GREEN MARKETING:
CONSUMER BEHAVIOR TOWARDS ENVIRONMENT FRIENDLY FAST MOVING CONSUMER GOODS (FMCG) IN LEBANON

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by

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Approval Certificate

Green Marketing: Consumer Behavior towards Environment Friendly Fast Moving Consumer Goods (FMCG) in Lebanon

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DECLARATION

I hereby declare that this thesis is entirely my own work and that it has not been submitted as an exercise for a degree at any other University.

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ABSTRACT

Purpose - This paper aims to understand how familiar the Lebanese are with environmentally friendly FMCG and explore the major factors affecting behavior towards these products. In addition to understanding who the Lebanese green conscious consumer is. Ultimately, to have a distinctive study available in Lebanon as a reference for future studies.

Design/methodology/approach - This research is mainly confirmatory since it is based on a previous research; however it has an explanatory aspect as well since there were no similar studies published in Lebanon. A deductive approach is used since theories discussed are based on available literature and data collected is mainly quantitative through a questionnaire. Factor analysis, multiple regression and non-parametric tests were used to analyse the data.

Findings - Some of the main findings are that people are aware and able to distinguish environmentally friendly products. They believe that awareness campaigns are necessary from producers and government. Lebanese people have low trust in environmentally friendly products, prices and quality in the market.

Research limitations/implications - Limitations of this study include sample age representation, sample size, geographical distribution, questionnaire circulation method and time constraint.

Practical implications - Actions should be taken by the Lebanese private and public sectors as a long term plan to switch to environmentally friendly lifestyle

Originality/value - This study is unique to the Lebanese market. A similar study has been done in Sweden and which was used as an inspiration. However, the difference between both is that this study focuses on awareness factor rather than word of mouth and satisfaction.

Keywords - Consumer Behavior, Green Marketing, Environmentally Friendly Products, Lebanese Green Consumer, Eco-friendly FMCG.

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I have registered for my MBA certificate while I was pregnant with my first child and along the way I had 3 kids which made it feel as a very long journey between motherhood and self-fulfillment. There were times were I felt I couldn't do it anymore but it was all because of the motivation from the people around me that this thesis is successfully complete. Thank you God.

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CHAPTER 1: INTRODUCTION

1.1 General Background

Sustainability and concern for the environment are increasingly important topics being discussed today. Over the last decade environmentalism has emerged to be a vital social concern due to increasing issues related to acid rains, depletion of the ozone layer, global warming, degradation of the land and many other pressing environmental issues. In December 2015, 196 countries participated in a United Nations conference COP 21 in Paris to present their actions and contributions to prevent emissions that are leading to global warming. These countries signed international agreements as commitment to their action plans, and developing countries will be assisted financially to execute these plans. Lebanon participated and presented a plan to cut down its gas emissions by 30% by the year 2030. This agreement would give Lebanon a chance to be involved in setting up global policies that will limit global warming and promote climate action practically.

It would be an opportunity for Lebanon to contribute to an international effort, to work towards meeting its own sustainable development goals and to take the environmental concern more seriously. In November 2016 COP 22 took place in Marrakech, countries met to discuss long term goals progress, define issues and action plans to clear those issues. Lebanon announced the joining of 120 companies from the public and private sector to the Climate Act initiative program. These companies will work towards reducing their carbon footprint through design and implementation of their activities. Lebanon's commitment to reduce the greenhouse gas emissions, taking into consideration the economic, social and environmental challenges that Lebanon is facing would be an interesting move towards green thinking.

Marketers once felt that green products were a trend and simply attempted to exploit the potential opportunity of the moment (Banerjee et al., 1995). However, what once was a fad is now a social responsibility, and green products and services are here to stay. As

consumers, how can we know if "environmentally friendly" products are really as claimed by marketers? In other words is it environmentally friendly because it's wrapped in biodegradable packaging or only contains natural ingredients or grown locally or saves energy or was made from recycled material? At many times there might not be enough consumer awareness on the standards of environmentally friendly products, certification and processes, as well as not enough information from producer or marketer on how environmentally friendly it is. Going back to the term environmentally friendly, it is the same as environment friendly, eco-friendly, nature-friendly, and green. In this present paper the following terms will be used interchangeably and they all refer to goods and services, laws, guidelines and policies that inflict reduced, minimal, or no harm at all, upon ecosystems or the environment.

According to a survey conducted by the Gallup organization in 2009, around one fifth of European interviewees think that the action which has the greatest impact on solving environmental problems was "to buy products produced by eco-friendly production" just after "minimizing waste and recycling" action. Green marketing has emerged due to the environmental deterioration and it becomes a global practice (Kumar, 2011). Green marketing probably can play some role in at least reducing to some extent the impact of climate change since there is sufficient evidence to support the fact that human activities are the major contributors towards climate change. Green marketing is the marketing of products and services in eco-friendly manner and it can be practiced on all the product categories. Green marketing is essential for businesses as a competitive advantage, image strengthener, and developer of new markets (Chen, 2008). Isaacs (2015) mentioned, as dissemination of information related to the advantages of green technology increased, manufacturing companies were making decisions about their products. Some companies were already becoming more socially and environmentally responsible and found that their profits increased as they changed along with their consumers' preferences.

Even though green marketing became popular in recent years, the concept of the

green movement has been around since the first Earth Day of 1970's. The major initiative for green movement was established with environmentalism, advocacy for the management and sustainability of the environment through public policy and individual behaviors (Leonidou and Leonidou, 2011). According to Kuzmiak (1991) Environmentalism has been in the American thought system since the 1830's and 1840's, but during the 1970's the environment started to be incorporated in public policies. The Clean Air Act, the founding of Earth Day, the banning of DDT, the Water Pollution Control Act are just some of the many policies implemented into the society.

Lebanon's hospitality industry including climate, nature, heritage, nightlife, history and culture had been throughout the years a major attraction for tourists from around the world. Lebanon was featured by the New York Times and Beirut was featured by Paris Match as a top tourist destination in year 2009 as mentioned in BLOM bank 2010 yearly report. In addition, Lebanon is the only country in the Arab region that offers real snow skiing, related winter sports activities, summer sports, distinctive culinary, diverse society, high tech medical services, financial hub and historical structure. However, Lebanon has gone through 25 years of war that lead to very slow country development and increasing environmental challenges. In Taleb (1997) Lebanese consumers were classified into three categories they appeared to be either "ungreen": plain, don't care about the environment, or "grousers": rationalize their non-behavior by excuses and criticize others, or "maybe green": express high degree of concern but act irregularly.

In Lebanon, green marketing continues to be addressed today in a limited manner; attempts are made to convince the public opinion to respect the green environment. During the past few years some corporations in Lebanon started moving towards green marketing. Major requirements such as strategy, innovation, relationship, infrastructure, regulation, technology and understanding consumer attitude are typically important areas that have a strong impact on green marketing. Recently in Lebanon, the market witnessed a remarkable growth in market niches and the blooming of green businesses that provide goods and services ranging from organic products on supermarket shelves and specialized restaurant menus to green tourism and green bank accounts.

The success, however, of any green marketing strategy is heavily reliant on the target customers. For instance, environmentally friendly baby products have become a big hit globally due to the great awareness and concern of parents about the hazardous effects of non-green products on their children. Ultimately, this awareness and concern have allowed the industry of green baby products to boom worldwide giving rise to the profitability of companies who deliver products such as BPA-free feeding bottles, anti-colic products, cloth diapers, paraben free and others.

Understanding and analyzing consumer behavior is a major guide for marketer's to launch new products, assess activities, position products and gain market share.
In the last few decades researchers have observed a significant change in the consumer behavior from choosing products based on its physical attributes such as size, color, flavor, or aroma to other important features related to the environment and health. The reason behind this change is nothing else but the perceived threat of climate change. Many people think that in order to act in an eco-friendly way it takes a lot of time, effort and money, but there are actually numerous quick and easy ways to contribute to the environment. Whether it is to stop using disposable chopsticks in favor of reusable ones, or swapping out your battery operated alarm clock for one powered by rechargeable batteries, or use ozone friendly deodorant rather than the normal spray deodorant, there are endless approaches to help the planet and cut back on producing waste.

1.2 Problem Discussion

In Lebanon, the size of the green market is uncertain. Through a review of the available literature, the researches that are concerned with green marketing and green consumerism are not numerous; and no researches on consumer behavior towards environmentally friendly Fast Moving Consumer Goods (FMCG) products in the country. Therefore to address this need, this research aims at focusing on the potential of green marketing strategies in Lebanon through understanding the perspective and behavior of consumers towards environmentally friendly products. This study will focus solely on FMCG products among others since they are the most traded in Lebanon's

economy. In the past few years, several companies have introduced green marketing and green products, examples of such companies are Indevco, Ixsir Winery and Balkis Juices. Currently, there are many organic and green products sold in supermarkets, either at a green products section or available on the product category section. However, few people are aware of these products and not enough attention is paid towards green marketing as far as consumers are concerned. In terms of the company or the supermarket not enough marketing actions are taken to educate and alter the consumer buying behavior. As far as the government is concerned, no clear laws and regulations are set to protect the consumer from false marketing claims.

One of the green marketing challenges is the lack of standards or public consensus about what constitutes green, and there is no definition of how good is good enough on products or companies making green marketing claims. According to Makower (1995) this lack of consensus by consumers, marketers, activists, regulators, and influential people has slowed the growth of green products. Moreover, companies are often reluctant to promote their green attributes, and consumers are often skeptical about claims.

Once the concept of green is fully understood and practiced in the country, consumers would definitely benefit through consuming healthier products, sustaining the environment for the future generations and reducing the prices of environmentally friendly products. When the demand of environmentally friendly products increase, more products will be produced; which will lead to reduced products prices on the long term (economies of scale). This research attempts to better understand the profile of consumers who buy green and why, to look beyond what consumers think, to examine what actions they actually take and what motivates them. There is a variety of societal factors that drive all purchase intentions regardless of lifestyle and there are factors related to the product such as marketing mix factors which need to be explored.

Based on the problem discussed above the research questions of the study are:
1-Does green awareness influence Lebanese consumers to purchase environmentally friendly products and does consumer green attitude lead to green purchase behavior?
2-To what extent do Marketing mix factors and demographics influence consumers to purchase environmentally friendly products?
3-Who is the environmentally conscious consumer who purchases environmentally friendly products?

1.3 Research Objective

The purpose of this study is to first, understand from the consumer point of view, motivations to purchase of environmentally friendly products and assess behavior towards these products. Second, the marketing mix that influences the consumer buying behavior. Third, to identify a profile of the green consumer in Lebanon. Fourth, the aim is to have a distinctive study available in Lebanon as a reference for University students, Companies who want to initiate green marketing programs or products and green concerned Organizations.

1.4 Summary

With the rising concerns on food and beverages standards that surged in Lebanon in 2015 by the ministry of health and the escalation of the waste disposal issue and its environmental threats; Lebanese are becoming more environmentally conscious and more ready to adopt new green ideas and products. This study will act as a "testing to the waters" in the present critical changing times. This research will help identify and analyze the beliefs, motivations, and lifestyles of the environmentally friendly consumer, a profile that has most certainly changed in the past decade with the changing trends and global exposure. The formation of a profile enables marketers to compare and contrast the difference between the international and Lebanese profiles; and the green consumer with the non-green. This study will examine the proposition that the strength of a consumer's environmental values will explain and predict purchase intentions towards environmentally friendly FMCG products. Whether a consumer is, for the first time, adopting household cleaners free of toxins and bleach, or an already eco-conscious

consumer is purchasing a recycled tissue paper box, this research aims to better understand that decision making process.

CHAPTER 2: LITERATURE REVIEW

An examination of the literature, both commercial and academic, on environmentally friendly products, green consumers and marketing is assessed in this section. The review of published literatures would help understand the predicted purchase behavior of consumers towards environmentally friendly products in general. However, the lack of literature specifically focused on green consumer behavior in Lebanon requires further investigation; this will be covered in the next sections.

2.1 The Concept of Green Marketing

The definition of green marketing has yet to be standardized, numerous definitions and concepts are found in the literature. Consumers often link terms like recyclable, refillable, organic, ozone friendly and environmentally friendly with green marketing but green marketing is much broader than those terms.

Green marketing has been defined by many researchers; Ghosh (2010) defined it in a broad sense as the marketing activities which facilitate exchanges to satisfy consumer needs and wants by minimizing the impact of these activities on the physical environment. Mansvelt (2011) also defined green marketing as an emerging advanced system of advertising and labeling of products, goods and services that are advertised by claims of either reduced or abolished negative effects in the ecology. At some point companies are forced to implement green policies when it comes to carrying out an advertisement, manufacturing the product, setting price, as well as placing the product to the market (Diglel and Yazdanifard, 2014). According to Chamorro et al. (2009) green marketing is also named ecological marketing, greener marketing, environmental marketing, enviropreneurial marketing and sustainable marketing.

In the present thesis the term green marketing will be used since it is the most commonly used term in scientific literature. Green marketing serves two purposes: 1) Develop

environmentally friendly goods that can appeal to the consumer at affordable prices. 2) Reflect an image of high quality, environmental sensitivity and hence production of products compatible with environment (Uydacı, 2002). Rahbar and Wahid (2011) define the green marketing tools as including eco label, eco brand and environmental advertisement. The difference in the level of green marketing the companies use is also proposed by Menon (1997), who states that there are three levels of green marketing a company can apply: strategic green, quasi-strategic green, and tactical green. In which strategic green represents the company that makes substantial changes in its philosophy, quasi-strategic green stands for a substantial change in the company's business practice, and tactical green is about a shift in functional activities, such as promotions.

