The Role of Environmental Responsibility in the Adoption of Green Marketing: The Case of Petroleum Companies in Arab Countries

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Abstract

Green marketing is considered as one of the most important responses to modern environmental challenges. In fact, green marketing goes beyond the local borders of countries and beyond any specific region. It is a global challenge that faces companies across the world. Green marketing is based on the principle of always providing customers and business partners with the highest added value, but with respect to environmental and social needs on the long term. In the present paper, we will define the requirements of a well-functioning green marketing strategy. We will also emphasize the role of environmental responsibility as one of the most important factors that push businesses to adopt a green marketing strategy.

Keywords: Environmental responsibility, environment management system, green marketing, environment protection, petroleum companies.

1.Introduction

Oil plays a key role in modern economy. It directly affects the development of nations especially as a source of energy, as a raw material or as a traded commodity. The oil industry is rich with processes and complementary activities. It involves prospection, drilling, production, refinement, manufacturing, transportation, distribution and marketing. It also involves the process of transformation of oil into various products that will end up in the hands of consumers. However, each of the previous steps has a negative impact on the environment. This is why, petroleum companies in Arab countries have decided to take this into consideration mainly by reducing pollution at each of the previously cited processes. These companies have in fact decided to prevent pollution before its occurrence.

Petroleum companies in the Arab world have begun questioning their social and ethical responsibility when it comes to marketing practices. They now try to fully incorporate the principles of environmental responsibility in what is known today as green marketing. However, the simple fact of

incorporating environmental concerns in the company's strategy is not enough. In fact, there exists a set of conditions that must be satisfied. This is why the present study tries to answer the following question:

How can environmental responsibility of petroleum companies in the Arab world contribute to the adoption of green marketing principles?

2. Literature Review

2.1.The Definition of Green Marketing

concerns toward environmental degradation with the purpose of reducing the negative consequences that come from their economic activities. The American Marketing Association (AMA) proposed three different definitions of green marketing (AMA online dictionary):

1. Retailing definition: the marketing of products that are presumed to be environmentally safe.
2. Social marketing definition: the development and marketing of products designed to minimize negative effects on the physical environment or to improve its quality.

3. Environments definition: the efforts by organizations to produce, promote, package, and reclaim products in a manner that is sensitive or responsive to ecological concerns.

Hence in the narrow sense the concept of green marketing refers to environmentally responsible marketing, in the broad sense, green marketing includes a whole set of ideas, methods and process that continually reevaluates how companies can achieve corporate objectives and meet consumer needs while minimizing long-term environmental harm. Green marketing is also known as environmental marketing, ecological marketing (Polonsky, 1994), or sustainable marketing (Fuller, 1999).\

2.2.The Development of Green Marketing

While green marketing came into prominence in the late 1980s and early 1990s, it was first discussed much earlier, The American Marketing Association (AMA) held the first workshop on "Ecological Marketing" in 1975, The AMA workshop attempted to bring together academics, practitioners, and public policy makers to examine marketing's impact on the natural environment (Polonsky, 1994). At this workshop ecological marketing was defined as: the study of the positive and negative aspects of marketing activities on pollution, energy depletion and non-energy resource depletion (Polonsky, 1994).

Despite some attention in the 1970s, it was really only in the late 1980s that the idea of green marketing emerged (Peattie and Crane, 2005). Clearly marketing had to respond to the increased pressure to meet its ethical and moral responsibilities, thus businesses moved from the marketing orientation to the latest business philosophy; the green marketing orientation (Miles and Munilla, 1995). A summary of the four traditional business orientations compared to the green marketing orientation is provided in the following tables.

Table 1. Summary of the Green Marketing Orientation

Orientation Symptom	Green Orientation
Typical Strategy	Environmental friendly products and innovative business practices that engender an enhanced environment.
KeySystems	Monitoring perceived organizational environmental sensitivity held by major market segments, environmental scanning, innovative product development, management of technology.
Traditional Strengths	Marketing, product innovation, logistics innovation.
Normal Focus	Customer and societal satisfaction with the total product, including service, and organizational business practices.
Typical Response to Competitive Pressure	Educate customers about companies green programs, including; waste recycling and environmental friendly disposal, packaging in recyclable containers, packaging in containers made of recycled materials, organizational commitment to buy products produced from recycled materials, employee supplier, community and customer eco-education programs and innovation.
Overall Mental Set	What we need to do in this company is to create high value, environmental friendly products; sold in high volumes through traditional distributors to a wide array of consumers. Our objectives include: to educate non-green consumers to have product from insistence for environmental friendly products, to produce high value environmental friendly products that will create brand preference for our brands by green consumers and to achieve sufficient distribution to minimize stock outs and brand switching.

Source: Miles and Munilla, 1995

2.3. Green Marketing; a Threat or an Opportunity

Many companies have adopted green marketing strategies to take advantage of the opportunities it offers. Besides minimizing pollution and company's environmental impact, green marketing offers the following benefits to the companies adopting it:

1. Better Products: green marketing offers higher quality products, better performance, convenience and safety (Ottman, 1998). For example; water-saving showerheads, nontoxic garden fertilizers, energy saving light bulbs, mercury free batteries, water-saving washing machines and dishwashers, phosphate-free laundry powder, biodegradable soups and detergents, organic produce, healthier food, and nontoxic cosmetics.

2. Competitive Advantage: positioning a brand as a "green brand" leads to a more favorable perception of the brand as it entails an active communication and differentiation of the product from its competitors through its environmentally sound attributes (Hartmann, et al., 2005), especially when companies offer innovative products with new attributes and without having to give up quality (Ottman, 1998).

3. Increased Market Share (Ottman, 1998): unique product innovation increases demand in current markets, attracts customers from competitors, opens up new markets, and offers access to international markets.
4. More Profits: better products, hence the competitive advantage and the increased market share, all contribute to increased profits. On top of that, recycling waste, using recycled materials, using fewer raw materials and using energy efficient technologies, improve efficiency and reduce operating costs while boosting profits. Moreover being environmentally responsible enhances employee morale and productivity (Ottman, 1998).
5. Improved Company's Image (Banerjee, 1999): company's image plays a vital role in consumers' considerations. Company's commitment to environmental responsibility, and its efforts in developing greener products and operations, and its compliance with environmental laws, will automatically improve relations with public authorities, green activist groups and consumers, hence acquiring considerable public goodwill. It will also earn publicity with the local, regional or even international media.
Although the literature suggests that adopting green marketing strategies opens up new opportunities and benefits to the company, still it adds another layer of complexity to management challenge. Green marketing is more multifaceted than conventional marketing; it challenges the companies to develop products that balance consumers' needs for quality, performance, affordable prices and convenience with minimal impact on the environment, and it should project an image of high quality, including environmental sensitivity, relating to both a product's attributes and its manufacturer's track record for environmental achievement (Ottman, 1998).

Hence, green marketing is a responsible, strategic and tactical process that requires a change in corporate thinking, takes time, commitment, and resources before meaningful results are achieved (Polonsky and Rosenberger III, 2001).

