

**T.C.
YALOVA ÜNİVERSİTESİ
SOSYAL BİLİMLER ENSTİTÜSÜ**

GREEN CONSUMERS IN POLAND

M.Sc. THESIS

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**Department: Management
Field of study: Management**

Thesis Advisor: Assoc. Prof. Fahri APAYDIN

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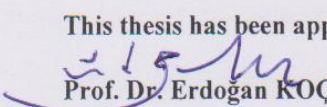
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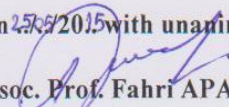
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DECLARATION

I hereby declare that this Master's Thesis is the product of my own independent work. All content and ideas drawn directly or indirectly from external sources are indicated as such. The thesis has not been used in the same or in similar version to achieve an academic grading and has not been published elsewhere.

Magdalena SZCZEPANIAK

15.05.2015

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ACRONYMS AND ABBREVIATIONS

ANOVA	: Analysis of Variance
df	: Degrees of Freedom
ECCB	: Ecologically Conscious Consumer Buying
et al.	: et alii (and others)
EU	: European Union
GPB	: Green Purchase Behavior
HSD	: Honestly Significant Difference
ISD	: Institute for Sustainable Development
M	: Mean
NEP	: New Ecological Paradigm
OECD	: Organization for Economic Cooperation and Development
PCE	: Perceived Consumer Effectiveness
PLN	: Polish Zloty
SD	: Standard Deviation
Sig.	: Significance
USD	: United States Dollar

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<p>İnsanlar kırk yılı aşkın bir süredir çevre, çevre sorunları ve çevrenin korunması konuları ile ilgilenmeye başladılar. Küresel ısınma, asit yağmuru ya da yenilenebilir enerji kaynakları basın tarafından sürekli örtülen konulardır. Tüketiciler, çevre bilinçliliğini devamlı olarak arttırmaya yönelik çevre dostu mal ve hizmetleri aramaktadırlar. Dahası, hükümetler çevre lehine getirdikleri kuralları ve kanunları yürürlüğe koymaktadırlar. Sonuç olarak şirketler çevre dostu pazarlamanın stratejilerini uygulamak zorunda kalmakta ve pazarlamacılar ise çevre farkındalığı açısından pazardaki çeşitli bölümler arasında var olan farklılıkları dikkate almaya başlamaktadır. Bu sebeple, araştırmanın temel amacı; pazarı, çevre dostu ürünlerin tüketim sürecinde önemli olduğu düşünülen çevre değişkenlerine göre belirli tüketici gruplarına ayırmak olmuştur. Çalışmanın ikinci amacı ise; demografik değişkenler açısından bölümler arasındaki farklılıkların önemini olup olmadığını belirlemektir. Çalışmanın son amacı ise; Polonya'daki çevre dostu tüketicilerinin profillerini tespit etmektir.</p> <p>Araştırmanın teorik kısmı; çevre dostu pazarlama literatürünün analizi, Polonyalı tüketicilerin çevre bilinçliliği ve çevre dostu pazarın bölümlendirilmesini kapsar. Temel varsayımlar, tarihçe, çeşitli stratejiler ve çevre dostu pazarlamanın araçları araştırılmıştır. Ayrıca Polonya'daki çevre bilinçliliği hakkındaki yorumlar ve çevre bilinçliliği incelenmiştir. Çevre dostu pazarın bölümlendirilmesi anlayışı, demografik (yaş, cinsiyet, eğitim seviyesi, gelir seviyesi) ve çevresel olarak (çevre kaygısı, tüketici yararlılığının korunması, ekonomik faktör, çevre bilgisi, çevre dostu ürünler satın alma davranışı, çevre dostu aktivizmi, çevre dostu alışkanlıklar) tartışılmıştır. Araştırmanın deneysel kısmından elde edilen istatistiksel veriler toplanılmış ve analiz edilmiştir. Araştırmada 250 Polonyalı tüketiciye kolayda örnekleme tekniği uygulanmıştır. Tüketicilere kendi kendine uygulanan anketler, mail ve web site ağları aracılığı ile yollanıp ölçüm aracı olarak kullanılmıştır. Faktör analizi, hiyerarşik ve hiyerarşik olmayan küme analizi ve varyans analizi (ANOVA) ; çevre dostu piyasadaki bölümleri birbirinden ayırmak için kullanılmıştır.</p> <p>Çevresel değişkenler; tüketicilerin bölümlendirilmesine imkân tanımış ve tüketicileri "Potansiyel Çevre Dostları", "Çevre Dostları" ve "Çevre Dostu Olmayanlar" olmak üzere üç gruba ayırmıştır. Çalışmanın sonuçları yaş ve cinsiyetin daha çevre dostu olan tüketicilerin bölümlendirilmesi ile daha az çevre bilinci olan tüketicilerin bölümlendirilmesiarasındaki farklılıklarınönemli olduğunu göstermiştir. Gelir ve eğitim seviyesinin ise istatistiksel olarak önemli olmadığı görülmüştür. Polonyalı çevre dostu tüketicilerin profili, bu çalışmada kapsamlı olarak teorik çerçevede sunulmuştur.</p> <p>Anahtar kelimeler: çevre dostu pazarlama, çevre dostu bilinçliliği, çevre kaygısı, tüketici yararlılığının korunması, ekonomik faktör, çevre bilgisi, çevre dostu ürünler satın alma davranışı, çevre dostu aktivizm, çevre dostu alışkanlıklar, çevre dostu tüketicilerin profili</p>	

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<p>Over the last forty years people have become more concern about the environment, its problems and preservation. Global warming, acid rain or renewable energy sources are the terms that have been covered by media repeatedly. Consumers have started to search for green products and services as their environmental consciousness has been increasingly rising. Furthermore, governments have introduced pro-environmental regulations and laws. As a result, companies have been forced to implement the strategies of green marketing, and marketers began to consider the differences existing between various segments of market in terms of green awareness. Therefore, the major aim of this study is to divide the market into specific consumer groups according to the environmental variables that have been viewed as important in the consumption process of the eco-friendly products. The second purpose of this research is to determine whether the significance differences between segments exist in terms of demographic variables. The third goal is to discover a profile of green consumers in Poland.</p> <p>The theoretical part of the study includes the review of literature on green marketing, environmental consciousness of Polish consumers, and segmentation of green markets. The basic assumptions, a brief history, various strategies and instruments of green marketing were investigated. Furthermore, the interpretations and the evolution of environmental consciousness in Poland were examined. Then, the concept of the green market's segmentation and its socio-demographic (age, gender, education, income) and environmental (green concern, perceived consumer effectiveness, economic factor, environmental knowledge, green purchase behavior, green activism, green habits) factors were presented. In the empirical part of the study the data were collected and analyzed. The research used a convenience sample of 250 Polish consumers. The self-administrated questionnaire sent via emails and networking websites served as a measurement instrument. The factor analysis, hierarchical and non-hierarchical cluster analyzes, and the Analysis of Variance (ANOVA) were performed in order to distinguish the segments of the green market.</p> <p>The environmental variables allowed making a segmentation of consumers and discovering three groups: 'Potential Greens', 'True Greens' and 'Browns'. The results of the study indicated that age and gender are significant for differentiating between greener segments and those consumer groups that are less environmentally conscious, while education and income are not statistically significant. The profile of Polish green consumer was determined based on the comprehensive theoretical framework proposed in this study.</p>	
<p>Keywords: Green Marketing, Green Consciousness, Green Concern, PCE, Economic Factor, Environmental Knowledge, Green Purchase Behavior, Green Activism, Green Habits, Green Consumers Profiles</p>	

INTRODUCTION

In the recent years, the environmental concerns have gained extensive attention from researchers, governments, consumers, as well as companies. Air pollution, natural resource exploitation, excessive logging of forests, and other causes of environmental degradation have been covered by media repeatedly. Rapid economic growth and over-consumption have also significantly contributed to the problems of the environment. Therefore, the pro-environmental actions and initiatives are seen as crucial for reducing the negative influence of consumers and organizations' activities on the natural environment, and for promoting the sustainable development.

More and more individuals became eager to introduce necessary changes in their everyday life in order to conserve the natural environment. Therefore, the environmental protection became one of the key issues on the global scale. It is assumed that eco-friendly consumption will be the main determinant of changes in the size and structure of consumption in developing countries (Zalejski and Faszczewska, 2012). As a result, the subject of environmental awareness has attracted the attention of both the practitioners and academicians from different business and science disciplines. The green concept and specifically the segmentation of environmentally-friendly consumers will be examined in the next chapters of this work.

The first chapter presents the review of the theoretical and empirical literature on green marketing in general, and on the environmental consciousness perspective particularly in Poland. The fundamental concepts, assumptions, and a brief history of pro-environmental marketing are introduced. Then, green marketing strategies and instruments, like green marketing mix instruments, are demonstrated, and the term 'greenwashing' is explained and discussed. Furthermore, the chapter examines the green consciousness, its interpretations, approaches developed toward environmental consciousness and its evolution in Poland.

The concept of ecological consumption dates back to the 1970s (Peattie, 2010). Since then many studies contributed to the understanding of this issue. Numerous researchers investigated demographic variables, environmental knowledge, attitudes, values and other constructs related to environmental consciousness in order to find out the factors that influence green behavior. Ecological consumers search for products favorable for the environment and contributing to its preservation. Individuals interested in green issues check the composition of products and select the ones in recyclable packaging, willing to pay higher price for eco-friendly products (Witek, 2008). An environmentally-friendly product was defined by the Organization for Economic Co-operation and Development 'produced without toxic chemicals or are recyclable, reusable, biodegradable or having eco-friendly packaging and with low detrimental environmental impact at all stages of its life-cycle with the long-term goal of preservation of natural environment' (OECD, 2009: 3). Besides, today's consumer is well educated, has a broad access to information and actively participates in social life. The companies became forced to implement the strategies and tools of green marketing. The concept of pro-environmental marketing is defined as organizations' efforts at designing, promoting, pricing and distributing products that will not harm the environment (Pride and Ferrell, 1993).

Also, it was proven in some of the previous empirical studies that nowadays more and more often consumers decide to choose green products (Buenstorf and Cordes, 2008). Therefore, the organizations are compelled to obtain information about the consumers and their behavior and learn the new market trends from them. If companies define different market segments' characteristics, they can easily select and target the suitable for them groups of consumers, and offer the right mix of products or services to the right market segments. Consequently their profitability and efficiency increases and they can gain a competitive advantage.

Moreover, market segmentation helps to improve customer satisfaction and expectation-perception coherence (Martin et al., 2000). As a result of the increasing environmental awareness and preferences for green companies involved in pro-environmental initiatives, and their environmentally-friendly products and services, marketers started profiling

ecological consumers. Therefore, the major purpose of this study was to identify green consumer profiles based on the constructs that have been viewed as significant in the consumption process of pro-environmental products. These constructs are the green concern, perceived consumer effectiveness, economic factor, environmental knowledge, green purchase behavior, green habits, and green activism.

According to the various researches carried out in Poland over the last 20 years, the green awareness of Polish consumers is constantly growing, as well as the prestige of being an eco-friendly consumer (Mirońska, 2010). The number of environmentally-friendly products and services available on the market is increasing, as is the purchasing power of green consumers. Numerous empirical studies were conducted among Polish individuals regarding the issues such as ecological consciousness (Hull, 1984; Bołtromiuk and Burger, 2008; Sadowski, 2000; Mirowski 1999; Gliński, 1996; Klimczyk-Bryk, 2000). The definition of the environmental consciousness explains it as information and beliefs about the natural environment and the perception of the relationship between the state and character of the natural environment and the conditions and quality of human life (Burger, 2005).

The report prepared by the Institute for Sustainable Development (ISD), 'Ecological awareness of Polish people, analysis of quantitative test results from the years 1992-2011', Strumińska – Kutra (2012) indicates that Polish society has a friendly attitude toward natural environment and it demonstrates the propensity to bear the social and economic costs to protect the environment. However, the studies investigated the declarations of respondents, not their actual behavior. Researchers focused mainly on the general attitude towards nature and interest in environmental issues, particularly in the context of awareness of environmental threats. Thus, another aim of this study is to discover green consumer profiles in Poland based on the holistic theoretical view of the environmental consciousness.

The concept of green markets' segmentation is presented in the second chapter, together with the examples of different typologies of environmentally-friendly consumers developed in previous researches. Furthermore, the socio-demographic and environmental

determinants of segmentation are investigated. The environmental variables were proposed as a comprehensive theoretical model including three dimensions: green attitudes, environmental knowledge, and eco-friendly behaviors. The first dimension consists of following variables: green concern, perceived consumer effectiveness, economic factor. The second dimension includes just one construct which is environmental knowledge. The third dimension incorporates green purchase behavior, green habits, and green activism. The framework was developed in order to present an integrated perspective on the concept of environmental conscious since the prior studies often focused only on one or few variables.

The socio-demographic determinants, age, gender, income, and education were also investigated. Many of the previous studies discovered that frequently a green consumer turns out to be younger, with a high level of education and quit high income (Diamantopoulos et al., 2003). Though, some of other researches specified a contradictory picture of an environmentally-friendly consumer (Straughan and Roberts, 1999). Hence, another goal of this research is to determine whether the significant differences exist between the green segment and the remaining groups in respect to the demographic variables.

The third chapter describes the research that was carried out in this work, and demonstrates the outcomes. It starts with the recollection of the objectives of the study. Then, the measurement instrument is described. The self-completion questionnaire was sent to the participants of the study as an online survey, which measured the environmental constructs and asked additional demographic questions about age, gender, education and income. The statements were assessed through 5-point Likert scales; from strongly disagree to strongly agree. Afterward, the sample was characterized. The study used a convenience sample composed of 250 consumers from Poland. After data were collected, analyses in the statistical software were performed. The factor analyzes, hierarchical and non-hierarchical (k-means) cluster analysis and the Analysis of Variance (ANOVA) are described in Chapter 3. Then, the three clusters distinguished in this study: ‘True Greens’, ‘Potential Greens’, and ‘Browns’ are characterized.

The conclusions and some implications can be found at the end of the paper. The results of the study can be beneficial in the consumer profiling, as well as developing marketing and communications strategies for the companies, especially located or trading in Poland. This study presents some recommendations for the marketing practitioners regarding the three segments discovered in this research and their characteristics. Furthermore, the conclusion section includes the limitations of this study that have been recognized, together with the suggestion for future researches. Hence, both scholars and professionals may be interested in the outcomes of this research.

CHAPTER 1: GREEN CONCEPT

1.1. Green Marketing

The concept of green marketing was derived from the socially responsible marketing and emerged due to the increased environmental awareness of the society as well as growing market share of the eco-friendly consumer groups (Ham, 2011). The green concern became one of the most powerful driving forces in managing business processes. These days, organizations aiming at profitability and competitive advantage must pay equal attention to their consumers, stakeholders, staff members, as well as the environment and society (Boztepe, 2012). As a result more and more companies who want to be successful on the market go green.

For instance, Toyota is well-known for its world's first mass-market hybrid vehicle Prius, which was recognized as the most fuel-efficient car available for buying in the United States. Whereas Dell announced its 'no computer should go to waste' program which helps to safely dispose computer equipment by allowing customers to return computers, monitors or printers (free of charge) back to Dell. Another example is Starbucks which, thanks to its 'bean-to-cup' concept underlining excellent efficiency at every phase of its worldwide supply chain, together with coffee cup sleeves made of recycled materials, could save a large number of trees. At the same time, Nike was able to reduce its overall carbon footprint by approximately 80% since the late 90s. Moreover, they offered the greenest soccer shoes, the Nike GS 2 Boot, made using renewable and recycled materials.