Thus the difference between green marketing and traditional marketing lays in the fact that green marketers should take into account the environmental aspect of the product or service that the company produces or in other words convince consumers that the product is green. When applying green marketing, advertisers focus on environmental benefits to sell their products such as recycled paper, energy-efficient light bulbs, organic cosmetics and environmentally safe detergents. One major reason why purchasers give negative feedback on green products is the so called green washing. As defined by environmentalists, green washing (derived from "white washing") is a type of activity that is adapted by producers wherein green marketing is used dishonestly to endorse the perception that the products they produce are environmentally friendly.

2.1.1 History of Green Marketing

Green marketing became prominent in the late 1980s and early 1990s. In 1975 the American Marketing Association (AMA) held the first workshop on "Ecological Marketing" and the proceedings of this workshop resulted in one of the first books on green marketing. According to Peattie (2001), the evolution of green marketing can be divided into three phases; First phase was termed as "Ecological" green marketing, to help solve the environment problems through remedies. Second phase was 'Environmental" green marketing with focus on clean technology that involved

designing of innovative new products that took care of pollution and waste issues. Third phase was "Sustainable" green marketing where it becomes essential for companies to produce environment friendly products as the awareness for such products is on the rise, since customers are demanding eco-friendly products and technologies. Padhy (2014) states that environmental marketing is not an option, it is the compulsion in the 21st century for all the successful entrepreneurs.

2.2 Green Marketing Mix

As stated by Jerome (1964) the marketing mix is one of the most famous marketing terms, it is the tactical or operational part of a marketing plan. It is often crucial when determining a product or brand's offer, and is often associated with the four P's: Price, Product, Promotion, and Place. Green marketing strategy can be implemented through the process of greening the classic marketing mix. Bradley (1989) first introduced the concept of "Green Marketing Mix" and provided a green market mix checklist for companies to conduct an audit to check whether their products are light or dark green. He still argued that "Green Marketing Mix" can be applied to all types of products no matter the targeted market is business to business or business to consumer. Bradley (1989)'s Green Marketing Mix checklist has 8 items: Price, Product, Package, Promotion, Distribution, Advertising, Sales Force and After Sales Service. Each item also has several sub-items which are used to check first from customer's point of view and then from the company's own perspective. Environmental Protection Agency of the Queensland Government (2006) suggested that the four Ps of conventional marketing mix can be addressed in green marketing strategy but in innovative ways. This paper will focus on the fundamental four Ps in green marketing strategy.

2.2.1 Green Product

Product is not limited to the end consumer object only but involves all the features of the product, such as the materials used, the production process and package. Thus, green product can be discussed in three subcategories below:

a. Product

According to the Queensland Government study (2006), marketers that implement green marketing strategy should either develop products that satisfy customer's environmental needs or develop environmentally friendly products that have less impact than competitors. These products in its suggestion include products: made from recycled goods or it can be recycled or reused itself, or be efficient, environmentally responsible packaged, green labeled, organic, rentable or loanable, and certified. Bradley (1989) stated that not only the green product itself but also the waste of green product should not damage the environment and society.

According to Charter (1992), green product can be developed in several ways:

- Repair: repair components of a product to extend its life
- Recondition: overhaul a product to extend its life
- Remanufacture: produce a new product based on an old one
- Reuse: repeat usage of a product
- Recycle: reprocess a product or convert it into raw material
- Reduce: use fewer raw materials or reduce disposable waste.

Some of the environmentally friendly products that can be found at the supermarket shelves without mentioning certain brands are food products that have the Bio or Organic label, household items that are recyclable and biodegradable, glass water bottles that are refillable, spray products that are ozone friendly, household appliances that are energy saving and stationery that are forests saving. As a concrete example from the Lebanese FMCG market we have Sanita Natura tissue paper that is made from recycled paper. In addition, we have organic products of wheat, oat bran, cereals and barley produced by Naturalia Company.

b. Production

According to Glorieux-Boutonnat (2004) to "go green" is expensive to invest on a short-

term but can be very profitable on a long-term since it can bring cost reductions in the production process. This advantage can be attained by eliminating redundant process and then reducing the usage of materials. Miller (2008) also suggested improving the recycling of the waste materials and the use of recycled materials in the production cycle. P&G worldwide leader in FMCG has adopted a systematic approach over the years towards reducing environmental impact which improved its manufacturing efficiency. Today, the company's use of energy is nine times more efficient than in 1985 and P&G is able to produce 50% more product output per unit of waste water than in 1990. Moreover, the shift away from coal to cleaner fuel has helped P&G to reduce CO2 emissions by three and a half fold per tonne of production.

In Lebanon, several companies have improved their production in an attempt to sustain the environment. If we look at the drinks industry an example is Almaza Beer, in the year 2015 Almaza started gathering its used beer bottles and sending them to a glass blower company to be recycled into reused beer bottles, as a plan to reduce production emissions and waste. In addition , Pepsi bottler company S.M.L.C in Lebanon since 1952 had been distributing Pepsi, 7up and Miranda glass bottles, these bottles are reusable and refillable which cuts huge production amounts.

c. Package

Packaging is also a factor that shouldn't be neglected for a company which adopts a green marketing strategy. Bradley (1989) claimed that the material of package should be biodegradable and environmentally safe and it's better to reuse or recycle these packaging materials. Sriram and Forman (1993) studied the relative importance of product's environmental attributes in a cross-cultural comparison. The results confirmed that the American consumers attach enormous importance to the recyclable feature of the milk package, whereas for the Dutch this was only of moderate importance. Nowadays the package may contain environmental information to catch consumers' attention and provide some environmental advices; this is known as eco labeling. Few examples for packaging improvements by producers are the following; In 2014 Unilever launched a newly developed packaging technology for Dove Body Wash

bottles that uses 15% less plastic. Projected cost savings for the whole portfolio are €50 million. With up to 59 million Dove Body Wash bottles sold across Europe, the new technology would save approximately 180 tonnes of plastic a year overall.

As for Lebanon, Indevco group is a leader in plastic and paper packaging solutions, in 2012 Indevco launched Greencoat® wax-free corrugated packaging for seafood, poultry and meat. Greencoat® is 100% recyclable which reduce carbon footprints as well as minimizes supply chain steps. Another example are supermarkets, in most of Europe plastic bags which they supply you with are paid for in an attempt to reduce the use of these bags, in addition supermarkets offer reusable bags that you pay for once and bring it along every time you go for shopping. In Lebanon Spinneys and Carrefour sell these reusable bags, however they have low consumption.

Eco labeling

One important tool of green marketing involves the promotion of eco labels on environmentally friendly products (D' Souza et al., 2006). Eco labeling is an effective measure which helps in bridging the gap between sellers and buyers by providing information on two aspects: 1) Information function presenting intangible quality measures including product quality examples listed in figure 1 are voluntary and mandatory. 2) Value function which presents the recyclability and corporate social responsibility related brand prestige (Sammer and Wustenhagen, 2006). Empirical research has concentrated on the need to look for ways by which eco labels will directly impact consumer purchase intention of products which are deemed to be environmentally friendly.

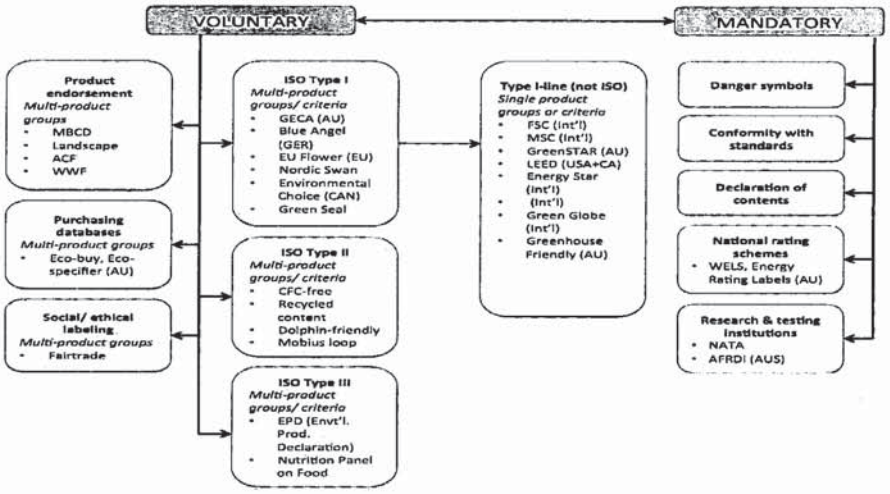

Figure 1.Overview of the different types of eco labels used to indicate credibility to consumer (Horne, 2009).

Certified international eco labels include Green Seal, Green Tick, Organic Food Federation, Rainforest Alliance Certified, Fair trade, EU eco label and many more. Some examples of products with international eco labels sold in the Lebanese market are: the Fair Trade eco label in figure 2 found on Romon Nature Tea package. The Fair Trade is an initiative that was created to form a new method for trade; this method takes an ethical stand point, and considers the producers first, in an attempt to emphasize equality in the market place (Alvarado, 2009). Another eco label commonly used on French organic products such as Auchun cheese, Francine bio flour, Bjorg tomato sauce and Bjorg chicken flavor cubes is Agriculture biologique (AB) France's national logo for organic products refer to figure 3. Organic products carrying this logo must contain more than 95 percent organic components, and be produced or processed within the EU, and were certified by one of the inspection bodies accredited. The AB eco label was initiated in 1995 but became a mandatory element for French organic products in 2008.

Figure 2.Fairtrade Logo

Figure 3.AB Logo

2.2.2 Green Price

Pricing strategy is an important part in the green marketing mix. In most cases the price of a green product is higher than a traditional product, which means there is a price premium. So the pricing strategy in green marketing is to balance and combine the consumer's price sensitivity and environmental consciousness. Due to price sensitivity, price could be a determining factor for consumers when making the choice between a green product and an ordinary one. According to a study by Queensland Government (2006) consumers don't usually pay a price premium for a green product that has the same price, quality and other attributes as an ordinary product. In another words, most consumers will only be prepared to pay a premium if there is a perception of additional product value in the term of improved performance, function, design, visual appeal or taste.

However, Polonsky and Rosenberger (2001) argued that consuming green products does not always mean costs will be more for consumers if all the associated costs and product life cycle are taken into considerations. They mentioned two terms of cost, initial expenses and lower long term costs. Green product often requires higher initial cost but on the long term, costs are reduced. A successful example is Philips's light bulbs which were first promoted as compact fluorescent light (CFL) bulb of Earth Light, at $15 each versus 75 cents for incandescent bulbs. The product had difficulty climbing out of its deep green niche. The company re-launched the product as "Marathon," emphasizing its new "super long life" positioning and promise of saving $26 in energy costs over its five year lifetime. Finally, with the U.S. EPA's Energy Star label to add credibility as well as

new sensitivity to rising utility costs and electricity shortages, sales climbed 12 percent in an otherwise flat market (Fowler, 2002).

If we are looking at Lebanon, after few visits to several supermarkets it was noticeable that organic or bio food products are always priced higher than the conventional, as for non-food products the price of environmentally friendly products is at many times similar or maybe slightly higher than conventional. For example at Spinneys Heinz ketchup 580g is priced 3,990L.L as for Organic Heinz ketchup it is priced 7,250L.L, 1er Choix 1kg flour is priced 1,650L.L as for Francine1 kg Bio flour it is priced 4,999L.L, here we can see that Organic products are priced double. An example of non-food products is Sanita biodegrable plastic bags, these bags are sold across most of the supermarkets and are priced similar to conventional competitor Mimosa plastic bags. Another example is Auchan eco multi surface solution cleaner which is also priced similar to Ajax multi surface cleaner the most commonly sold product in the household cleaning category.

2.2.3 Green Place

The choice of where and when to make a product available by a company, will have significant impact on the customers purchase. Very few customers will make extra effort to buy green products. The place strategy should also be consistent with the environmental image; a greener distribution can be a competitive advantage. There are some specific suggestions like using recycled or used materials in stores, reducing and saving resources in the transportation, using environmental friendly vehicles and reducing product movements. From a wider perspective, greener place strategy also requires the company to find a green distributor which will associate responsibility with their products (Bradley, 1989). An example in Lebanon is the organic grocery shop "a new earth" which opened at Achrafieh in 2009; it provides consumers with all they need from a grocery store but as environmentally friendly products and in a green display. In addition, in 2010, "Live organic" was established, which is a specialty retail store that offers an all green body and soul experience through its organic certified food products,

organic body care and eco-friendly household items. Its green image is visible in the organic coffee shop and green library; and noticeable through the green educated staff and partnership with organizations to preserve Lebanon's resources. A very popular place example is Bioland farm, at this farm organic fruits, vegetables, seeds, wheat, olive oil, jam, eggs and many more are sold. In addition to selling products at the farm, they have a store to sell their products in Beirut and they have a restaurant at the farm that serves Lebanese dishes with organic ingredients, which is the first farm to table concept restaurant.

2.2.4 Green Promotion

Marketers have to consider "What environmental information should be communicated and how it should be communicated?" before promotions (Polonsky and Rosenberger, 2001). So the primary issue for green promotion is to communicate substantive and meaningful environmental information to consumers. Taking social responsibility and customer education into consideration, companies green their promotion methods by targeting certain customer segments with specific green value propositions (Zhu and Sarkis, 2015). An important part of the promotion is the eco labeling which has been mentioned earlier. According to a study conducted by Boztepe (2012) single consumers were more affected by green promotions and advertising while married consumers were affected by green price and product features.

