trees. (Akcanlı 2010, p.29) Recycled papers and cartons offer 73% reduced air pollution than their original manufacturing.

Glass Packages: Reusability of glass packages made them a preferred package type for liquid products. Especially the glass bottles have a waste use area since they have transparency that shows the product easily and they do not react with any material. (Akcanlı 2010, p.29) The recycling of glass packages is 100 ton of petrol for each ton of glass. (Karagözoğlu, Özyontar, Yılmaz and Atmaca 2009, p.5) The recycling of glass packages is based on two practices; culleting or washing the glass packages. In culleting practices, to have the clean cullets, the foreign items removed from the glass packages. For this method, the color-based sorting is applied in facilities. After the removing and smashing processes, the cullets are sent to glass manufacturing facilities. The washing

practice of glass packages is simply based on reusing the waste glass packages by refilling. Often practices are return-the-deposit systems of industries. In that sense, the washing method could be considered as waste prevention and production of new bottles' prevention. (Larsen, Merrild and Christensen 2009, p.754-755)

Metal Packages: In terms of revenue, recycled metal materials offer big profits to recycle facilities. Waste metal could be used in different industries from food industry to construction when they recycled. (Akcanlı 2010, p.29) Today, metal packages are mostly used on beverages. The recycling method for metal packages starts with the separation accordingly the materials as aluminum or steel. The collected metal packages would be pressed in order to facilitate the transporting process. In recycling facilities, the metal packages face with physical grinding. Following the grinding process, the materials will be melted in kilns with high temperatures. Melted metal can be poured into the moulds and they can be shaped as blocks. Metal manufacturers shape these blocks by pressing and bending and prepare the materials for refilling. According to researchers, the saved energy from recycling of metal is 4% less than the energy use in mining. (Karagözoğlu, Özyontar, Yılmaz and Atmaca 2009, p.6)

Plastic Packages: Plastic is the fundamental raw material for many products today. Besides its waste usage, their disappearance in the environment could take 1000 years. In the plastic industry, recycling could easily managed. Except plastic toys, polystyrenes (PS), styrofoams, plastic dishes, the other plastic types could be recycled. Within recyclable plastic packages, PETs (polyethylene terephthalate) with 1,2 symbols and HDPE (High-density polyethylene) are the most frequently used packagings in beverages and detergents. Thermoplastic types cover 90% volume of produced and consumed plastic and they could be reprocessed by melting. But it is impossible to reuse plastic packaging materials in food industries since the molecular structure of plastic degenerates in recycling process. As a result of the process, the recycled plastic would not be clean and the additive substances may be transferred to food. (Karagözoğlu, Özyontar, Yılmaz and Atmaca 2009, p.6)

3. DATA AND METHOD

3.1 RESEARCH OBJECTIVE

The objective of all businesses is to maximise their profits and sell their goods to as many people as they can. In order to assure that, they follow the trends of consumers and strive the different methods to convince the buyers. The expansion of environmental problems is a reality of the world and this triggers consumers to seek greener products or ecologically sensitive applications from companies. Besides these commercial concerns, when the green activities and implications of companies are examined, it should be noted that the cruciality of environment has been noticed by many firms and they have sincere actions in order to treat their effects to nature.

When the wastes of the FMCG companies are considered, one of the most discussed components of their products that consumers spotted is packaging. After a FMCG product finishes its life cycle, the final heritage of it to nature is its packaging. This negative heritage of the companies could be minimised by using and developing recycled packages or developing reusable packages. In this research, the primary objective is to understand if there is an importance of recyclable packaging of FMCG goods at the companies' side. The secondary objective is to give an idea to the FMCG brands to modify their strategies for the packaging of their goods..

3.2 RESEARCH TYPE AND SAMPLING

This research was prepared in order to understand the preference of recyclable packages by the FMCG companies. In that sense, to receive necessary findings, in-depth interviews were conducted with the FMCG companies and packaging suppliers of these companies. Within that frame, the interviews were done with three FMCG companies from different sectors and three packaging companies.

3.3 FINDINGS

In this part, six in-depth interviews were conducted with participants who are responsible for environmental policies of their companies within the questions that were

determined. With these interviews; key drivers that pushes to select recyclable packaging and also positioning, activities, strategies and visions about greening, sustainability and recycling implementations in packaging of the FMCG goods were tried to understand.

3.3.1 Professional Qualifications of Participants

Professional status and experience of participants are stated in detail in Table 4.1 which is located below. During the selection of participants in this research, their positions, experience, activity areas, education levels, effects and contribution on product design were the determining factors. It is assumed that, receiving information from manufacturers of FMCG products and packaging manufacturers as suppliers of FMCG companies may reflect package design operations since they conduct a co-decision process in terms of uniting.