Companies in Poland also implement strategies that help them to become greener. Grupa Żywiec, which is a part of the international concern Heineken Group and one of the biggest beer producer in Poland, approaches rigorously the production process, packaging and waste management. Moreover, during the Open'er Festival in 2011 they were promoting selective waste collection, sorting and recycling plastic beer cups. The good practice of Polpharma, a pharmaceuticals company, is a sustainable packaging – the use of recycled

cardboard and eco-labels prints for medication packaging. Furthermore, T-Mobile Poland introduced electrical cars to its fleet and built an electronic vehicle charging station allowing T-Mobile's employees and customers to use it for free. Whereas, Tchibo Warszawa created and implemented a tool named 'Tchibo Environment Plus'. The goal of this tool is to reduce the negative impact of products on the environment at the design stage. Another example of a company which implements green practices is Tesco Poland. They used most of the banners that left after their advertising outdoor campaign to produce colorful bags for shopping.

1.1.1. Brief History and Assumptions of Green Marketing

The concept of green marketing is closely related to the assumptions of social marketing. According to the social marketing theory when a company makes decisions about marketing actions, it should take into account the needs of customers, the requirements of the organization but also the long-term interests of consumers and the whole community (Kotler and Armstrong, 2012). Therefore, while creating marketing strategies, organizations should focus on the balance between the three aspects: the profits of the enterprise, the needs of consumers and the public interest. The term marketing was broadened to issues regarding social welfare, including the environment protection, due to the negative outcomes of traditional marketing such as manipulation of consumers, promotion of over consumption or excessive exploitation of natural resources (Płoska, 2005).

Although, the green marketing (environmental marketing, ecological marketing, sustainable marketing) literature significantly intensified at the turn of the 1980s and 1990s, the issue was already addressed in the early 1970s (Paço and Raposo, 2010). The first articles considering the environmentally concerned consumers and more social approach of marketing appeared in the *Journal of Marketing*, published by authors such as Kassrajain (1971), Fisk (1973) and Kinnear et al. (1974). In that period of time numerous of environmental laws were introduced in the United State, while in Germany the Green Party was created, whose activities were perceived as a major determinant in European's 'green revolution' (Lampe and Gazda, 1995). 'Ecological Marketing' by Henion and Kinnear

(1976a) was one of the first books treating on the subject of green marketing. It was published as an outcome of the first workshop organized by the American Marketing Association on ‘Ecological Marketing’ in 1975.

Table 1. Examples of Definitions of the Green Marketing

Author	Definition
Henion and Kinnear (1976b)	The study of the positive and negative aspects of marketing activities on pollution, energy depletion, and non-energy resource depletion
Polonsky (1994)	Green or Environmental Marketing consists of all activities designed to generate and facilitate any exchanges intended to satisfy human needs or wants, such that the satisfaction of these needs and wants occurs, with minimal detrimental impact on the natural environment
Peattie (1995)	The process of identifying, predicting and satisfying needs of consumers and society as a whole in a profitable way that at the same time ensure the ecological balance.

Source: Henion and Kinnear (1976b), Polonsky (1994), Peattie (1995)

Henion and Kinnear (1976b) defined the ecological marketing as ‘the study of the positive and negative aspects of marketing activities on pollution, energy depletion, and non-energy resource depletion’. Since then the definition has evolved, for example Polonsky (1994) claims that ‘Green or Environmental Marketing consists of all activities designed to generate and facilitate any exchanges intended to satisfy human desires, such that the fulfillment of these needs and wants occurs, with minimal detrimental impact on the natural environment’. Thus, it should be equally important for the marketers to satisfy the needs and wants of customers and reduce the negative impact on the environment. Other scholars in their definitions highlight the idea that organizations should increase their profitability while meeting consumers’ needs in a sustainable way, so that both company’s and

consumer's interests are protected and both parties benefit from the exchange (Peattie, 1995). Table 1 shows the summary of presented examples of green marketing definitions.

The 1990s were acclaimed the 'decade of the environment' (Brown and Wahlers, 1998) or the 'the Earth decade' (McDaniel and Rylander, 1993). In those times, many companies started to implement strategies of ecological marketing. As a result, since the 1990s pro-environmental marketing is viewed as a strategy and is treated as a management concept covering the entire enterprise (Płoska, 2005). Furthermore, green issues are considered to be one of the most important challenges for today's businesses.

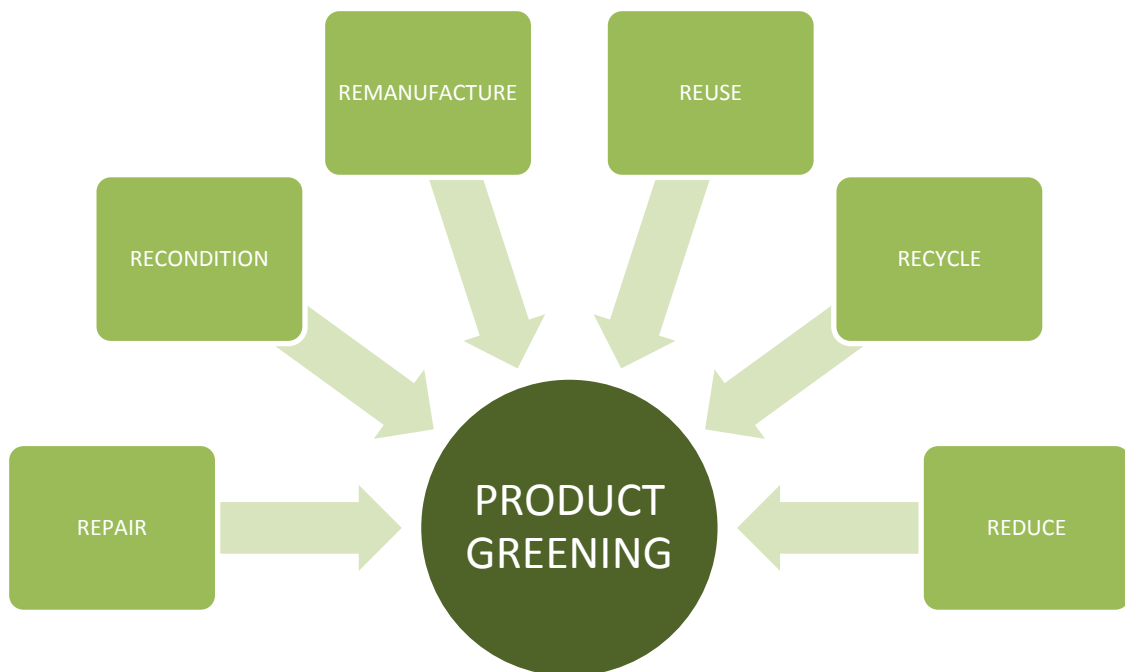
1.1.2. Strategies and Instruments of Green Marketing

Environmental marketing considered as a strategy involves a cooperation throughout the entire value chain (Ham, 2011). Companies must collaborate with all the parties from its value chain to gain the environmentally sustainable development. Furthermore, the cooperation of all business functions must be assured in order to reach profit and long-term positive contribution to the environment. Organizations should also reevaluate their mission, vision and goals to gain the strategic advantages offered by eco-friendly marketing.

Different companies follow various ways of implementing green marketing activities. In accordance with McDaniel and Rylander (1993), these activities can be divided into two main approaches: passive (defensive) and proactive one (assertive). The passive attitudes towards green marketing include introducing by the company changes that are the absolute minimum to meet the legal environmental requirements and avoid negative consequences like financial punishment. Whereas, organizations that adopt the proactive approach undertake voluntary actions helping to reduce a negative impact on the natural environment. The proactive approach includes communication with company's stakeholders for creating environmentally-friendly activities, being ahead of government's regulations and consumers' requirements for ecological products and services, and taking part in the discussion about green issues (Wilk, 2012).

Due to the increasing importance of green marketing the traditional marketing mix needs to be modified by taking into account green issues. As it was shown in the examples of companies' green activities at the beginning of this chapter, green marketing includes various activities such as modification of product and its package, redesigning of process and modifying the communication. Various scholars attempted to reconceptualize the concept of the marketing mix.

Figure 1. Product Greening



Source: Prakash (2002)

Green products are seen as being more efficient, durable, clean and safer than traditional one. Singh and Pandey (2012) suggest that the green product must be produced in a way that does not have a negative impact on the natural environment and scarce resources. However, at the same time the quality of this product must not be compromised. Since packaging is a main component of the household waste, it is very important to redesign it by for instance using a recycled paper or resigning from toxic printing. Furthermore,

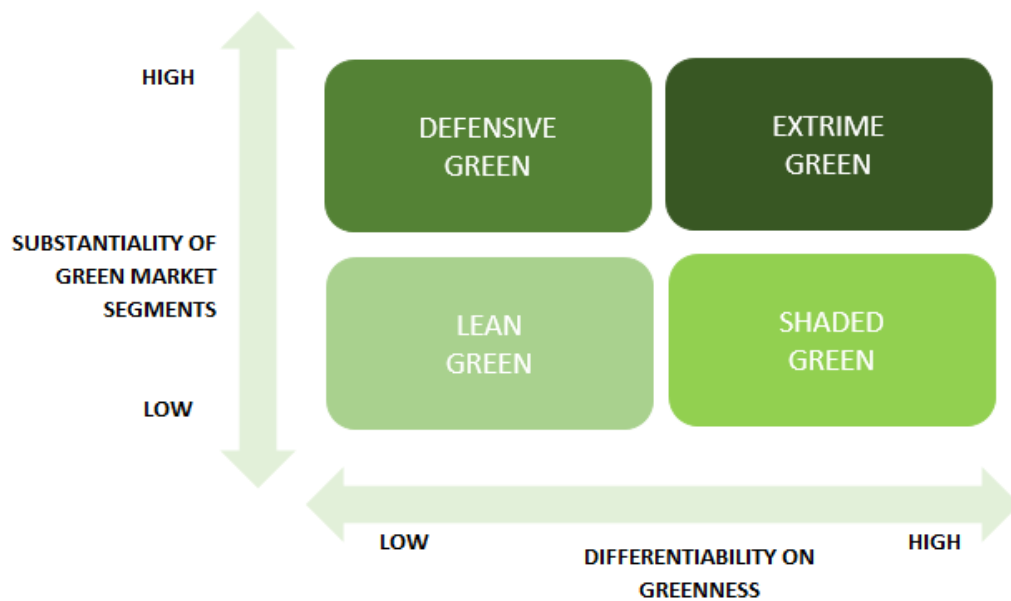
Prakash (2002) proposes the approach known as product greening, which include six ways that describe how products can be made greener (Figure 1). Products and services can be more environmentally-friendly if they are produced according to the following six steps: repair – extending the life of a product by repairing its parts; recondition – extending the life of a product by significantly overhauling it; remanufacturing – manufacturing of a new product with major inputs from an old product; reuse – designing of a product which can be used multiple times through its life; recycle – designing of a products which can be reprocessed and converted into raw material to be used in another or the same product; reduce – manufacturing of a product which uses less raw material or generates less disposable waste, while offering benefits comparable to its former versions or to competing non-green products.

The decision on where and when to make a product or service available on the market has a big influence on the customers. In order to provide green distribution (place), companies must cooperate with suppliers and distributors who also show pro-environmental attitudes. Moreover, organizations can use fuel-efficient transportation, regional production or storages (Singh and Pandey, 2012) to become more environmentally-friendly. Companies can attract customers by promoting their goods on the basis of money saving, performance, health and convenience or just eco-friendliness. As stated by Polonsky and Rosenberger (2001), organizations that decided to implement green marketing strategies should ask themselves: what environmental information should be communicated and how should it be communicated? Ottman (2008) suggests that is important for the company to be transparent in promoting its eco-friendly products. The individual should be able to quickly and effortlessly find the information about the greenness of products. While Ham (2011) emphasizes the significance of strong advertising campaign and its slogan that will influence consumers' decisions and behavior, giving the examples of P&G ('Put more money in your pocket and less in less waste in your bin') and Patagonia's slogan ('Doing well by doing good').

Consumers are not willing to pay extra money for a product. Only the additional values regarding its appearance (design, visual appeal), functionality (performance, taste) or

customization, can induce them to pay a premium (Singh and Pandey, 2012). The production of environmentally-friendly goods often cost much because of the higher quality materials, or extra treatment of water, energy etc. These costs are usually transferred to the customer; therefore it is important to communicate to customers the potential benefits of purchasing green products. With regard to the perspective on marketing mix tools mentioned above (product, place, promotion, price), Ginsberg and Bloom (2004) proposed the green marketing strategy mix presented in Figure 2. Thus, the companies which desire to become green can choose one of the following strategies: Lean Green, Defensive Green, Shaded Green and Extreme Green.

Figure 2. Green Marketing Mix Strategies3



Source: Ginsberg and Bloom (2004:81)

Companies that have decided to implement the Lean Green strategy try to be good corporate citizens by involving themselves in pro-environmental practices to reduce costs and improve efficiency. But they do not put efforts in advertising or publicizing their green activities because they worry they will not be able to perform in accordance to their claims

or differentiate themselves from rivals. These organizations obey the laws and regulations but do not seek direct financial benefit from green practices.

Defensive Green companies use situational green marketing tactics in order to respond to a specific crisis or competitors' threat. Although these companies may be truly committed to environmental protection, it is not their corporate principle. As long as the organization is not gaining a sustainable competitive advantage on the basis of being green but is eager to be environmentally responsible, Defensive Green is the suitable strategy for it.

Companies using Shaded Green strategy are committed to pro-environmental activities both financial and nonfinancial. They consider green practices as a strategic opportunity and invest significantly in corporate level green processes and procedures. While these companies have a capability to differentiate themselves on greenness, they do not do so, choosing instead to promote other attributes which are usually direct, tangible and financially more beneficial to differentiate.

Extreme Green firms are those that incorporated the holistic philosophy and values of being green into their business model. They undertake the pro-environmental activities on a daily basis. Their practices include life-cycle pricing approaches, total quality environmental management and the manufacturing for the environment. The organizations that use Extreme Green as a marketing strategy generally operate in niche markets and offer their eco-friendly products or service through boutique stores or specialty channels.

Table 2 summarizes the primary marketing mix tools in different green strategies Ginsberg and Bloom (2004). The companies which implemented Lean Strategies focus only on the environmentally-friendly products. While, companies using Defensive Strategies aim their attention at both product and promotion. The product, price, and promotion are the aspects that make the companies which use Shaded Strategies environmentally-friendly. Whereas, all the four Ps (product, place, price, promotion) have an impact on the greenness of companies that use an Extreme Strategy.

Table 2. Primary Marketing Mix Tools in Different Marketing Strategies

Types of greenness	Product	Price	Place	Promotion
Lean	x			
Defensive	x			x
Shaded	x	x		x
Extreme	x	x	x	x

Source: Ginsberg and Bloom (2004)

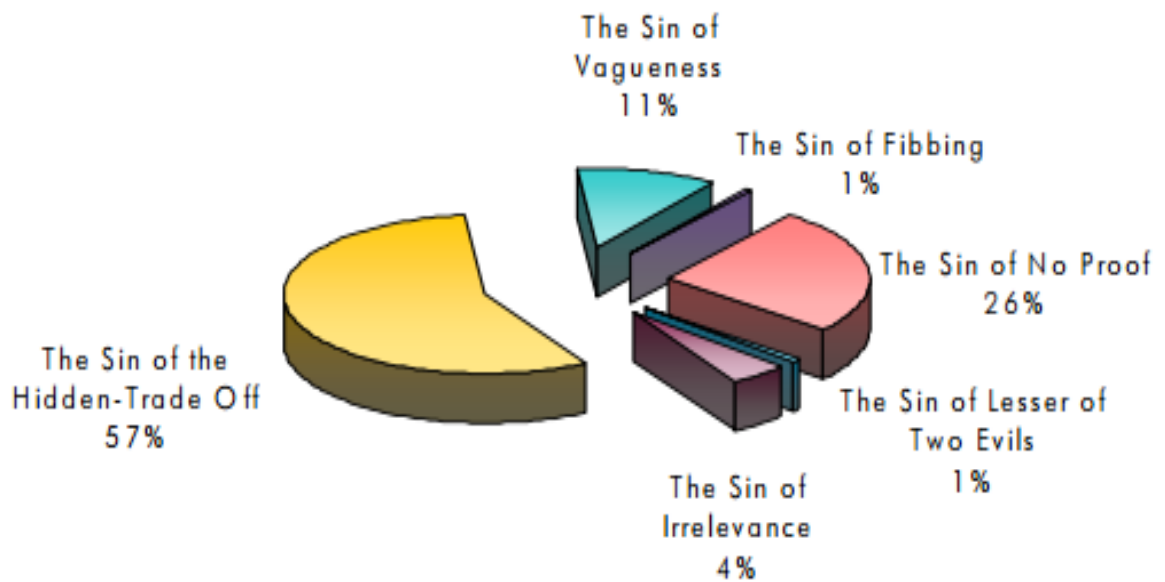
1.1.3. Greenwashing

To become green, it is necessary to change the approach to conducting business in a more responsible and environmentally sound manner. However, sometimes the potential advantages of the green marketing like higher profitability and competitiveness on the market attract the companies that think ‘ecology sells, so we can try it too’. Often they just promote traditional products as green while not making any changes in the production process, distribution or other activities making a company environmentally-friendly. Moreover, some companies were adding careless tags, random prefixes or adjectives to the product name, such as eco, bio etc., without any prior significant improvements in the product (Ham, 2011).