One of the successful campaigns that happened in America the year 2005 was for Procter & Gamble when they launched the Tide Coldwater detergent, the campaign raised awareness of the benefits of laundry washing in cold water to save energy and money. The campaign included TV advertising, in-store programs, product sampling, a strong Internet presence, consumer promotions and strategic alliances. In Lebanon, an interesting example would be a recent TV commercial by Bankmed which was launched mainly to promote a green planet through raising awareness over saving water, saving electrical energy and avoiding trash disposal randomly. The commercial "We all saw"

had been running across several TV stations and over a period of four months, it's purely educative and good will image building message by Bankmed.

2.3 Green Consumer

The green consumer is generally defined as one who takes on environmentally friendly behaviors and/or who purchases green products over the standard alternatives. Green consumers are more internally controlled as they believe that an individual consumer can be effective in environmental protection. Thus, they feel that the job of environmental protection should not be left to the government, business, environmentalists and scientists only; they as consumers can also play a part. They are also less dogmatic and more open-minded or tolerant toward new products and ideas. Their open-mindedness helps them to accept green products and behaviors, more readily (Shamdasani et al., 1993). Strong (1996) has defined green consumers as those "who avoid products that are likely to endanger the health of the consumer or others, cause significant damage to the environment during manufacturing, use, or disposal, consume a disproportionate amount of energy, cause unnecessary waste, use materials derived from threatened species of environment. Peattie (2001) states that there is also a grey consumer, who is a consumer that has little interest in the environment; this consumer is not interested in green products at all.

Peattie (1992) defined green consumption as "consuming in a more sustainable and socially responsible way". He mentioned various shades of green and cited the framework developed by marketing diagnostics:

a) Green activists - members or supporters of environmental organizations

b) Green thinkers - will look for new ways to help the environment and seek out green products and services

c) Green consumer base - includes anyone who has changed their consuming behavior in response to green concerns

d) Generally concerned - people claiming to be concerned about green issues.

Socio-Demographic Profile

An important challenge facing marketers is to identify which consumers are willing to pay more for environmentally friendly products. It is apparent that an enhanced knowledge of the profile of this segment of consumers would be extremely useful. Socio-demographic factors are especially favorable in research, according to Rex and Baumann (2007) several studies were conducted in the US, where some found that young, higher educated; high income females were the green consumers. Other findings found that the green consumer is aged between 30 and 49, married, has children above the age of six and is politically liberal. In a research conducted by Chen (2014) to compare the Chinese green consumer with Japanese, the findings revealed that the green consumer is between ages 25-35 and educated. In addition Japanese people were more green concerned than Chinese as part of their culture. Shrum et al. (1995) in the study stated that the green consumer is an information seeker, that has interest in new products and considers himself as an opinion leader who is not brand loyal.

The characteristics of the green consumer might sound very useful but often the results contradicted. In demographic portrayal of consumers, gender is a primary factor to consider. Lee (2009) stated that adolescent females rated significantly higher than adolescent males in green purchasing behavior in China. Eisler et al. (2003) found that males exhibited higher environmental knowledge levels compared to females. Income is another factor considered important for influencing purchase of environmentally friendly products. Higher income households purchase organic products more frequently (Govidnasamy and Italia, 1990). Other studies revealed that the purchase of environmentally friendly products is affected by education as well. Consumers with higher level of education were more interested in purchasing organic food than those with less education (Dettmann and Dimitri, 2007). In the survey conducted for this study, demographics will be analyzed to understand for example majority of Lebanese female consumers eco-friendly products categories preferences, the willingness to recommend to family and friends and level of awareness on these products. In addition,

factors such as income and willingness to pay extra are tested; and education level and quality importance are tested.

2.4 Consumer Attitude and Behavior

How many times throughout the day do people make product decisions? If you stop to think about it, many product decisions are made every day ranging from buying decisions that need complex thinking such as buying a car to unconscious ones such as buying a chewing gum. Consumer reactions towards certain phenomena are of great interest in scientific studies and in practice, because if you know what consumers want, you as a business can respond to that need and profit from the needs of the consumers. However, many times people's positive attitude towards a product may not lead to a positive adoption or buying behavior. The study of consumer behavior is essential in marketing and it draws upon social science disciplines of anthropology, psychology, sociology, and economics. According to Kuester (2012) consumer behavior is the study of individuals, groups, or organizations and the processes they use to select, secure, and dispose of products, services, experiences, or ideas to satisfy needs and the impacts that these processes have on the consumer and society. Consumer behavior study is based on consumer buying behavior, with the customer playing the three distinct roles of user, payer and buyer. Research has shown that consumer behavior is difficult to predict, even for experts in the field (Armstrong, 1991).

Engel et al. (1968) introduced the 5 stages of consumer buying process they are: The problem recognition stage, which is the identification of something a consumer needs. The search for information, where in you search your knowledge bases or external knowledge sources for information on the product. Evaluation of alternatives, at this stage a comparison of other better or cheaper products happens. Next is the purchase decision and then finally purchase behavior after using the product. This shows the complete process that a consumer will most likely, whether recognizably or not, go through when they go to buy a product. The EKB (Engel, Kollat, Blackwell) model was further developed by Rice (1993) who suggested there should be a feedback loop, Foxall

(2005) further suggests the importance of the post purchase evaluation and that it is key because of its influences on future purchase patterns. Previous findings concerning consumers' attitudes towards environmentally friendly products are conflicting. Some studies found that consumers think conventional products have high quality materials compared to eco-friendly ones but in other studies results show the opposite (Vernekar and Wadhwa, 2011).

In certain studies of De Pelsmacker et al. (2009); Pirani and Secondi (2011); we can find that consumers are willing to pay more for green products and in other studies it is not the case or the extra price has to be low. Scherhorn (1993) did a study on the consumer's concern of the environment and its impact on businesses in the United States of America. The study highlights that majority of consumers feel that environmental issues are a serious problem and that one should really do something about it. Far fewer consumers indicate that they have changed their behavior or are seriously willing to revise it. Not more than 40% can be taken to be pro-environment in their actions, as opposed to their attitudes. In Lebanon we need to find how much positive attitude towards environmentally friendly products translates into purchase behavior this is covered in the survey through a series of statements. Attitudes are analyzed both general attitudes such as on the environment, and specific attitudes such as attitudes on food and non-food environmentally friendly products.

2.5 Factors Influencing Consumer Behavior

Kotler (1998) identified four main factors that can influence consumer behavior: cultural, social, personal, and psychological factors. These factors are split between internal and external. Internal factors are psychographics and demographics, psychological factors include an individual's motivation, perception, knowledge, feelings, attitude and belief; while personal or demographic factors include income level, personality, age, occupation and marital status. External influences are culture, sub-culture, royalty, ethnicity, social class, past experience, reference groups, and market

mix factors. Marketers can make use of these factors to launch new products, target interested buyers and appeal to satisfy consumer's needs better.

Economic growth, environment and health are three significant aspects of sustainable development. Nowadays; lifestyle is increasingly evaluated as one of the most important factors influencing health. As increasing health expenditure is an important problem for sustainable development, it is essential to examine the society in terms of their health-related habits and promote healthy lifestyle (Akkucuk, 2015). As the environmental movement becomes more prominent consumers who are highly susceptible to interpersonal influence within a reference group will be more likely to adopt environmentally friendly products when alternatives exist because going green is a trendy and popular orientation. Self-Actualized consumers are more likely to show socially conscious consumer behavior in a general context (Brooker, 1976) and, therefore, it is assumed that they are also more likely to be green consumers. Age groups can be a subculture in the society, while some brands target teen-age groups, others can be offered to matured market like health care products, home decoration and travel (Blackwell et al., 2001). Consumer behavior and social class also connect in different ways. For example, high class consumers prefer magazines of technology, art, decoration, sailing and luxury brands, since they have common interests and needs. These types of magazines are priced higher than the normal and the advertisements in these magazines are targeted to the high social class segment.

In Lebanon cultural factors are the most basic determinant of consumer's needs and behavior. Subcultures are the "cultures within cultures" that have distinct values and lifestyle, an example would be the Armenian Lebanese in Lebanon. People with different cultural and subcultural characteristics may have certain beliefs and practices that lead to certain product decisions. Lebanese society is intensely social. In sociological terms it is a group society rather than an individual one. The reference groups, which includes family, friends, social networks and professional associations, can strongly affect product and brand choices. In Lebanon, family members maybe the primary influencers in product decision making, family comes first it's part of the

culture. Lebanese culture combines Christian, European and Arab Non-Fundamentalists Muslim values (Neal et al., 2005). Lebanon's major religions are Christian and Muslim under which there are 18 different sects according to Tlaiss and Kauser (2011), Lebanon holds both strong cultural and religious customs in addition to modern values. The patriarchal values stressing the nurturing role of women as moms and wives were found to be rooted very deeply in Lebanese culture.

As for education level, for 62% of households none of their members held a university degree. On the other hand 38% of households had at least one person holding a university degree and 16% had more than one person educated to degree level. And finally in general the population of Lebanon was multi-lingual; almost a third of the persons aged 15 years and above spoke French and some 22% spoke English (Yacoub & Badre , 2012). Lebanon had achieved several important milestones towards gender equality, including granting political rights to women in 1953, giving married women the right to choose their citizenship in 1960, allowing women to be elected in local councils in 1963, establishing equal retirement ages and social security benefits for men and women in 1984, in addition to other laws consecrating the principle of equality (Mansour & Abou Aad, 2012). When it comes to grocery purchasing decisions of the house, in Lebanon females are more inclined to do the shopping since cooking and cleaning are under the housewife roles, however males do grocery shopping but on a smaller scale.

In general, the trend of purchasing environmentally friendly products is in a premature stage and the Lebanese government hasn't shown support to these products. The Ministry of Environment launched an awareness campaign in 2010 on the dangers of pollution, however no awareness campaigns were found with regards to environmentally friendly FMCG products not even from the Ministry of Health who is currently active on food ingredients and standards or the Ministry of Industry. As for laws to protect the consumer and ensure that the products promoted as environmentally friendly are truly as claimed, these national legislations are absent even for organic food . Organic certification in Lebanon is performed by two local certifying bodies: LibanCert/Quacerta

and IMC-Liban. LibanCert/Quacerta is the only Lebanese body for inspection and certification in the field of organic. It was established in November 2005 and operates under the umbrella of the American University of Beirut, with the support of the Swiss government and FiBL, the Swiss Research Institute of Organic Agriculture. LibanCert is able to offer certification for all relevant markets including the European Regulation for Council regulations EC 2092/91 and the US National Organic Program (Sfeir, 2010). However, this organization and practice is not taken so seriously.

CHAPTER 3: METHODOLOGY

This chapter describes the research design, approach and hypothesis formed. In addition data collection and analysis procedures are highlighted with detailed description of the questionnaire design and limitations confronted.

3.1 Research Design

This paper aims to understand how familiar the Lebanese are with environmentally friendly FMCG and explore the major factors affecting behavior towards these products. The paper is an inspiration of a study by Magali Morel and Francis Kwakye in 2012 for the Swedish market. The research title was "Green marketing: Consumers' Attitudes towards Eco-Friendly Products and Purchase Intention in the Fast Moving Consumer Goods (FMCG) sector". The aim of Morel and Kwakye research was to focus on the factors that affect consumer behavior towards environmentally friendly FMCG which are marketing mix, word of mouth, positive attitude and satisfaction factors.

The difference between this paper and the latter, is that this paper focuses on marketing mix (4 Ps), positive attitude, demographic factors in addition to awareness instead of word of mouth and satisfaction to affect behavior, since in Lebanon green marketing in general is at its initial stage were the majority is still not aware of environmentally friendly products or activities. Where as in Sweden the majority is aware, they consume to some extent environmentally friendly products and it became a lifestyle to think green. In Sweden, they have adopted waste management household plans since year 2006 and are transforming their trash into energy for heating purposes, with more than 99 percent of household waste recycled and they are aiming for zero waste. In comparison, in Lebanon when the trash hit the streets in July 2015 and the remains were uncollected for 8 consecutive months; it was only then, when the government and the active organizations started proposing waste and trash segregation at the source for example at the homes. Hence in light of the above, we believe environment sensitive thinking in Lebanon is at the "problem recognition stage" as for Sweden, they are at "adoption or acceptance stage".

3.2 Research Approach

In general a research approach is divided into two types which are deductive and inductive. These two methods of reasoning are very different when conducting research, however at times they complement each other and could be used together in the same research. Inductive reasoning, by its very nature, is more open-ended and exploratory, especially at the beginning; it contributes to the emergence of new theories at the end of the study. Deductive reasoning is narrower in nature and is concerned with testing or confirming hypothesis, based on existing theories. This research is mainly confirmatory since it is based on a previous research , however it has an explanatory aspect as well since there were no similar studies published (that we are aware of) in Lebanon.

Saunders et al. (2007) distinguish the major differences between deductive and inductive research approaches as explained in Table 1 in the following manner:

Deductive methods	**Inductive methods**
▪ Principles based on science ▪ Movement is done from theory to data ▪ Casual relationships between variables need to be explained ▪ Quantitative type of data is mainly collected ▪ Measures of control are applied in order to ensure the validity of data ▪ Concepts are operationalized in order to ensure the clarity of definitions ▪ The approach is highly structured ▪ Researcher is independent from the	▪ The meaning of human attachment to events are aimed to be explored ▪ Research context is understood in a deeper manner ▪ Qualitative type of data is collected ▪ More flexible approach to research structure to ensure provisions for changes during the research ▪ Researcher is perceived to be a part of the research process ▪ Research findings do not have to be generalized

research process ▪ Samples need to be selected of a sufficient size in order to be able to generalize research conclusions	

Table 1: Difference between Deductive and Inductive Methods (Saunders et al., 2007)

Concerning this study, a deductive approach is used since theories discussed are based on available literature, the topic researched is an adaptation to a study done abroad, data collected is mainly quantitative , and hypothesis are developed in the next section to be tested for scientific results that can be generalized for Lebanon.