Table 3.1: Sampling Companies

Name	Age	Represented Company	Position	Education Level	Year of Experience	Activity Area
Neslihan Çam Akdeniz	41	Duran Doğan	Quality Manager	University	15	Food Packaging
Ahmet Başpınar	32	Ülker	Quality Manager	Master	9	Nutritions
Nursel Evrim	56	Evyap	Quality Manager	University	19	Cosmetics
Salih Ercan	58	Cupplast	General Manager	Master	26	Food Packaging
Bayram Varol	51	Amcor	Chief of Environmental Policies	University	19	Food Packaging

Recycling and sustainability policies are conducted mostly by quality departments in firms. The participants of reviews underline that all of the coordination between

different departments, budget policies, preparing necessary reports and decision for taking environmental actions are determined by the participants with the help of their teams.

According to the data, it is possible to say that sustainability and recycling policies require high education level and experience at the companies' side. It is reviewed that the average year of experience is 17 years of the participants and it is also underlined that the companies do not make frequent changes in these teams in order to assure the stability. This stability is also required for attainment of environmental aims and management environmental policies of companies in a healthy manner.

3.3.2 Environmental Actions in Participant Companies

For natural source management, the first aim is the reduction of the use of natural sources. In that sense, responsible energy use and economizing became the priorities of the companies in production sites. With the help of technological developments and modifications on the production processes, the reduction in the use of natural sources could be achieved. The same initiatives also started for waste management regulations. Within this frame, the companies benefit from the services of licensed waste collection companies as their legal responsibility.

In waste management and use of natural sources, Ülker company has a historical approach from its founder Sabri Ülker. For many years, Ülker has built waste and water management systems in its production areas. In the last decade, all decontamination systems were renovated and projects for electricity, waste and chemicals were organized and conducted. In that sense, the firm has formed its sustainability project for 2024. Within this project, Ülker aims 100% recyclability and zero waste transfer. Another aim of this project is reducing 25% of current electricity use of all production sites. In that sense, Ülker builds its new factories as "green buildings" which could make their self-decontamination in the sense of waste, use less electricity and water. In terms of environmental measures, each factory has its own environment teams. These teams are composed by operators and foremen and they are responsible for reaching environmental objectives of the factory. For water management, Ülker sees itself at benchmark level against European firms. In every factory, water usage is calculated

with many counters and it is measured daily. If there is a necessary action, it is taken promptly. Ülker explains its natural source management as below.

> *When we consider natural source management, we focus on two points; water and energy. To measure water consumption, we have placed many counters in our factories from the entrance to the toilets. With these counters, we calculate all of the water consumption in each sector. Starting from these calculations, we can make our plannings that aim to reduce water consumption and adapt these plannings in other factories. About energy consumption, we have implemented a few plans in the recent years for natural gas use and plant modernization as new machinery replacement and modification or modernization of heating systems. By doing that, we are close to our environmental objectives of 2024. Besides that, we have very similar numbers with European companies in terms of economization on natural sources.*

Ülker prepares a yearly budget for environmental modifications in factories. Within this budget, necessary renovations are made by management and expected revenue of this budget is 25% less energy usage. Ülker has a sustainable development platform. The members of this platform are the leaders of each department and this platform meets 4 times minimum in a year. Platform's duty is determining the trends for sustainability and necessary actions. As the result of the meetings, KPIs for each department are specified. Top management also has a role in this platform for approval but it shows that a total management for sustainability is aimed. This platform usually takes long-term objectives for departments in order to assure stability. Ülker makes cooperations with NGOs within environmental social responsibility. In that sense, they conduct major and minor projects. As an example of a major project, Ülker conducted "Sustainable Nut Production Project" with WWF in Giresun. By examining all nut fields in Giresun, Ülker and WWF prepared a report which aims to increase the efficiency and reduce the use of chemicals. As minor projects, Ülker founded workshops in its factories where the students could visit and receive information about the sustainability perspective of the company. These workshops are also called as "Energy Schools".

Duran Doğan company claims that the company analyses all production processes under environmental risk analysis. In that analysis, the possible effects of wastes on air, water sources and soil are considered by the quality department. In order to prevent air pollution, the gas is released to the nature by filtering. About soil and water pollution, the company has its own decontamination system and it clears its wastes before releasing. About waste management, company follows ISO 14001 standards and legal responsibilities. In that sense, all the waste from the factories is collected by licensed

companies separately and Duran Doğan takes feedback from these companies about the recycling of these wastes. This company uses carton in its products and its most significant natural source is paper. In that sense, the company has the FSC certificate. This certificate could be achieved under a voluntary basis but it also obliges the companies to pay a variable amount which depends on paper usage. This amount is used for producing industrial trees and in that sense, Duran Doğan contributes to growing trees that it consumed in a year. The comment about paper consumption of Duran Doğan is as below.