Due to this excessive labeling as well as environmentally oriented promotional messages without adding actual green value, necessary regulations were introduced. The Green Report 1 was created by the state attorneys of 10 countries and indicated that ‘the environmental statements should be as specific as possible, and supported by significant scientific evidence’ (Fuller, 1999:228). Furthermore, the Federal Trade Commission (U.S.)

realized in 1992 a set of recommendations saying that: ‘economic subjects should follow in an attempt to ensure that their green marketing communications are clear and not leading to wrong conclusions’ (Polonsky and Mintu-Wimsat, 1997:202-203). Those recommendations together with The Green Report 1 focused on bucking the trend of misleading advertisements and arbitrary labels.

Figure 4. Greenwashing Sins Committed by Category



Source: ‘The Six Sins of Greenwashing’ (2007:2)

As a result of decreasing the reliability of marketing communications for environmentally-friendly products and services, the new term – ‘greenwashing’ was introduced in 1986 by Wastervald. The term was created as a combination of words ‘green’ and ‘whitewash’ and it means ‘the act of misleading consumers regarding the environmental practices of a company or the environmental benefits of a product or service’ (The Six Sins of Greenwashing, 2007). In other words, the term greenwashing describes offering by an organization products and services that seem to be environmentally-friendly but in reality

do not have much in common with environment preservation. The example of greenwashing is claiming by the hotel that it is environmentally-friendly only because they give their guest the possibility to reuse the towels but do not undertake any other pro-environmental activities like saving the water or energy.

According to the study called ‘The Six Sins of Greenwashing’ conducted by the company Terra Choice company, 99% of 1018 randomly selected products and services’ campaigns committed at least one of the Six Sins of greenwashing (Figure 3). The first sin – ‘Sin of Hidden Trade-Off’, is committed by saying that a product is eco-friendly based on the single pro-environmental characteristic or very few of them; it was the most frequently committed (57%) sin among investigated environmental claims. The second sin – ‘Sin of No Proof’ takes place when an organization does not provide an easily accessible supporting evidence, sufficient information or reliable third-party certification; this sin was committed by 26% of the environmental claims. The third sin – ‘Sin of Vagueness’ relates to claims that are too broad or poorly defined that the real meaning can be misunderstood by the consumers; 11% of claims committed this sin. The fourth sin – ‘Sin of Irrelevance’ refers to making a green claim that may be truthful but is unimportant for consumers searching for eco-friendly goods; it accounted for 4% of the environmental claims. The fifth sin – ‘Sin of Lesser of Two Evils’ is committed when claims are true within the product category, though there is a risk related to greater environmental impacts of the category as a whole (e.g. organic cigarettes); approximately 1% of environmental claims committed this sin. The sixth sin – ‘Sin of Fibbing’ is committed by making environmental claims that are simply not true; this sin was committed by less than 1% of environmental claims. In conclusion, consumers who want to find truly eco-friendly products and services must take a notice about multiple environmental considerations rather than just single green issues.

1.2. Green Consciousness in Poland

Increasing awareness of the state of the natural environment and expanding knowledge of green issues intensified in the 1980s. Various organizations supported by governments were actively involved in the pro-ecological education. As a result, many environmental organizations, institutes and research programs were created. Their role was to examine and promote the idea of ecology. Likewise in Poland, the environment protection and care for the individuals' health started to influence consumers' everyday decisions. Over the last 30 years, there have been many attempts to conceptualize and operationalize the green consciousness concept in the Polish society (Górnicki, 2010). Scholars conducted numerous empirical and theoretical studies on this subject among different social groups. Moreover, various expertise and monographs of environmental movements, systematic studies and those in which green issues were one of the motives were one of the first researches on the green awareness and attitudes toward ecological problems (Dziamski and Nowosielski, 2013). For instance, in 1987 Poskrobko conducted a research on the sources of environmental threats among specific employees' groups in the industrial companies that were polluting the environment. Poskrobko found out in his study that individuals would like the surrounding environment to be clean and pleasant but at the same time they were consciously involved in the production process that had a negative impact on the environment.

1.2.1. Interpretation of Green Consciousness

Hull (1984) was the first Polish researcher who incorporated term environmental consciousness to the Polish literature and referred to it in two dimensions – individual and collective dimension. In the individual dimension, the concept was defined as experiences and ways of thinking about the natural environment by individuals. Whereas the collective dimension concerns the standards of the biosphere's understanding, experiencing and evaluating.

Table 3. Examples of Definitions of the Environmental Consciousness

Author	Definition
Hull (1984)	Individual dimension: experiences and ways of thinking about the natural environment by individuals. Collective dimension: standards of understanding, experiencing and evaluating of the biosphere.
Poskrobko (1984)	Broader sense: the whole of ideas, values and opinions about the natural environment as a place of life and development of people, common to specific and historical communities. Narrower sense: an individuals' state of knowledge, views and perceptions about the role of the environment in human life, its anthropogenic burden, degree of overexploitation, threats and conservation, including the state of knowledge on how to use and control instruments for environmental protection.
Wiśniewski (1995)	The type of behavior where the choice of products in the market and ways of meeting the individual's needs does not have a negative impact on the environment.
Bołtromiuk and Burger (2008)	The combination of information and beliefs about environment and perceptions of the relationship between the state and character of the natural environment and humans' quality of life.

Source: Hull (1984:30), Wiśniewski (1995), Bołtromiuk and Burger (2008:9)

Another Polish author Poskrobko (Hull, 1984) examined the environmental awareness in both, the broad and narrow sense. In a broader meaning, the environmental awareness is the whole of ideas, values and opinions about the natural environment as a place of life and development of people, common to specific and historical communities. In a narrower sense, the construct is explained as individuals' state of knowledge, views and perceptions about the role of the environment in human life, its anthropogenic burden, degree of overexploitation, threats and conservation, including the state of knowledge on how to use and control instruments for environmental protection. The second definition, compared to

broader one, emphasizes the knowledge, attitudes and beliefs about the relationship between people and environment and, in particular the impact of individuals on the environment.

Green consciousness was also viewed as the type of behavior where the choice of products in the market and ways of meeting the individual's needs does not have a negative impact on the environment (Wiśniewski, 1995). While Bołtomiuk and Burger (2008) see the environmental consciousness as the combination of information and beliefs about environment and the perceptions of the relationship between the state and character of the natural environment and humans' quality of life. Table 3 shows the summary of presented definitions.

1.2.2. Evolution of Green Consciousness

Studies from 1980s on the ecological movements indicated that mostly young people were members of environmentally-friendly organizations (Kassenberg, 1987). At that time, younger age groups were more often noticing the inconsistency between industrial development and environment protection. According to Dziamski and Nowosielski (2013) at the end of 1980s the environmental consciousness of Polish society was still shaping and developing. Although individuals were usually aware of the importance of environment conservation and its impact on their lives and health, they did not put this knowledge into practice. Moreover, in those times various pro-environmental organizations had a significant influence on the development of green awareness: in 1989 the number of this type of organization was around 140 (Poskrobko, 1987). Their activity increased substantially after the Chernobyl disaster, the catastrophic nuclear accident that took place in Ukraine in 1986, and focused mainly on the actions against building the nuclear power plant in Poland.

In the 1990s, the researchers showed an increased number of individuals who believed that their actions can help to protect the natural environment (Dziamski and Nowosielski, 2013). Furthermore, many respondents decelerated the willingness to buy an eco-friendly product or service even if they were more expensive than normal goods. Similarly, they preferred

less convenient packaging which at the same time does not have a negative impact on the environment. However, consumers were convinced that taking the responsibility for environment preservation is a role of local authorities (Burger, 2000).

The researches carried out in 2000s, discovered that the level of environmental consciousness is related to the economic condition of the society (Dziamski and Nowosielski, 2013). The reforms implemented in Poland between 1999 and 2001 raised social disagreements and individuals were assessing the condition of country and individuals households as bad. Dziamski and Nowosielski (2013) indicated that this situation divided the society to wealthy, well-educated and pro-ecological in contrary to poor, less educated people who do not care about environment protection. Though, in accordance to Strumińska – Kutra's (2012) study, the green activities that were decelerated usually were connected to economic motives such as water or energy saving. It was also discovered that health and concern for the future generations are the major motives that make consumers undertaking green activities, nature as a value itself is a less popular motif (Strumińska-Kutra, 2012).

The outcome of studies showed also that young people (between 18 and 24 years old), unlike their 1980s contemporaries, are rather not involved in green behaviors. This situation can be explained by the development of characteristics of consumer society, as well as the shortage of knowledge about sustainable consumption. The other group that chose not to engage in pro-environmental behaviors included older people (above 65 years old). The biggest concern about the state of the natural environment was expressed by middle-aged people. It was also explained in the literature as a result of having children which is believed to sensitize to green problems.

What is more, the important factor for the development of eco-consumption in Poland was joining the European Union in 2004. One of the conditions of the membership was adjusting the environmental policies to high EU standards (Zrałek, 2010). Besides, the research from 2011 showed the growing number of consumers who avoid purchasing products that have a negative impact on the environment (Strumińska-Kutra, 2012). In summary, the results of the studies that were conducted over the years in Poland indicate

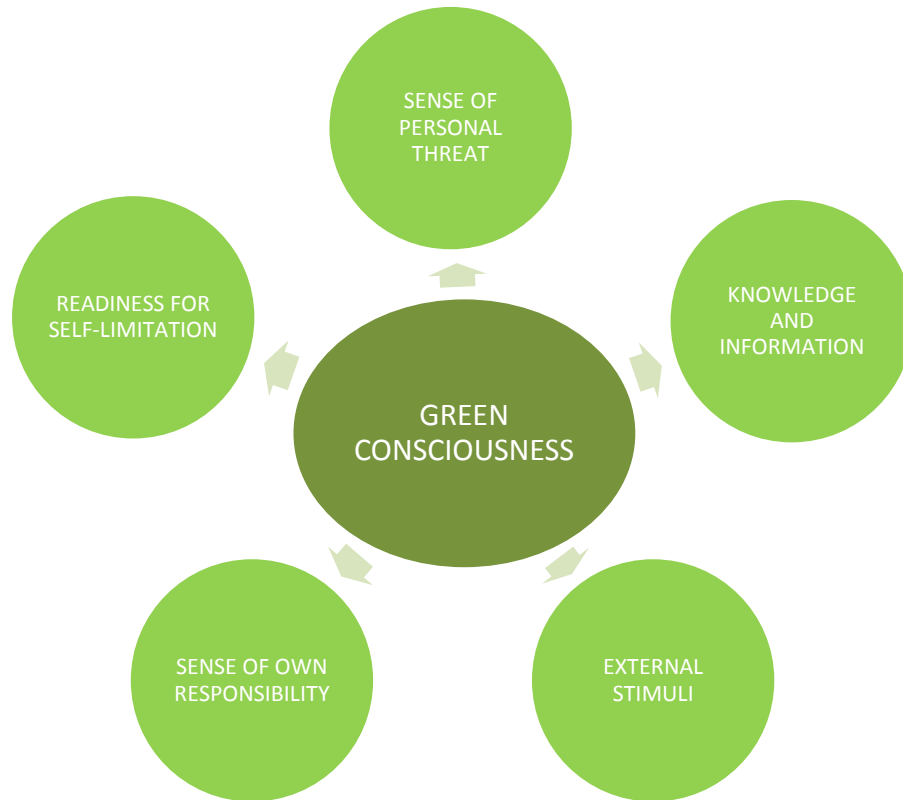
that nowadays new features of environmental consciousness are being shaped followed by the reevaluation of views on the environment and its protection.

1.2.3. Approaches to Green Consciousness

Klimczyk-Bryk (2000) distinguished five factors that influence the environmental consciousness of consumers (Figure 4.). First of all we find a sense of personal threat; the stronger is the feeling of personal threat caused by the environmental problems, the higher is the probability of engaging in green behaviors. The second factor is the possessed knowledge and information about the green issues which induce to pro-environmental attitudes and activities. The external stimuli leading to conscious behavior, which is the fourth determinant, can be for example the increasing prestige of purchasing and consuming eco-friendly products and services. The next factor is a sense of one's own responsibility for the state of the natural environment; if the individual shows a high level of green consciousness, he will be more actively involved in the conservation of environment. The fifth and last determinant is an individual's readiness to limit his needs which regard the economic sacrifices and resignation from comfort and convenience.

Polish studies on the environmental consciousness usually focus on the individuals' general attitudes toward natural environment especially in the context of ecological threats, and individuals' declarations of pro-environmental behaviors. According to Górnicki (2010), the research methodology of green awareness has not been standardized. Moreover, the definitions applied by the scholars in the conceptualization phase are quite broad yet in the operationalization process the chosen variables only partially cover the scope of the subject. Gliński (1996) identified different levels of green consciousness in the Polish society based on these empirical researches (Figure 5.).

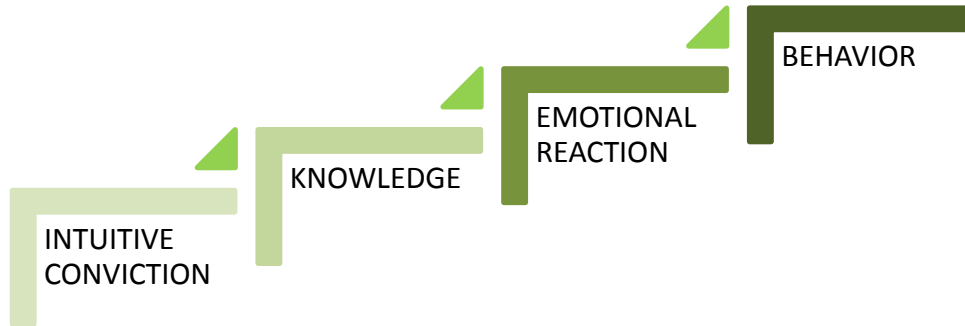
Figure 5. Factors Influencing Environmental Consciousness



Source: Klimczyk-Bryk (2000:97)

At the first level, a consumer has an intuitive conviction about the environmental threats or the negative influence of these threats on his health or needs. This aspect of green awareness is the one that most often occurs in Polish society according to Burger's research (1992). The second level, apart from the intuitive conviction, contains the knowledge about the environmental risks, the process of their formation and their impact on humans. As stated by Klimczyk-Bryk (2000), Polish society can be characterized by a relatively low level of knowledge which is rather intuitive than scientific. At the third level, there is an emotional reaction. The devastated environment can have a stressful influence on the individual's psyche (Górnicki, 2010). Nevertheless, the emotional reaction may also motivate to green behavior, which appears at the fourth and last level of environmental consciousness.

Figure 6. Levels of Green Consciousness



Source: Gliński (1996)

However, the significant condition of passing from ecological interest to the stage of actual pro-ecological behavior is an individual's belief that he can contribute to the protection of environment, which is called consumer perceived effectiveness (Klimczyk-Bryk, 2000). Even if a person has enough interest in the green issues and the necessary knowledge without the adequate motivation he or she will not engage in pro-environmental actions. In accordance to a research carried out by Burger and Sadowski (1994) among Polish citizens, two out of three respondents were convinced that they or their families cannot individually contribute to environment conservation or they did not express an opinion on this subject at all. The situation was changing with the increase of education level and job position. The more educated the people were and with a better job position, the more often they considered themselves to be able to make a difference for the natural environment.