3.3 Hypothesis

The following hypothesizes were derived from in-depth literature review and the common knowledge based on experience, association and observation of the Lebanese public.

H1. People are able to distinguish environmentally friendly products.

H2. There is a general agreement among the Lebanese public that government, society and producing companies should work towards promoting awareness on ecofriendly products.

H3. People have similar attitudes towards eco-friendly products and their impact on society and the environment.

H4. The Lebanese general public manifested a high level of trust and acceptance in the environmentally friendly products available in the Lebanese market.

H5. The purchase behavior varies with gender, age, marital status, employment status, education level and income level.

H6. The attitude towards eco-friendly products varies with gender, age, marital status, employment status, education level and income level.

H7. The perceived value of eco-friendly products varies with gender, age, marital status, employment status, education level and income level.

H8. The perceived quality of eco-friendly products varies with gender, age, marital status, employment status, education level and income level.

3.4 Data Collection Procedures

Primary data of this research is collected through a survey distributed to consumers and the content collected in quantitative data format. The questionnaire was self-completion type, it was distributed by hand and completed by the respondents, hence the respondents were not influenced by the interviewer; they expressed their opinions objectively. Since there is a time limit factor to this study, the survey was conducted over a period of three weeks during the month of February 2016. A sample of 165 questionnaires was distributed, out of which 145 were considered to represent a Lebanese population of 5,948,331 according to World meter website in the month of March 2016.

3.4.1 Sampling Method

Sampling method used is convenience sampling which is a non-probability sampling technique, as consumers are available and can be easily accessible. One of the main advantages of this technique is that the information collected normally gives a general initial and quick result on the topic. The survey was distributed to residents of Lebanon mainly in the areas of Beirut, Mount Lebanon and the North. The sampled residents were randomly selected, out of the 165 surveys, 85 were distributed at NDU focusing on Masters Students, Staff and Instructors, out of which 70 were fully filled. As for the other 80, they were distributed by hand to consumers who were over the age of 21 years, and a primary responsible person for household purchasing decisions. The surveys were distributed at a gym, clothes store, music instruments store and a residency compound.

The aim was to have a profile of different age groups, lifestyle, gender, education level, marital status and income.

3.4.2 Questionnaire Design

The questionnaire was prepared in English, composed of 13 closed questions split between multiple choice questions and scale questions. Multiple choice questions are used to gather demographic information, with questions that require a single answer and others that offer multiple answer selections. As for scale questions, likert scale questions form were used to measure people's attitudes, perceptions and opinion. Likert (1932) developed the principle of measuring attitudes by asking people to respond to a series of statements about a topic, in terms of the extent to which they agree with them, and so tapping into the cognitive and affective components of attitudes. Likert scale questions were used since responses are easily quantifiable and allow for extensive analysis. In addition, it does not require the respondent to provide a concrete yes or no answer; the respondent can have neutral or undecided feelings towards the topic.

At the beginning of the questionnaire there is a brief introduction paragraph over the main subject of the survey and the side responsible for conducting it, the aim was to inform the respondents that this is not a survey for any commercial purpose and it's a confidential one. Following the introduction, the questionnaire consists of three sections, general information on the topic section, a detailed information on attitudes, behavior and perception section; and the demographics section. The first section has two questions, which were set to measure consumer's awareness on environmentally friendly products and general knowledge of characteristics of these products regardless being food or non-food products.

The second section has 4 questions (3,4,5,6,), question 3 lists environmentally friendly FMCG product categories most commonly found in supermarkets, in an attempt to measure purchase behavior of these products on a scale of "currently purchase" to "will never purchase". Question 4 is a multiple scale question, with statements on

environmentally friendly products marketing mix, that respondents need to give their opinion on ranging from strongly agree to strongly disagree. Question 5 is also a likert scale question to measure respondent attitude towards several statements and issues related to environmentally friendly products. The question 6 is to measure were respondents buy from their environmentally friendly products; and that is related to the marketing mix 4 P's that is the place aspect.

As for the third section, it is designed to understand who the Lebanese consumers are; whether they are ungreen, grouser or maybe green as Taleb (1997) classified them; knowing that we do have also true green activists in Lebanon. An initial profile could be formed through collecting important demographics of gender, age, nationality, marital status, employment status, education level and income. Raw data is needed to proof that people with different demographics have different priorities, responsibilities, lifestyle and knowledge.

3.4.3 Questionnaire Pretesting

Prior to the distribution, the questionnaire was pretested among 15 consumers who had different knowledge level of environmentally friendly products. The pretest aimed to ensure that the questions can be understood. Any section in the questionnaire which the respondents could not comprehend was modified to make it perfectly understandable. For example, there is a question which states that eco-friendly products are properly promoted; to one respondent the term promoted was vague an example of in store or advertising was added to the question. In addition, a suggestion was given by one of the respondents to include the income scale which was taken into consideration, since income is an aspect that would lead respondents to be price sensitive in their decisions. Finally, the term environmentally friendly was changed to eco-friendly since it's a simpler more widely used term among consumers.

3.5 Data Analysis Procedures

Filled questionnaires were collected and the data was entered in Statistical Package for Social Sciences. Various statistical tools and techniques were used to analyze the data. Data Analysis is the process of systematically applying statistical and/or logical techniques to describe and illustrate, condense and recap, and evaluate data (Shamoo and Resnik, 2003). For quantitative data assessment, simple descriptive statistics is done which involves simple Percentages, Frequencies and Means to analyze mainly the demographics. A more detailed statistical analysis is carried out through Factor Analysis and Multiple Regression methods to conduct hypothesis testing and critical analysis of results obtained.

3.6 Limitations

Limitations occur for all research studies, while conducting the survey few participants above the age 45 had basic English knowledge and hence requested some assistance in translation. For future studies an Arabic and French version of questionnaire would avoid such happenings. Another limitation is the consumer profile, an important category in Lebanon not to be disregarded is the consumer who lives below the poverty level and earns even below the minimum wage, according to CIA World factbook for the year 2014, 28% of Lebanese live below the poverty line. This consumer may not be covered in this study; however he/she is part of the population, even though this topic would not be the most relevant to his/her lifestyle and needs.

CHAPTER 4: DATA ANALYSIS AND FINDINGS

In this section, data results will be analyzed by using several multivariate techniques. In addition, reliability of findings will be evaluated using Cronbach's alpha. The findings will be explained and consolidated throughout this chapter to aid in drawing a concrete conclusion.

4.1 Descriptive Statistics

There were a total of 145 questionnaires collected which were analyzed, out of which 56.6% were females and 43.4 % were males. The largest age group is 25-34 with 35.2% and the minorities of the respondents were above 55 years old (4.8%) as represented in table 2 age frequencies. Lebanese respondents were 93.1% while 6.9% (10 respondents) were other nationalities, however there were 4 respondents who selected the 2 categories since they had Lebanese and another nationality.

Single respondents (55.2%) were more than the married, but the majority of the married which is 35.9% (52 respondents) had kids and 15.2% were males married with kids. Concerning the education level of the respondents, 51% (74 respondents) had Graduate degree this is predictable since half the questionnaires were distributed to University Instructors, Masters Students and Staff. Respondents who held College degree were 31 % and respondents with High School education were 17.2%, only 1 respondent had some education level and he was above the age 55.

Most of the sample was employed (77.9%) almost half males (38.6%) and half females, 11% were unemployed, the cross tabulation table 3 showed that 9.7% were females unemployed, not surprisingly since they could be housewives. The minority were the retired (1.4%) and the balance were students (9.7%, 14 respondents). Finally, as for the income respondents with the least annual income below $8000 were 17.8% and the ones with the highest income above $60000 were 10.9%, the largest category were the people with $8000-$20000 annual income.16 respondents did not respond to the income question could be either since they were unemployed or students so had no income, or they were conservative when it came to financial declaration. Table 2 represents frequencies for age and marital status, in addition table 4 represent means comparison of

gender and purchase behavior. Female's means were higher for all categories except for energy efficient bulbs and appliances. All the balance relevant descriptive statistics for the sample under this study are presented in appendix A.

AGE

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18-24	39	26.9	26.9	26.9
	25-34	51	35.2	35.2	62.1
	35-44	32	22.1	22.1	84.1
	45-54	16	11.0	11.0	95.2
	+55	7	4.8	4.8	100.0
	Total	145	100.0	100.0	

MARITAL STATUS

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Single	80	55.2	55.2	55.2
	married have no kids	13	9.0	9.0	64.1
	married have kids	52	35.9	35.9	100.0
	Total	145	100.0	100.0	

Table 2.Frequencies of Age and Marital Status

GENDER * EMPLOYMENT STATUS

			Employment status				
			employed	unemployed	student	retired	Total
Gender	female	Count	57	14	9	2	82
		% of Total	39.3%	9.7%	6.2%	1.4%	56.6%
	male	Count	56	2	5	0	63
		% of Total	38.6%	1.4%	3.4%	0.0%	43.4%
Total		Count	113	16	14	2	145
		% of Total	77.9%	11.0%	9.7%	1.4%	100.0%

Table 3.Crosstabulation of Gender and Employment Status

GENDER (PURCHASE BEHAVIOR)

GENDER		Cleaning household supplies	Health care and cosmetic products	Organic or bio food	Recycled paper or plastic goods	Energy efficient appliances/ bulbs	Organic clothing
female	Mean	3.80	4.01	3.96	4.06	4.23	3.06
	N	82	82	82	82	82	82
	Std. Deviation	.867	.896	.909	1.035	1.010	1.070
male	Mean	3.56	3.40	3.75	4.03	4.33	2.87
	N	63	63	63	63	63	63
	Std. Deviation	.929	1.199	1.031	.967	.880	1.171
Total	Mean	3.70	3.74	3.87	4.05	4.28	2.98
	N	145	145	145	145	145	145
	Std. Deviation	.900	1.079	.966	1.002	.954	1.115

Table 4.Means Comparison for Gender on Purchase behavior

4.2 Factor Analysis using Principle Component Method of Extraction

After the elimination of different observations due to the variation in the answers and the doubt of bias, we were left with 145 answered questionnaires. The sample size is almost a 4:1 (ratio of observations to variables, 145 observations left; 41 variables), which is almost acceptable. However, some of the variables were removed after conducting the first analysis which brought the ratio to a more acceptable value. Also, the sample size of 145 provides an adequate basis for the calculation of the correlations between variables.

Reliability Testing

To test the reliability of the questionnaire on the remaining 145 respondents as shown in table 5 a reliability test was conducted. The cases were 100% valid and no exclusion occurred. In addition, the Cronbach's alpha was tested and yielded 0.836 which is highly accepted as per table 6. Thus, the questionnaire that was conducted is valid and reliable.

Case Processing Summary

		N	%
Cases	Valid	145	100.0
	Excluded[a]	0	.0
	Total	145	100.0

a. Listwise deletion based on all variables in the procedure.

Table 5.Processing Summary

Reliability Statistics

Cronbach's Alpha	N of Items
.836	50

Table 6.Cronbach's Alpha results

Conceptual and Statistical verifications were conducted in order to ensure the applicability and accuracy of our analysis. Our conceptual assumptions and logic

provide a justification for the use of factor analysis in the study of the different variables in our study since correlations among those variables are sure to be found.

In addition, statistical verifications are applied. The first step is a visual examination of the spearman's correlations, identifying those that are 90% and 95% statistically significant. The table 7 shows the correlation matrix for the 6 variables. Inspection of the correlation matrix reveals that an accepted number of correlations are significant. Since the data is non-parametric spearman's rho was measured for correlations. The Spearman's rho table is too large; part of the table is displayed below for the first 6 variables.

Spearman rho		Natural Renewable Material	Less energy to produce	Little no harmful material	More energy when used	Non polluting	Sustainably harvested extracted processed transported
Natural Renewable Material	Correlation Coefficient	1.000	.646**	.562**	-.047	.586**	.317**
	Sig. (2-tailed)		.000	.000	.572	.000	.000
	N	145	145	145	145	145	145
Less energy to produce	Correlation Coefficient	.646**	1.000	.618**	-.085	.469**	.336**
	Sig. (2-tailed)	.000		.000	.312	.000	.000
	N	145	145	145	145	145	145
Little no harmful material	Correlation Coefficient	.562**	.618**	1.000	-.064	.471**	.294**
	Sig. (2-tailed)	.000	.000		.448	.000	.000
	N	145	145	145	145	145	145
More energy when used	Correlation Coefficient	-.047	-.085	-.064	1.000	-.121	.000
	Sig. (2-tailed)	.572	.312	.448		.148	.995
	N	145	145	145	145	145	145
Non polluting	Correlation Coefficient	.586**	.469**	.471**	-.121	1.000	.276**
	Sig. (2-tailed)	.000	.000	.000	.148		.001
	N	145	145	145	145	145	145
Sustainably harvested extracted Processed Transported	Correlation Coefficient	.317**	.336**	.294**	.000	.276**	1.000
	Sig. (2-tailed)	.000	.000	.000	.995	.001	
	N	145	145	145	145	145	145

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

Table 7.Spearman's Rho Partial Correlation

We can assess the overall significance of the correlation matrix with the Bartlett test and the factorability of the overall set of variables and individual variables using the measure of sampling adequacy (MSA). Because factor analysis will always derive factors, the objective is to ensure a base level of statistical correlation within the set of variables, such that the resulting factor structure has some objective basis.