> *We have a strict policy about the consumption of paper. Despite our main raw material is carton, we use recycled carton in secondary packagings. Our aim in this action is contributing to saving forests and minimizing their consumption. If we have to use non recycled ones, we only use cartons which have FSC certifications. By following this policy, we minimize our consumption and promote planting trees.*

Duran Doğan also made another initiative about the energy use six years ago. As the plan of this initiative, all energy consuming points were determined and heating and lighting systems of the factories were modernized. Today, a part of the heating is acquired from waters which is heated by compressors and all lighting systems are LED. It is noticed that, after these modifications, energy consumption of factories has been reduced by 30%. As sustainable production models, Duran Doğan benefits from TPM, Kaizen, Lean Production and Six Sigma. Within this scope, once a year at minimum, the employees are receiving trainings. Duran Doğan is also delivering voluntarily its waste and recycling reports to Carbon Disclosure Project (CDP) and received "Most Transparent Company in Turkey" in 2013 with the Coca Cola Company.

In Evyap company, about waste management, ISO 14001 standards are followed. This company is producing oils and dangerous waste related to their activity area. For these wastes, Evyap makes yearly agreements with licensed waste management companies and delivers its wastes to them. These standards have been followed at all factories since 2003. The company does not have any harmful effects on the soil. About air pollution, Evyap has its own filtering system and the emission rates are measured every 6 months. Evyap underlines the power of environmental regulations as below.

> *We follow the environmental management standards since 2003 and it pushes us to manage our wastes as separating, recycling or annihilation. In that sense, we did all segmentation*

of wastes. We also monitor the activities of our suppliers. Even our catering company can not leave their waste as they planned and we place these terms in all supplier contracts.

Because its activity area is cleaning products, Evyap can not avoid water consumption in the production process. Even though there was an initiative four years ago which aimed reusing the water in production, it failed. In frame of natural sources management, the company focused on reducing electricity consumption. In that sense, the company made to its initiatives. Firstly, in modernization of the machines, Evyap started to prefer new equipment and parts that consume less energy in operation. Secondly, all lighting systems in factories were replaced by LED systems and roofs of storage areas were designed as transparent in order to benefit from daylight. Evyap does not have a sustainable production model yet but Kaizen implications will be started next year. This company organizes its environmental social activities at schools. The schools are invited to the factories in order to get informed about the environment.

Amcor company has a wide perspective about waste and natural sources management. The company cooperates with licensed waste management companies as the legal regulations forces. Besides these standard applications, Amcor has developed its own practices by forming a cycle. Since this company is a packing manufacturer, the products of Amcor contain solvent. During the drying process of the product, vaporing solvent is transferred into another section for fluidization. As a result of this process, company gains 11 tons of solvent each day besides its positive effect on nature. This solvent could be used in another production plan. Amcor explains this project as below.

We are very proud of our solvent regain project in terms of preventing air pollution. The system starts at the drying tunnel. When printed material enters into that tunnel, we vaporize solvent and transfer it to another section. After a few steps, we receive raw solvent which we could use in other printings. Besides its gains against air pollution, this system is an economic win for the company. Thanks to this system, we have decreased our yearly solvent usage around 7%.

About soil and water pollution, Amcor has its own storage and chemical decontamination areas and discharging limits are assured in these areas. For the management of natural sources, Amcor uses the most modern technologies in its production areas. In printing machines, Amcor prefers driver motors instead of hydraulics. These motors can be organized according to the frequency in the production plan and they assure an economy in electricity consumption. In heating systems, Amcor

has an automation for air conditioning. This automatic system receives weather data directly from Turkish State Meteorological Service and arranges the necessary heating for the factory. Besides that, LED lighting systems are also automatic in each department. Amcor also has a department which is called “Continuous Development” and one of the objectives of this department is planning and consulting for activities that aim reducing raw material use in production. The department sets weekly meetings with related sections of the subject and assures coordination within them. In the next year, Amcor plans to adapt itself to ISO 50001 standards. Amcor reports its sustainability activities to its global portal “Enviro-Chart”. This activity is monitored monthly and questioned if there is a change in numbers of consumption. Amcor is using 6S, Kaizen, JIT and Gemba Walk as sustainable production methods. These methods, necessary activities and plans are organized by the global management and continuous development department. As environmental social activities, Amcor is cooperating with ÇEVKO and TEMA. This company is one of the founders of ÇEVKO and does planting works with TEMA in order to reduce Amcor’s effects on nature.