Furthermore, the research discovered the environmentally-friendly behaviors that were most often performed by respondents within their household such as: using chemicals which are less harmful to the environment, changing the way of heating house for more environmentally-friendly, or implementing an appropriate waste management. Moreover,

every one in three respondents admitted that he or his family had undertaken some activities aiming at the environment protection. Similarly, the number of this kind of answers was high among individuals with higher education level and position in the job hierarchy.

In conclusion, over the years the interest in researches about the environmental consciousness in Poland has significantly increased. People understood that the reasons for environmental degradation often lie in the green awareness and individuals' environmentally-friendly attitudes. However, in general, during the times of economic downturn, when many of the individuals' needs and desires are not being fulfilled, the ecological problems might be treated as secondary problems. This situation occurs also in Poland (Klimczyk-Bryk, 2000). Nevertheless, the environmental issues are still being concerned as important for the society. Polish people declare their friendly attitudes toward the natural environment and their willingness to engage in green activities. Even if many of these declarations are not being transformed into actual behaviors and choices, it may still be stated that pro-environmental values are a part of Polish society's principals.

CHAPTER 2: SEGMENTATION OF THE GREEN MARKET: EXAMPLES AND DETERMINANTS – SOCIO-DEMOGRAPHIC AND ENVIRONMENTAL VARIABLES

Segmentation is one of the most crucial subjects in the marketing theory and it gained scholars' substantial attention. Market segmentation is the process of dividing the market into groups of consumers that share specific needs, characteristics or behaviors; the next step is to evaluate and target the chosen segment or segments (Kotler et al., 2001). Marketers must compare the benefits with the costs associated with focusing on a particular group of consumers. They must also deal with the strategic questions regarding market segments, such as: what groups of potential customers can be treated within one marketing strategy, which of these segments are profitable enough to address them, and what marketing programs can be applied that are most appropriate for each of the target segments (Choffray and Lilien, 1978). Marketers should understand the significance of segmenting a market and the specific criteria for successful segmentation since it allows the company to customize its products or service to the customers that will potentially buy them. Besides, the implications of market segmentation strategy influence the optimal allocation of scarce marketing resources of the organization.

Table 4. Typology of Green Consumers by Ogilvy and Mather (1992)

Author	Segments	Description
Ogilvy and Mather (1992)	Activists	Likely to purchase pro-ecological goods
	Realists	Are anxious about the environment but skeptical about the green trend
	Complacents	See the solution as somebody else's problem
	Alienated	Are unaware of green issues or see them as transient

Source: Ogilvy and Mather (1992)

The literature on green marketing demonstrates that scholars have put much work in identifying the characteristics of the eco-friendly consumer (Rex and Baumann, 2007). Market segmentation should be used by the companies that want to choose a suitable green message for a proper group of consumers through an appropriate communication channel. Various approaches to segmentation exist in the literature. Researchers determine segmentation variables by taking into account specific objectives of their studies (Lai et al., 2009). Many scholars tried to determine the characteristics of an eco-friendly consumer in order to create market segments. As stated by Kotler and Keller (2005), these characteristics can be classified into following groups: geographic characteristics (e.g. geographic region), demographic and socio-economic characteristics (e.g. age, gender), psychographic characteristics (e.g. values, lifestyle) and behavioral variables (e.g. purchase occasion).

According to typology made by Ogilvy and Mather (Peattie, 1992) the green market is divided into segments based on the ‘greenness’ of the consumers (Table 4.). These segments are constituted by: ‘Activists’ characterized by willingness to buy ecological products and services; ‘Realists’ who are concerned about the environment but doubtful about the green trend; ‘Complacents’ who see the solution as somebody else’s problem; and ‘Alienated’ showing ignorance about ecological issues or seeing them as transient.

Table 5. Typology of Green Consumers by US Roper Starch Worldwide (2000)

Author	Segments	Description
US Roper Starch Worldwide (2000)	True Blue Greens	Major pro-ecological buyers and recyclers
	Greenback Greens	Will purchase green but will not make lifestyle changes
	Sprouts	Care but would only spend a little more to buy green
	Grouzers	Think that environment is somebody else’s problem
	Basic Browns	Essentially do not care about environment

Source: Klimczyk-Bryk (2000)

Another example of green consumers' classification (Table 5.) based on 'greenness' comes from the survey prepared by Roper organization in 1990 (Klimczyk-Bryk, 2000). They divided consumers into following five groups: 'True Blue Greens' strongly concerned about the environmental issues, they are environmental activists; 'Greenback Greens' willing to buy ecological products but not making lifestyle changes; 'Sprouts' believing in environmentalism in theory but often not following it; 'Grouzers' believing that environment is somebody else's problem; 'Basic Browns' not caring about the green issues at all.

Table 6. Typology of Green Consumers by Klimczyk-Bryk (2000)

Author	Segments	Description
Klimczyk-Bryk (2000)	Consumers showing a common sense	Buy the green products relying on their knowledge and credible information
	Consumers oriented themselves	Buy the green products only because of egoistic reasons
	Ecological fanatics	Buy the green products due to strong believe that they are better than traditional ones

Source: Klimczyk-Bryk (2000)

Polish authors also presented their proposals of green consumer typology. Klimczyk-Bryk (2000) took into account green consumers' motives for choosing and buying ecological products and determined the following profiles of consumers (Table 6.): consumers showing a common sense who buy the green products relying on their knowledge and credible information, in order to increase their status; consumers self-oriented themselves who buy the green products only because of egoistic reasons like their own or their family's health; ecological fanatics who buy the green products due to strong believe that these products are better than traditional ones.

Another study conducted in Polish society by Zaremba (1997) was based on the constructs of environmental knowledge and environmental awareness. Five groups of consumers were found (Table 7.). The first one is named ‘Blacks’ and it includes individuals without both environmental knowledge and awareness. Individuals called as ‘Greys’ show a low level of environmental knowledge and awareness. Consumers from the segment ‘Grey-greens’ are characterized by a quite high level of environmental knowledge and awareness. ‘Greens’ have the big knowledge and they constantly put their environmental awareness upfront. While ‘Bright-greens’ call for the return to nature.

Table 7. Typology of Green Consumers by Zaremba (1997)

Author	Segments	Description
Zaremba (1997)	Blacks	Without environmental knowledge and awareness
	Grays	Low level of environmental knowledge and awareness
	Grey-greens	Quite a high level of environmental knowledge and awareness
	Greens	Big knowledge and environmental awareness being constantly advanced
	Bright-greens	Call for the return to nature

Source: Zaremba (1997)

2.1. Demographic Characteristics

Diamantopoulos et al. (2003) made a compilation of socio-demographic studies conducted in 1966-1994, which aimed to determine green consumer profile. In this summary, 39 researches on education were found, 31 researches on gender, 35 studies regarding age and 21 studies on social class. Similar compilation created by Straughan and Roberts (1999) indicated that the green consumer is usually young, well-educated and has relatively a high income. They also found that females are more likely to engage in eco-friendly consumer

behavior than males. However, due to the large number of studies on this matter, some of the researches provided contradictory descriptions of green consumers (Straughan and Roberts, 1999).

Age is one of the determinants of purchasing behavior that received considerable attention in the literature. According to Grønhøj and Thøgersen (2009) younger age groups of consumers demonstrate more positive attitudes toward environmentalism than older individuals yet are reluctant to follow up with green behavior. As it is stated, older generations are more eager to commit to pro-environmental behavior. For instance, Johnson et al. (2004) measured the environmental attitudes of consumers using New Ecological Paradigm; although young people scored higher, they were less inclined to perform eco-friendly household behavior than older individuals.

Furthermore, previous studies discussed the importance of gender in consumer behavior. Many scholars identified a woman as a more pro-environmental consumer who buys environmentally friendly products and services more frequently than a man (Banerjee and McKeage, 1994). This tendency can be explained by the social role theory which assumes that woman and man are socialized differently, thus play different roles in the society and show different behaviors (Saad and Gill, 2000). The most common argument for this situation is that women will consider the impacts of their actions on others more carefully (Straughan and Roberts, 1999).

Researchers analyzed also the influence of education and income on the decision-process and green buying behavior. Keaveney and Parthasarathy (2001) found those consumers who are more educated and have a higher level of income tend to assess better what to expect from a product or service. As a result, individuals with lower income and education level show dissimilar purchasing behaviors and expressed intentions. Furthermore, the literature demonstrates that post-purchasing behavior can be explained by the level of education and income as well (Im et al., 2003). Other studies exposed that these two demographic characteristic have a positive impact on the green consciousness of customers and their environmental intentions (Roberts, 1996). More educated individuals seem to be further aware of the potential damage (Lozano, 2006) and to be more knowledgeable about

the environment (Schlegelmilch et al., 1996). Individuals with a higher income level are expected to bear rising marginal costs associated with choosing eco-friendly products and supporting green causes (Straughan and Roberts, 1999). Therefore, they are expected to engage in the eco-friendly behavior more often than less educated consumers.

In conclusion, the literature indicates that demographic characteristics, such as age, gender, education and income influence the consumer's green purchasing behaviors and expressed intentions. Researchers in their studies on environmental issues suggest that green conscious consumers are more likely to be female, younger, more educated and have a higher level of income. Large numbers of organizations focus on socio-demographic characteristics for segmenting and targeting green consumers (McDonald and Dunbar, 1998, p.22). The reason for this situation is the availability and relative ease of the application of these kinds of segmentation measures compared to other variables (Myers, 1996). Though, many researches show the limited value of demographics for segmentation process (Scott and Willits, 1994; Stern et al., 1995). Therefore, more recent studies use rather the psychographic characteristics, for example, environmental concern or perceived consumer effectiveness to determine green segments of the market. These types of characteristics are considered to be better than demographic factors in explaining differences in green consumer behavior (Straughan and Roberts, 1999).

2.2. Environmental Characteristics

Numerous scholars attempted to determine the characteristics of the ecologically conscious consumers and of the ecological consumer behavior using various environmental variables, for instance ecological concern, ecological product behavior, recycling (Sarmaniotis and Tilikidou, 1998); product attributes, green buying (Shurm et al., 1995); recycling (Hopper and Nelson, 1991); environmental importance, product choice (Murphy et al., 1978); perceived consumer effectiveness, index of ecological concern (Henion and Wilson, 1976). According to Tilikidou and Zotos (1999) many of these studies concentrated only on the fragmentary aspects of environmental consciousness, not providing a holistic theoretical framework. Such a framework should include all the dimensions of green consciousness.

Tilikidou and Zotos (1999) proposed their holistic and multidimensional approach (Figure 6.) which consists of two main axes: the ecological concern and the ecological consumer behavior. The first axis contains constructs of knowledge, attitudes, and individual differences. The second axis includes the constructs of purchase behavior, post-purchase behavior, and activities. Afterward, Tilikidou (2002) revised with other scholars the framework (Figure 7.) separating the concepts of knowledge and attitudes. Knowledge became the single construct in the cognitive dimension. The second dimension (affective dimensions) consists of pro-environmental attitudes and recycling attitudes which were assessed separately from other attitudes and replaced the individual differences variable from the previous framework. Pro-environmental purchase behavior, pro-environmental post-purchase behavior and pro-environmental activities constitute behavioral dimension similarly to the previous framework.

Figure 7. The Holistic Framework Proposed by Tilikidou and Zotos (1999)



Source: Tilikidou and Zotos (1999: 16)

The framework suggested more integrated examination of the green conscious consumer and his/her behavior by investigation of all the constructs together at the same place and time. However, after reviewing the extensive literature, in this study the following framework was proposed: (Figure 8.): three main dimensions are: attitudes, knowledge and behaviors. The first dimension consists of perceived consumer effectiveness, green concern, and economic factor. The second dimension includes only one construct which is knowledge. The third dimension contains green activism, green purchase behavior, and green habits.

Figure 8. The Holistic Framework Proposed by Tilikidou et al. (2002)



Source: Tilikidou et al. (2002: 47)

In the extensive literature the components of environmental consciousness have been recognized as: attitudes toward the environment, knowledge about the green matters and environmentally sensitive behaviors (Diamantopoulos et al., 2003). However, as stated by Diamantopoulos et al. (2003) a number of previous studies applied the measurements of

green consciousness that lacked sufficient dimensionality, reliability, or validity tests. For instance, some scholars investigated in their researches only the concept of environmental attitudes including levels of green concern about environmental issues (Benton and Funkhouser, 1994; Shrum et al., 1995; Wall, 1995). While others focused exclusively on the eco-friendly behavior (Roizen and De Pelsmacker, 1998; Widegren, 1998).

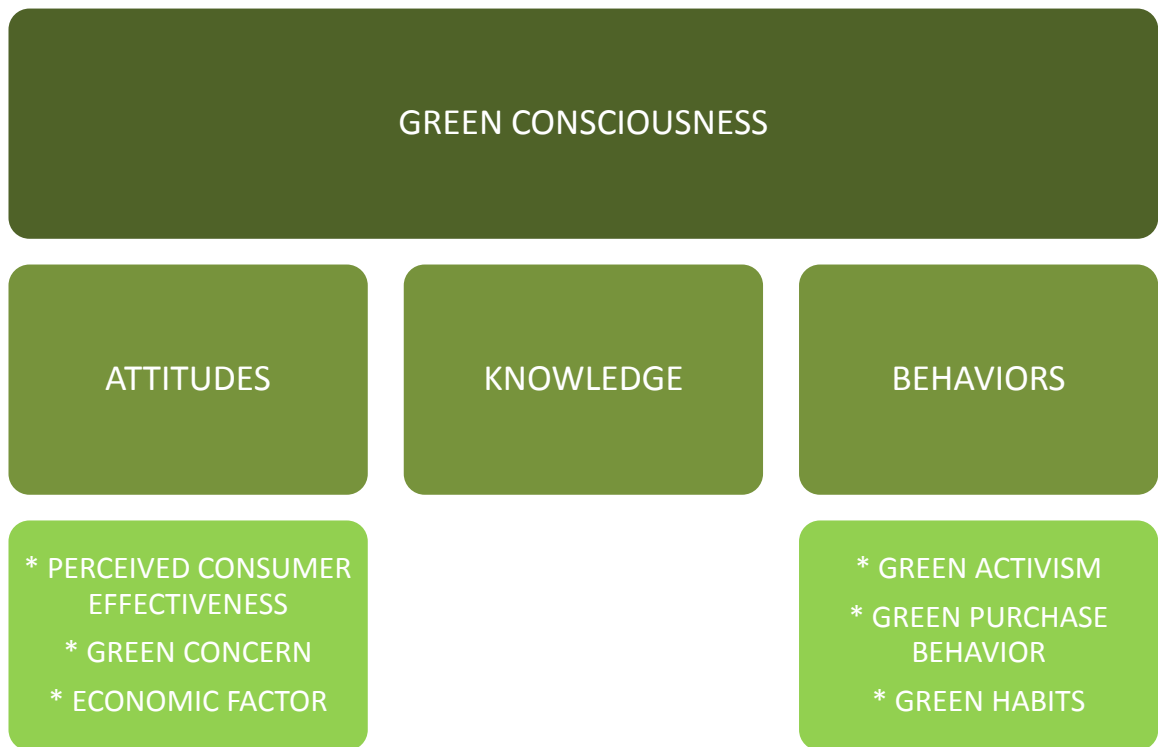
However, individuals who demonstrate a high level of environmental consciousness do not necessarily behave in an environmentally sensitive way (Kanchanapibul et al., 2014). In other words, attitudes are not always a good predictor of engaging in a specific behavior. Many researchers identified this kind of gap between environmental attitudes and green behavior (Gupta and Odgen, 2009; Smith et al., 1994; Tarrant and Cordell, 1997). For example, Simmons Market Research Bureau (1991) noticed in his study conducted in the U.S. that consumers' preference for product due to its green attributes does not translate directly into purchase behavior. Thus, the environmental attitude of a consumer will not automatically lead to undertaking an environmentally friendly action. Some scholars presented an explanation for existence of gap between attitudes and behavior by using a social dilemma theory (Gupta and Odgen, 2009).

