A COMPARATIVE STUDY ON MARKET SEGMENT CHARACTERISTICS THAT INFLUENCE ADOPTION OF GREEN PRODUCTS: A CASE OF RUNDA AND NAIROBI DAM ESTATES

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DECLARATION

Supervisor Declaration

This research project has been submitted with my approval as University Supervisor

SUPERVISOR: DR.MARY KINOTI Signature

Date

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I would like to thank The Almighty God for the strength, perseverance and grace He gave me during the project. It has been a long journey which would have not been successful and complete had He not been by my side. His help was further manifested by the people He placed on my path who encouraged me during this walk. May His Holy name be praised.

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DEDICATION

I would like to dedicate this project to my immediate family; my parents, brother and sister for their support and for walking this journey with me.

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LIST OF ABBREVIATIONS

- OECD Organization for Economic Co-operation and Development
- CITES Convention on International Trade in Endangered Species (of Wild Fauna and Flora)
- EAEN Eastern Africa Environmental Network
- UNGA United Nations General Assembly
- KNBS Kenya National Bureau of Statistics
- SPSS Statistics Package for Social Scientists

ABSTRACT

Given the growing awareness of widespread environmental degradation facing current and future generations, environmentalism has been identified as potentially one of the biggest business issue that corporates must address in order to promote sustainable development. This has led to the emergence of green consumers, in a bid to drive the green agenda. According to the Green Growth report (2011), it was widely acknowledged that green growth and green product adoption in Kenya was less than ideal compared to the scenario in some of its counterparts. However, the Government of Kenya has already made progress in developing and implementing policies that promote the production and consumption of green products.

The objectives of the study were to determine market segment characteristics that influence the adoption of green products, establish the level to which consumers in Runda and Nairobi Dam estates have adopted green products and to compare market segment characteristics that influence adoption of green products among residents of Runda and Nairobi Dam Estates. Literature was collected from various authors who focused on market segmentation, green products as well as factors influencing green product adoption. The research design used was a descriptive research study as it sought to further identify market segment characteristics of consumers who adopt green products by comparing consumers in Runda and Nairobi Dam Estates. The data was collected through semi-structured questionnaires.

The study revealed that the respondents' adoption of green products was influenced by behavioural, demographic, geographic and psychographic characteristics. Regarding the level of adoption of green products, the study revealed that 96.7 percent of the respondents were aware of green products and had therefore purchased and used them. On the other hand 95.0 percent of the respondents still use green products. However the study established that Runda residents are more aware of the green products and therefore have adopted these green products more as compared to the residents of Nairobi Dam estate.

CHAPTER ONE: INTRODUCTION

1.1 Background to study

Modern environmentalism began in 1950s but became more active in 1960s with public pressure. In the 1970s, environmental issues became established as a permanent feature of national and international policy with first Earth day held in 1970 and first United Conference on the Human environment held in Stockholm in 1972 (Kinoti, 2011). The 1972 conference then led to the 1992 Earth Summit and other subsequent international summits/ fora such as the Rio +20 Summit in which the concept of sustainable development goals was widely adopted by governments and others, and in many countries had a tangible impact on the priority given to environmental objectives. At a regional level, there are various bodies that attend to environmental matters such as the Organization for Economic Co-operation and Development (OECD) and Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). At a local level initiatives include the Eastern Africa Environmental Network (EAEN) and the Green Africa Foundation (Kenya) (United Nations General Assembly (UNGA), The Future We Want – Outcome Document, 2012).

Given the growing awareness of widespread environmental degradation facing current and future generations, environmentalism has been identified as potentially one of the biggest business issue that corporates must address in order to promote sustainable development (Kirkpatrick, 1990). Many companies have attempted to capitalize on the public's interest in green issues by positioning themselves as environmentally responsible organizations (Mungai, 2009). Such organizations include LG and Samsung Electronics with their eco-friendly washing machine and air conditioner respectively.