Cupplast company is a mid-range plastic packaging company. After the production activities of this company, oil wastes are the only wastes. These oils are stocked in a depot and delivered to licensed companies as regulations stated. About natural source management, the company tries and follows new raw material technologies. Most recently, Cupplast experienced biodegradable propylene by adding some agents to their current formula. By doing that, company aimed to produce the plastic packaging which could be degraded in nature in 40 or 50 years instead of continuing its existence for 400 years. About sustainable production methods, 5S was tried for one year but it did not succeed. Cupplast has not managed any environmental social responsibility activities until today.

3.3.3 Green Marketing Perspective of Participant Companies

For green marketing in food products, Ülker is still in a development process. Ülker states that according to conducted researchs by Nielsen, the knowledge of Turkish consumer for green food products is low and in their perspective, food products are innocent about environmental pollution. Therefore, there is no request for green food products in current situation from customers. This situation is also effecting Ülker’s

marketing strategy. In order to prepare and select a green marketing method, it should be a demand from customer. Besides that, into current circumstances, Ülker produces with minimum rates of pollution. The main difficulty for green marketing is pricing. The customers still have a price-oriented perspective for food products. Ülker sees green marketing development in Turkish market as below.

> *In countries as Turkey, the consumers seek the lowest price and demand for green products is low. We see demands for greener products in European countries but there is also price sensitiveness. We need consumer demand in order to take steps for greener products and green marketing. According to researches that we made, the Turkish consumers do not accept buy greener products with higher prices. They states that if we offer them with same prices, they would prefer. Thus, our key driven is consumer demand for greener products.*

Ülker made a few intiatives for green products under healthy concept but consumers' expectation is purchasing a greener product with same prices. Additionally to lancing new product, Ülker has made modifications in terms of packaging to be greener. Within this frame, the company requested several less chemical material usage in packages. Greening in products has effects for pricings due to more eco-friendly material changes. Despite decrease in raw material usage, it is hard and expensive to supply convenient materials for green products. In greening processes, one of the most studied point is life cycle analysis. Into the product designing, it has been revealed that production of raw materials is almost 40% of caused total environmental effect in terms of emission. In that sense, Ülker primarily focuses to improve value chain about the desing green products. About reverse logistics, Ülker cooparates with NGOs and municipalities. 10% of the packages that Ülker produces in a year is collecting by these institutions. Ülker uses also reverse logistics in terms of tertiary packages. The company has rented the necessary pallets from a supplier and these pallets are using until they complete their life cycle.

Duran Doğan underlines its recyclable paper usage and its renovations within production processes in green marketing strategy. This company has recently introduced a new production method for shiny packages which is called ''Gloss and Green''. As the result of this method, PET film usage in paper packages has been removed and the packages gained 100% recyclability without having any degradation process. As driver factor of greening, the expectation of customers and environmental knowledge are Duran Doğan's key elements. The green marketing strategies of Duran Doğan is as below. Paper-carton packaging industry is constantly having greener improvements and

these advancements is closely monitoring by customers. In order to follow these advancements, Duran Doğan has formed a internal team and has made the tests about suitabilities and capacities of existing machines. This team has specified the necessary modifications for greener production. In marketing department, the potential demands which could support greening activities of Duran Doğan have been analysed and informed about the modifications. The greening activities have brought inevitable cost changes and pushed the company to make elevation on prices. In terms of persuasion for green products, it constitued a bottleneck and marketing department of company made educational and informational activities with customers. For designing greener products, Duran Doğan gives its customers consultancy and develops packagings collectively. Within its green perspective, the company has implemented an ERP system for reverse logistics of secondary packages. The pallets that the company uses in domestic operations are following by this system.

Evyap company is aware of that there is a rising trend for green products in cleaning products in Turkish market. Besides this demand, Evyap is also mesures that Turkish consumers show a timid approach for green products because of their price-oriented purchasing perspective. Considering this timid approach, Evyap generates its green marketing strategy on reducing product weights and modifications in packaging materials. Within the context of packaging modifications, Evyap requested from its packaging suppliers to reduce weights on bottles and lids for liquid products. Evyap has made its most influential greening activity for solid soap products. In production process, the company changed raw material preference from animal fat to vegetable oil. This change did not made a significant increase on costs and succeeded on the customer side. Evyap has a distant approach for reverse logistic activities. The claim about this approach bears the activity field of company. As a cleaning company, Evyap does not want to effectuate a questioning for hygene in customer's mind.

Amcor uses its ''Green Point'' licence and 2025 environmental goals in its green marketing strategies. The company set that the biggest objective of 2025 goals is producing 100% recyclable packages. Another advantageous factor of the company is, Amcor's customers have high environmental sensetiveness and it makes easier to implement the strategies. Even the customers have budgetary issues for green products,

they can not leave their green standarts. Apart from this advantageous situation, global management's dedication to greening forms the basis of strategies. The global management assign tasks to departments directly for planning greener steps. As a result of these steps, the costs of unit production is rising but needed support is coming from the customer standarts. The customers of Amcor strictly monitor all processes and demand related certificates from company. In terms of product designs, Amcor tries convenient transitions to 2025 goals. Despite wide environmental changes, company has not any initiatives for reverse logistics.