2.4. The Marketing Mix

When considering green marketing, many people believe it refers solely on specific individual activities, such as promoting green product characteristics or designing less ecologically harmful products, although these activities are tactically important and necessary to the overall success of a greening program, green marketing is a holistic, integrated approach (Polonsky and Rosenberger III, 2001) that incorporates a wide range of activities including; product modification, changes to the production process, raw materials selection, pricing, promotion, distribution, labeling, packaging, sponsoring, and waste reduction, that can be applied to consumer goods, industrial goods and even services (Polonsky, 1994).
Here is a presentation of some of the most important elements of the green marketing mix;
A. Raw materials: green companies when choosing raw materials, should not only consider cost, reliability and continuity of supply of their raw materials, but also, they should take into account environmental considerations, for example; the scarcity and sustainability of resources used, and the environmental implications of their extraction and use. Initially green marketers should try to reduce the amount of raw materials used whenever possible; moreover green purchasing should include the acquisition of environmentally friendly raw materials that havereduced negative effect on the environment when

compared to similar materials,additionally it should give priority to safe, nontoxic, energy- and water-efficient, recycled content and recyclable materials.

B. Product: The Federal Trade Commission (FTC) defined "environmentally preferable products" as products and services that have a lesser or reduced effect on human health and the environment, when compared to other products and services that serve the same purpose (EPA).

In general, according to North (1992), the green consumer avoids products which are likely to:

1. Cause significant damage to the environment during its manufacturing, use or disposal.
2. Endanger the health of the consumers or of others.
3. Consume a disproportionate amount of energy or water during manufacture use or disposal.
4. Cause unnecessary waste either because of over packing or because of an unduly short useful life.
5. Use materials derived from threatened species or from threatened environment.
6. Involve the unnecessary use of or cruelty to animals whether this be for toxicity testing or for other purposes.
7. Adversely affect other countries, particularly in the third world.

According to Chamorro and Bañegil (2006), green products can be distinguished between three levels;

a) Basic green product: the manufacturer only takes into account the characteristics of the product in the use/consumption and post-consumption stages.

b) Extended green product: when ecological attributes are also considered in the manufacturing process, for example; energy, water and natural resources consumption, waste generation, and water and air pollution contribution.

c) Total green product or green offer: when the ecological variable has been incorporated into all the internal activities of the company (finance, purchasing, human resources etc.) and the environmental behavior of the organizations interrelated with the company (suppliers, distributors, financial entities) does not contradict its environmental policy and principles.

C. Packaging: an important part of the total product is the packaging, which not only provides information but also serves as a type of promotion for the product (Lampe and Gazda, 1995) that clearly can influence the purchase decision. On the other hand, packaging can be a reason for backlash and can be considered a green-wash since it is the main target for environmental and public interest groups when they choose to criticize a company's environmental record (Wasik, 1996). Hence marketers must insure that all information communicated on the packaging should be actual and accurate.

Another problem with packaging is that it is a major source of environmental waste (Lampe and Gazda, 1995). Until recently, more packaging meant more safety and therefore was a good objective (Bishop, 2000), butpackaging became the largest single portion of municipal landfills, accounting as much as one-third of the municipal solid waste stream (Wasik, 1996).For that reason, companies undertook major redesign efforts to cut excess packaging, and use fewer materials, a term called source reduction, that is reducing the amount of materials entering a waste stream from a specific source by redesigning products or patterns of production (Erickson and King, 1999), hence reducing pollution at the source rather that treat and dispose of waste after it has been produced (Post, et al., 1996). And while still maintaining the

package's functionality, source reduction is not only good for the environment it is also good for the business; less packaging needs less raw materials and less energy required for manufacturing and transportation thus competitive costs can be sustained.

D. Labeling: in many countries consumers identify environment friendly products by means of environmental labels; logos or seals that a given product is environmentally safe or friendly, granted by governments or independent organizations.

Companies can voluntary apply for an eco-label, to indicate that their products are less harmful to the environment than competing products, based on scientifically determined criteria (Thorne, et al., 2003) of particular relevance to the respective product category.

At least 25 countries around the world offer eco-label programs (Ottman, 1998), there are Eco-Mark in Japan, Eco-Logo in Canada and Eco-Flower in European Union. But the oldest, and perhaps the most successful, in terms of consumer recognition of the eco-labels is the Blue Angel seal in Germany, it has existed since 1978, and its government panels have evaluated over 3500 products in 60 different categories (Lampe and Gazda, 1995).

Eco-Logo, CanadaEco-Mark, JapanEco-Flower, EuropeanUnion

Picture 1: Examples of International Eco-Labels

Eco-labels can enhance consumer confidence in environmental promises, credibility to environmental messages, and help to attract attention among environmentally conscious consumers (Ottman, 1998). Nevertheless eco-labels are not without controversy, critics charge that the science which eco-labels are based on is too subjective, the specific criteria upon which they are based can limit product innovation; criteria vary from country to country, and finally the use of symbols does not educate consumers about the actual environmental attributes of products (Ottman, 1998).In addition to governmental eco-labels, there is a considerable number of different profit or non-profit organizations around the world that provide eco-labels on a different variety of products addressing variant issues such as organically grown produce, recyclable packaging, energy efficiency technologies and ozone friendly aerosols, even environmental friendly hotels or buildings.

Energy Efficiency Technology Organic Ingredients Dolphin Safe Tuna

Green Seal Recycle

Picture 2: Examples of Product Specific Eco-Labels

E. Pricing: traditionally, companies have focused on achieving products of high quality using the best technology available to the company at as low cost as possible, and pricing has normally involved only the economic cost of producing the product (Bishop, 2000). Now though, companies are going further to include the cost of environmental impacts caused by the manufacture, use and disposal of the product (Bishop, 2000). In other words the green price of products reflect their full costs; that is the price of the product reflect not only the cost of raw materials and production costs, but also any associated environmental damage (Post, et al., 1996).

In general, the pricing of green products has typically been higher than traditional goods, to reflect the added costs of developing these products, modifying the production and the disposal process. An additional reason for higher prices is the perception that consumers will pay more for green products; surveys indicate that consumers say that they will pay from 7 to 20% more for environmentally friendly products(Lampe and Gazda, 1995). Nevertheless the higher price of green products does not always mean they cost more, especially when one considers all associated costs, often, green products have higher initial out-of-pocket expenses but lower long term costs, for example long-life compact fluorescent light bulbs are much less expensive than traditional ones duringtheir lifetime,unfortunately, their relatively longer payback period and higher upfront costs discourage their buy, making it difficult for many consumers to think of light bulbs as an investment warranting life-cycle costing (Polonsky and Rosenberger III, 2001). Higher out-of-pocket prices for green products are problematic, with consumers generally willing to pay only a small premium for them while expecting them to perform just as well as other products, especially as equal performance is not always possible because altering the product composition changes its performance presenting a potential challenge for marketers (Polonsky and Rosenberger III, 2001). To overcome this, manufacturers must produce higher quality green products and use the premium pricing strategy commensurate with the higher costs of production.