Social dilemma is defined as 'a situation in which a group member faces a choice between the cooperation with the group to maximize to group's benefits (sacrificing individual's gains) and defection for himself to pursue self-interest' (Lee et al., 2014). Thus a person is in a dilemma because it does not matter what he chooses, the outcome will not be ideal for him. Perceived consumer effectiveness (PCE) (person's perception of the extent to which his efforts will contribute to resolving the given problem) can be a way out from this situation by helping to explain individual's decisions and behaviors (Ellen et al., 2001). According to Berger and Crobin (1992) the existence of a high level of PCE makes stronger the relationship between attitude and behavior. Also, green concern was found out to be a driver of eco-friendly behavior (Lee et al., 2014). PCE together with the green concern were used in various models investigating green concepts.

Furthermore, Bohlen et al. (1993, p.417) indicated that a consumer who wants to be green should understand the consequences of his behavior. Environmental knowledge is an

‘individuals’ level of factual information about specific or general aspects of environmental, ecological, or energy-saving phenomena ‘ (Diamantopoulos et al., 2003, p.467). Therefore, together with the concepts of attitudes and behavior, knowledge should be taken into account during the examination of green consciousness. Furthermore, many of the prior studies targeted only one type of green behavior (Lee et al., 2014) which includes green activism, green purchase behavior, as well as green habits.

Figure 9. The Holistic Framework Proposed in This Study



To sum up, in order to capture the holistic view of the environmental consciousness it is necessary to examine all of its dimensions – attitude, knowledge and behavior and the variables they include. The multidimensional approach proposed in this study is believed, by the author of this paper, to effectively help identify distinct market segments of green

consumers. The content of each dimension will be explained more deeply in the following sections.

2.2.1. Attitudes

In accordance with Milfont and Duckitt (2010), environmental attitude can be defined as a psychological tendency expressed by evaluating the perceptions or beliefs regarding natural environment with some degree of favor or disfavor. Some of the researchers use the term environmental attitude interchangeably with environmental concern (Dunlap and Jones, 2002; Fransson and Gärling, 1999). Though, other scholars made a distinction between these concepts (Schultz et al., 2005; Stern and Dietz, 1994). In this study, the environmental concern is viewed as a part of attitude dimension since in the prior studies exists the evidence that environmental attitude is a more general concept than green concern. For example, Schultz et al. (2005) considered green concern as the affect associated with an environmental attitude. This dimension includes also a perceived consumer effectiveness (PCE) construct since it was examined as one of the attitudinal variables in predicting behavior (Straughan and Roberts, 1999). The third element of attitude dimension is an economic factor which was studied by Laroche et al. (2001) as strongly associated with individual's green attitudes.

2.2.1.1. Perceived Consumer Effectiveness

Perceived consumer effectiveness (PCE) was defined by Ellen et al. (1991, p.103) as 'a domain-specific belief that the efforts of an individual can make a difference in the solution to a problem'. In other words, some individuals may feel that their own actions can significantly reduce environmental problems while others may think that their efforts will not make any difference. In some early studies, perceived consumer effectiveness was measured as a part of personality variables to predict environmental concern (Kinnear et al., 1974).

Afterwards, PCE was measured as an element of the attitudinal variables in predicting green behavior and it was considered as a better predictor than environmental concern (Straughan and Roberts, 1999). Therefore, perceived consumer effectiveness might be useful for forecasting green behaviors. The assessment of the contribution level to environmental issues determines the degree to which PCE is effective (Cho et al., 2013). In his study, Brown (1979) distinguished knowledge as well as direct and indirect experiences as the determinants of PCE.

Furthermore, the prior studies indicated that individuals who believe that their efforts can actually make a difference and increase the social common good, are more inclined to cooperate and less likely to withdraw for personal well-being (Lee, 2014). For instance, when the level of PCE is higher, the relationship between attitude and behavior is stronger (Berger and Corbin, 1992). As a result, individuals that show positive attitude are expected to engage in the eco-friendly behavior more when they believe in their ability to contribute to environment's preservation.

2.2.1.2. Green Concern

The individual's concern for the environment has met a relatively great interest from scholars in the literature. Lee et al. (2014) conceptualized it as a 'general attitude toward an environment that reflects the extent to which consumers are worried about threats to the environment' based on previous studies' results. This attitude is influenced by three factors: direct personal experiences, experiences of other individuals and communication produced by the media (Paço and Raposo, 2010). The definition proposed by Dunlap and Jones (2002) is viewed as one of the most comprehensive definitions of environmental concern. It states that green concern is the individuals' awareness of environmental problems, their attempts to solve them or the lever of their willingness for such attempts.

Environmental concern has been considered as a one-dimensional construct which can range from unconcerned about the environment at the low end to highly concerned at the high end, as measured by the New Environmental Paradigm (Milfont and Duckitt, 2004). Several studies concluded that green concern has a significant impact on pro-environmental

behavior (Baumann et al., 2002; Lin and Huang, 2012; Chan, 2001). Thus, consumers with higher environmental concern will have higher eco-friendly behaviors. Roberts and Bacon (1997) explain this situation by saying that individuals who support environmentalism are more willing to change their behavior to help the preservation of the environment. Customers who are highly concerned about the environment tend to buy green products more often than people who are not interested in environment's conservation (Kim and Choi, 2005). Besides other studies identified strong and direct influence of environmental concern on recycling, energy saving, environmentally friendly product purchase or transport type selections (Bamberg, 2003). Hence, the previous studies show that individuals who are concern about the environment are more likely to engage in all types of eco-friendly behavior, such as green activism, green purchase behavior, and green habits.

2.2.1.3. Economic Factor

The economic factor is another construct that have been investigated by scholars. Numerous researchers analyzed consumers' willingness to pay an additional amount for the eco-friendly product's attributes beyond the price of the base product. This kind of green attributes attract especially younger, female, more educated and wealthier consumers and encourages paying a premium (Laroche et al., 2001). The premium that consumers are willing to pay for environmentally-friendly products and services is a behavioral intention (Ajzen and Driver, 1992). These intentions relate to 'the amount of effort a person exerts to perform a behavior' (Cordano& Frieze, 2000, p. 628). Therefore, the magnitude of the premium reflects the amount of effort an individual makes to reward a product attribute.

Laroche et al. (2001) discovered that the positive intention to pay a premium for a pro-environmental products and services is strongly associated with individual's pro-environmental attitudes. However, other studies (Auger et al., 2003; Öberseder et al., 2011) present contradictory results saying that not all consumers who have positive attitudes towards the environment are willing to pay more for green products or for the goods from environmentally-performing companies, as is often necessary. It becomes especially important during the times of economic crises and when personal disposable income

decreases (Hampson and McGoldrick, 2011). As a result, when the prices go up some consumers may not be committed to green products anymore.

Due to the expenses usually related to environmentally-oriented initiatives, managers might face a problem in deciding whether the enhancement of reputation is worth the cost (Mohr & Webb, 2005). Obviously this kind of cost called as the green premium is passed on the customer (Vermillion and Peart, 2010). Then consumers must make a compromise between extra cost and the perceived added value (the environmentally-friendly benefit). The point at which the sacrifice of paying additional cost outweighs the added value is called a critical ethical point (Freestone and McGoldrick, 2008). It means the costs are too high to encounter green benefits. Above this point, enhanced environmental concern and awareness will not lead to environmentally-friendly behavior.

2.2.2. Knowledge

Environmental knowledge can be defined as ‘a general knowledge of facts, concepts, and relationships concerning the natural environment and its major ecosystems (Fryxell & Lo, 2003, p. 45). Another interpretation of green knowledge underlines the role of individuals in preserving the environment by referring to environmental knowledge as individual's ability to identify various symbol, concepts and behavior patterns related to environmental protection (Laroche et al., 2001). Therefore, green knowledge involves what individuals know about the environment, as well as the awareness about environmental problems and ways for resolving them.

According to Schahan and Holzer (1990) two types of environmental knowledge exist: abstract and concrete. The abstract type of green knowledge relates to the individual's understanding of environmental issues such as its problems, causes, and solutions. The concrete kind of knowledge relates to behavioral knowledge, so it can be utilized and acted upon. Moreover, the environmental knowledge has been viewed as a factor that has a significant impact on every stage of the purchase decision process. Laroche et al. (2001) identified that knowledge affects the way in which consumer gather and organize information, as well as the evaluation process of green products and services.

Although, environmental knowledge seems to play an important role in eco-friendly behavior, the empirical findings are mixed and reveal a more complex relationship between knowledge and behavior. In the empirical literature, it is viewed that more knowledgeable individuals will be more concerned and aware of the environmental issues, but it will not necessarily result in behavioral changes (Kollmuss and Agyeman, 2002). While some of the previous researches discover no significance relationships (Laroche et al., 2001; Bartiaux, 2008), others find the evidence that deeper knowledge of environmentalism increases the odds that an individual will take part in pro-environmental actions (Kaiser and Fuhrer, 2003; Mobley et al., 2010). Therefore, the lack of appropriate knowledge may limit pro-environmental behaviors or induce individuals to make environmentally wrong decisions. Simmons and Widmar (1990) found out in their study that among the respondents with positive preservation attitudes, the shortage of knowledge was an important barrier to recycling. Furthermore, the research carried out in Poland by Rokicka (2002) concluded that a higher level of environmental knowledge leads to much better pro-environmental behavior.

In conclusion, the foregoing empirical results support the conventional perspective that there is a positive relationship between environmental knowledge and eco-friendly behavior (Mostafa, 2007). In addition, Kaiser and Fuhrer (2003) specified that knowledge is a necessary but not sufficient requirement for eco-friendly behavior. Therefore the construct of knowledge should be used in the examination of green consciousness; however it should be investigated together with other constructs.

2.2.3. Behaviors

The third dimension of the framework proposed in this research consists of the following constructs: green activism, green purchase behavior, and green habits. Previous studies suggest various subtypes of environmentally significant behavior also known as environmentally conscious behavior, environmentally responsible behavior, pro-environmental behavior, green behavior, or eco-friendly behavior. According to Stern (1999) it is possible to distinguish three kinds of behavior that cover different activities: green purchase, good citizenship behavior, and environmental activist behavior. Green habits from this study are an equivalent to the construct of good citizenship behavior, and green activism is analog to the environmental activist behavior from the Stern's research. All of these three types of behavior aim at influencing the environment in a positive way. The constructs are related to each other, though they have been investigated separately in order to better understand the concept of green consciousness, as well as to more effectively segment the market.

2.2.3.1. Green Activism

Numerous researchers from different disciplines investigated the concept of green activism. Seguin et al. (1998) define it as a 'function of specific behaviors' and various kinds of behaviors have been used to operationalize the concept. For instance, being a member of an environmental group (Edwards and Oskamp, 1992), engaging in political actions (Stern et al., 1995), being actively involved in environmental organizations (Stern, 2000), intentionally performing 'difficult' environmental behavior (Seguin et al., 1998), and having the potential to influence policy or management decisions (McFarlane and Hunt, 2006).

In the disciplines such as sociology and politic science, the concept of green activism was explained as 'a process of collective actions to support the environmental movement' (Dono et. al, 2010; p.178). Therefore, it is assumed that this type of behavior is the most collective form of environmentally responsible behavior. The goal of its actions is to make changes at the institutional level rather than at the individual level. As stated by Stern (2000) green

activism is distinct from other kinds of eco-friendly behaviors. The difference is about the degree of impact and intent of environmental protection.

2.2.3.2. Green Purchase Behavior

It was demonstrated in the previous studies that the reason of numerous environmental problems is consumers' buying behavior. However, nowadays consumers are becoming more and more aware of the need to choose green products in order to protect the environment (Mostafa, 2007). The green purchase behavior involves the use of products or services that are environmentally beneficial, recyclable, or that are able to protect the environment (Mostafa, 2007). Thus, according to Carrington et al. (2010) environmentalism is not always the major motive for buying eco-friendly products. Green consumer may be motivated by both personal (e.g. consuming organic food for personal health) and public reasons (e.g. buying green product to support environmentally friendly business) (Lee et al. 2014; p.2096). In any case, the green purchase will have a positive impact on the environment.

Furthermore, the prior literature suggests an inconsistency between green concerns and green purchase behavior (Chang, 2011). Although the individuals may have concerns regarding environmental issues, it may not always be consistent with actual buying behavior. As stated by Luchs et al. (2010) many customers show the willingness to purchase eco-friendly products, but only a few make such purchases. The explanation for this situation can be the ambivalent attitude derived from both positive and negative purchase evaluations (Chang, 2011). For instance, a customer is inclined to choose an eco-friendly product due to the emotional benefits such as feeling proud of making green purchase, at the same time this customer may consider the inferior quality and higher cost deriving from buying this eco-friendly product.

2.2.3.3. Green Habits

Green habits as opposed to green buying behavior, which is limited to the purchase of pro-environmental products or services, are considered in this research as an activity that is not related to purchase and has a positive impact on the natural environment. In the empirical literature this type of behavior is defined as 'intentionally reducing the negative impact that an action can have on the environment' (Kollmuss and Agyeman, 2002) and it should be performed as 'everyday environmental behavior' (Tindall et al., 2003). Consequently, eco-friendly activists deliberately choose to perform the activities that aim at preservation of natural environment and what is more, these are not just one time actions but actions that are taken regularly.

There are various types of green habits and consumers from different countries attach more or less importance to specific eco-friendly attitudes. The results of the Boston Consulting Group's study 'Capturing the Green Advantage for Consumer Companies' shows that, for example, for Italians resignation from animal testing is an important manifestation of 'being green'. Though, the same behavior is not significant for the Japanese people. As for using recyclable materials by the organizations, it is valuable for Americans but it is not much relevant for Germans.

It was also investigated what kind of pro-ecological behaviors are taken by respondents. Among the most frequently mentioned signs of being environmentally friendly were: turning off lights and electrical appliances when they are not in use, waste recycling, and water saving. Particularly recycling is considered to be one of the most important green behaviors. It is also viewed as a 'catalyst' activity that positively influences the adaptation of other eco-friendly behaviors (Austin et al., 2011). However, other studies (Wenke, 1993; Tucker and Douglas, 2006) recognize that recycling may lead to negative spillover effects by giving individuals a good excuse not to engage in more impactful activities such as reducing their household waste.

Green habits are viewed to have a more direct effect on the protection of environment than green purchase behavior, since the effect of buying eco-friendly products is usually

materialized not through the customer but the business processes of the manufacturer and its suppliers (Lee, 2014). As a result, green purchase behavior has more indirect effect on the environment conservation. Moreover, green habits are motivated by public reasons rather than the individual intentions. For instance, a person who decides to avoid using aerosol spray cans may suffer from some inconveniences like higher costs or difficulties related to search and purchase of an alternative; therefore, engaging in this behavior will be motivated by potential benefits for the environment and society (Lee, 2014) rather than for an individual. As a result, green habits seem to be more genuine and active form of behavior, which has a more direct positive effect on the natural environment.

CHAPTER 3: METHODOLOGY AND RESULTS OF THE RESEARCH

The first and second chapter have presented the review of the literature on the green marketing, its assumptions and strategies, the evolution and perspectives of the green consciousness concept in Poland, as well as the segmentation of the environmentally-friendly markets together with its determinants. The results of this analysis on the previous empirical researches and existing theories emphasize the fact that the consumers can be divided into groups based on their different levels of environmental knowledge, green attitudes or varying eco-friendly behaviors. As it was mentioned before, this study attempts to identify different segments of green consumers. Due to the complexity and range of determinants that can characterize particular groups, it was decided to use in this research the demographic and environmental variables.

3.1. Objectives of the Research

This study addresses the three main research questions:

- ❖ Is it possible to clearly identify green consumers segments based on the constructs that have been viewed as significant in the consumption process of the ecological products? The efforts will be made to divide the market into green segments by examining the following seven constructs: green concern, perceived consumer effectiveness, economic factor, environmental knowledge, green purchase behavior, green habits, and green activism. Thus, the major objective of this study is to segment the market according to the mentioned environmental variables.