Cupplast has not developped green marketing strategies because the demand of greening comes from its customers. In that sense, the focus point of the company in terms of greening is its customers. Distinctly from other participant companies, Cupplast is facing with difficulties in supplying greener raw materials and suitable machineries to them. In their activity area, technological developments have not answered yet to greening demands of customers. The company is trying to meet with demands within possible changes in manufacturing. In terms of these changes, the reduction on product weight has been realised. This reduction has brought less raw material and electricity usage in production. The company's bottleneck for greening is about assuring necessary endurance on products. The thicker designs effects negatively the endurance and the company strives altenative methods to reach optimal level between durability and greening. It should be noted that as the result of these modifications, the products are 50% thicker than old designs. Cupplast indicates need of harmony in order to produce thicker packages as below.

> *We discuss frequently for thicker packages with customers and suppliers. Advancements in our sector always seek differents method of faster and thicker products. Within these developments, there is a lack of harmony. The suppliers have some initiatives but they make them internally and there is no collaboration. It is a fact that every element of this sector is waiting for tehnological developments but it should be a collectivity in order to have that.*

About the reverse logistics, as customers of Cupplast, food brands have doubts to reuse plastic packages and accept additional costs. They assume that collected and reused packaging products can not guarantee the hygene necessities.

3.3.4 Packaging Desings of Participant Companies

For food companies, irreplaceable attraction point of design is having a glossy structure. Besides that, every company tries to build a heritage for its products. In that sense, Ülker company follows above approaches in its packaging designs. The most used packaging type of the company is carton and opp packages. In order to create attraction, the company puts product images on the packages. In visual designs and materials, Ülker focuses on the modifications in ink and glue usage with its suppliers. Moreover, there is a continuous development effort to acquire thicker and shorter packages. Thicker packages give advantages to the company in terms of cost but the contradiction for this subject is assuring freshness at the same time. For Ülker company, the most important objective of packaging is creating an oxygen barrier between the product and the exterior. To reach the optimal level, R&D teams of Ülker make frequent meetings with suppliers. In terms of visual design, the company uses the same designs for a long time.

As a food brand supplier, Duran Doğan follows almost the same steps Ülker indicates. In Duran Doğan's products, the photos of the products are the basis of visual design. The company states that for food brands it is also important to draw the customer's attention to the packaging. In that sense, this carton packaging manufacturer gives a lot of importance to glossy designs. The company supports its glossy designs with recyclability in each component. For raw materials as carton and ink, only eco-friendly certificated suppliers are chosen by Duran Doğan. The firm also states that no product contains harmful materials for air, soil or water. Amcor and Cupplast also provide the same visual characteristics in flexible food packaging and IML plastic packaging industry. The most important visual actor in companies products is the content.

Evyap uses aluminum and plastic materials in their packagings. The sources of the extracts or perfume give the visual designs to packagings. Another important point for visual design in Evyap is that the company wants to put its brand on the packaging with big fonts. Besides that, the colors of the packages are generally chosen from colors that give a relaxing feeling to the consumer. Evyap also pursues recyclability in their packaging materials as a small part.

About producing recyclable packages, Amcor follows the guidance of its customers within the legal regulations. The company also states that this situation will be changed

until 2025 parallel with the global recyclability objectives of the company. The 2025 commitments of Amcor Global will push all factories to follow more strict environmental standards than today.

About recyclability, Cupplast indicates the harmony between IML technology and plastic packagings. Both components are manufactured with the same material, polypropylene. Even though it is a petro-chemical product, the company affirms that the recycling process and reusability of these plastic packagings do not require any sortation progress.

3.3.5 Sustainability and Recycling Perspectives of Participant Companies

About managing the sustainability policies, almost every participant company has similar approaches. Generally this perspective comes from top managements and their leaders. Ülker sees sustainability as a management model. The sustainability activities are operated by top management. Within their operations, meeting and training programs are developed by departments and thus sustainability remains an up-to-date subject for every employee. With its heritage, Ülker aims to benefit from all sources such as human, energy or raw material without making any waste. Ülker shares its sustainability vision as below.