F. Advertising: perhaps no area of green marketing has received as much attention as advertising (Inc. Magazine). Green advertising objective is to educate stakeholders about environmental issues and to foster an image of environmental responsibilityin terms of product and company's practice, that will directly or indirectly have a positive impact on sales now or in the future (Fuller, 1999). However, the challenge for green marketing is that environmental benefits are often indirect, intangible or insignificant to the consumer, for example consumers cannot see the emissions being spared at the power plant when they use energy saving appliances, additionally they do not see the space saved in the landfill when they recycle

their cans and bottles, (Ottman, 1998) neither they notice the decrease in CFC levels when they stop using aerosol cans.

Moreover, not all green products are cheaper, faster, better, smaller or more convenient, some are more expensive, slower, uglier or less sanitary. For example cloth dinner napkins may be less wasteful than paper but they can't match the convenience of their disposable counterparts (Ottman, 1998). Likewise, according to Peattie (2001), many green purchases involve some form of compromise or trade-off, for example, paying a green premium, accepting a lower level of technical performance or traveling to non-standard distribution outlets. All this make it very difficult for marketers to promote their products, especially when studies show that consumers will not compromise quality when choosing green products.

Green washing grew so rapidly that there was a need to regulate and standardize claims about the environmental characteristics of products. Federal Trade Commission (FTC) issued guidelines to help reduce consumer confusion and prevent the false or misleading use of environmental terms (Fuller, 1999).

Thus, all green promotional activities need to be carefully evaluated to ensure that the company is not criticized for green washing, in fact, green promotion needs to communicate substantive environmental information to consumers that has meaningful links to corporate activities, as such; it is unlikely to be an effective strategic tool unless it is supported by other corporate activities (Polonsky and Rosenberger III, 2001). Moreover green advertising should be sufficiently clear and prominent to prevent deception and it must be able to support that claim with reliable scientific evidence to justify its claims or allegations and in compliance with legislation (Bhat, 1993), otherwise, consumers may perceive these activities as green-washing and ignore the promotion or even punish the company by boycotting products or complaining to regulators (Polonsky and Rosenberger III, 2001).

G. Distribution: mobile sources such as automobiles, buses, trucks, airplanes and ships contribute to global warming, air pollution, acid rain, local smog and noise. Hence the environmental impact associated with distribution systems represents a significant proportion of companies' environmental footprint, particularly those with extensive supply and distribution networks. Consequently assessing the impact of different transporting vehicles is part of a comprehensive approach to green marketing. Hence vehicular pollution associated with distribution called for better planning,for example, one of the first functions targeted to minimize environmental costs associated with distribution is to reduce volume and weight by clever design of products and packaging, which can directly and indirectly lower distribution costs as well, for examplesome concentrated laundry detergents now come in smaller packages, weigh less than regular ones, hence requiring less fuel to ship, and use less energy and raw material for equal cleaning performance (Polonsky and Rosenberger III, 2001). Also reduction of distances between production and consumption,more and better maintenance to ensure that engines operate at maximum energy performance, replacing existing engines with new engines that meet lower emission standards, and reduction of waste, all contribute to improvements in distribution efficiency.

A new area of distribution concerning green marketing is what has been called reverse logistics, whereby companies move packaging and used products or returned goods due to damage, seasonal or excess inventory from the consumer back up the distribution channel to the company for reconditioning, remanufacturing, refurbishing, recycling packages and reusing containers or for the proper disposal.

Reverse logistics need not be simply a green activity that places costs on companies; it can also be a flow of inputs to production as well as a flow of products, allowing companies to turn returned products into major cash flows (Polonsky and Rosenberger III, 2001).

H. Sponsoring: companies can express their concern for the environment by affiliating themselves with groups or projects engaged in environmental improvements. Eco-sponsoring demonstrates that companies are part of the community and that they are prepared to share responsibility for the environment and thus enhancing their brand equity and build sales. It also allows the consumers to contribute to their favorite environmental programs or organizations with little or no added expense or inconvenience, in addition environmental partners enjoy broadened publicity and the potential to attract new members and financial support (Ottman, 1998).

There are several ways for companies to engage in eco-sponsoring; in the simplest form, companies can donate and contribute funds directly to an environmental organization (Inc Magazine) or an environmental cause. Another approach is to adopt a particular environmental cause or program (Inc Magazine), for example companies can adopt a community recycling program, donating trees, assisting in cleaning up polluted areas, financially assisting school environmental programs, or by sponsoring environmental awards. Companies can also demonstrate their interest in supporting environmental protection, by donating a percentage of sales or profits to an environmental cause or organization.

I. Waste Management:the production of industrial products involves the extraction of natural resources, their utilization in the manufacturing and the disposal of unwanted materials not utilized in the final product (North, 1992). These processes raise a major problem of waste, which is considered as one of the serious environmental problems concerning societies; hence a green company has a major responsibility in handling their manufacturing waste.

Waste is the unwanted material left from manufacturing process (Erickson and King, 1999) including solid, liquid, or gaseous material (Ross, 1968).The problem is how to dispose industrial waste in a responsible manner, as waste can be hazardous and toxic causeing dramatic health and environmental problems.

Waste management; the process of collecting, transporting, processing, recycling or disposing of waste materials (wikipedia) was introdused to help organizations deal with the problem of waste. One of the waste management strategies is the concept of 3Rs; Reuse, Reduse and Recycle. Reduce also refers to waste reduction, source reduction or pollution prevention (Bishop, 2000), according to Environmnetal Protection Agency (EPA), it is an effort to use materials, processes or practices that reduce or eleminate the creation of pollution or wastes at the source (Bishop, 2000), rather that treat and dispose of waste after it has been produced (Post, et al., 1996). Pollution prevention activities incorporates a wide range of activities, such as product changes, input material changes, technology changes and improved operating practices (Bhat, 1993,Bishop, 2000).

2.5. The Green Consumer

Companies have discovered that consumers will buy products or avoid their purchase based upon environmental considerations(Lampe and Gazda, 1995). Studies have shown that consumers are changing their behavior to integrate environmental considerations and are basing their purchasing decisions not only

on how well products satisfy individuals needs, but also how these products affect the natural environment (Sheth and Parvatiyar, 1995). Hence green marketing no longer view consumers as individuals with insatiable appetites for material goods, but as human beings concerned about the condition of the world around them, how they themselves interact with the nature, and cognizant of how material goods impact their lives positively as well as negatively short term as long as long term (Ottman, 1998).

But not all consumers' purchase behavior is influenced by environmental concerns, thus, there is a need to identify and concentrate promotion on those market targets that are environmentally concerned(Lampe and Gazda, 1995). While the findings are inconsistent, empirical evidence suggests that the most receptive consumers to green marketing appeals tend to be white, better educated, higher in income, higher in occupation status and higher in socioeconomic status (Cornwell and Schwepker, 1995), motivated by a desire to keep their loved ones free from harm and make sure their children's future is secure (Ottman, 1998).