In our case, Bartlett's test of sphericity, finds that the correlations, when taken collectively, are significant at the 0.01 level. It gives a value of 2629.941 as shown in the table 8, which is above the acceptable range (> 500), indicating significance.

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.796
Bartlett's Test of Sphericity	Approx. Chi-Square	2629.941
	df	820
	Sig.	.000

Table 8.KMO and Bartlett's Test

However, Bartlett test only indicates the presence of nonzero correlations, not the pattern of these correlations. The MSA looks not only at the correlations, but also at patterns between variables. In our situation, the overall MSA value falls in the acceptable range (> 0.5) with a value of 0.796, as shown in the table above.

In addition to the test of significant correlations, partial correlations were analyzed to further investigate the applicability of factor analysis. A partial correlation is the correlation that is unexplained when the effects of other variables are taken into account. The partial correlations off-diagonal, are small indicating that there are "true" factors since variables could be explained by the variables loading on the factors. SPSS provides the anti-image correlation matrix, which is the negative value of the partial correlation. The partial correlations on the diagonal should be >0.5 to retain the variable in the factor analysis. According to the results, no variable should be removed from the analysis because all partial correlations on the diagonal are above 0.5 so all the variables should be retained.

A variable's communality as shown in table 9 is the estimate of its shared variance among the variables as represented by the derived factors. Only 1 variable (18) "easily accessible gave a value less than 0.5 for the communality thus was removed from the analysis. We were left with 40 variables understudy.

	Extraction
1. Natural Renewable Material	.773
2. Less energy to produce	.706
3. Little no harmful material	.679
4. More energy when used	.653
5. Nonpolluting	.727
6. Sustainably harvested extracted processed transported	.533
7. Not recyclable	.698
8. Socially environmentally responsible companies	.667
9. Organic Bio Food	.646
10. Recycled paper plastic goods	.717
11. Ecofriendly cleaning household supplies	.671
12. Energy efficient appliances bulbs	.588
13. Ecofriendly healthcare cosmetic products	.564
14. Organic Clothing	.632
15. Positive long term impact	.653
16. Eco friendly food products overpriced	.675
17. Eco friendly nonfood products overpriced	.717
18. Easily accessible	.420
19. Food products Superior quality	.698
20. Non-food products Superior quality	.696
21. Not really ecofriendly as claimed	.627
22. Healthy	.626
23. Proper promotion	.742
24. Common knowledge	.757
25. Trusted labels	.625
26. Read labels	.707
27. Pay more for food products	.739
28. Pay more for non-food products	.705
29. Shopping	.723
30. Sacrifice quality	.693
31. Time consuming	.646

32. Organic food	.644
33. Environmentally conscious decisions	.570
34. Encourage family & friends	.674
35. Advocating for environment	.642
36. Awareness Campaigns	.682
37. Last concern	.581
38. No difference	.657
39. Promoting to increase awareness	.726
40. Financial support	.556
41. Companies generate profits	.524

Extraction Method: Principal Component Analysis.

Table 9.Communalities

The KMO and Bartlett's tests were done again as shown in table 10 and were still valid.

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.798
Bartlett's Test of Sphericity	Approx. Chi-Square	2573.630
	df	780
	Sig.	.000

Table 10.KMO and Bartlett's Test (2)

Component analysis was applied in our case for the Factor Analysis, since we are conducting a confirmatory analysis. In addition, total variance is considered since prior knowledge suggests that specific and error variance represent a relatively small proportion of the total variance.

We were not bound by preconceptions as to the number of factors that should be retained. We applied the latent root criterion of retaining factors with eigenvalues greater than 1, and 11 factors were retained.

The Scree test in figure 4 also gave the same result. The 11 factors retained represent 66.598% of the variance of the 40 variables, deemed sufficient in terms of total variance explained as shown in table 11. Combining all these criteria together leads to the conclusion to retain 11 factors for further analysis.

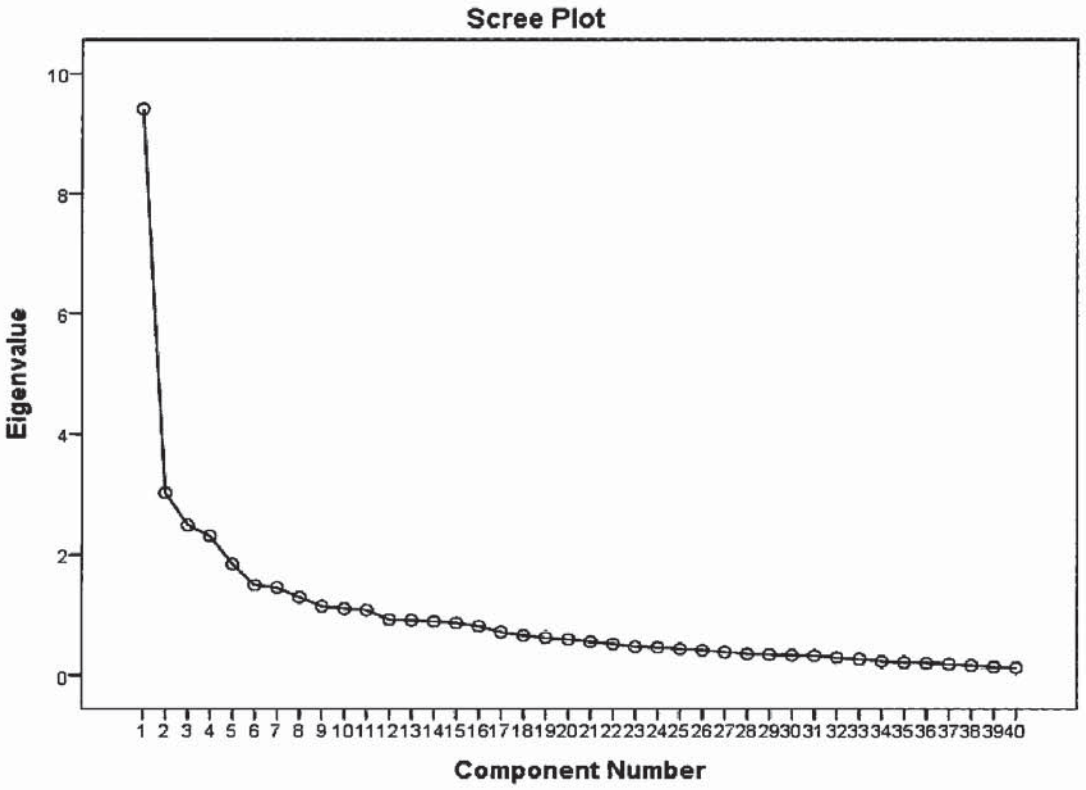

Figure 4. Scree Test

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	9.407	23.518	23.518	9.407	23.518	23.518
2	3.024	7.560	31.078	3.024	7.560	31.078
3	2.489	6.222	37.300	2.489	6.222	37.300
4	2.307	5.768	43.068	2.307	5.768	43.068
5	1.841	4.602	47.671	1.841	4.602	47.671
6	1.496	3.739	51.410	1.496	3.739	51.410
7	1.454	3.635	55.044	1.454	3.635	55.044
8	1.294	3.235	58.280	1.294	3.235	58.280
9	1.145	2.863	61.142	1.145	2.863	61.142
10	1.102	2.755	63.898	1.102	2.755	63.898
11	1.080	2.700	66.598	1.080	2.700	66.598
12	.921	2.304	68.902			
13	.910	2.275	71.176			
14	.891	2.227	73.403			

15	.866	2.164	75.567			
16	.811	2.029	77.596			
17	.714	1.786	79.382			
18	.657	1.643	81.025			
19	.621	1.553	82.579			
20	.593	1.483	84.061			
21	.551	1.378	85.439			
22	.519	1.297	86.736			
23	.470	1.174	87.911			
24	.462	1.155	89.065			
25	.433	1.084	90.149			
26	.412	1.029	91.178			
27	.381	.953	92.131			
28	.353	.882	93.013			
29	.340	.850	93.863			
30	.329	.823	94.686			
31	.323	.807	95.494			
32	.290	.725	96.219			
33	.266	.666	96.885			
34	.230	.574	97.459			
35	.212	.529	97.988			
36	.200	.499	98.487			
37	.184	.461	98.948			
38	.161	.403	99.351			
39	.137	.342	99.692			
40	.123	.308	100.000			

Extraction Method: Principal Component Analysis.

Table 11.Total Variance Explained

Initially, un-rotated matrix was computed as shown in table 12, containing the factor loadings for each variable on each factor. For a sample of 145, on a .05 significance level, any factor loading higher than around 0.45 was considered significant.

	Component										
	1	2	3	4	5	6	7	8	9	10	11
Natural Renewable Material	.567										
Less energy to produce	.570										
Little no harmful material	.461										
More energy when used											
Nonpolluting			.527								
Sustainably harvested			.496								
processed transported											
Not recyclable		.462									
Socially environmentally											
responsible companies											
Organic Bio Food	.590										
Recycled paper plastic goods	.467										
Eco friendly cleaning supplies	.672										
Energy efficient appliances											
Ecofriendly healthcare	.608										
cosmetic products											
Organic Clothing	.554										
Positive long term impact	.645										
Eco food products overpriced				.487							
Eco non-food products				.542		-.499					
overpriced											
Food products Superior	.469										
quality											
Non-food products Superior				.498							
Quality											
Not really ecofriendly as				.453							
claimed											
Healthy	.468							-.504			
Proper promotion		.571									
Common knowledge		.559									
Trusted labels		.481									
Read labels	.699										
Pay more for food products	.682										

Pay more for non-food products	.467						-.494					
Shopping	.688											
Sacrifice quality	.521											
Time consuming												
Organic food	.622											
Environmentally conscious decisions	.541											
Encourage family & friends	.729											
Advocating for environment												
Awareness Campaigns	.631											
Last concern	-.530											
No difference	-.560											
Promoting to increase awareness	.589											
Financial support	.555											
Companies generate profits					.473							

Extraction Method: Principal Component Analysis.
a. 11 components extracted.

Table 12.Un-rotated: Component Matrix[a]

Due to the existence of different cross loadings, rotation was necessary. When rotations were conducted initially, the only two rotations that did not contain any cross loadings were the Varimax and Promax. However, the Varimax rotation was adopted because it was able to retain as much variables as possible. Only 4 variables had to be removed with the Varimax rotation, whereas with the Promax rotation 6 variables had to be removed (including the ones excluded with the Varimax) because they had no factor loadings with any of the factors.

Going back to the un-rotated matrix we started removing the variables one by one. The factor analysis was applied again without 4 variables (Organic bio food, Energy efficient appliances bulbs, Eco-friendly healthcare cosmetic products and Easily accessible) which had no factor loadings with any of the factors.

Partial correlation was applied again, there were 2 variables that had partial correlations below 0.5: ecofriendly food products overpriced and non-food products superior quality.

The KMO and Bartlett's tests were re-conducted for the third time as shown in table 13, results were in the acceptable range (>500).

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.813
Bartlett's Test of Sphericity	Approx. Chi-Square	2172.327
	df	595
	Sig.	.000

Table 13.Third KMO and Bartlett's Test (3)

When correlation was calculated again, no partial correlations were below 0.5. Hence 35 variables were kept understudy and with 145 observations, it is at better observations to variables ratio: 4.2:1. Next the latent root criterion of retaining factors with eigenvalues greater than 1 was applied, and 10 factors were retained. The Scree test also gave the same result. The 10 factors retained represent 66.955% of the variance of the 35 variables, deemed sufficient in terms of total variance explained. Combining all these criteria together leads to the conclusion to retain 10 factors for further analysis.

Component analysis was conducted again and cross loadings were found so different rotations were applied. Variable 31 which is " Time consuming" had cross loading in all rotations so was removed from the analysis. Partial correlation was reapplied and correlations on the diagonal were all above 0.5, KMO and Bartlett's Test were done again as shown in table 14 and results were within the acceptable range.

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.815
Bartlett's Test of Sphericity	Approx. Chi-Square	2123.992
	Df	561
	Sig.	.000

Table 14.KMO and Bartlett's Test (4)

The latent root criterion of retaining factors was applied, 9 variables were retained according to the Scree plot, eigenvalues and cumulative variances. The 9 factors retained represent 65.122% of the 34 variables as shown in table 15.

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	8.603	25.302	25.302	8.603	25.302	25.302
2	2.751	8.091	33.394	2.751	8.091	33.394
3	2.376	6.989	40.383	2.376	6.989	40.383
4	1.876	5.518	45.901	1.876	5.518	45.901
5	1.641	4.825	50.726	1.641	4.825	50.726
6	1.362	4.007	54.733	1.362	4.007	54.733
7	1.261	3.710	58.443	1.261	3.710	58.443
8	1.229	3.613	62.056	1.229	3.613	62.056
9	1.042	3.066	65.122	1.042	3.066	65.122
10	.974	2.864	67.986			
11	.937	2.757	70.743			
12	.868	2.553	73.296			
13	.809	2.378	75.675			
14	.763	2.245	77.920			
15	.700	2.060	79.979			
16	.611	1.797	81.776			
17	.573	1.684	83.460			
18	.531	1.562	85.022			
19	.519	1.526	86.548			
20	.495	1.456	88.004			
21	.435	1.279	89.284			
22	.426	1.254	90.537			
23	.399	1.174	91.711			
24	.375	1.102	92.813			
25	.343	1.008	93.821			
26	.329	.966	94.787			
27	.297	.873	95.660			
28	.281	.828	96.488			
29	.253	.743	97.231			
30	.233	.685	97.916			
31	.208	.613	98.529			
32	.199	.585	99.114			
33	.165	.485	99.598			
34	.137	.402	100.000			

Extraction Method: Principal Component Analysis.