Subsequently, this has led to the emergence of green consumers, in a bid to drive the green agenda. Consumers, who adopt a concern for the environment, or those with an orientation towards green products are growing in number (Donaton and Fitzgerald, 1992; Mungai, 2009). They avoid purchasing products that they perceive as risky to

health, harm the environment during production, use or final disposal, consume much energy, have excessive packaging, and contain ingredients coming from threatened habitats or species (Akerhurst 2012).

1.1.1 The Concept of Market Segmentation

Kotler and Armstrong (2012) defined segmentation as the process of dividing a mass market into distinct subsets of consumers with common needs/characteristics and selecting one/more segments to target with distinct marketing strategy. Dibb and Simkin (1997) and Schiffman, Kanuk and Hansen (2008) also hold a similar opinion as above. Various segmentation bases have been identified by several scholars (Kotler and Armstrong, 2012; Guyat, 2011; Dibb and Simkin, 1997; Guyat, 2011). These include: demographic segmentation: identifiable, measurable characteristics of a population i.e. age, gender, marital status, income, education level, occupation; geographic segmentation: market divided by location e.g. by region, size of city, population density and climatic conditions; psychographic segmentation: segments are defined on the basis of social class, lifestyle and personality characteristics and by behavioural characteristics; occasions, user status, usage rate and loyalty status.

1.1.2 The Concept of Green Products

Ottman (1992) defined green products as typically durable, non-toxic, made of recycled materials, or minimally packaged. They are further categorized into three levels; the primary level is the expected value that corresponds to the expected product benefits; the desired level of value the consumer would like to receive; and lastly, the unanticipated value, which may exceeds customer expectations. Ideally, customers lean more towards examining the green products from the point of view of their packaging as well as product ingredients (Todd, 2004).

According to Peattie and Crane (2005), green products often position themselves as being comparable or better quality than non-green products and as being safe for the environment.

More recently, however, Manget et al., (2009) discovered that almost half of the respondents in a multi-country survey indicated that green products offer comparable or superior quality over conventional alternatives. This position was further supported by Dibb and Wesley (2004) who found out that despite consumers feeling the pinch in the current economic downturn, interest in environmentally responsible products remains significant; more than half of consumers (52 per cent) said that they are buying more environmentally responsible products.

1.1.3 Runda Estate

Runda Estate is found in the western part of Nairobi City and is dissected into almost two equal halves by the latitude 01.2130 South and longitude 36.8190 East. It is located within the Westlands area of Nairobi which has an area of 97.6 km². Property prices in Runda estate are high, with some pieces of land being sold at an average of Ksh. 50 Million to 200 Million; given that it is located in a prime area (Kiambu – Gigiri – Limuru areas). The estate also houses key government representatives, diplomats and international organizations. It is also close to the United Nations Headquarters, big shopping malls, 5 star hotels and restaurants thus leading it to be classified as a residential area for high income earners (Ministry of Planning, Nairobi West District Development Plan, 2008 – 2012). As at December 2012, Runda estate was estimated to have 1,100 households (www.rundaestate.com).

1.1.4 Nairobi Dam Estate

The study will also focus on Nairobi Dam Estate which is an estate within Lang'ata area. Property prices in this area average between Ksh. 5 Million and Ksh. 15 Million. According to KNBS, Kenya's middle class includes anybody spending between Sh23, 670 and Sh199,999 per month. African Development Bank, define the middle class as anybody with an annual income exceeding Sh331,500 (\$3,900) or who spends between Sh170 (\$2) and Sh1,700 (\$20) a day (www.afdb.org) (Ministry of Planning, Nairobi West District Development Plan, 2008 – 2012).

1.1.5 Green Products in Kenya

According to the Green Growth report (2011), the definition of green growth and product adoption in Kenya has proved to be elusive. It was widely acknowledged that green growth and green product adoption in Kenya was less than ideal compared to the scenario in some of its counterparts. However, though there remains considerable work to be done, the Government of Kenya has already made progress in developing and implementing policies that promote the production and consumption of green products. It was further highlighted that challenges such as marketing strategies for green technologies to date have not adequately improved consumer awareness of and demand for these innovations. It was also noted that there are considerable scope for increasing consumer demand for green growth by implementing consumer outreach campaigns in the area of green product adoption.