There are many attempts to segment consumers according to their environmental attitudes, but the best known segmentation was developed in 1990 by the Roper Organization, and it identified five categories of consumer (Coddington, 1993, Ottman 1998):

- True Blues: this segment holds strong environmental beliefs and lives them. Individuals in this segment believe they can make a difference, they dedicate time and energy to environmentally safe practices themselves and influence others to do the same, they are more apt to contribute money to environmental groups, and more likely to shun products made by companies that are not environmentally responsible.This group is the most educated of five groups, hold executive or professional jobs and are politically and socially active (Ottman, 1998).
- Greenbacks: green purchasing within this group is very high, and they are willing to pay extra for environmentally friendly products, avoid buying products from companies they perceive as environmentally irresponsible, and they worry about the environment and support environmentalism, yet feel too busy to change their lifestyle (Ottman, 1998).
- Sprouts: this segment is eager to engage in environmental activities from time to time, but only when it requires little effort. They prefer to choose green products but will not choose a green product if it is more expensive than others on the shelf (Ottman, 1998).
- Grousers: these people do not believe that individuals play any significant role in protecting the environment; instead they believe that the responsibility belongs to the government and corporations. Moreover they complain that they are too busy or that it is hard to get involved, and that green products cost too much and do not work as well (Ottman, 1998).
- Basic Browns: this segment is simply not convinced that environmental problems are all that serious. This segment has the lowest level of education and the lowest median income (Ottman, 1998).

2.6. Environmental Responsibility

a vision by the company that emphasizes the responsibility of conserving the environment and the importance of considering environmental issues within organizational decision making. There is evidence

that environmental responsibility is positively related to the presence of green marketing efforts (Coddington, 1993, Langerak, et al., 1998, Polonsky and Rosenberger III, 2001, Camino, 2004).

3. Methodology and instruments of the study

The study has focused on petroleum companies in the Arab world. Because these companies were not located in one geographical area, we have chosen to gather data through a survey.

Here is good to mention other resons for choosing survey, like: Survey provides a means of measuring a population's characteristics, self-reported and observed behaviour, awareness of programs, attitudes or opinions, and needs ...

Moreover, is better to mention that there are numerous survey research methods, including mail, telephone, face-to-face, handout and electronic, and you choose …

There are various types of surveys you can choose from. Basically, the types of surveys are broadly categorized into two: according to instrumentation and according to the span of time involved. The types of surveys according to instrumentation include the questionnaire and the interview (in survey research, the instruments that are utilized can be either a questionnaire or an interview (either structured or unstructured).

That is why in our country we use to mention: research method is survey and research instrument is questionnaire.That because there is much confusion around the terms survey and questionnaire.They are often used interchangeably probably because people think they are synonymous.

A survey is the process of collecting and analyzing the data, where the questionnaire is the set of questions used to gather the information.

So, while many people think of a questionnaire as the "survey", the questionnaire is just one part of the survey process.

3.1. Structure of the survey and study variables

Part one: General information about the company. The first part aims to obtain the following information:

a- Nature of the activity: it mainly consists of one of the multiple activities of the oil industry presented by the OAPEC[i]. These activities fall into one of these groups: prospection and exploration, production and extraction, refinement, transportation and marketing;

b- Size of the company: The size of these companies will be determined according to the number of employees. A micro sized company will be employing less than 49 persons, a small sized company will be employing between 50 and 249 persons, a medium sized company will be employing between 250 and 499 persons, while a large sized company will be employing more than 500 persons;

c- Number of years of experience;

d- Capital of the company;

e- Degree of competition; and

f- Awareness about the concept of green marketing.

Part two: Application of green marketing (dependent variable).

In order to find out if the studied companies do take green marketing into consideration, we have introduced thirty one questions. The answers to these questions will follow a Likert-type scale. This scale goes from 1 to 5. (1) is synonymous to total disagreement while (5) is synonymous to total agreement with the statement. (3) Indicates neutrality. Questions in this part of the survey mainly deal with environmental issues that are related to: prospection and drilling, choice of raw materials, production, wastes management, commercial brand, research and development, packaging, storage and outsourcing, pricing, transportation and distribution, commercial campaigns, media and finally annual reports.

Part three: Environmental responsibility.

Environmental responsibility will be measured based on many aspects such as the existence of a clear environmental policy inside the company. This policy may include the existence of an environmental management system, the incorporation of environmental concerns in the decision making process and the existence of specific jobs inside the company that are mainly related to environment. There are eleven statements in this section. Answers will follow a Likert-type scale.

3.2. Data description

The population of the study is composed of all petroleum companies that are active in Algeria, Saudi Arabia, Qatar, Kuwait, Oman, Egypt, Libya and United Arab Emirates. As for the sample, the study has tried to reach the highest number of companies in the population. Table1 summarizes the number of distributed questionnaires and the number of answered questionnaires.

Table 1 . Survey statistics by country

Country	Number of distributed questionnaires	Number of recovered questionnaires	Percentage
Algeria	100	51	44.34
Saudi Arabia	30	20	17.39
United Arab Emirates	18	14	12.17
Qatar	10	08	6.95
Oman	20	08	6,95
Egypt	06	06	5.21
Kuwait	06	04	3.47
Libya	10	04	3.47
Total	200	115	100

Source : Based on the results of sorting and classification of the survey

The present study has focused on petroleum companies in Arab countries regardless the nationality of these companies, whether they were domestic or foreign. This choice can be justified by many reasons but most importantly because:

a. Arab countries do host the most important and the higher number of petroleum companies in the world. In addition, some of these Arab countries do play a key role in the oil market like Saudi Arabia who holds the highest oil reserves in the world;

b. The Arab countries are most likely to suffer from environmental issues that are related to the oil industry;
c. The renowned environmental responsibility of petroleum companies who are active in the Arab world;
d. The high level of environmental awareness in the Arab world; and
e. The ability of the research team to get access to high level executives especially those in marketing and environmental issues.

The sample was composed of 100 petroleum companies from all previously cited Arab countries. The distributed survey was specifically meant to: (1) health, safety and environment executives (HSE); and (2) marketing or sales managers. Each company has received two surveys, one for each service.

3.3. Survey distribution

The survey was distributed between September 2014 and December 2015. During this period, the survey has been first distributed on 25 petroleum companies in HassiMessaoud, Algeria. Then, the survey was distributed on the remaining companies in its final version. Due to the large geographic area that hosts the studied companies, we have adopted multiple methods or communication channels with these companies:

a- Physical or personal method: most of the companies that are located in Algeria such as ENAFOR, ENSP and ENTP were approached physically. These companies were mainly located in HassiMessaoud, Ain Amenas, Skikda and Oran. It is important to mention that this method has proven to be more effective than the remaining methods;
b. Electronic method: companies outside of Algeria were approached through official email addresses or through their official media websites; and
c. Telephone Method: Some of the selected companies have been approached through telephone, especially those in HaoudBerkaoui, Saudi Arabia, Qatar and Oman.

3.4. Sample description

In the present study, two hundred questionnaires were distributed on 100 petroleum companies. Each company has received two questionnaires, one for HSE executives and one for marketing or sales managers. Only 115 out of 200 questionnaires were returned (57,5%). Most of the companies have only answered to one questionnaire only. After examination, seven of the answered questionnaires revealed to be invalid, which leaves us with only 108 valid questionnaires. In the following, we will present the descriptive statistics of the collected data:

a- Sector of activity: As mentioned earlier, the oil industry comprises several sectors. Table 2 presents the distribution of the studied companies according to their sector of activity. According to this table, 46,7% of the companies are specialized in prospection and exploration, 39,3% in production(extraction), 8,4% in transportation, 5,6% in marketing and 0% in refinement. The latter could be due to the fact that refinement is not a separate activity by itself, as it can be included with one of the previous activities.