Table 15.Total Variance Explained (2)

Finally, Principle component analysis was conducted again, cross loadings existed hence rotations were applied. Two rotations had the same categorization; these rotations were Equamax and Varimax methods with loadings greater than 0.5. The table 16 displays Varimax rotated components of 34 variables.

	Component								
	1	2	3	4	5	6	7	8	9
1. Natural Renewable Material	.752								
2. Less energy to produce	.769								
3. Little no harmful material	.761								
4. More energy when used						.585			
5. Nonpolluting	.776								
6. Sustainably harvested processed transported	.558								
7. Not recyclable									.560
8. Socially environmentally responsible companies	.565								
10. Recycled paper plastic goods					.736				
11. Ecofriendly cleaning supplies					.609				
14. Organic Clothing					.695				
15. Positive longterm impact							.524		
17. Eco nonfood products overpriced									.755
19. Food products Superior quality							.734		
21. Not really ecofriendly as claimed									.477
22. Healthy							.733		
23. Proper promotion				.845					
24. Common knowledge				.791					
25. Trusted labels				.700					
26. Read labels		.688							
27. Pay more for food products								.621	
28. Pay more for nonfood products								.720	
29. Shopping		.724							
30. Sacrifice quality		.727							
32. Choose organic food		.615							

33. Environmentally conscious decisions			.623						
34. Encourage family & friends		.643							
35. Advocating for environment						.761			
36. Awareness Campaigns			.708						
37. Last concern						.626			
38. No difference						.559			
39. Promoting to increase awareness			.795						
40. Financial support			.610						
41. Companies generate profits								.667	

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 10 iterations.

Table 16.Varimax: Rotated Component Matrix[a]

The first factor, which accounted for the greatest value of the variance at 25.30%, contained variables 1, 2, 3, 5, 6, and 8 which are all characteristics of eco-friendly products. These all loaded on component 1 and were named "Knowledge or Familiarity". Component 2 at 8.09% of the variance, contained variables 26 (read eco-friendly labels on products), 29 (look for eco-friendly products whenever I shop), 30 (sacrifice quality to use recycled materials), 32 (choose organic food because it's better quality) and 34 (encourage family & friends to purchase healthier food). Variables of factor 2 are personal attitudes and opinions towards eco-friendly products with emphasis on quality attributes and hence was named "Perceived Quality". Component 3 explained 6.99% of the variance and was composed of variables 33 (we are all responsible for environmentally conscious decisions), 36 (government should encourage consumption through awareness campaigns), 39 (promoting in the social media would increase awareness) and 40 (government should support eco-friendly firms financially). All 4 variables are attitudes that reflect importance of promoting awareness on eco-friendly products through government, public and producing companies; this third factor was named "Promoting Awareness".

Component 4 variance at 5.52% contained variables 23, 24 and 25 which are related to attitudes with regards to eco-friendly products in terms of being properly promoted or

advertised, are common knowledge and have trusted labels on the package. As such, component 4 was named "Advertising and Promotion". The fifth factor accounted for the variance 4.83%, the variables included 10, 11 and 14 which are related to purchase behavior towards recycled paper or plastic, cleaning supplies and organic clothing. Based on this categorization the component 5 was named" Purchase Behavior". Component 6 explained variance 4.00% which is composed of variables 4 (require more energy when product is used) a characteristic of eco-friendly product, 35 (advocating for the environment is useless in our society), 37 (there are many issues to worry about, consuming eco-friendly products is my last concern) and 38 (my consumption of eco-friendly products doesn't make a difference). These variables are attitudes and feelings of the real impact of eco-friendly products on our Lebanese society and therefore the component 6 was named "Impact on Society and Environment".

Component 7 at 3.71% variance contained variables 15, 19 and 22; the major benefits of eco-friendly products consumption which are long term impact on environment and society, superior quality than conventional products and healthier when consumed. Based on this finding, component 7 was named "Benefits". The eighth factor which explained 3.61% of variance, contained 3 variables all related to how respondents perceive the value and price of eco-friendly products, the attitudes included: producing companies generate considerable profits, I am willing to pay more for eco-friendly food products and non-food products. Considering the type of attitudes under this component, it was named "Perceived Value". Finally, component 9 the weakest factor had 3.07% variance and contained variables 7 (not recyclable) eco-friendly product attribute, 17(non-food products are overpriced) and 21(are not really eco-friendly as claimed). These variables are major negatives that respondents feel towards eco-friendly products and thus this last component was named "Disadvantages".

Hence the factors were classified as shown in table 17 from 1 to 9, with 1 ranked the highest loading and 9 the lowest loading.

Factor 1:	Knowledge (familiarity)
Factor 2:	Perceived quality
Factor 3:	Promoting awareness
Factor 4:	Advertising/promotion

Factor 5	Purchase behavior
Factor 6:	Impact on society and environment (attitude)
Factor 7:	Benefits
Factor 8:	Perceived value
Factor 9:	Disadvantages

Table 17.Factor's Classifications

4.3 Multiple Regression

In the this section further analysis was done through Regression since we were interested in factor 1 which is the knowledge on eco-friendly products and factor 2 which is the perceived quality in the minds of the consumer. The Regression investigates how strong the relation is between the two factors and the variables within each factor, it attempts to determine the strength of one dependent variable and a series of several independent variables. Table 18 below shows the two factors and variables listed:

Factor 1: Knowledge	**Factor 2 : Perceived Quality**
Natural Renewable Material	Read labels
Less energy to produce	Shopping
Little no harmful material	Sacrifice quality
Non-polluting	Organic food
Sustainably harvested extracted processed transported	Encourage
Socially environmentally responsible companies	

Table 18: List of Factors 1 and 2 Variables

4.3.1 Regression on factor 1 with its variables:

The R-squared which is a measure of goodness of fit, which explains the percentage of variation in the dependent variable explained by the independent variables, gave a 92% in our case as per table 19. The difference between the adjusted R-squared and the R-squared takes into consideration the fact that when you increase the number of independent variables R-squared increases. In our case the difference is less than 10%, meaning that there are no independent variables to be eliminated.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.959[a]	.919	.916	.28995986

a. Predictors: (Constant), Sociallyenvironmentallyresponsiblecompanies, littlenoharmfulmaterial, sustainablyharvestedextractedprocessedtransported, Nonpolluting, NaturalRenewableMaterial, lessenergytoproduce

Table 19. Factor 1 and Variables Regression

The significance of the constant and all the independent variables taken in this model is less than 0.05, meaning that all the variables should be retained in the model as shown in table 20. As a result the model can be represented in the following equation, where the independent variables are inserted in the equation in order from the highest weight till the lowest:

Factor score 1 = -6.454 + 0.423(Nonpolluting) + 0.299(littlenoharmfulmaterial) + 0.273(lessenergytoproduce) + 0.222(sustainablyharvestedextractedprocessedtransported) + 0.214(NaturalRenewableMaterial) + 0.138(Sociallyenvironmentallyresponsiblecompanies)

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-6.454	.168		-38.507	.000
	NaturalRenewableMaterial	.214	.046	.163	4.597	.000
	lessenergytoproduce	.273	.042	.229	6.429	.000
	littlenoharmfulmaterial	.299	.041	.246	7.343	.000
	Nonpolluting	.423	.043	.319	9.888	.000
	sustainablyharvestedextractedprocessedtransported	.222	.030	.203	7.310	.000
	Sociallyenvironmentallyresponsiblecompanies	.138	.031	.127	4.422	.000

a. Dependent Variable: REGR factor score 1 for analysis 1

Table 20. Regression Factor Score 1

4.3.2 Regression on factor 2 with its variables:

The R-squared gave a 76% in this case which denotes that the independent variables explain 76% of the behavior of factor score 2 as per table 21. The difference between the adjusted R-squared and the R-squared is less than 10%, meaning that there are no independent variables to be eliminated.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.869[a]	.756	.747	.50308477

a. Predictors: (Constant), Encourage, Sacrificequality, Organicfood, Readlabels, Shopping

Table 21.Factor 2 and Variables Regression

The significance of the constant and all the independent variables taken in this model is less than 0.05, meaning that all the variables should be retained in the model as shown in table 22. As a result the model can be represented in the following equation, where the independent variables are inserted in the equation in order from the highest weight till the lowest:

Factor score 1 = -3.205 + 0.361(Sacrificequality) + 0.208(Readlabels) + 0.205(Shopping) + 0.123(Organicfood) + 0.106(Encourage)

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-3.205	.174		-18.454	.000
	Readlabels	.208	.055	.227	3.802	.000
	Shopping	.205	.058	.222	3.545	.001
	Sacrificequality	.361	.046	.402	7.753	.000
	Organicfood	.123	.053	.126	2.309	.022
	Encourage	.106	.052	.116	2.043	.043

a. Dependent Variable: REGR factor score 2 for analysis 1

Table 22.Regression Factor Score 2

4.3.3 Regression on factor 1 with all variables in factor 1 and 2:

The R-squared gave a 96% in table 23 which denotes that the independent variables explain 96% of the behavior of factor score 1. The difference between the adjusted R-squared and the R-squared is less than 10%, meaning that there are no independent variables to be eliminated.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.978[a]	.957	.954	.21473427

a. Predictors: (Constant), Encourage, sustainablyharvestedextractedprocessedtransported, Nonpolluting, Sacrificequality, Sociallyenvironmentallyresponsiblecompanies, Organicfood, littlenoharmfulmaterial, Readlabels, NaturalRenewableMaterial, lessenergytoproduce, Shopping

Table 23.Factor 1 and Variables in Factor 1 and 2 Regression

The significance of the constant and all the independent variables, except two (Readlabels and Sacrificequality) is less than 0.05, representing the variables that should be kept in the model as shown in table 24. As a result the model can be signified in the following equation, where the independent variables are inserted in the equation in order from the highest weight till the lowest:

Factor score 1 = -6.078 + 0.383(Nonpolluting) + 0.327(littlenoharmfulmaterial) + 0.312(lessenergytoproduce) + 0.244(NaturalRenewableMaterial) + 0.213(sustainablyharvestedextractedprocessedtransported) + 0.193(Sociallyenvironmentallyresponsiblecompanies) - 0.096(Encourage) - 0.083(Organicfood) – 0.066(Shopping)

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-6.078	.135		-45.011	.000
	NaturalRenewableMaterial	.244	.035	.186	6.909	.000
	lessenergytoproduce	.312	.032	.262	9.737	.000
	littlenoharmfulmaterial	.327	.030	.269	10.782	.000
	Nonpolluting	.383	.033	.289	11.739	.000
	sustainablyharvestedextractedprocessedtransported	.213	.023	.194	9.376	.000
	Sociallyenvironmentallyresponsiblecompanies	.193	.024	.178	8.043	.000
	Readlabels	.012	.025	.014	.504	.615
	Shopping	-.066	.025	-.072	-2.652	.009
	Sacrificequality	-.001	.020	-.001	-.053	.958
	Organicfood	-.083	.023	-.085	-3.575	.000
	Encourage	-.096	.023	-.105	-4.234	.000

a. Dependent Variable: REGR factor score 1 for analysis 1

Table 24.Regression Factor score 1

4.3.4 Regression on factor 2 with all variables in factor 1 and 2:

The R-squared gave an 83% in our case which denotes that the independent variables explain 83% of the behavior of factor score 2 as per table 25. The difference between the adjusted R-squared and the R-squared is less than 10%, meaning that there are no independent variables to be eliminated.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.911[a]	.831	.817	.42814449

a. Predictors: (Constant), Encourage, sustainablyharvestedextractedprocessedtransported, Nonpolluting, Sacrificequality, Sociallyenvironmentallyresponsiblecompanies, Organicfood, littlenoharmfulmaterial, Readlabels, NaturalRenewableMaterial, lessenergytoproduce, Shopping

Table 25.Factor 2 and Variables in Factor 1 and 2 Regression

The significance of the constant and some independent variables is less than 0.05, representing the variables that should be kept in the model as shown in table 26. As a

result the model can be signified in the following equation, where the independent variables are inserted in the equation below in order from the highest weight till the lowest:

Factor score 2 = -1.924 + 0.374(Sacrificequality) + 0.268(Readlabels) – 0.259(NaturalRenewableMaterial) + 0.192(Shopping) + 0.152(Encourage) + 0.101(Organicfood)

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-1.924	.269		-7.147	.000
	NaturalRenewableMaterial	-.259	.070	-.197	-3.676	.000
	lessenergytoproduce	-.052	.064	-.044	-.814	.417
	littlenoharmfulmaterial	-.050	.061	-.041	-.825	.411
	Nonpolluting	-.127	.065	-.096	-1.948	.053
	sustainablyharvestedextractedprocessedtransported	.076	.045	.070	1.688	.094
	Sociallyenvironmentallyresponsiblecompanies	.060	.048	.055	1.249	.214
	Readlabels	.268	.049	.292	5.427	.000
	Shopping	.192	.050	.208	3.855	.000
	Sacrificequality	.374	.041	.417	9.196	.000
	Organicfood	.101	.046	.103	2.169	.032
	Encourage	.152	.045	.166	3.361	.001

a. Dependent Variable: REGR factor score 2 for analysis 1

Table 26.Regression Factor score 2

4.4 Non-parametric tests of Independent samples

Non-parametric tests of independent samples have been conducted for hypothesis 5 to hypothesis 8. Non-parametric statistics mainly uses data that is ordinal, which means it does not rely on numbers, but rather order of sorts or a ranking. It has been used since most of our questions are likert scale and mostly ordinal data.