- ❖ Do the environmentally-friendly segments significantly differ from other consumer groups regarding the demographic characteristics? Finding an answer to this question is the second purpose of the study. The variables such as age, gender,

income and education will be used in order to determine whether the significant differences exist.

- ❖ Is it possible to determine green segments among Polish consumers based on the multidimensional framework proposed in this study? To discover green consumer profiles in Poland and reach the third goal of this research, the holistic theoretical model of the environmental consciousness will be applied.

3.2. Measurement Instrument

The self-administrated questionnaire served as a measurement instrument. It was sent to the participants of the study as an online survey in order to effectively reach the consumers. The use of an online survey in the academic research is considered to be acceptable due to its relative ease in obtaining more sincere answers (Han and Kim, 2009). The survey was composed of two main sections. The first part was developed to measure the constructs proposed in the theoretical holistic framework (green concern, perceived consumer effectiveness, economic factor, environmental knowledge, green purchase behavior, green habits, and green activism). In the second part, data were collected on the socio-demographic features of the study's participants (age, gender, education, income). The questionnaire included statements assessing the concepts through 5-point Likert scales (1 = strongly disagree; 2 = disagree; 3 = neutral; 4 = agree; 5 = strongly agree). The questions were translated into Polish language, and its content validity was established using experts' reviews. In order to measure the constructs, multiple items were used, which were borrowed from prior researches:

- ❖ Five items from the New Ecological Paradigm (NEP) scale (Dunlap, Van Liere, Mertig, & Jones, 2000) were adapted to measure the construct of the environmental concern. The environmental concern shows the extent to which individuals are concerned about the issues related to the environment conservation and the future of the environment as well as its impact on themselves and their health. Therefore,

statements such as ‘I am extremely worried about the state of the world’s environment and what it will mean for my future’ or ‘If things continue on their present course, we will soon experience a major ecological catastrophe’ were included in the questionnaire.

- ❖ Four items from the Straughan and Roberts (1999) study were applied to measure perceived consumer effectiveness (PCE), including declarations such as ‘I feel capable of helping solve environmental problems’ and ‘I feel I can help solve natural resources problem by conserving water and energy’. These statements relate to green issues and at the same time to a personal belief that an individual can contribute to solving environmental problems.
- ❖ Four variables constituted the economic factor construct; they were borrowed from the Paço and Raposo (2010) research. These items, for example: ‘I am willing to buy green products even if they cost more than usual ones’ and ‘I am willing to pay more taxes in order to protect the environment’, examine consumer’s willingness to pay a premium for the environmentally-friendly products and to pay higher taxes in order to conserve the environment.
- ❖ Five statements, such as: ‘I know the meaning of global warming’ or ‘I know what the renewable energy sources are’, were used to measure the environmental knowledge. These items were adapted from the Paço and Raposo (2010) study and adjusted to present research in order to examine consumer’s knowledge about the green aspects and ways to protect the environment.
- ❖ To measure green purchase behavior, the questionnaire included four items from the Ecologically Conscious Consumer Buying (ECCB) scale (Roberts and Bacon, 1997). The statements, such as: ‘I usually buy products made from recycled materials’ and ‘I have switched products/brands for ecological reasons’,

demonstrate individuals' inclination for purchasing green products that can be energy-efficient, recyclable or come from environmentally-friendly manufacturers.

- ❖ Five items were adapted also from the ECCB scale in order to measure the construct of green habits. This study assumes that the green behavior dimensions consist of three distinct types of behaviors (green purchase behavior, green habits and green activism). Therefore, the variables from this construct relate to activities that are not related to purchase and are distinct from activism, for example: 'I turn off the tap when brushing teeth' and 'I conserve energy by turning off lights and electrical appliances when I am not using them'.

- ❖ In order to measure the construct of green activism, four items were applied from the Paço and Raposo (2010) study. The examples of statements include: 'I am interested in reading reports on environmentally friendly products', or 'I have taken part in a protest related to environmental cause'; they aim at assessing consumers' interest in participating in pro-environmental organizations or actions, supporting the green causes and willingness for searching the information about green issues.

3.3. Sample

The data were collected through a survey carried out among Polish consumers. The study used a convenience sample composed of 250 respondents from Poland. Their socio-demographic characteristics are presented in Table 8. Among those 250 participants, there were 168 females (67.2%) and 82 males (32.8%).

About 30.4% (76) of the respondents were between 18 and 25 years old, the age of 52.8% of the sample (132) ranged between 26 and 35, 4.4% (11) of the participants were 36-45 years old, 8.4% (21) of them between 46 and 55, and 4% (10) of the respondents were 56 or older.

A majority of the study's participants hold a higher education degree (71.6%) or finished secondary education (28.4%). About 15.6% of the respondents have a monthly income of less than 1299 PLN, which is currently a minimum wage in Poland (approximately \$349 in US dollars). 30.8% of the study's participants reported an income between 1300 and 1999 PLN (350-537 USD). 29.6% of the sample's income range between 2000-2999 PLN (538-806 USD). Whereas, 14.8% of respondents reported an income between 3000-3999 PLN (807-1075 USD), and 9.2% of the sample's income is 4000 PLN and more (1076 USD and more).

Table 8. The Socio-Demographic Characteristics of the Sample

Demographic characteristics	Frequency	Percentage of sample
Gender		
Female	168	67,2
Male	82	32,8
Age		
18-25	76	30,4
26-35	132	52,8
36-45	11	4,4
46-55	21	8,4
56 and more	10	4,0
Education		
secondary	71	28,4
higher	179	71,6
Income		
less than 1299 PLN (349 USD*)	39	15,6
1300-1999 PLN (350-537 USD)	77	30,8
2000-2999 PLN (538-806 USD)	74	29,6
3000-3999 PLN (807-1075 USD)	37	14,8
4000 and more PLN (1076 USD and more)	23	9,2

* 1 USD = 3,72 PLN (20.04.2015)

The collected data demonstrate a slight over-representation of the individuals from younger age groups. This can be explained by the fact that the survey was distributed by emails, as well as social networking websites. And younger people tend to be more engaged in the activities in social media. However, as indicated by Han and Kim (2009), online surveys are becoming more acceptable in the academic research due to the possibility to obtain more sincere answers. What is more, the sample consists of more female than male individuals which might be justified by the belief that females are more interested in green issues.

3.4. Scales Reliability

The next step, after the data were collected, was to analyze them with the statistical software SPSS 16.0 (Statistical Package for Social Sciences). The data were submitted to the following analyzes: factor analysis, hierarchical and non-hierarchical (k-means) cluster analysis, and the Analysis of Variance (ANOVA). Then, obtained segments were characterized. As a result of factor analysis, seven factors were found out (green concern, perceived consumer effectiveness, economic factor, environmental knowledge, green purchase behavior, green habits, and green activism). According to the score obtained in the Kaiser- Meyer-Olkin measure – 0.857 (Table 9), the results of the analysis can be considered are meritorious (Kaiser, 1974). Moreover, the Bartlett's test of sphericity showed a significance level of $P=0.000$.

The internal consistency was measured by computing Cronbach's coefficient alpha for each of the seven constructs investigated in this study (Table 9). The factor analysis was performed in order to see the data in a clearer way and to better interpret them. The intercorrelated variables were gathered under more general and elemental factors. Thus, the variables were reduced and the appropriate number of factors was found. Besides, the results of factor analysis were used in subsequent analyses.

Further, Table 10 shows the total variance explained. The eigenvalues of each linear factor are presented before the extraction, after the extraction, and after the rotation. Before the

Table 9. Rotated Component Matrix (Varimax Method)

	Items	F1	F2	F3	F4	F5	F6	F7
Green concern	1	0.829						
	2	0.760						
	3	0.729						
	4	0.581						
	<i>α</i>	0.818						
Green activism	1		0.838					
	2		0.836					
	3		0.692					
	4		0.471					
	<i>α</i>		0.787					
Perceived consumer effectiveness	1			0.781				
	2			0.722				
	3			0.591				
	4			0.536				
	<i>α</i>			0.744				
Green purchase behavior	1				0.692			
	2				0.675			
	3				0.674			
	4				0.668			
	<i>α</i>				0.736			
Knowledge	1					0.900		
	2					0.887		
	3					0.810		
	<i>α</i>					0.848		
Economic factor	1						0.796	
	2						0.771	
	3						0.658	
	<i>α</i>						0.839	
Green habits	1							0.713
	2							0.700
	3							0.653
	<i>α</i>							0.603
Kaiser-Meyer-Olkin Measure of Sampling Adequacy						,857		
Bartlett's Test of Sphericity					Approx. Chi-Square	2740,833		
df		300						
Sig.		0,000						

Table 10. Total Variance Explained – Rotation Sums of Squared Loadings

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	7,302	29,208	29,208	7,302	29,208	29,208	2,791	11,162	11,162
2	2,609	10,436	39,644	2,609	10,436	39,644	2,566	10,263	21,425
3	1,753	7,014	46,658	1,753	7,014	46,658	2,468	9,871	31,296
4	1,471	5,883	52,54	1,471	5,883	52,54	2,365	9,459	40,755
5	1,304	5,216	57,756	1,304	5,216	57,756	2,363	9,453	50,208
6	1,12	4,48	62,236	1,12	4,48	62,236	2,273	9,092	59,3
7	1,03	4,12	66,357	1,03	4,12	66,357	1,764	7,057	66,357
8	0,863	3,453	69,81						
9	0,749	2,996	72,806						
10	0,683	2,734	75,54						
11	0,664	2,658	78,198						
12	0,642	2,567	80,765						
13	0,581	2,324	83,09						
14	0,562	2,248	85,337						
15	0,483	1,932	87,269						
16	0,473	1,893	89,163						
17	0,456	1,823	90,986						
18	0,412	1,647	92,632						
19	0,371	1,486	94,118						
20	0,331	1,323	95,441						
21	0,317	1,269	96,71						
22	0,307	1,228	97,938						
23	0,222	0,889	98,826						
24	0,17	0,679	99,505						
25	0,124	0,495	100						

Extraction Method: Principal Component Analysis.

extraction, 25 factors were identified within the data set. The eigenvalues are shown with regard to the percentage of variance explained (factor 1 explains 29.208% of total variance, factor 2 explains 10.436% of total variance and so on). Then, all factors with eigenvalues greater than 1 were extracted, so that seven factors left. The values of discarded components were ignored. After that rotation was performed in order to optimize the structure. As a result, column Rotation Sums of Squared Loadings shows that factor 1 accounts for 11.162% of the total variance in all seven variables, factor 2 accounts for 10.263%, factor 3 explains 9.871% of total variance, factor 4 explains 9.459%, factor 5 accounts for 9.453%, factor 6 for 9.092%, and factor 7 explains 7.057% of total variance. Therefore, it can be stated that the total variance explained by seven factors is equal to 66.357%.

One item from the environmental concern dimension ('Despite our special attributes, humans are still subjects to the laws of nature') was deleted in order to reach the reliability $\alpha = 0.818$ (Table 11).

Table 11. Rotated Component Matrix (Varimax Method) for the Factor Green Concern

Factor	Items	
	If things continue on their present course, we will soon experience a major ecological catastrophe.	0,829
	Humans are severely abusing the environment.	0,76
Green concern	I am extremely worried about the state of the world's environment and what it will mean for my future.	0,729
	Humans must live in harmony with nature in order to survive.	0,581
	<i>Cronbach Reliability</i>	<i>0,818</i>

While, the reliability of the perceived consumer effectiveness dimensions was equal to Cronbach's coefficient alpha $\alpha = 0.744$. Table 12 shows all of the variables from this construct together with the scores.

Table 12. Rotated Component Matrix (Varimax Method) for the Factor PCE

Factor	Items	
Perceived consumer effectiveness	I can protect the environment by buying products that are friendly to the environment.	0,781
	I feel I can help solve the natural resources problem by conserving water and energy.	0,722
	I feel capable of helping solve environmental problems.	0,591
	Each person's behavior can have a positive effect on society by signing a petition in support of promoting the environment.	0,536
	<i>Cronbach Reliability</i>	0,744

In order to achieve the reliability at the level of $\alpha = 0.839$, one item was deleted from the economic factor dimension ('Economic development is less important than protecting the environment'). All the variables with the Cronbach's coefficient alpha scores are presented in the Table 13.

Table 13. Rotated Component Matrix (Varimax Method) for the Economic Factor

Factor	Items	
Economic factor	I am willing to buy green products even if they cost more than usual ones.	0,796
	I am willing to buy products produced by companies not being harmful to the environment even if they cost more than usual ones.	0,771
	I am willing to pay more taxes in order to protect the environment.	0,658
	<i>Cronbach Reliability</i>	0,839

Similarly, two items were removed from the green knowledge dimension ('I know how to preserve and not cause damage to the environment' and 'I know that plastic bags take many years to decompose and cause pollution'), so that the reliability could equal to $\alpha = 0.848$ (Table 14).

Table 14. Rotated Component Matrix (Varimax Method) for the Construct Knowledge

Factor	Items	
Knowledge	I know the meaning of 'acid rain'.	0,9
	I know the meaning of 'global warming'.	0,887
	I know what the renewable energy sources are.	0,81
	<i>Cronbach Reliability</i>	<i>0,848</i>

Whereas, the reliability of the green purchase behavior dimension was equal to Cronbach's coefficient alpha $\alpha = 0.736$. Table 15 presents all the variables form the green purchase behavior dimensions together with scores.

Table 15. Rotated Component Matrix (Varimax Method) for the Construct GPB

Factor	Items	
Green purchase behavior	I try to buy products not tested on animals.	0,692
	I try to buy energy efficient household appliances.	0,675
	I usually buy products made from recycled materials.	0,674
	I have switched products/brands for ecological reasons.	0,668
	<i>Cronbach Reliability</i>	<i>0,736</i>

Two items were deleted from the dimension green habits ('I usually keep separate piles of rubbish for recycling' and 'I hand in at the chemist's medicine that is left over or past its sell-by date') and the reliability is $\alpha = 0.603$ (Table 16).

Table 16. Rotated Component Matrix (Varimax Method) for the Construct Green Habits

Factor	Items	
	I wait until I have a full board before doing my laundry.	0,713
Green habits	I conserve energy by turning off lights and electrical appliances when I am not using them.	0,7
	I turn off the tap when brushing teeth.	0,653
	<i>Cronbach Reliability</i>	<i>0,603</i>

The reliability of green activism reached $\alpha = 0.787$ (Table 17).

Table 17. Rotated Component Matrix (Varimax Method) for the Construct Green Activism

Factor	Items	
	I help a group whose aim is to preserve the environment.	0,838
	I give money to a cause or an environmental group.	0,836
Green activism	I have taken part in a protest related to the environmental cause.	0,692
	I am interested in reading reports on environmentally friendly products.	0,471
	<i>Cronbach Reliability</i>	<i>0,787</i>

According to Sekaran (1992) all Cronbach's Alpha coefficient values above 0.6 are considered to be acceptable. Therefore, the Cronbach's alpha coefficients of the constructs were satisfactory, with values ranging between $\alpha = 0.603$ and $\alpha = 0.848$. The factors that were identified in the factor analyze were afterward used as inputs in the following analysis.

3.5. Cluster Analysis

In order to distinguish clusters, both hierarchical and non-hierarchical (k-means) cluster analyzes were applied. The factor scores for each of the seven dimensions was calculated and subsequently submitted to a hierarchical cluster analysis. To indicate the number of the clusters, Ward's method with the Squared Euclidean distance as an interval measure were applied. Afterward, the agglomeration matrix and the dendrogram were examined revealing a three-cluster solution.

Then the non-hierarchical k-means analysis was applied using findings from the hierarchical cluster procedure. The solution derived from k-means analysis shows that: cluster one (n=180) constituted 72% of the sample, cluster two correspondent to (n=29) 11.6%, and cluster three (n=41) represented 16.4% of the sample. In order to discover the difference between clusters, the Analysis of Variance (ANOVA) was performed (Table 18). The constructs were used as dependent variables and the three clusters were used as independent variables. There are statistical significant differences between the groups (P=0.009 for green knowledge, P=0.000 for the rest of the constructs) since the significance level is below 0.05.