Table 2. Distribution of surveyed companies by field of activity

Nature of the activity	Frequency	Percentage
Prospection and exploration	50	46.7
Production (extraction)	42	39.3
Refinement	00	00
Transportation	09	8.4
Marketing	06	5.6
Total	107	100

Source: Based on SPSS 22 survey analysis

b- Size: the distribution of companies' sizes is summarized in Table 3, The latter shows that 36,4% of the studied companies are mid-sized (comprising between 250 and 499 employee), 29,9% are large sized companies (comprising more than 500 employees), 25,2% are small-sized companies and finally 8,4% are micro-sized companies. It is clear that micro sized companies constitute a small proportion of the studied sample. This is mainly due to the fact that the oil industry requires large human resources.

Table 3. Distribution of surveyed companies by size

Size of the company (number of employees)	Frequency	Percentage
≤ 49 employees	09	8.4
Between 50 and 249 employees	27	25.2
Between 250 and 499 employees	39	36.4
≥ 500 employees	32	29.9
Total	107	100

Source: Based on SPSS 22 survey analysis

c- Years of experience: according to table 4, 46,7% of the studied companies have an experience of more than 26 years, 22,4% of the studied companies have between 16 and 25 years of experience, 19,6% of the studied companies have between 6 and 16 years of experience, and finally 11,2% of the studied companies have an experience of less than five years.

Table 4. Distribution of surveyed companies by years of experience

Years of experience	Frequency	Percentage
≤ 5	12	11.2
Between 6 and 15 years	21	19.6
Between 16 and 25	24	22.4
≥ 26	50	46.7
Total	107	100

Source: Based on SPSS 22 survey analysis

d- Level of competition: table 5 shows that only 2,8% of the studied companies had no direct competitors, 33,6% of the studied companies had a low level of competition, 33% of the studied companies had a moderate level of competition, 32,7% of studied companies stated that they had a high level of competition. We can conclude that the oil industry witnesses a high level of competition whether on the national or on the international level.

Table 5: Distribution of surveyed companies according to the level of competition

Level of competition	Frequency	Percentage
No direct competitors	03	2.8
Low number of competitors	36	33.6
Medium number of competitors	33	30.8
High number of competitors	35	32.7
Total	107	100

Source: Based on SPSS 22 survey analysis

b- Awareness about the concept of green marketing: the studied companies have been categorized according to their level of awareness about the concept of green marketing. It is important to mention that a considerable number of companies where practicing it without knowing that these efforts fall under the concept of green marketing. Table 6 shows that 50,5% of the studied companies are aware of the concept of green marketing while the remaining 49,5% are not.

Table 6. Distribution of companies according to their awareness about green marketing

Awareness about the concept of green marketing	Frequency	Percentage
Yes	54	50.5
No	53	49.5
Total	107	100

Source: Based on SPSS 22 survey analysis

We can conclude that the companies under study practice a highly polluted activity, with a considerable impact on earth, air and water. In fact, petroleum companies do not have a positive public image. Their impact on the environment is mainly emphasized by large investments and large exploitation activities. However, the studied companies accord an enormous importance to environmental issues. In addition to this, the studied companies are trying to distinguish themselves from competition through the integration of environmental considerations in various phases of oil exploitation.

3.5. Consistency and reliability of the data

The survey has been examined, improved and validated by university professors and experts in the field of environmental issues from petroleum companies in the Arab countries. In addition, we have applied the alpha Cronbach coefficient in order to measure the internal consistency of the data. This coefficient

checks the probability of obtaining invalid data when reproducing the same study on the same sample under the same conditions. It takes a value between 1 and 0. The closer it is to 1, the higher the consistency. The closer it is to 0, the lower the consistency. Data is said to be consistent when the coefficient reaches a value of 0.6 or higher. The coefficient of reliability, which is the square root of alpha Cronbach coefficient has also been calculated. These tests have been conducted under SPSS 22. Results are summarized in the following table.

Table 7. Consistency and reliability coefficients of the survey

Study variables	Number of statements	Alpha Cronbach	Coefficient of reliability
Application of green marketing	30	0.958	0.917
Environmental responsibility	12	0.961	0.923

Source: Based on SPSS 22 survey analysis

Table7 shows that all coefficients are above 0.6.This is anindication that the survey is internally consistent and reliable.

3.6. Methods (for analyzing data)

The present study relies on both Excel 2010 and SPSS 22. In order to analyze the existing relationship between the variables, we have used the following methods:

* Alpha correlation coefficient in order to verify the reliability and the internal consistency of the different variables.
* Factor analysis in order to identify the internal structure of the variables.
* One way ANOVA in order to verify the validity of the research hypothesis which stipulates that there is a statistically significant relationship between environmental responsibility and green marketing.
* Chi-Square test in order to assess the statistical significance of differences between petroleum companies' characteristics and their level of environmental responsibility.
*Simple regression analysis in order to quantify the relation between environmental responsibility (independent variable) and the application of green marketing (dependent variable).

4. Results

4.1. Statistical analysis of the variables

At first, we have applied the Exploratory Factor Analysis[ii] for all the variables of the study. This will mainly allow us to identify a set of latent constructs underlying the study variables. EFA is generally used when there are no a priori hypotheses. In addition, we have conducted the following tests:

***Goodness of fit to normal distribution:** in order to check the goodness of fit of data to the normal distribution, we have applied the Kolmogorov-Smirnov test. Results show that the significance level for each variable is higher than 0.05. Thus, data for each variable follows a normal distribution.These finding are also confirmed by the visual inspection of each variable's histogram.

*** Extreme values test**: in order to check if data is free of extreme values, we have conducted the Mahalanobis test. Results show that the values of the MAH-1 column are lower than the tabular value of

Chi-square at a degree of freedom equal to 49 (Number of groups - 1) and at a significance level equal to 0,001. We can conclude that the data set does not include extreme values.

*__Test of non-correlation between independent variables__: In order to check for un-correlation between the independent variables, we have calculated the matrix determinant for each variable. Since the latter is higher than 0.0001, we can conclude that there is no correlation between the independent variables.

***Sample adequacy test**: the size of the sample in the present study is higher than 100. However, we have applied the KMO[iii] test in order to verify the sufficiency of the sample. Results show that the sample is sufficient. In addition, we have applied the Bertlett test of Sphericity in order to check the sample adequacy. Results show that the level of significance was lower than 0.05.

*** Results of factor analysis of the variables[iv]:**

- Results of factor analysis of the dependent variable (incorporation of green marketing): At first, the survey included 30 statements concerning the incorporation of green marketing. However, after factor analysis, five statements have been removed due to the fact that they are uncorrelated. Table 8 illustrates factor analysis concerning the application of green marketing as a dependent variable. The matrix is composed of four dimensions. The first dimension explains production and pricing activities that are friendly to environment. The second dimension explains storage activities that are friendly to environment, in addition to the use of green labeling card. The third dimension represents green distribution. The fourth dimension explains green promotion.