> *In terms of sustainability, the main aim of Ülker is defining long term objectives. We believe that plans for short terms could be delayed and create a frivolity. Thus, we made a plan for 10 years and called it ''2024 Vision''. In that vision, we have commitments under 6 main topics. These main topics are; environment, value chain, R&D, employees, leadership and social responsibility. We defined these main subject starting from 3Ps of sustainability; people, planet and product. Under these main topics, we have many objectives which we have to complete until 2024 but the essential is to make Ülker more respectful to nature and human health without damaging its productivity.*

Duran Doğan's strategy is also managed by top management and this company underlines the importance of voluntary basis. Top management of Duran Doğan's mission is to convert the company into a completely sustainable and eco-friendly company. In that sense, the company is conducting frequent trainings and investments towards its mission. Similar to these companies, Amcor is also operating its sustainability strategies under global management. The company's sustainability strategies and policies are defined by global management. In that sense, the company's biggest commitment is to remove all water processes in their production until 2025.

Cupplast's sustainability strategy bears following technological developments. In that sense, management of the company is monitoring technologic renovations in the industry closely and planning to make changes in production units in short term. Besides these activities, Evyap has no systematic initiative about sustainability yet.

In terms of sustainable packagings designs, there is another similarity between the companies. Ülker's expectation for this subject is driven by the market's expectation. The company states that the market's expectation is as important as the packaging costs. Duran Doğan and Cupplast companies have a parallel approach to the subject with Ülker company. Duran Doğan and Cupplast's aim is to build a balance between the market expectation and profitability. Evyap's strategy for sustainable packaging depends on customer expectation.

About recycling strategies, Ülker's strategy is acquiring 100% recycling ratio until 2024 and according to its statement, 90% recyclability ratio was reached in 2018. In that sense, Ülker has made the renovations in waste areas and has build the degradation stations for each factory. In each factory, special recycling teams have been organized. The nonrecyclable wastes are transferred to cement factories, power plants and biodiesel manufacturers. In terms of national and international cooperations, Ülker collaborates with TÜKÇEV, municipalities, ministries and universities about the wastes. On the international level, their partner is Terra Cycle. Ülker also has initiatives in order to measure the reactions of the consumers and it takes this information from Nielsen. According to these feedbacks, the consumers have not reached to the expected level about recycling and sustainability.

Duran Doğan has a different approach to this subject. Besides its efforts for becoming a 100% recyclable company, Duran Doğan also aims for compensating its natural source consumption. This company also has national and international cooperations as Ülker. In Turkey, the partner of this company about recycling the wastes is ÇEVKO. In terms of international alliances, Duran Doğan has relations with Carbon Disclosure Project (CDP) and Lloyd's Register. These institutions receive environmental reports from the biggest 500 companies from every country. Even though Duran Doğan is not listed within these companies, it delivers the reports voluntarily.

About recycling, Evyap also has a mission for 100% recyclability ratio for its wastes. Parallel to Nielsen reports, the company states that Evyap's consumers has not reached to the expected maturity for recycling and sustainability. Today, Evyap has 80% recyclability ratio for its wastes. In the last 10 years, Evyap has renovated its production sites, converted the materials with recyclable ones and followed the legal regulations strictly in terms of recycling. In recycling processes, Evyap is working with PAKÇEV and Remondis Turkey. These institutions are responsible for the transformation of Evyap's wastes.

In Amcor's activities for recycling, the aim is reducing the loss during the production as low as possible. In packaging industry, a certain amount of loss in production is considered as normal procedure but Amcor wants to go beyond this perception. Amcor also built degradation stations in its facilities and the production losses is entering firstly to degradation process in these areas. The nondegradable parts are sent to cement factories. Amcor states that with this application, cement factories reduced their energy usage around 30%. Another recycling application of Amcor is stopping PVC usage in the production. This initiative has been taken by considering worldwide trends. As the third initiative of the company, the raw materials for production are preferred within the companies which apply EU standards. Besides this information, Amcor is one of the founder companies of ÇEVKO and collaborates with this company for its wastes. According to the internal surveys, Amcor receives positive feedbacks from its customers about recycling and sustainability policies of the company.

About sustainability and recycling policies, Cupplast has a double-edged perception. In sustainability strategies, Cupplast targets to meet with the market's expectation and to be an eco-friendly company at the same time. In that sense, increasing efficiency is considered an energizer factor in order to be environmentalist. Since there is a homogeneity within the raw materials that the company uses for production, Cupplast defines its recycling processes as "simple". The recycling processes are not operated in company's body and Cupplast outsource these activities. This outsourcing companies reactivate the waste of Cupplast by transferring them to related industries. Reduction on production loss ratios is a common strategy between recycling and sustainability of Cupplast. In order to assure that, the management plans to initiate a renovation in

production site by modernizing the machines. Since the machines are getting old, they are also a source for production loss. In the last 10 years, Cupplast has followed the legal regulations about the environment and has shared requested reports. The environmental collaboration of Cupplast is limited with ÇEVKO. Until today, Cupplast has not conducted any surveys for measuring its customers' opinion for sustainability and recycling activities.