Consequently, multiple comparisons with Tukey's Honestly Significant Difference (HSD), as a post hoc test, were conducted to examine the between-group differences among the variables. The results can be seen in the Table 18. Based on the final cluster's table, the groups were classified according to the variables: green concern, perceived consumer effectiveness, economic factor, environmental knowledge, green purchase behavior, green habits and green activism.

Table 18. Cluster Profiles with the Mean Values Across the Seven Variables and Post Hoc Test

One-way ANOVA	Cluster 1 'Potential Greens'	Cluster 2 'True Greens'	Cluster 3 'Browns'	General mean				Tukey post hoc
	(n=180) M (SD)	(n=29) M (SD)	(n=41) M (SD)	M (SD)	F	P	P< 0,01	
Green concern	4.04 (0.65)	4.57 (0.47)	2.77 (0.73)	3.90 (0.83)	82,151	0,000	2>1>3	
PCE	3.75 (0.60)	4.36 (0.72)	2.23 (0.72)	3.57 (0.89)	122,076	0,000	2>1>3	
Economic factor	2.97 (0.79)	4.55 (0.42)	1.56 (0.53)	2.92 (1.06)	148,394	0,000	2>1>3	
Knowledge	4.51 (0.60)	4.85 (0.30)	4.38 (0.93)	4.53 (0.65)	4,843	0,009	2>1,3	
Green purchase behavior	3.27 (0.74)	4.40 (0.42)	2.51 (0.71)	3.28 (0.86)	60,747	0,000	2>1>3	
Green habits	4.39 (0.64)	4.77 (0.30)	3.68 (1.07)	4.32 (0.76)	23,962	0,000	2>1>3	
Green activism	2.09 (0.69)	3.52 (0.83)	1.21 (0.66)	2.11 (0.92)	92,66	0,000	2>1>3	

3.6. Discussion

With regards to the results from the Analysis of Variance (ANOVA), the first segment (72%) was labeled as ‘Potential Greens’, they showed the scores ranging from middle to high. The second cluster demonstrated highest scores and was labeled the ‘True Greens’ (11.6%). Whereas, the third group was named the ‘Browns’ (16.4%) showing the lowest scores. Therefore, the first research question (Is it possible to clearly identify green consumers segments based on the constructs that have been viewed as significant in the consumption process of the ecological products?) of this study was answered, confirming that the seven constructs examined in this research can serve as factors in determining green consumers groups.

The Pearson’s test was undertaken, in order to examine the significance of the socio-demographic characteristics in the process of differentiation of the segments. Cross-tabulation analysis and the chi-square statistic were used. The results are shown in Table 19, and indicate that variables: gender (P=0.000) and age (P=0.004) are significant for differentiating between the groups. Furthermore, there are no statistical significant differences between the three clusters according to the variables: education (P=0.241) and income (P=0.578).

Table 19. Chi-square Test (Demographic)

Variables	Pearson's χ^2	df	Sig.
Gender	22,041	2	0
Age	22,733	8	0,004
Education	2,85	2	0,241
Income	6,618	8	0,578

Table 20 presents the characteristic of each cluster according to the socio-demographic variables. As it was indicated by previous studies (Diamantopoulos et al., 2003; Straughan and Roberts, 1999; Banerjee and McKeage, 1994), also present research found out that gender is a significant determinant of green consciousness and, what is more, females show higher level of environmental awareness than males. They constitute 89.65% of the segment ‘True Greens’, 70% of the group ‘Potential Greens’ and only 39.02% of the ‘Browns’.

Table 20. Characteristics of the Clusters – Mean Scores

Demographics		Cluster 1 ‘Potential Greens’ (n=180)	Cluster 2 ‘True Greens’ (n=29)	Cluster 3 ‘Browns’ (n=41)	Total 250
Gender (%)	Female	126 (70.00)	26 (89.65)	16 (39.02)	168
	Male	54 (30.00)	3 (10.35)	25 (60.98)	82
Age (%)	18-25	58 (32.22)	3 (10.34)	15 (36.58)	76
	26-35	93 (51.67)	14 (48.28)	25 (60.98)	132
	36-45	9 (5.00)	2 (6.90)	0 (0.00)	11
	46-55	13 (7.22)	7 (24.14)	1 (2.44)	21
	56 and more	7 (3.89)	3 (10.34)	0 (0.00)	10
Education (%)	secondary	49 (27.22)	12 (41.38)	10 (24.39)	71
	higher	131 (72.78)	17 (58.62)	31 (75.61)	179
	less than 1299	32 (17.78)	1 (3.45)	6 (14.63)	39
	1300-1999	56 (31.11)	10 (34.48)	11 (26.83)	77
Income (%)	2000-2999	53 (29.44)	9 (31.03)	12 (29.27)	74
	3000-3999	23 (12.78)	7 (24.14)	7 (17.07)	37
	4000 and more	16 (8.89)	2 (6.90)	5 (12.20)	23

If it comes to the next demographic characteristic – age, it also turned out to be statistically significant ($P=0.004$) in determining a profile of the environmentally-friendly consumer. Moreover, most of the younger participants of the study became a part of the segments: ‘Browns’ and ‘Potential Greens’, while older age groups established the clusters ‘Potential Greens’ and ‘True Greens’. These results are consistent with the outcomes reached by Strumińska-Kutra (2012) in her study. She stated that young people (between 18 and 24 years old), unlike their 1980s contemporaries, are rather not involved in eco-friendly behaviors.

Although the scholars who conducted previous researches have not always come to the same conclusions, the green consumer has been generally considered as a young individual (Diamantopoulos et al., 2003). However, in Poland the studies from 1980s indicated a high level of environmental awareness among young people (Kassenberg, 1987), and thirty years later it has been reflected in a high level of green consciousness represented by older individuals in this study. Furthermore, especially young people in Poland show the characteristic of a modern consumer society, as Poles have already accustomed to free market realities (Mróz, 2011) after the transformation of the political and economic system at the turn of 1980s and 1990s.

Furthermore, it could seem that consumers with a higher level of education and income are more environmentally conscious and more actively involved in pro-environmental activities as it was indicated in some prior studies (Roberts, 1996). However, no statistically significant differences between segments according to the education ($P=0.241$) and income ($P=0.578$) have been found in present research. It can be explained by the fact the influence of income on the household’s decisions is difficult to assess. For instance, it should be more possible for the households with higher income to invest in water or energy saving devices, which are usually quite expensive; though their water or energy demand might be less elastic to prices than demand of household with lower income (Martinez-Espineira et al., 2014). Besides, Lam (2006) in his research demonstrated that level of formal education does not have an impact on green behavioral intentions. It might be related to the suggestion from

the Strumińska-Kutra' study (2012) that Polish schools do not provide enough information about the sustainable consumerism.

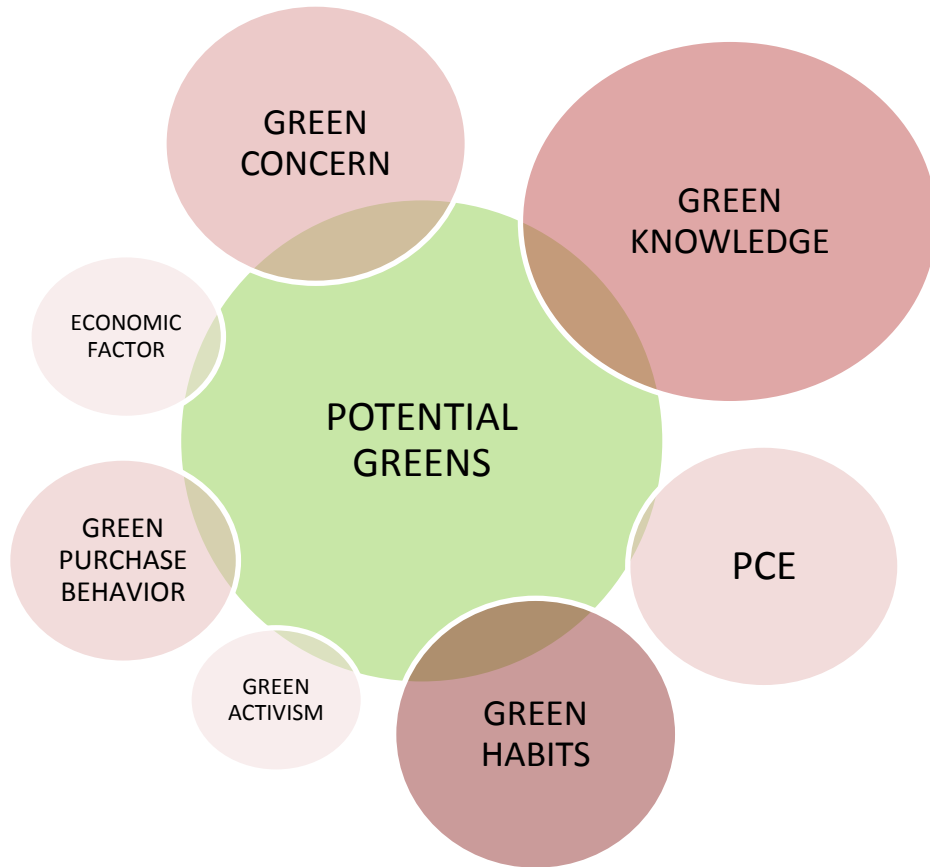
To conclude, the answer for the second research question of this study (Do the green segments significantly differ from other consumer groups regarding the demographic characteristics?) was provided. It can be stated that there are differences between more pro-environmental segments and the remaining groups of consumers in terms of socio-demographic characteristic such as age and gender, however this study does not provide such an evidence for the variables education and income. This situation might be justified by the cultural, economic and historical differences between various countries.

If it comes to the segment of environmentally-friendly consumers that were discovered in this study, these segments can be characterized as follows:

SEGMENT 1 – The ‘Potential Greens’ (72%)

In this group of consumers, females predominate over males. Moreover, this segment is mainly composed of individuals whose age range between 18 and 35. They show a quite high level of green concern and environmental knowledge. However, the ‘Potential Greens’ demonstrate mixed feelings about their individual ability to contribute to the environment protection and improvement. What is more, consumers from this segment are rather not willing to pay more for environmentally-friendly products and services or to preserve the natural environment. Consequently, the ‘Potential Greens’ show a moderate level of an eco-friendly purchase behavior. If it comes to other types of pro-environmental behaviors, they are engaged in the green habits such as turning off the tap when brushing teeth or saving energy by turning off light when not using them. However, they are not interested in the green activism's actions such as supporting environmental organizations, reading the reports on eco-friendly products or companies, or giving money to the environmental cause. Figure 9 shows the summary and intensity of the environmental characteristics of the ‘Potential Greens’ segment.

Figure 10. Environmental Characteristics of the ‘Potential Greens’ Segment

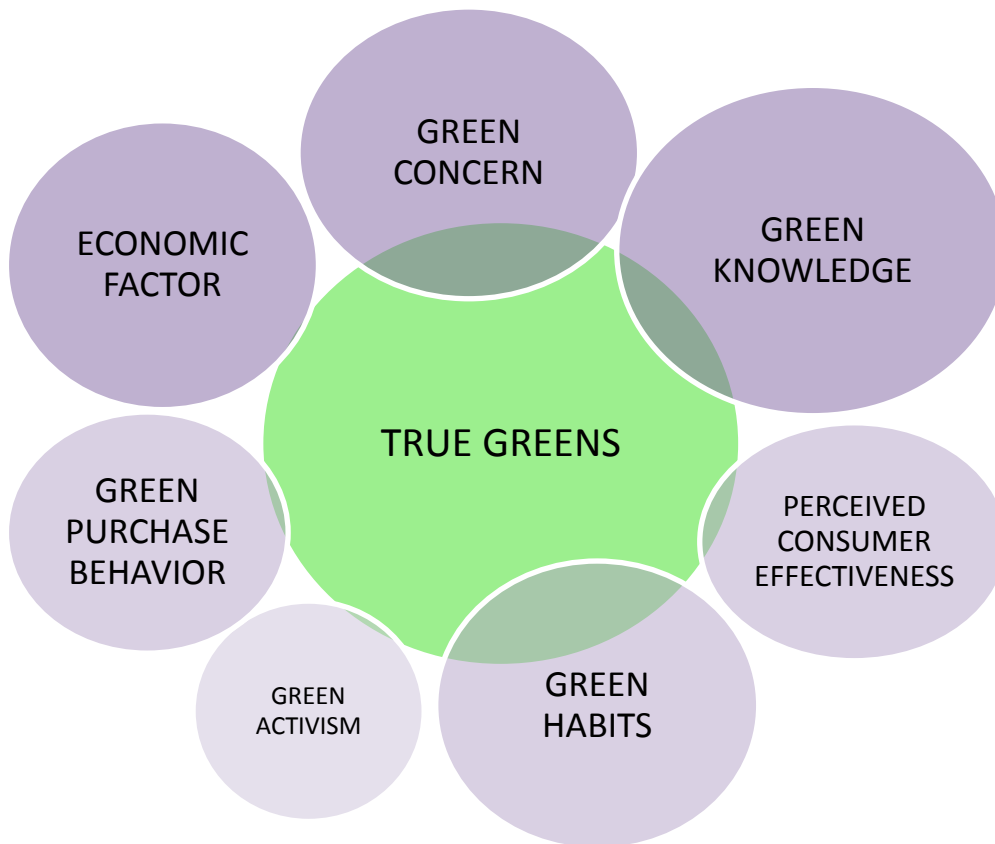


SEGMENT 2 – The ‘True Greens’ (11.6%)

Similarly to the previous group, this segment consists mainly of female consumers. Besides, the individuals’ age range between 26 and 35 and between 46 and 55. They are very concerned about the green issues and demonstrated the highest level of knowledge compared to other segments. They believe that they can make a difference for the natural environment and contribute to its conservation. Moreover, they show the willingness to pay a premium for green products and more taxes in order to protect the environment. Thereupon, members of this group engage in the pro-environmental purchase behavior. What is more, they perform green activities, like energy or water saving. The ‘True Greens’ are involved in all types of green behavior, environmental activism too. Though among

those different kinds of behavior, activates such as taking part in a protest related to the environmental cause or reading reports on eco-friendly products, are the least popular. Figure 10 presents the summary and intensity of the environmental characteristics of the ‘True Greens’ segment.

Figure 11. Environmental Characteristics of the ‘True Greens’ Segment

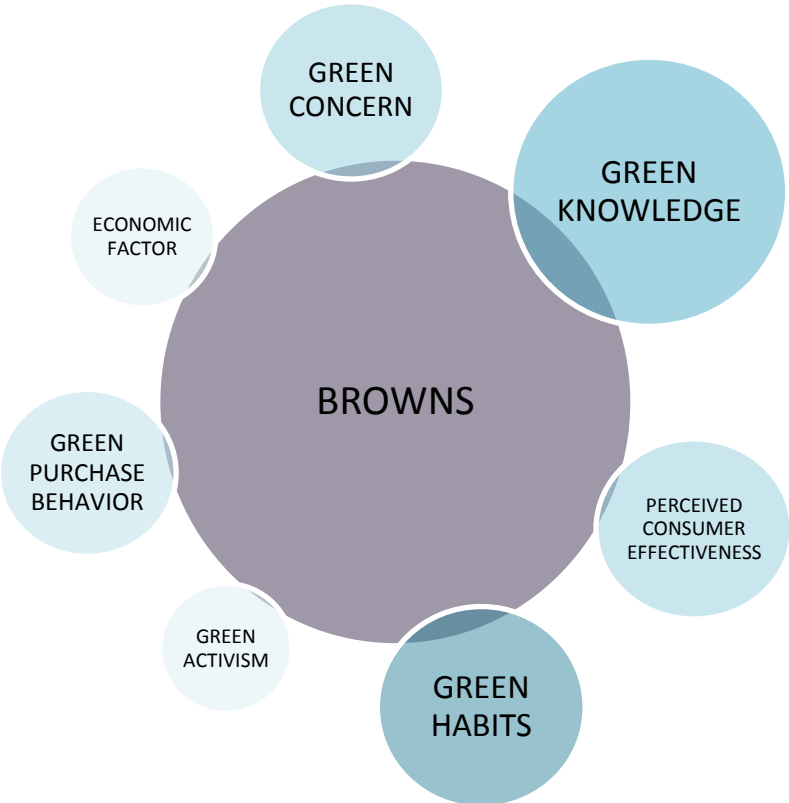


SEGMENT 3 – The ‘Browns’ (16.4%)

This group includes mainly males contrary to previous segments. The ‘Browns’ also consists almost only of young individuals aged between 18 and 35. They show a quite high level of environmental knowledge. However, other segments are slightly more knowledgeable about the green issues. Although they seem to be well informed about the

environmental problems, they are not concern about the natural environment protection. They are also not willing to pay more for the eco-friendly products and services. They think that economic development is much more important than protecting the environment. Therefore, the ‘Browns ‘are rather not involved in green purchase behavior. Furthermore, consumers from this group consider their individual actions not sufficient to contribute to the improvement of the natural environment. Consequently, they definitely do not engage in the environmental activism and do not support environmental movements. However, they show a moderate level of green habits. Figure 11 show the summary and intensity of the environmental characteristics of the ‘Browns’ segment.