Table 8. Matrix of rotated factors concerning the application of green marketing

Statement	Factor one	Factor two	Factor three	Factor four	Covariance	Stability of the measuring instrument
1. Our companyworks on choosing the less contaminating raw materials	0,789				0,794	0,891
2. Our company takes into account the environmental impact when developing new products . through trying to diminish the environmental impact as well as possible.	0,781				0,799	0,893
3. Our company adjusts the available products to make them less harmful to the environment.	0,630				0,753	0,867
4. Our company seeks to eliminate(eradicate) the pollution resulting from industrialization.	0,451				0,837	0,914

5. Our company sets specific procedures to get rid of the dangerous materials by the end of product`s cycle.	0,222				0,748	0,864
6. Our company takes on the international developments in preserving the environment.	0,668				0,726	0,852
7. Our company has a specific (specialistic) organization for research and development in the field of environment preservation.	0,444				0,557	0,746
8. Our company works on decreasing raw materials and the usable energy in the processes of filling and packaging.	0,633				0,722	0,849
9. Our company uses the recyclable materials of filling and packaging or those wich can be used again or those naturally decomposed.	0,739				0,748	0,864
10. Our company creates data related to environment preservation on its products.	0,590				0,722	0,849
11. Our company uses commercial names, posters, stamps, or pictures to confirm that its products are not harmful to environment.	0,762				0,653	0,808
12. Our company pays attention to the increase of product`s prices which preserve environment.	0,726				0,819	0,904
13. Our company decides on its depending on the real value of its products.	0,686				0,629	0,793
14. That our company takes concern in about environmental issues leads to increase in the costs of transportation and distribution which, in turn, affects its product`s prices.			0,751		0,828	0,909

15. That our company looks after(take concern in) the environmental issues leads to an increase in storing and handling costs, which in turn, affects its product`s prices.			0,859		0,785	0,886
16. When choosing location for stores and building, our company is sensitive to environmental damage.		0,703			0,798	0,893
17. - Our company employs transporting and handling means less in energy.			0,690		0,649	0,805
18. Packages which our company loads the products in can be reused.			0,715		0,679	0,824
19. Our company enjoys a slogan expressing environment preservation.		0,722			0,702	0,837
20. Our company comments on product`s environmental characteristics during its advertising campaigns.		0,403			0,689	0,830
21. Our company seeks to realise credibility during its advertising campaigns.		0,700			0,863	0,928
22. Our company admits its harmful – to environment mistakes to the media.				0,806	0,671	0,819
23. Our company`s salesman are of awareness about the benefits that our products entail to environment.				0,272	0,644	0,802
24. Our company issues annual reports about its environmental contribution.				0,495	0,745	0,863
25. The increasing cost of green marketing doesn`t repeal our				0,697	0,667	0,816

company`s pursue in green policies.						
Percentage of explained variance	%53,2	%8,7	%6,5	%4,4		
Name for each dimension	Production and pricing activities that are friendly to environment	Green labeling card	Green distribution activities	Green promotion activities		

Source : Statistical appendix for Factor Analysis

* Total variance explained: 72,9%* Alpha coefficient: 95,8% * Factor stability:82,03%

*Bartlett test: 0.749 * Significance level:0,000 * Eigen value 13.3

In this section, there are twenty-five statements. Each statement can be answered on a Likert-type scale from 1 to 5. And so, the overall score will vary between 25 and 125. A score of 65 or higher indicated that the company incorporates green marketing principles in its strategy. The choice of the value 65 comes as an attempt to obtain an objective measure of green marketing behavior inside the surveyed companies. This will mainly contribute in reducing the social desirability bias, where the survey respondents try to answer in a manner that is viewed favorably by others. Based on this criterion, it is concluded that all the surveyed companies do incorporate green marketing in their strategy. This result may be due to the fact that all companies in the selected sample have already obtained the ISO 14000 certification, which usually means that these companies do in fact take into consideration environmental issues. In addition, such a conclusion may be also due to social desirability bias as mentioned earlier.

- Results of factor analysis of the independent variable (environmental responsibility of companies): This section comprises thirteen statements about environmental responsibility of the surveyed companies. Table 9 summarizes the matrix of rotated factors concerning the company's environmental responsibility.

Table 9. Matrix of rotated factors concerning environmental responsibility

Statement	Factor one	Factor two	Covariance	Stability of the measuring instrument
1. Our company has a clear policy regarding its environmental responsibility.		0,906	0,858	0,926
2. Our company prevents the wasteful use of raw materials and natural resources.		0,833	0,806	0,897

3. Our company uses techniques to improve energy or water efficiency.		0,675	0,674	0,820
4. Our company uses environmentally friendly machines and technologies.		0,760	0,728	0,853
5. Our company evaluates its environmental performance through periodically conducting environmental audits.	0,785		0,788	0,887
6. Our company implements pollution prevention programs.	0,821		0,833	0,912
7. Our company implements environmental management systems like ISO 14000.	0,852		0,857	0,925
8. Our company`s manager`s attitudes are positive towards theenvironmental issues in society.	0,796		0,851	0,922
9. Our company`s managers feelthat they are able to deal with or lighten the intensity of the environmental problems.	0,834		0,865	0,930
10. Our company`s supreme administration is convinced about the importance of integrating the environmental dimension into its strategic planning.	0,859		0,769	0,876
11. Our company`s supreme administration is responsible for the environmental attitude and for utilisingnew methods and avoiding counterfeiting. Its decisionsare all environmental morals-proper decisions.	0,506		0,570	0,754
12. Our company enjoys specialist environmental occupation and environment`s specialists.	0,836		0,784	0,885
13. Men of marketing in our company are committed to the environmental issues in society.	0,746		0,769	0,876
Percentage of explained variance	69,081%	9.015%		
Name for each dimension	Application ofenvironmental administration and environmental specialization of	Company's responsibility towards natural resources		

	the administration and the employees			

Source: Statistical appendix for Factor Analysis

* Total variance explained: 78,1% * Alpha coefficient: 96,1%* Factor stability:88,17%

*Bartlett test: 0.864 * significance value:0,000 * Eigen value: 8.98

Table 9 indicates that the variable of environmental responsibility is composed of two dimensions. The first dimension explains the application of environmental management and environmental specialization by top managers and employees. The second dimension explains the company's responsibility towards the preservation of natural resources. Table 9 shows that this variable enjoys a high internal consistency considering the fact that Alpha coefficient equals 96,1% and that factor stability has reached 88,17%

*** Hypotheses testing**

First hypothesis: "There is a statistically significant relationship between environmental responsibility and green marketing". This hypothesis has been tested using one way ANOVA. Results are summarized in table 10.

Table 10: one way ANOVA of the relationship between environmental responsibility and the application of green marketing

	Source of variance	Sum of squares	Degrees of freedom	F value	Test significance
Aggregated scale for environmental responsibility	Intra groups	1512,056	29	111,521	0,000
	Error	36,000	77		
	Total	1548,056	106		

Sig. level: 5%Source: Statistical appendix of one way ANOVA

Table 10 indicates that the calculated F value is equal to 111,521 at a significance level of 0.000. The latter is largely inferior to 5%. Thus, the null hypothesis stipulating that there is a statistically significant relationship between environmental responsibility and green marketing application can be accepted

Second Hypothesis: "There is a statistically significant relationship between the company's characteristics and the incorporation of green marketing." This hypothesis has been tested using the Chi-square test. Results are summarized in table 11. It indicates that the calculated Chi-square value for the sector of activity, the number of employees, years of experience, capital, competition and awareness of green marketing concepts are respectively: (290,429), (265,242), (280,18), (249,307), (302,229) and (94, 999) at the same significance level of (0.000). The latter is lower than (0.05). Thus, the null hypothesis stipulating that there is a statistically significant relationship between the company's characteristics and the application of green marketing is accepted.