4. CONCLUSION

As it is in our daily life, consumption is a fact which humans need in order to sustain their existence. It is a fact that the consumption phenomenon has evolved in history. The fundamental element of its evolution is the differentiation of needs. The explorations in faster manufacturing methods and globalisation of commerce are other supplementer facts of consumption. In accelerated manufacturing methods, the source that we benefitted is the nature. These developments have been realised by ignoring that the natural sources are not infinite and today we are facing with environmental problems in all areas of our lives.

In this study, FMCG brands and their preferences for the usage of recyclable packagings have been evaluated because these brands are inseparable parts of our lives and their effect on environment is huge. Studying the final phase of a FMCG product after it completes its life cycle is a necessity and it is the reason for focusing on FMCG brands' recycling preferences in this study.

This necessity proves itself with the arising of sustainability in the 1980s. At first stage, the countries discussed how could the manufacturing be eco-friendly by meeting with the needs of humans and they took the necessary steps for it. Within these steps, they built common principals and stated that the manufacturing activities in each country should be convenient to these principals. One of these principals is less raw material use and it forms the basis of the recycling fact. Regaining the wastes in economies instead of annihilating them is the philosophic basis of recycling measures and activities that has been conducted since 1990s.

It is another fact that the initiatives about sustainability and recycling is a reflection of the market's expectation. The environmental conscience was improved in customers in the 1980s and 1990s and it also triggered the emergence of green marketing concept. Environmentally sensitive customers sought and demanded the brands and products which will not help the expansion of environmental problems or will not cause these problems. Today, the promotional activities of all companies show us that the brands

are aware of the green sensitiveness of consumers and brands organize their bodies accordingly.

The collected data from sample surveys show that the companies have solid environmental awareness regardless of their activity field. Within their environmental awareness, the companies state that the natural sources should be protected in order to sustain the existence of all livings. About protecting natural sources, first common attempt of companies is reducing the consumption they do. In that sense, the companies take necessary actions on energy use and manufacturing processes and make necessary investments and renovations related to energy and raw material economisation. About the waste management, despite the companies that take further precautions in sampling, the common action of companies is taking the necessary precautions and following regulations issued by governments. The same attitude has been monitored in social activities in terms of environment. Generally, the brands focus on kids and teenagers in order to implement environmental awareness.

The conducted surveys about green marketing indicate a homogeneity within the samples. It has been found that the companies do not make a systematic work on green marketing. The fundamental problem of this deficiency takes its roots from Turkish consumers. According to the sample companies surveys, the Turkish customers are not at the same maturity level as European consumers are in terms of environmental sensitiveness and Turkish consumers still have a price-oriented perspective. Moreover, the companies know that greening in products will bring a cost and price increase. Thus, the FMCG companies defend that developing a green marketing strategy is not necessary in the Turkish market for now. This situation also arises a similar effect in their suppliers. In that sense, FMCG brands and their suppliers are waiting an alteration in customers' price-oriented attitudes in order to build and systemize green marketing strategies.

In the surveys about packaging designs, there is a partial homogeneity within the samples. It is found that, the most preferred packaging materials by FMCG companies are carton and plastic. The companies state that in order to create the visual attraction for the consumer, these materials offer the best opportunities to brands. The common points for visual design come up on color and product view on the packaging. By using

product images and glossy colors, the brands aim to awake a purchasing intention at consumers. During the design of the packages, the recyclability of packaging materials is an important subject for brands but the expectation of market forestalls it if there is a contradiction between being green and attractiveness. In that sense, the brands prefer to take actions which could meet with their sales and marketing expectations in terms of packaging design.

About sustainability and recycling strategies of the sample companies, it is revealed that the firms are conducting similar systems with each other in terms of design. During the designation of sustainability strategies, top management of companies are leading. They start, organize and monitor these processes. During the assignation of targets, companies generally set long term objectives. This could be explained by saying that the companies want to implement these strategies as a company culture and desire that these changes could be lasting. In that sense, it is observed that the samples that have international relations apply more systematic and strict implementations and actions. They strive to implement the same practices in European companies and take European standards as their reference point. The common point in recycling strategies of sample companies is reaching 100% recyclability on their wastes. Despite some samples build their own recycling systems internally to reach this goal, the identic application of these strategies is outsourcing recycling activities. It should be also noted that the root cause of these outsourcings is the recycling regulations. When the recycling activities of companies are studied, it is found that the major recycling activities have been realised by the obligation of the legal regulations. The companies follow these regulations and cooperate with licensed recycling companies. In terms of responsibilities of the companies, they should deliver their wastes properly as indicated, report them and cover these expenses.