Figure 12. Environmental Characteristics of the ‘Browns’ Segment



As a result, the third research question of the present study (Is it possible to determine green segments among Polish consumers based on the multidimensional framework proposed in this study?) was answered. This research discovered green consumer profiles in Poland by applying all seven constructs (green concern, perceived consumer effectiveness, economic factor, environmental knowledge, green purchase behavior, green habits, and green activities) from the holistic theoretical model of the environmental consciousness proposed in this research. The previous studies were usually focusing on the one or few dimensions of green consciousness, not taking into account all of the significant determinants of green consumer profile. Therefore, this study is believed to contribute to the existing literature on green awareness, and specifically to the present knowledge about the pro-environmental segments in the Polish market. Thus, the results of this research can be useful for both academicians and practitioners.

CONCLUSIONS AND RECOMMENDATIONS

Over the last few decades, individuals have understood the seriousness of environmental problems and started to be increasingly green conscious. Preserving the natural environment became a significant concern of society. As a result, consumers introduced various eco-friendly behaviors into their everyday lives, including green habits, pro-environmental activism, as well as purchase of eco-friendly goods. More and more often individuals search for environmentally-friendly products and services and prefer to buy the goods from the companies that engage in the environmental protection practices.

Nowadays, when an increasing number of individuals decide to choose green, the organizations are assessed on the basis of business ethic and social accountability. Therefore, the marketers should take into account the differences existing between various groups of consumers in terms of green awareness. The companies should focus on identifying the needs and characteristics of specific market segments, in order to target appropriate groups and implement suitable marketing strategies to gain market share and a competitive advantage in the marketplace.

Many scholars made great efforts to discover a profile of the green consumer. The literature shows numerous attempts to segment the market using a variety of variables, both socio-demographic and environmental, though, many studies decided to investigate only one or few constructs, not implementing the comprehensive view. Therefore, in this research the holistic model including green attitudes (green concern, perceived consumer effectiveness, economic factor), environmental knowledge and eco-friendly behaviors (green purchase behavior, green habits, green activism) was proposed and carried out.

The companies that successfully targeted the segments can select among various strategies and instruments that offer them the green marketing. Green marketing originated from socially responsible marketing and indicates that the organizations must take the responsibility for the needs and desires of consumers, own profit, and company's requirements, as well as the whole society's interest at the same time. Green marketing

includes various activities such as modifying the product or service, making changes in the production process or packaging of goods, as well as revising advertising and promotion policies. The company can generally have a defensive (passive) approach to green marketing, doing the absolute minimum to comply with environmental regulations and laws, or an assertive (proactive) one, voluntarily creating pro-environmental activities, being proactive. Marketers can decide about the specific strategy that the organization prefers to implement, for example lean, defensive, shaded or extreme green strategy.

Due to the lack of clear definitions and standards, some companies started to make questionable green claims about their products misleading the consumers. These practices called 'greenwashing', led to individuals' skepticism about environmentally-friendly products and services. Besides, the companies became more cautious about offering green goods. Moreover, during the times of recession, individuals consider the ecological problems rather as secondary problems. It is possible to observe this situation taking place in Poland. However, according to the increasing number of the studies on green issues carried out in Poland, the level of environmental consciousness of Polish society has significantly raised over the years.

This study used a convenience sample of 250 Polish consumers. The online survey was distributed by emails and networking websites. The self-administrated questionnaire included statements regarding the environmental variables and socio-demographic determinants, such as age, gender, education, and income. The statements mostly borrowed from previous researches, were assessed through 5-point Likert scale, from strongly disagree to strongly agree. Based on the results of this study, it can be concluded, that Polish society, is, in general, aware of the problems related to the natural environment protection. They assess their environmental knowledge at the very high level. However, they are reluctant to green activism. They are rather not prone to participate in ecological associations or pro-environmental actions. Although, most of the individuals in Poland confess to having green habits, those activities are usually connected to water and energy saving, thus some people can be motivated by economic factor rather than concern about

the environment. Generally speaking, the Polish consumers are aware of the green issues but it does not always translate into pro-environmental behaviors.

Particularly, the outcome of this research proves that certain socio-demographic and environmental factors are significant for differentiating between greener groups of individuals and those that are less environmentally conscious. Therefore, the goals of this study were reached. Firstly, the market was divided into groups based on the following environmental variables: green concern, perceived consumer effectiveness, economic factor, environmental knowledge, green purchase behavior, green habits, and green activism. Secondly, it was shown that the segments significantly differ in terms of age and gender but the education and income are not relevant to differentiate between consumers groups. And then the profile of green consumers in Poland was determined based on the holistic model proposed in this research.

The study determined three segments of Polish consumers: 'Potential Greens', 'True Greens' and 'Browns'. The largest group consist of the 'Potential Greens', who are quite concerned and knowledgeable about the natural environmental, perceiving themselves rather capable of contributing to environment protection and to engaging in green habits, such as water and energy conservation, on a daily basis. However, they are rather sensitive to the price of environmentally-friendly products and services, not too much willing to buy them, and to contribute financially to solving the ecological problems. Moreover, they are rather not involved in green activism.

Unlike other segments, the 'True Greens' are quite engaged in the pro-environmental movements or in supporting green issues. Furthermore, this group of consumers believes that their commitment to the environment conservation and financial support for the cause can make a real difference for the environment. Thus, they actively purchase eco-friendly goods, even when they have to pay the green premium. However, this group consists of the smallest number of individuals. More people are included in the 'Browns' segment.

The 'Browns' are not interested in the green issues and the protection of the natural environment. They do not even consider themselves to able to help reducing ecological

problems, though, they show a quite high level of environmental knowledge and are rather engage in performing green habits. But the water and energy conservation can be related to the financial motives since the ‘Browns’ are convinced that the economic development is more significant than environment protection. Hence, they are not eager to spend their money on this matter.

The companies should take into consideration the way that the market is divided into these three segments and analyze each group of consumers assessing their attractiveness. The next step for the organization is to select a correct positioning of target segment or segments and to implement suitable marketing strategies and instruments. Marketing practitioners whose purpose is to attract consumers concerned about the natural environment and its protection should emphasize in their marketing campaigns the green image of the company. For instance, they can advertise the pro-environmental practices implemented in the organization, such as reducing the carbon footprint by changing the vehicles to electric, using the recycled materials for production or packaging of goods, or efficiently managing the waste.

Likewise, the companies can promote the pro-environmental attributes of the products or services offered by the company describing the eco-friendly characteristics, clearly stating the benefits for the environment, and justifying the green claims (for example underling that the product is recyclable, non-toxic, efficient in the use of resources or is easily disposable). However, the companies must remember not to exaggerate their environmental claims. They should focus on credibility in order to avoid greenwashing. Additionally, the manufacturers of green goods should provide sufficient information about the product and its consequences on the environment. They can use for that eco-labels and tags, which communicate the green credentials of products and can help to increase awareness of green issues. What is more, it makes easier for the consumers to choose the environmentally-friendly goods. These kinds of initiatives will draw the attention of individuals who are aware of the ecological problems and care about the environment preservation.

Whereas, the consumers who are rather not green conscious might be attracted by convincing them that conserving the environment is everyone’s responsibility and it has a

positive impact on the environment. Marketing managers should make long – term efforts to promote green attitudes, environmental knowledge, and eco-friendly behaviors through various media and advertising campaigns. The increase of individuals’ daily green attitudes and habits will eventually lead to the eco-friendly purchases. Furthermore, it is important to point out the significance of consumer’s individual decisions and actions related to the protection of the natural environment. The companies should provide to their consumers an encouraging feedback emphasizing that individual’s decisions and initiatives have a positive effect on the environment; hence, increasing consumers’ perceived effectiveness will in turn raise the green buying behavior.

When it comes to the consumers that are less willing or totally reluctant to pay extra money for the environmentally-friendly products, the discounts or subsidies can be offered by a company. Also, the marketing managers can emphasize the other values of products, such as functionality, visual appeal, quality, design or taste. First of all the companies should develop products that combine the other values with the environmental friendliness. While, the consumers that are not sensitive to the price can be attracted by the marketers by emphasizing, except the basic advantage of influencing the environment in a positive way, also the prestige of buying and consuming environmentally-friendly goods.

Moreover, since the large number of young people constitute the group of consumers who are not much interested in environmental issues; the companies should invest in product innovations in order to reach younger age groups of consumers. The younger people are more likely to search for innovativeness when adopting a new product or service. For example, when the company introduces the newest packaging innovation like using a kind of degradable fiber, it is likely to both contribute to environment protection and gain the attention of young individuals.

Moreover, the companies should try to reach younger people through the internet and social media. The young individuals are very active on the networking websites, which became essential in their daily lives. Moreover, this kind of communication channel enables direct interactions and two-way communications and empowers the word-of-mouth marketing.

The companies should follow the media coverage and answer the questions asked by consumers and media.

The traditional advertisements, such as the ones on TV, radio or press would be more suitable for the older individuals. The older age groups establish mainly the segment of environmentally consciousness consumers, called in this study the 'True Greens'. This segment is the one that is the most involved in the green activism. Therefore, the organizations that have an ambition to draw the attention of environmentally conscious consumers can build a partnership with a pro-environmental non-governmental or governmental organization and arrange together some actions aiming at environment protection or solving a specific ecological problem. Furthermore, the marketers can encourage the consumers to participate in those environmental initiatives together with the company.

Some limitations of this study have been recognized. First of all, the sample was quite small (n=250) and it was slightly over-represented by the individuals from the younger age groups compared to the number of older consumers. Also, the number of females participating in the study was much higher than males. Besides, after deleting some of the questions from the questionnaire in order to reach a higher reliability, in some dimensions the variables were represented by a small number. Therefore, scholars might be interested in deepening the study by using a larger sample, together with a wider range of variables. What is more, further researches should use a more diverse sample in order to increase the generalizability of the results.

To summarize, this work provides the review of theoretical literature and empirical studies on the subject of green marketing, its assumptions, history, and strategies. Further, it discusses the environmental consciousness concept, its various interpretations and evolution particularly in the Polish society, with the different approaches to the environmental consciousness. Besides, this paper answers the three research questions raised at the beginning of the study, by discovering segments of eco-friendly consumers in Poland based on the holistic framework of environmental variables, which was proposed by the author, and determining the socio-demographic characteristics that differentiate the

groups of eco-friendly products' consumers (age, gender). The results of this study can be beneficial for the scholars by extending the knowledge, as well as pointing out the limitations of this research and future directions for further investigations. The findings provide also the significant information from the practical perspective. Marketing practitioners can use that information and recommendations to increase the market shares and gain a competitive advantage over the rivals.

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APPENDICE

Green Consumers in Poland

This survey is completely anonymous. Answers to all questions in this survey will be used only for the purposes of scientific research. Thank you in advance for taking the time to complete this survey.

Please read each of the following statements very carefully and state how strongly you agree or disagree with it; mark your answer.

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1. Humans are severely abusing the environment.	1	2	3	4	5
2. If things continue on their present course, we will soon experience a major ecological catastrophe.	1	2	3	4	5
3. Despite our special attributes, humans are still subjects to the lows of nature.	1	2	3	4	5
4. I am extremely worried about the state of the world's environment and what it will mean for my future.	1	2	3	4	5
5. Humans must live in harmony with nature in order to survive.	1	2	3	4	5
6. I feel capable of helping solve environmental problems.	1	2	3	4	5
7. I can protect the environment by buying products that are friendly to the environment.	1	2	3	4	5
8. I feel I can help solve natural resources problem by conserving water and energy.	1	2	3	4	5
9. Each person's behavior can have a positive effect on society by signing a petition in support of promoting the environment.	1	2	3	4	5
10. Economic development is less important than protecting the environment.	1	2	3	4	5
11. I am willing to buy green products even if they cost more than usual ones.	1	2	3	4	5
12. I am willing to buy products produced by companies not being harmful to environment even if they cost more than usual ones.	1	2	3	4	5
13. I am willing to pay more taxes in order to protect the environment.	1	2	3	4	5
14. I know how to preserve and not cause damage to the environment.	1	2	3	4	5

15. I know the meaning of 'global warming'.	1	2	3	4	5
16. I know the meaning of 'acid rain'.	1	2	3	4	5
17. I know what the renewable energy sources are.	1	2	3	4	5
18. I know that plastic bags take many years to decompose and cause pollution.	1	2	3	4	5
19. I usually buy products made from recycled materials.	1	2	3	4	5
20. I try to buy energy efficient household appliances.	1	2	3	4	5
21. I have switched products/brands from ecological reasons.	1	2	3	4	5
22. I try to buy products not tested on animals.	1	2	3	4	5
23. I conserve energy by turning off lights and electrical appliances when I am not using them.	1	2	3	4	5
24. I usually keep separate piles of rubbish for recycling.	1	2	3	4	5
25. I hand in at the chemist's medicine that is left over or past its sell-by date.	1	2	3	4	5
26. I turn off the tap when brushing teeth.	1	2	3	4	5
27. I wait until I have a full board before doing my laundry.	1	2	3	4	5
28. I am interested on reading reports on environmentally friendly products.	1	2	3	4	5
29. I help a group whose aim is to preserve the environment.	1	2	3	4	5
30. I give money to a cause or an environmental group.	1	2	3	4	5
31. I have taken part in a protest related to environmental cause.	1	2	3	4	5

32. Gender

- a. Man
- b. Woman

33. Age

- a. 18 – 25
- b. 26 – 35
- c. 36 – 45
- d. 46 – 55
- e. 56 and more

34. Education

- a. Secondary

b. Higher

35. Income (per month; net)

- a. below 1299 zł
- b. 1300 - 1999 zł
- c. 2000 - 2999 zł
- d. 3000 - 3999 zł
- e. 4000 zł and more

RESUME

Born in 1988 in Swiebodzice, Poland, Magdalena Szczepaniak started her bachelor's degree in Wroclaw School of Banking, in the field of Management and specialization in HR Management. The third and fourth semester of studies she spent at Universidad Carlos III de Madrid, in Spain under the Erasmus Program. Then she did an internship in Toshiba Carrier, in the United Kingdom also under the Erasmus Program. Magdalena Szczepaniak awarded her Bachelor's degree on 18 October 2010 with the final grade 'very good'. Afterwards, she started her professional carrier in Grupa Trinity as an Administrative/Event Specialist. Then she became a Project Coordinator in Work Solutions, in the meantime starting Master's studies in Business Administration at Wroclaw University of Economics. After the successful completion of first year of studies, she came to Turkey with an AIESEC internship. Afterwards, Magdalena Szczepaniak started working in HAS Elevator as a Foreign Customer Representative and began in 2013 M.Sc. in Management Program at Yalova University. She presented her paper 'Fashion Involvement and Innovativeness, Self-Expression through Fashion and Impulsive Buying as Segmentation Criteria: Identifying Consumer Profiles in the Turkish Market' at the international Conference ICOAC organized in December 2014 in Szczecin, Poland. Then, the article was published in the Entrepreneurship and Innovation Management Journal in February 2015.