H5. The purchase behavior varies with gender, age, marital status, employment status, education level and income level.

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of REGR factor score 5 for analysis 1 is the same across categories of Gender.	Independent-Samples Mann-Whitney U Test	.424	Retain the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

Table 27.Independent Sample Test of Gender (H5)

The distribution of regression on factor score 5 (purchase behavior) when independent sample Mann Whitney U Test was carried out, results showed that behavior does not vary with gender since the score is 0.424 which is above the significance level of 0.05 as shown in table 27, so we do not reject the null hypothesis.

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of REGR factor score 5 for analysis 1 is the same across categories of Age.	Independent-Samples Kruskal-Wallis Test	.161	Retain the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

Table 28.Independent Sample Test of Age (H5)

The distribution of regression on factor score 5 (purchase behavior) when independent sample Kruskal-Wallis Test was carried out , results showed that behavior does not vary with Age since the score is 0.161 which is above the significance level of 0.05 as shown in table 28, hence we do not reject the null hypothesis.

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of REGR factor score 5 for analysis 1 is the same across categories of Maritalstatus.	Independent-Samples Kruskal-Wallis Test	.337	Retain the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

Table 29.Independent Sample Test of Marital status (H5)

The distribution of regression on factor score 5 (purchase behavior) when independent sample kruskal-Wallis Test was carried out , results showed that behavior does not vary with Marital Status since the score is 0.337 which is above the significance level of 0.05 as shown in table 29, so we do not reject the null hypothesis.

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of REGR factor score 5 for analysis 1 is the same across categories of Employmentstatus.	Independent-Samples Kruskal-Wallis Test	.232	Retain the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

Table 30.Independent Sample Test of Employment Status (H5)

The distribution of regression on factor score 5 (purchase behavior) when independent sample Kruskal Wallis Test was carried out, results showed that behavior does not vary with employment status since the score is 0.424 which is above the significance level of 0.05 as shown in table 30, so we do not reject the null hypothesis.

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of REGR factor score 5 for analysis 1 is the same across categories of Highestlevelofeducation.	Independent-Samples Kruskal-Wallis Test	.037	Reject the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

Table 31.Independent Sample Test of Education Level (H5)

The distribution of regression on factor score 5 (purchase behavior) when independent sample Kruskal Wallis Test was carried out, results showed that behavior does vary with level of education since the score is 0.037 is below the significance level of 0.05 as shown in table 31, hence we reject the null hypothesis.

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of REGR factor score 5 for analysis 1 is the same across categories of Annualincome.	Independent-Samples Kruskal-Wallis Test	.337	Retain the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

Table 32.Independent Sample Test of Annual Income (H5)

The distribution of regression on factor score 5 (purchase behavior) when independent sample Mann Whitney U Test was carried out , results showed that behavior does not vary with annual income since the score is 0.337 which is above the significance level of 0.05 as shown in table 32, so we do not reject the null hypothesis.

H6. The attitude towards ecofriendly products varies with gender, age, marital status, employment status, education level and income level.

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of REGR factor score 6 for analysis 1 is the same across categories of Gender.	Independent-Samples Mann-Whitney U Test	.690	Retain the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

Table 33.Independent Sample Test of Gender (H6)

The distribution of regression on factor score 6 (attitude) when independent sample Mann Whitney U Test was carried out, results showed that behavior does not vary with Gender since the score is 0.690 which is above the significance level of 0.05 as shown in table 33, hence we do not reject the null hypothesis.

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of REGR factor score 6 for analysis 1 is the same across categories of Age.	Independent-Samples Kruskal-Wallis Test	.367	Retain the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

Table 34.Independent Sample Test of Age (H6)

The distribution of regression on factor score 6 (attitude) when independent sample Kruskal Wallis Test was carried out, results showed that behavior does not vary with Age since the score is 0.367 which is above the significance level of 0.05 as shown in table 34, hence we do not reject the null hypothesis.

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of REGR factor score 6 for analysis 1 is the same across categories of Maritalstatus.	Independent-Samples Kruskal-Wallis Test	.730	Retain the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

Table 35.Independent Sample Test of Marital Status (H6)

The distribution of regression on factor score 6 (attitude) when independent sample Kruskal Wallis Test was carried out, results showed that behavior does not vary with Marital status since the score is 0.730 which is above the significance level of 0.05 as shown in table 35, hence we do not reject the null hypothesis.

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of REGR factor score 6 for analysis 1 is the same across categories of Employmentstatus.	Independent-Samples Kruskal-Wallis Test	.181	Retain the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

Table 36.Independent Sample Test of Employment Status (H6)

The distribution of regression on factor score 6 (attitude) when independent sample Kruskal Wallis Test was carried out, results showed that behavior does not vary with Employment status since the score is 0.181 which is above the significance level of 0.05 as shown in table 36, hence we do not reject the null hypothesis.

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of REGR factor score 6 for analysis 1 is the same across categories of Highestlevelofeducation.	Independent-Samples Kruskal-Wallis Test	.043	Reject the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

Table 37.Independent Sample Test of Education Level (H6)

The distribution of regression on factor score 6 (attitude) when independent sample Kruskal Wallis Test was carried out, results showed that behavior does vary with Level of education since the score is 0.043 which is below the significance level of 0.05 as shown in table 37, so we reject the null hypothesis.

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of REGR factor score 6 for analysis 1 is the same across categories of Annualincome.	Independent-Samples Kruskal-Wallis Test	.113	Retain the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

Table 38. Independent Sample Test of Annual Income (H6)

The distribution of regression on factor score 6 (attitude) when independent sample Kruskal Wallis Test was carried out, results showed that behavior does not vary with Annual income since the score is 0.113 which is above the significance level of 0.05 as shown in table 38, so we do not reject the null hypothesis

H7. The perceived value of ecofriendly products varies with gender, age, marital status, employment status, education level and income level.

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of REGR factor score 8 for analysis 1 is the same across categories of Gender.	Independent-Samples Mann-Whitney U Test	.422	Retain the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

Table 39. Independent Sample Test of Gender (H7)

The distribution of regression on factor score 8 (perceived value) when independent sample Mann-Whitney U test was carried out, results showed that behavior does not vary with Gender since the score is 0.422 which is above the significance level of 0.05 as shown in table 39, hence we do not reject the null hypothesis.

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of REGR factor score 8 for analysis 1 is the same across categories of Age.	Independent-Samples Kruskal-Wallis Test	.234	Retain the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

Table 40.Independent Sample Test of Age (H7)

The distribution of regression on factor score 8 (perceived value) when independent sample Kruskal Wallis Test was carried out, results showed that behavior does not vary with Age since the score is 0.234 which is above the significance level of 0.05 as shown in table 40, hence we do not reject the null hypothesis.

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of REGR factor score 8 for analysis 1 is the same across categories of Maritalstatus.	Independent-Samples Kruskal-Wallis Test	.795	Retain the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

Table 41.Independent Sample Test of Marital Status (H7)

The distribution of regression on factor score 8 (perceived value) when independent sample Kruskal Wallis Test was carried out, results showed that behavior does not vary with Marital status since the score is 0.795 which is above the significance level of 0.05 as shown in table 41, so we do not reject the null hypothesis.

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of REGR factor score 8 for analysis 1 is the same across categories of Employmentstatus.	Independent-Samples Kruskal-Wallis Test	.013	Reject the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

Table 42.Independent Sample Test of Employment Status (H7)

The distribution of regression on factor score 8 (perceived value) when independent sample Kruskal Wallis Test was carried out, results showed that behavior does vary with Employment status since the score is 0.013 which is below the significance level of 0.05 as shown in table 42, hence we reject the null hypothesis.

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of REGR factor score 8 for analysis 1 is the same across categories of Highestlevelofeducation.	Independent-Samples Kruskal-Wallis Test	.700	Retain the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

Table 43.Independent Sample Test of Education Level (H7)

The distribution of regression on factor score 8 (perceived value) when independent sample Kruskal Wallis Test was carried out, results showed that behavior does not vary with Level of education since the score is 0.700 which is above the significance level of 0.05 as shown in table 43, so we do not reject the null hypothesis.

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of REGR factor score 8 for analysis 1 is the same across categories of Annualincome.	Independent-Samples Kruskal-Wallis Test	.228	Retain the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

Table 44.Independent Sample Test of Annual Income (H7)

The distribution of regression on factor score 8 (perceived value) when independent sample Kruskal Wallis Test was carried out, results showed that behavior does not vary with Annual income since the score is 0.228 which is above the significance level of 0.05 as shown in table 44, hence we do not reject the null hypothesis.

H8. The perceived quality of ecofriendly products varies with gender, age, marital status, employment status, education level and income level.

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of REGR factor score 2 for analysis 1 is the same across categories of Gender.	Independent-Samples Mann-Whitney U Test	.583	Retain the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

Table 45.Independent Sample Test of Gender (H8)

The distribution of regression on factor score 2 (perceived quality) when independent sample Mann-Whitney U Test was carried out, results showed that behavior does not vary with Gender since the score is 0.583 which is above the significance level 0.05 as shown in table 45, hence we do not reject the null hypothesis.

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of REGR factor score 2 for analysis 1 is the same across categories of Age.	Independent-Samples Kruskal-Wallis Test	.675	Retain the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

Table 46.Independent Sample Test of Age (H8)

The distribution of regression on factor score 2 (perceived quality) when independent sample Kruskal Wallis Test was carried out, results showed that behavior does not vary with Age since the score is 0.675 which is above the significance level of 0.05 as shown in table 46, so we do not reject the null hypothesis.

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of REGR factor score 2 for analysis 1 is the same across categories of Maritalstatus.	Independent-Samples Kruskal-Wallis Test	.194	Retain the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

Table 47.Independent Sample Test of Marital Status (H8)

The distribution of regression on factor score 2 (perceived quality) when independent sample Kruskal Wallis Test was carried out, results showed that behavior does not vary with Marital status since the score is 0.194 which is above the significance level of 0.05 as shown in table 47, so we do not reject the null hypothesis.

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of REGR factor score 2 for analysis 1 is the same across categories of Employmentstatus.	Independent-Samples Kruskal-Wallis Test	.279	Retain the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

Table 48.Independent Sample Test of Employment Status (H8)

The distribution of regression on factor score 2 (perceived quality) when independent sample Kruskal Wallis Test was carried out, results showed that behavior does not vary with Employment status since the score is 0.279 which is above the significance level of 0.05 as shown in table 48, hence we do not reject the null hypothesis.

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of REGR factor score 2 for analysis 1 is the same across categories of Highestlevelofeducation.	Independent-Samples Kruskal-Wallis Test	.153	Retain the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

Table 49.Independent Sample Test of Education Level (H8)

The distribution of regression on factor score 2 (perceived quality) when independent sample Kruskal Wallis Test was carried out, results showed that behavior does not vary with Level of Education since the score is 0.153 which is above the significance level of 0.05 as shown in table 49, hence we do not reject the null hypothesis.

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of REGR factor score 2 for analysis 1 is the same across categories of Annualincome.	Independent-Samples Kruskal-Wallis Test	.155	Retain the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

Table 50.Independent Sample Test of Annual Income (H8)

The distribution of regression on factor score 2 (perceived quality) when independent sample Kruskal Wallis Test was carried out, results showed that behavior does not vary with Annual income since the score is 0.155 which is above the significance level of 0.05 as shown in table 50, hence we do not reject the null hypothesis.

CHAPTER 5: CONCLUSIONS AND RECOMMENDATIONS

This chapter completes the study by summarizing the main findings and deliberating on the difficulties faced. Furthermore, managerial implications and recommendations for future research will be stated as well.

5.1 Main Findings

Hypothesis 1 states that the Lebanese people are able to distinguish environmentally friendly products through their knowledge and awareness of the main eco-friendly products attributes such as: being non-polluting, sustainably harvested, produced by environmentally responsible companies, have little or no harmful material and made from natural renewable material. This hypothesis is accepted since when conducting the factor analysis the "knowledge" was ranked factor 1 which proves it has the greatest value and most agreed on factor. Hypothesis 2 assumed that there is a general agreement among the Lebanese Public that government, society and producing companies should work towards promoting awareness on environmentally friendly products, this agreement could be based on what Lebanese people see happening in other countries through the media in terms of government interventions and actions. The results of factor analysis conducted ranked "Promoting awareness" as factor 3 which proves that people believe that they are responsible for their actions ,they also see companies promoting in social media as vital in raising awareness , in addition government awareness campaigns and financial support to eco-friendly firms is highly agree on. The results of these findings lead us to retain hypothesis 2.

People have similar attitudes towards eco-friendly products and their impact on society and the environment this is stated in Hypothesis 3, however based on the findings of the factor analysis the "Impact of society and environment" is factor 6 ranked among the last and least important factors. Respondents didn't highly agree to the following terms: eco-friendly products require more energy when product is used, consuming eco-friendly products is a last concern, advocating for environment is useless in our society and consumption of eco-friendly products doesn't make a difference. Based on the high

conflicting views, the Hypothesis 3 is rejected since people had different attitudes with regards to the impact on society and environment.