This situation shows itself in preference of recyclable packagings. The FMCG brands perform their legal duties in terms of the effect of product packages on the environment within the regulations but they do not receive any environmental pressure from their consumers. This situation causes negotiations between FMCG brands and their packaging suppliers to be limited to manufacturing thicker packages or using less raw material. Since there are additional costs for the degradation of waste packages, FMCG

companies look for 100% recyclable packages. Despite the fact that it is possible to manage that with carton packages, in many types of plastic ones, total degradation could not be operated. After some applications, the carton packages could become raw materials for new carton packages. For plastic packages, the fundamental reason of this situation is the lack of technological developments in the plastic industry. At the present time, it is not possible yet to produce 100% recyclable plastic packages. Another bottleneck come up in direct contact of plastic packages with the products. The consumers could have questions about hygiene matters if there is a direct contact of products with recycled or reused plastic packages. Therefore, the FMCG brands do not lean towards for these applications and accept additional costs in order to look for their reputations.

As a result of all these datas, it is possible to state that environmental conscience has been settled at FMCG brands and its packaging suppliers and this is a subject that they care. They are also aware that there is a linkage between controlling environmental problems and continuity of their existence. Understanding this linkage convinces them to accept additional costs or reserve budgets for environmental issues. About the recycled packagings, it should be remarked that the fundamental reasons of their preferences by FMCG brands splits into two; the legal regulations and the additional costs that these regulations put on, and environmental awareness of FMCG brands. FMCG brands predict that they may reduce their environmental effect and reduce their costs by preferring recycled packages. Having further developments in recycling is dependent to the demand of end user, in other words, the consumer. If this demand will be stronger in future, it is certain that, new initiatives will be started in order to have more antipollutionist materials in industries related to packaging.

It is undeniable that the most negative effect in the development of recyclable packages is the public opinion in terms of hygiene. In the reviews, I realized that the role of the governments is only about defining the rules for recycling. In terms of further steps, governments could take responsibility as promoters. It is a fact that, governments have social effects and many variant instruments in order to orient public opinion more than the FMCG brands. In that sense, the governments could take more active roles in school activities for implementation of recycling perspective. On the other hand, FMCG brands

and packaging manufacturers have activities for kids and teenagers but they miss that these groups do not have any effects on buying decisions of families. In order to promote the importance of recycling packages, FMCG brands and packaging manufacturers could organize activities which aim adults. These dual activities within the government and the companies could break prejudices against recyclable packages and open wider areas of usage. By promoting the technologies in the packaging industry, the consumer demand could also be directed towards green products.

Another fact is that, the lack of technological developments forms a bottleneck for recyclable plastic packages. In that sense, the needed collaboration could be founded between universities, and packaging manufacturers and suppliers. The universities could help to develop technologies in terms of raw material or machinery for suppliers and contribute to packaging manufacturers in terms of qualified employee. In exchange, they could gain further knowledge about the packaging industry, activity area and relations with local or global businesses. Besides that, technical universities possess subventions in order to contribute technological developments. It could be a key element for suppliers in the packaging industry that need capital to conduct further steps in recycling technologies.

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APPENDICES

1. In-Depth Interview Questions

i. What is the field of activity of your company/institution?
ii. What is your position in your company/institution?
iii. For how many years you are in your position?
iv. Which mesures have been taken about pollution in production process?
v. Do you have actions for natural sources management?
vi. Did you implemented any sustainable production model to your organisation. If so, could you describe your model?
vii. Do you have social responsability activities in terms of environment? Could you describe?
viii. In your marketing process, do you use green marketing principles? If so, what is your focus points?
ix. In green marketing process, did you faced with any difficulties? If so, which problems were the most frequent ones?
x. What is the driver key element for company/institution in order to implement green marketing strategies?
xi. About manifacturing greener products, do you have any attempt? If so, could you share?
xii. Is greening in products effect the pricing?
xiii. In greening process, what is your aim while the product design?
xiv. Do you follow reverse logistics principals? If so, could you describe the processes?
xv. Which packaging materials are the most frequently used in your products?
xvi. Which visual designs are the most frequently used in your products?
xvii. Do you have recycling considerations in material or visual design selection processes? Is it defining your selections?
xviii. Which function of packaging is the most important one for your products?
xix. What is the general strategy of your company/institution about the sustainability?
xx. For sustainable packages, is your focus point market's expectation or being eco-friendly when the packaging desing is creating? If you have another focus point, please describe.

xxi. What is the general strategy of your company/institution about the recycling?

xxii. In this decade, which actions have been taken in terms of recycling in your product?

xxiii. Do you have national or international partnerships for recycling?

xxiv. Are the reactions for these actions mesured at customers' side? If so, how they mesured and what is the reactions?