Table 11: Chi-square analysis of the relation between the company's characteristics and the application of green marketing

Characteristics	Chi-Square	Degrees of freedom	Test significance
Sector of activity	290,429	87	0,000
Number of employees	265,242	87	0,000
Years of experience	280,187	87	0,000
Capital	249,307	87	0,000
Level of competition	302,229	87	0,000
Awareness about green marketing	94,999	29	0,000

Sig. level: 5% Source: Statistical appendix of Chi-square analysis

4.2. Results from the simple linear regression model

The relationship between green marketing (dependent variable) and environmental responsibility (independent variable) is formulated as:

$$y = \alpha + \beta x + \varepsilon$$

Where y represents the application of green marketing, αrepresents a constant value, β represents slope, x represents environmental responsibility and ε represents the error terms.

Table 12 summarizes the results of the regression model. It shows that environmental responsibility can only explain 65% of the variation in the application of green marketing. In this case, the coefficient of determination R-squared is equal to 0.657.

Table 12. Simple regression analysis of environmental responsibility and green marketing

Model	Variables of the model	Coefficient of determination	Standard error	Calculated F. value	Level of significance
1.	Company's environmental responsibility	0,657	9,998	201,015	0,000

Sig. level: 5% Source: Statistical appendix of the simple regression model

Table 13 indicates that there is a positive relationship between the company's environmental responsibility and the incorporation of green marketing principles in its strategy. The relationship between these two elements can be formulated as:

Application of green marketing = 49,243 + 1,343 environmental responsibility.

Table 13 . Regression coefficient from the simple regression model

Variables	Regression coefficient(β)	Standard error of regression coefficient	Standard regression coefficient	Calculated t value	Level of significance
Constant	49,243	6,820	-	7,220	0,000
Environmental responsibility	1,343	0,339	0,302	3,957	0,000

Sig. level: 5% Source: Statistical appendix of the simple regression model

5. Discussion

Results have shown that there is a statistically significant relationship between environmental responsibility and the incorporation of green marketing in petroleum companies. These companies are perfectly aware that the oil industry is one of the most polluting sectors. They are also ready to take the necessary precautions in order to protect the ecosystem and the natural resources that will certainly impact the economic and social benefits of oil.

It is important to mention that the studied companies are implanted in countries that are involved in the United Nations Environment Program, and that they have signed various agreements that aim to protect the environment against any infringements. Based on this, petroleum companies are required to comply with the local laws of their host countries. This compliance may appear to be voluntary, but at the end, petroleum companies do not have the choice but to strictly follow local laws. The findings of the present study are in line with the findings of Scovill's study and Linowes' study.

6.Conclusions

The oil industry by its nature has always presented serious threats to the environment. The latter must be protected by all counterparts including governments, petroleum companies and consumers. The available natural resources are not the property of the current generation only, but the property of all the future generations. We will present in following a set of recommendations to governments, petroleum companies and consumers:

1- Governments are required to reach the optimal energetic balance in order to preserve the rights of the future generations whether concerning oil or concerning the environment;

2- Governments are required to instore the necessary laws in order to push petroleum companies towards the respect of the environment at all phases of oil exploitation, in addition to the proper incineration of wastes. Governments should also work hand to hand with petroleum companies in order to implement adequate laws concerning the environment;

3- Governments should encourage law complying companies through various means such as granting financial aids, offering tax exemptions and creating specific funds that aim to protect the environment;

4- Petroleum companies are advised to create a research and development section that deals specifically with environmental challenges. These companies should also provide their marketing team with environmental data concerning their products. Efforts in this sense have proven to have immediate effects on the competitive advantages of these companies;
5- Marketing executives are advised to communicate environmental facts while advertising their products. They are also advised to precisely define the most important environmental concepts that are present on their products packages;
6- Consumers are advised to choose products that come from environment respecting companies. This will encourage the remaining companies to adopt the concept of green marketing;
7- Consumer protection associations should play a key role when it comes to sensitizingcustomers about environmental issues. They should also push companies to adopt a green strategy; and
8- Governments are required to learn from the experiences of developed countries especially when it comes to their strategies concerning the instauration of an advanced environmental culture.

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[i]Organization of Arab Petroleum Exporting Countries.

[ii] In order to identify the constructs, we have applied the principal components method. SeeH.Fenneteau, C Bialés, Analyse statistique des données: Application et cas pour le marketing, France : Aubin imprimeur, 1993, p55. In addition, we have applied an orthogonal rotation of axes using the Varimax method. This method mainly helps reducing the number of dependent variables. As for determining the number of factors, we have relied on the Kaiser criterion where the Eigen value must equal 1 or higher and the Cattel criterion.

[iii]Statistical appendix of factor analysis.

[iv] Factor analysis is a mathematical operation that deals with the classification of scientific phenomena in the fields of education, psychology and marketing. It is also a statistical technique that aims to explain the significance of correlation coefficients between variables. It is used to simplify the relationship between a dependent variable and a multitude of independent variables.

Factor analysis is one of the most effective ways to reduce the size of data and the number of variables.For more information see:

- Jean-François Durand, **"éléments de calcul matriciel et d'analyse factorielle de données"**,France,2002.
- Electronic Textbook, **Principal Components and Factor Analysis**,Available:http://www.statsoft.com/textbook/stfacan.html.(20/01/2016)

Appendix(1)

Questionnaire

Dear Manager:

In the light of increased global environmental concern, the researcher is conducting a study on green marketing (that eliminates the negative impact of marketing activities on the environment). The research aspires to obtain an overview of green marketing adoption in of petroleum's Organizations , and believed it will be a valuable contribution to the available literature. Hereby, I am kindly asking for your assistance in completing this research by answering the attached questionnaire objectively, since your contribution is vital for this research accomplishment, and all received information will be confidential and used solely for the research objectives.