In this study we found out that the trust in eco-friendly products is questionable. Hypothesis 4 states that the Lebanese general public manifested a high level of trust and acceptance in the environmentally friendly products available in the Lebanese market, through the factor analysis tested; the results showed that "disadvantages" of eco-friendly products is the last factor or factor 9 with the lowest level of correlations. Thus Lebanese may see products in the market not really recyclable, non-food products as overpriced and the eco-friendly products not really eco as claimed. With these findings, we see that people have low trust in eco-friendly products, quality and prices hence hypothesis 4 is rejected.

Non-parametric tests of independent samples have been conducted for hypothesis 5 to hypothesis 8. According to Hypothesis 5; the purchase behavior varies with gender, age, marital status, employment status, education and income level. Tests were done separately as shown in the earlier chapter table which is an example of gender hypothesis test. The results revealed that purchase behavior does not vary with gender; however when tests were done through means comparison as shown in table 4 we found out that purchase behavior differs between males and females. To explain this difference in results: non-parametric tests analyse generally if there is a huge variance in purchase behavior with regards to gender while in parametric test such as means comparison if there is a slight difference it will be considered varying. Based on table 4 which reflects the purchase behavior of males and females, there is a difference concerning purchase of eco-friendly products, women would buy more cleaning household supplies (3.80) , health care products (4.01) and Organic clothing than men (3.56, 3.40 and 2.87), these results are not surprising since these are more of female concerns. On the other side males would agree more on buying Energy efficient bulbs (4.33) than females (4.23). These results show us that women seem to be more concerned by eco-friendly products than men however the differences are not so significant as per the non-parametric tests hence purchase behavior doesn't vary with gender. Similarly non-parametric tests for hypothesis of purchase behavior varying with marital status, employment status ,

education level and income level were all done separately available in chapter 4. The results showed that purchase behavior only varies with the education level, while with the other demographics it doesn't really significantly vary.

Hypothesis 6 was tested to see if attitude towards eco-friendly products varies with gender, age, marital status, employment status, education level and income level. The non-parametric results showed that attitude only varies with education level. This is very logical since the more a person is aware or has been educated about green in general the more that person will have a positive attitude to adopt eco-friendly products. As for hypothesis 7 which states that the perceived value of eco-friendly products varies with gender, age, marital status , employment status, education level and income level. The results revealed that perceived value only varies with employment status. This is not surprising since a person employed would have an income and would be less price sensitive and willing to pay more than a person unemployed or a student. The last hypothesis 8 mentions that the perceived quality of ecofriendly products varies with the demographics listed above; however when tested results showed that perceived quality varies with none, hence this hypothesis is rejected.

5.2 Green Consumer

The consumer that has positive attitude and purchase behavior towards green products is the green consumer. Based on the findings, the Lebanese green consumer would be one that holds at least a college degree and believes that eco-friendly food products have superior quality and healthier benefits. The married with kids' consumer has highest consumption of eco-friendly products and even encourages family and friends to purchase eco-friendly products. In addition, the married with kids and holds high level of education is willing to pay more for eco-friendly food products and reads labels of eco-friendly products regularly. Consumer with income above 40,000$ is also willing to pay more for eco-friendly products although he considers the eco-friendly products overpriced. In addition, the above 40,000 income consumer makes most of eco-friendly products purchases according to this study.

5.3 Implications

Actions should be taken by the Lebanese private and public sectors as a long term plan to switch to environmentally friendly lifestyle (attitude and behavior). In the private sector, companies regardless of the industry should implement environmentally friendly processes such as partnering with green organizations, adopting waste management office plan, engaging in fair trade, purchasing from first source such as farmers, using recycled stationery, planting greenery, and offering organic food in the cafeteria. As for producing companies of environmentally friendly products, their role is more complex. The products they produce should be convincing to the consumer from an environmentally friendly perspective: starting from the company's location (doesn't cause destruction to the environment), to the reduction of pollution emissions and waste of non-recycled by products during production, to green adaptation of marketing mix product factors, to investing in green research & development and so on. The Consumer's role is vital; they need to raise the standards or required product quality. The more consumers are concerned with what they eat or consume, the more there will be competitive quality and prices to the environmentally friendly products sold. Cancer is on the rise in Lebanon and this is being a huge concern to people. Several studies are published on the factors that increase the risks of cancer; these studies are shared almost every day in visual, social and print media. This has increased the motivation of the people to start switching to green and organic products immediately.

In the public sector, the government should start raising awareness at the school level. Attitudes of people are shaped during childhood years, it's important to direct the attention to the role of educational institutions lead by the ministry of education in addressing green issues and the importance of green products for sustaining the environment and the long term impact on health. This action would develop an environmental attitude that could lead to green behavior. Since people's trust in eco-friendly products is low, due to people's distrust in the government. Ministry of health should launch an awareness program through social media at least to educate people on eco-friendly products available in Lebanon and how to differentiate them from conventional products. In addition, raising awareness on eco-friendly international labels

and introducing Lebanese certifications/labels to be placed on any eco-friendly product in the market, just like the ministry of health introduced a label which is placed on controlled medicines. The Ministry of Industry should impose strict rules and regulations on factories in terms of pollution emissions, waste management and standards on the products produced. From the parliament's side also, a Law needs to be put in place to save the consumer from fake producer green assumptions.

5.4 Limitations

When conducting a new study, it's obvious to have several gaps in the knowledge base that need to be filled and, based on the resources and time available we aim to make it successfully complete. For this study, the findings have been highly realistic and pleasing, yet they may not be generalized to Lebanese population. The dissemination of the questionnaire was done by hand; the use of online method might have reached a larger target group in less time however there would have been low monitoring to response reliability. Both methods used in parallel could have provided a more comprehensive and larger sample of the target group. Respondents who were above the age 55 were only 4.8 % and non-Lebanese respondents were only 6.9% for these categories the representation is low to reflect a true sample of the population. In addition, the South and Bekaa region was not covered geographically which turns the study to a population-specific study.

5.5 Future Recommendations

The internet and the availability of other researches at a hit of a button had been very helpful to focus on a topic, learn from other studies faults and take good examples as a reference or a drive. Yet this leaves one with a doubt of "Am I informed enough?" and knowing more doesn't have a limit. This study would provide a valuable insight to practitioners who need start-up information on eco-friendly awareness and purchase behavior of Lebanese people. Further related studies could be done in the future, such as one that compares Lebanese and Greek buying behavior; for example to understand how culture, society and government play a vital role in comparison to economy role. Future research could be also more detailed by selecting few prominent Lebanese eco-friendly

brands, observing people's buying behavior and assessing the products' marketing mix to add qualitative input. Furthermore, a study on eco-friendly durable goods such as home appliances, cars, sports equipment, mobiles and toys could be done since these products were not tackled in this study and they involve a different buying behavior or experience. Finally, an expansion of this study to other fields such as restaurants, spas and cleaning services will be motivating; hence eco-friendly services rather than products may be assessed. Any additional research on this topic will be extremely helpful to form a concrete base for the green concerned in Lebanon.

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Appendices

Appendix A. Frequencies and Cross tabulation tables.

Gender

		Frequency	Percent	Valid Percent
Valid	female	82	56.6	56.6
	male	63	43.4	43.4
	Total	145	100.0	100.0

Nationality

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Lebanese	135	93.1	93.1	93.1
	other	10	6.9	6.9	100.0
	Total	145	100.0	100.0	

Highest Level of Education

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	some grade school	1	.7	.7	.7
	high school	25	17.2	17.2	17.9
	college degree	45	31.0	31.0	49.0
	graduate degree	74	51.0	51.0	100.0
	Total	145	100.0	100.0	

Annual Income

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	below $8000	23	15.9	17.8	17.8
	$8000-$20000	40	27.6	31.0	48.8
	$20000-$40000	36	24.8	27.9	76.7
	$40000-$60000	16	11.0	12.4	89.1
	above $60000	14	9.7	10.9	100.0
	Total	129	89.0	100.0	
Missing	System	16	11.0		
Total		145	100.0		

Employment Status

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	employed	113	77.9	77.9	77.9
	unemployed	16	11.0	11.0	89.0
	student	14	9.7	9.7	98.6
	retired	2	1.4	1.4	100.0
	Total	145	100.0	100.0	

GENDER * MARITAL STATUS Crosstabulation

			Marital status			
			single	married have no kids	married have kids	Total
Gender	female	Count	43	9	30	82
		% of Total	29.7%	6.2%	20.7%	56.6%
	male	Count	37	4	22	63
		% of Total	25.5%	2.8%	15.2%	43.4%
Total		Count	80	13	52	145
		% of Total	55.2%	9.0%	35.9%	100.0%

Appendix B. Questionnaire.

You are invited to participate in a study on "Consumer behavior towards environmentally friendly Fast Moving Consumer Goods in Lebanon". This study is conducted by an MBA student of Notre Dame University Louaize and the focus is on eco-friendly products. Eco-friendly products are those that have less impact on the environment or less harm to human health than traditional products. Please complete each section of this survey; it should take approximately 5-10 minutes of your time. Kindly provide your most honest and accurate assessment, your responses will remain completely confidential.

1. How familiar are you with eco-friendly products prior to taking this survey?

☐ Not at all familiar ☐ Somewhat familiar ☐ Very familiar

2. Using a scale from 1 to 5, with 5 being 'Strongly Agree' and 1 being 'Strongly Disagree', Circle the number that best describes your opinion with regards to characteristics of eco-friendly products.

Eco-friendly products :	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Made from natural or renewable materials	1	2	3	4	5
Use less energy or raw materials to produce	1	2	3	4	5
Contains little or no harmful materials	1	2	3	4	5
Require more energy when product is used	1	2	3	4	5
Nonpolluting	1	2	3	4	5
Sustainably-harvested, extracted, processed, and transported	1	2	3	4	5
Not recyclable	1	2	3	4	5
Produced by socially and environmentally responsible companies	1	2	3	4	5

3. Using a scale from 1 to 5, with 5 being 'Currently purchase' and 1 being 'Will never purchase', Circle the number that best describes your behavior with regards to eco-friendly products purchasing.

	Will never purchase	Would not consider purchasing	Neutral	Would consider purchasing	Currently purchase
Organic or Bio food	1	2	3	4	5
Recycled paper or plastic goods(e.g.plastic bags, tissue paper)	1	2	3	4	5
Eco-friendly cleaning household supplies	1	2	3	4	5
Energy efficient appliances/bulbs	1	2	3	4	5
Eco-friendly health care and cosmetics products	1	2	3	4	5
Organic clothing	1	2	3	4	5

4. Using a scale from 1 to 5, with 5 being 'Strongly Agree' and 1 being 'Strongly Disagree', To what extent do you agree or disagree with the following statements about the eco-friendly products in Lebanon. Please choose one number for each statement.

Eco-friendly products	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
Have positive long term impact on society and environment	1	2	3	4	5
Food products are overpriced	1	2	3	4	5
Nonfood products are overpriced	1	2	3	4	5
Are easily accessible	1	2	3	4	5
Food products have superior quality than conventional products	1	2	3	4	5
Nonfood products have superior quality than conventional	1	2	3	4	5

products					
Are not really eco-friendly as claimed	1	2	3	4	5
Are healthier when consuming food	1	2	3	4	5
Are properly promoted (in store, advertising)	1	2	3	4	5
Are common knowledge	1	2	3	4	5
Eco-friendly labels on package are trusted	1	2	3	4	5

5. Using a scale from 1 to 5, with 5 being 'Strongly Agree' and 1 being 'Strongly Disagree' Please circle the number that best reflects your personal attitude or opinion

	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
1. I read eco-friendly labels on products	1	2	3	4	5
2. I am willing to pay more for eco-friendly food products	1	2	3	4	5
3. I am willing to pay more for eco-friendly nonfood products	1	2	3	4	5
4. I look for eco-friendly products whenever I shop.	1	2	3	4	5
5. I sacrifice some amount of quality so that I can use recycled materials.	1	2	3	4	5
6. Its too time consuming to find environmentally friendly products.	1	2	3	4	5
7. I choose organically grown food because it is better quality	1	2	3	4	5
8. We are all responsible for making environmentally conscious decisions.	1	2	3	4	5
9. I encourage family and friends to purchase products that are healthier for them and for the environment	1	2	3	4	5
10. Advocating for the environment is useless in our society.	1	2	3	4	5
11. Government should encourage eco-friendly products consumption through	1	2	3	4	5

awareness campaigns					
12. There are many other issues to worry about, consuming eco-friendly products is my last concern	1	2	3	4	5
13. My consumption of eco-friendly products doesn't make a difference.	1	2	3	4	5
14. Promoting eco-friendly products in the social media would increase awareness	1	2	3	4	5
15. Government should support eco-friendly firms financially	1	2	3	4	5
16. Companies producing eco-friendly products generate considerable profits	1	2	3	4	5

6. If you buy eco-friendly products, where would you most likely buy from?

☐ Local minimarket ☐ Supermarket ☐ Specialty store ☐ Online ☐ Eco farm

☐ Other:_____

7. Gender

☐ Female ☐ Male

8. Age

☐ 18-24 ☐ 25-34 ☐ 35-44 ☐ 45-54 ☐ +55

9. Nationality

☐ Lebanese ☐ Other

10. Marital status

☐ Single ☐ Married have no kids ☐ Married have kids

11. Employment Status

☐ Employed ☐ Unemployed ☐ Student ☐ Retired

12. Highest Level of Education

☐ Some grade school ☐ High school ☐ College degree ☐ Graduate degree

13. If you have an income, what is your Annual income?

☐ Below $8000

☐ $8000 - $20000

☐ $20000 - $40000

☐ $40000- $60000

☐ Above $60000

Your assistance in completing this survey is very much appreciated. Thank you.