It was recommended that information on green products should be made widely available to promote benefits such as the long-term health and financial benefits to consumers who adopt green technologies that may be more expensive than existing technologies in the short term. Studies on green marketing undertaken in Kenya include the following: Kiongera (2003) undertook a survey of green marketing practices in Bamburi cement in Kenya; (Obuya (2003) carried out a survey of the extent to which manufacturing firms in Nairobi practice green marketing; Kalama (2007) undertook a study on the green marketing practices by Kenya Petroleum refineries; Odhiambo (2008) surveyed the extent to which floricultural firms in Kenya practice green marketing; Thiong'o (2009) undertook an investigation of green marketing practices among pharmaceutical firms in Kenya and Kinoti (2011) examined green marketing intervention strategies and sustainable strategies.

1.2 Research Problem

Society has become more concerned with the natural environment. Businesses have begun to modify their behavior in an attempt to address society's concerns on environmental degradation. Some have been quick to accept concepts like environmental

management systems and waste minimization, and have integrated environmental issues into all organizational activities; including incorporating green elements to their products (Polonsky, 1994).

On the side of the consumer, majority have realized that their purchasing behavior has had a direct impact on ecological problems currently facing the world. They are therefore considering environmental issues before purchase and are likely to pick up ecologically compatible products. On an international level, studies have been done highlighting the role of firms in promoting environmental conservation; such as those by Peattie and Crane (2005) and Polonsky (2004) on green marketing and the role played by organizations in conserving the environment. There are also studies highlighting the role of the consumers in promoting green consumption within the global context such as those done by Laroche and Forleo (2001) on targeting the green consumer; and by Straughan and Roberts (1999) on targeting the green consumer.

However, few studies seem to have captured concretely the factors influencing adoption of green products to the consumer especially within the local context. Studies have been done by Obuya (2003), Kiongera (2003), Kalama (2007), Odhiambo (2008) Mungai (2009) and Kinoti (2011) which focused on green marketing by various firms. Nonetheless, none has specifically focused on a comparative study on market segment characteristics that influence adoption of green products in Runda and Nairobi Dam estates. Therefore a knowledge gap exists to be filled. This study attempt to fill the gap by answering the following research question: Which market segment characteristics influence the adoption of green products in Runda and Nairobi Dam Estates in Nairobi?

1.3 Objectives of the Study

The specific objectives of the study were to:

- i.Determine market segment characteristics that influence the adoption of green products.
- ii.Establish the level to which consumers in Runda and Nairobi Dam Estate have adopted green products.

iii.Compare market segment characteristics that influence adoption of green products among residents of Runda and Nairobi Dam Estates.

1.4 Value of Study

Knowledge created from this research can be used for further research on the concept and for comparative purposes; for instance, further comparative studies can be done to ascertain how these market segment characteristics vary between other market segments such as middle and low income segments and upper and low income segments.

This research may also be useful to existing and future manufacturing firms and service providers dealing with green consumer goods and services, in trying to understand the factors that influence their consumers to take up green products. It can be used as a basis for further research into this area.

To the government this study will provide hints on what factors consumers take into account when purchasing green versus non-green products. This information can then be used to develop strategies that would encourage uptake of green products which are more beneficial to the environment; and would also result in economic growth.

To scholars, this study will be of benefit through the knowledge generated by this study, enabling other researchers to improve and develop a better understanding of green product adoption by specific market segments, that is the middle and high income segments.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter highlights the work that other scholars and researchers have done on market segment characteristics that influence adoption of green products. It begins by identifying theories and concepts that are applicable to the study. It also takes a look into concepts such as green product adoption and factors that influence green product adoption.