A Copy of research findings is available upon request .( )

I highly appreciate your precious cooperation in advance

Respectfully your

Halima Saadia KORICHI

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P please indicate the level of agreement with each of the following statements that mostly represents your company:

The 1- The sector of your company's industry is:

	3-Refining		**2- Production (extraction)**		**1- Prospecting and Exploration**
	5- **Marketing**		**4-Transportation**		

66 6- **Other (Please Specify)**

2 **.2- The number of your company 's employees is:**

1-less than 49		2-50-249		3-250-499		4- More than500	

3-

3- **TThe number of your company's years in business is**

1:Less than 49		2: 6-15		3:16-25		4: more than 26	

.44- The size of your company's capital is (in million)

1-less than 99		2- 100-999		3- 1000-10000		4- more than 10000	

5-

5- 5-The size of competition within your company's sector is:

	1- No close competitors		2- Few competitors		3- Many competitors		4-A large number of competitors

6- **Are you familiar with the green marketing concept?**

	1-Yes		**2-No**

Please indicate the level of agreement with each of the following statements that mostly represents your company:

A. Green Marketing Adoption	Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
1- Our company works on choosing the less contaminating raw materials.					
2- Our company takes into account the environmental impact when developing new products . through trying to diminish the environmental impact as well as possible.					
3- Our company adjusts the available products to make them less harmful to the environment.					
4- Our company seeks to eliminate(eradicate) the pollution resulting from industrialization.					
5- Our company sets specific procedures to get rid of the dangerous materials by the end of product`s cycle.					
6- Our company takes on the international developments in preserving the environment.					
7- Our company has a specific (specialistic) organization for research and development in the field of environment preservation.					
8- Our company works on decreasing raw materials and the usable energy in the processes of filling and packaging.					
9- Our company uses the recyclable materials of filling and packaging or those wich can be used again or those naturally decomposed.					
10- Our company creates data related to environment preservation on its products.					
11- Our company uses commercial names, posters, stamps, or pictures to confirm that its products are not harmful to environment.					
12- Our company pays attention to the increase of product`s prices which preserve environment.					
13- Our company decides on its depending on the real value of its products.					

14- That our company takes concern in about environmental issues leads to increase in the costs of transportation and distribution which, in turn, affects its product`s prices.					
15- That our company looks after(take concern in) the environmental issues leads to an increase in storing and handling costs, which in turn, affects its product`s prices.					
16- product`s prices for our company are always less than the competitors.					
17- When choosing location for stores and building, our company is sensitive to environmental damage.					
18- Our company employs transporting and handling means less in energy.					
19- Our company employs transporting and distributing means which diminish the proportion lost of products.					
20- Packages which our company loads the products in can be reused.					
21- Our company has its specific distributing canals for transporting its waste material.					
22- Our company enjoys a slogan expressing environment preservation.					
23- Our company comments on product`s environmental characteristics during its advertising campaigns.					
24- Our company seeks to realise credibility during its advertising campaigns.					
25- Our company admits its harmful –to environment mistakes to the media.					
26- Our company`s salesman are of awareness about the benefits that our products entail to environment.					
27- Our company works on diminishing its waste or even abolishing it ascertaining its social responsibility.					
28- Our company issues annual reports about its environmental contribution.					
29- The revenue from applying the green marketing is intangible in the short-term.					

30- The increasing cost of green marketing doesn`t repeal our company`s pursue in green policies.					
31- Our company is not affected by long period of retrievals for the spent investments in producing pro-environmental products.					

B. Green Marketing Attitudes	**Strongly Agree**	**Agree**	**No Opinion**	**Disagree**	**Strongly Disagree**
1. Green marketing should be considered only in companies with high environmental impact.					
2. Green marketing should be considered only upon strict environmental legislations.					
3. Green marketing should be considered only upon stakeholders' environmental pressure.					
4. Our company does not have any good reason to implement a green marketing strategy.					
5. Our company is not interested in green marketing as our marketing activities do not affect the natural environment.					
6. Green marketing is an additional managerial burden.					
7. Green marketing requires a great deal of financial investments that could influence company's profitability.					
8. Green marketing needs big technical modifications on products and production processes.					
9. Green marketing reduces companies' efficiency in performing their marketing activities.					
10. Green marketing increases products' prices hence reduces their ability to compete in the market.					
11. Green marketing does not add any competitive advantage for the companies adopting it.					
12. Green marketing does not add any positive image for the companies adopting it.					

C. Social Responsibility	Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
1. Our company complies with community ethical norms and standards.					
2. Our company contributes resources to charities and welfare.					
3. Our company sponsors and supports social, educational and youth programs within the local community.					
4. Our company considers the interest and the feedback of all stakeholders					
5. Our company provides reliable, high quality and safe products.					
6. Our company discloses all information about product contents.					
7. Our company does not participate in deceptive and unfair marketing activities.					
8. Our company provides employees with fair compensations.					
9. Our company provides all employees with health insurance.					
10. Our company prohibits child labor.					
11. Our company employs disabled people or the less fortunate for human purposes.					

D. Environmental Responsibility	Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
1. Our company has a clear policy regarding its environmental responsibility.					
2. Our company complies with all environmental regulations and legislations.					
3. Our company prevents the wasteful use of raw materials and natural resources.					
4. Our company uses techniques to improve energy or water efficiency.					
5. Our company uses environmentally friendly machines					

and technologies.					
6. Our company evaluates its environmental performance through periodically conducting environmental audits.					
7. Our company implements pollution prevention programs.					
8. Our company implements environmental management systems like ISO 14000.					
9- Our company`s manager`s attitudes are positive towards the environmental issues in society.					
10- Our company`s managers feel that they are able to deal with or lighten the intensity of the environmental problems.					
11-Our company`s supreme administration is convinced about the importance of integrating the environmental dimension into its strategic planning.					
12-Our company`s supreme administration is responsible for the environmental attitude and for utilising new methods and avoiding counterfeiting. Its decisions are all environmental morals-proper decisions.					
13-Our company enjoys specialist environmental occupation and environment`s specialists.					
14-Men of marketing in our company are committed to the environmental issues in society.					

Thank you for dedicating your time to complete this questionnaire

Appendix(2)

ANOVA

Environmental Responsibility

	Somme des carrés	ddl	Carré moyen	F	Sig.
Intergroupes	1512,056	29	52,140	111,521	,000
Intragroupes	36,000	77	,468		
Total	1548,056	106			

Test du khi-deux

Tests statistiques

	X1	X2	X3	X4	X5	X6
Khi-deux	56,776[a]	18,421[a]	29,860[a]	70,682[a]	28,290[a]	,009[b]
ddl	3	3	3	3	3	1
Sig. asymptotique	,000	,000	,000	,000	,000	,923

a. 0 cellules (0,0%) ont des fréquences théoriques inférieures à 5. La fréquence théorique minimum d'une cellule est 26,8.

b. 0 cellules (0,0%) ont des fréquences théoriques inférieures à 5. La fréquence théorique minimum d'une cellule est 53,5.

ANOVA

Determinants Green Marketing

	Somme des carrés	ddl	Carré moyen	F	Sig.
Intergroupes	46065,869	29	1588,478	67,502	,000
Intragroupes	1812,000	77	23,532		
Total	47877,869	106			

Régression

a. Variable dépendante : Green Marketing

Récapitulatif des modèles[j]

Modèle	R	R-deux	R-deux ajusté	Erreur standard de l'estimation
1	,810[a]	,657	,654	9,998

ANOVA[a]

Modèle		Somme des carrés	ddl	Carré moyen	F	Sig.
1	Régression	20094,432	1	20094,432	201,015	,000[b]
	Résidus	10496,316	105	99,965		
	Total	30590,748	106			

Coefficients[a]

Modèle		Coefficients non standardisés		Coefficients standardisés	t	Sig.	Statistiques de colinéarité	
		B	Ecart standard	Bêta			Tolérance	VIF
1	(Constante)	37,291	3,739		9,973	,000		
	Environmental Responsibility	3,603	,254	,810	14,178	,000	1,000	1,000