2.2 Theoretical Review

Understanding market segment characteristics that influence adoption of green products is better achieved by gaining knowledge of two theories that underpin this study; namely the diffusion of innovations theory by Rogers (2003) and the theory of planned behavior by Fishbein and Ajzen (1980).

2.2.1 Theory of Diffusion of Innovations

The theory of diffusion of innovation by Rogers (2003) seeks to explain how innovations are taken up in a population. Consumers go through several stages during the product adoption process. This include awareness – consumer is first exposed to the product innovation; interest – interest in the product makes them search for more information on it; evaluation – decide whether or not to believe that this product or service will satisfy the need; trial – use of the product on a limited basis and adoption – if favourable, the consumers uses it on a full basis. If unfavourable, the consumers rejects it completely (Schiffman, Kanuk and Hansen, 2008).

In adoption, consumers can be classified into different categories of adoption based on how quick they are to take on new products (Kotler and Armstrong, 2012). They include innovators who are usually the first to try out new products; early adopters who adopt new products albeit carefully after evaluating risks observed from the innovators' experience; early majority who adopt new ideas before the average person; late majority who tend to be skeptical and adopt a product only after a majority of people have tried it

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and laggards who are traditionally bound and will adopt a product when it has become a tradition in itself. This theory is relevant to the study as it is consistent with the research objective that seeks to establish the level to which consumers in Runda and Nairobi Dam estates.

2.2.2 Theory of Planned Behaviour

The above theory was developed by Fishbein and Ajzen (1980). This theory attempts to predict deliberate behavior, because behavior can be deliberative and planned. It suggests that a person's behavior is determined by his/her intention to perform the behavior and that this intention is, in turn, a function of his/her attitude toward the behavior and his/her subjective norm. The best predictor of behavior is intention. Intention is the cognitive representation of a person's readiness to perform a given behavior, and it is considered to be the immediate antecedent of behavior. This intention is determined by three things: their attitude toward the specific behavior, their subjective norms and their perceived behavioral control. The theory of planned behavior holds that only specific attitudes toward the behavior in question can be expected to predict that behavior.

In addition to measuring attitudes toward the behavior, there is also need to measure people's subjective norms – their beliefs about how people they care about will view the behavior in question. To predict someone's intentions, knowing these beliefs can be as important as knowing the person's attitudes. Finally, perceived behavioral control influences intentions. Perceived behavioral control refers to people's perceptions of their ability to perform a given behavior. These predictors lead to intention. A general rule, the more favorable the attitude and the subjective norm, and the greater the perceived control the stronger should the person's intention to perform the behavior in question. The TPB is therefore relevant to this study as it offers a defined structure that explains change of consumer behavior from consuming products perceived to be harmful to the environment to those whose consumption is perceived to be conserving the environment.

2.3 Market Segmentation

Market segmentation is the process of dividing a mass market into distinct subsets of consumers with common needs/characteristics and selecting one or more segments to target with distinct marketing strategy. Dibb and Simkin (1997) and Schiffman, Kanuk and Hansen (2008) also hold a similar opinion as above. They outlined the following steps that guide the market segmentation process: marketing analysis to gain knowledge or current marketing intelligence; strategy development to formalize ideas; and, marketing programs to action the determined revised segmentation strategy. They further highlight that the process can be broken down into: Segmentation - choosing variables for segmenting market, building a profile of segments and validating emerging segments; Targeting - deciding on targeting strategy, identify which and how many segments should be targeted; and Positioning - understanding consumer perceptions, positioning products in the mind of the consumer and designing appropriate marketing mix to communicate positioning. A successful segmentation plan must produce market segments which meet the four basic criteria: substantiality, identifiably, accessibility, and responsiveness.

2.4 Market segment characteristics

Following the segmentation process highlighted above, several authors have identified characteristics that green consumers are associated with as indicated below (Straughan and Roberts (1999); Laroche, Bergeron and Forleo (2001); Roberts (1996) and Partlow, Di-Pietro and Cao (2013). These include demographic, psychographic, geographic and behavioural characteristics.

Previous studies have found that in general demographic factors are significantly related to consumer beliefs about green practices and environmental practices by organizations, but the results are not always consistent. These demographic factors include age, gender, education, income, family size, family life cycle, occupation and nationality. Partlow, Di-Pietro and Cao (2013) are opined that age as a demographic factor has shown that there are inconsistent results regarding which group of consumers is more influenced by green practices of organizations and how they respond to that issue. In a study done by

Schubert et al. (2010) younger people (ages 35 years or younger) tend to consider using organic foods and reducing the ecological footprint of the restaurant as important for a restaurant. In another study, Hu et al. (2010) found that older people tend to be more environmentally friendly and have a higher intention to patronize a green restaurant. The development of unique gender roles, skills, and attitudes has led most researchers to argue that women are more likely than men to hold attitudes consistent with the green movement. In a study done by Schubert et al. (2010), the research found that females thought that restaurants that utilize green practices are healthier for them and that females consistently rated the importance of green practices higher than males. In a different study done in Taiwan, Hu et al. (2010) found no significant differences between the genders in their study of restaurant patrons regarding customers' intention to patronize a green restaurant. Income is generally thought to be positively related to environmental sensitivity.

The most common justification for this belief is that individuals can, at higher income levels, bear the marginal increase in costs associated with supporting green causes and favoring green product offerings. Education is expected to be positively correlated with environmental concerns and behavior. Partlow, Di-Pietro and Cao (2013) further found out that the more educated a person is, the more that they tend to know about green practices and the higher value that they place on those green practices. Family size is also seen to influence consumption choices. For instance, Toyota has car sizes to suit both big and small families. On family life cycle, it is believed that the consumption habits of a young couple differ from those of an elderly couple whose children have all moved out (Kotler and Armstrong, 2012).

Geographic segmentation involves dividing the market by location. It has been another variable of interest since the early days of green research, though the majority of interest in this variable has been in the last 15 years. In nearly 30 years of research, many studies have considered the correlation between place of residence and environmental concern. Studies have found that those living in urban areas are likely to show more favorable

attitudes towards environmental issues. Furthermore, it has been noted that even within urban areas, the neighbourhood/ areas one lives is related to the likelihood of purchasing green products. For instance, the more affluent the geographical area, the more likely the consumers in that region will hold favourable attitudes towards buying green products and vice-versa (Hartono, 2008).

Several authors argue that psychographic variables provide more relevant insights into green consumer behavior. Among some of the psychographic factors identified include social class, lifestyle and personality. Lifestyle segmentation attempts to group people according to their way of living as reflected in their activities, interests and opinion. Some examples of lifestyle traits include individuals who are successful and thus purchase products that enhance their successful nature; aspirers who tend to be ambitious and therefore likely to be impulse shoppers and lastly the struggling poor who are seen to be unhappy and tend to make price – based purchasing decisions. Social class is usually measured by the weighted index of several demographic variables such as education, occupation and income. The concept of social class implies a hierarchy in which individuals in the same class generally have the same degree of status, whereas members of other classes have either higher or lower status. Studies have shown that consumers in different social classes vary in terms of values, product preferences and buying habits (Schiffman, Kanuk and Hansen, 2008). Personality is the inner psychological characteristics of individuals that lead to consistent responses to their environment (Ellis - Chadwick and Jobber, 2013). For instance, a person may tend to be warm - cold, dominant - subservient, introvert - extrovert or sociable - loner. Personalities also tend to be exhibited in brands. For instance, Nike is associated with winners. Previous studies have indicated that consumers associate themselves with brands that are consistent with their personalities.

Behavioural characteristics divide consumers into groups based on their knowledge, attitudes, uses or responses to a product. These bases include occasions, benefits sought, user status, usage rate and loyalty status (Kotler and Armstrong, 2012). Occasions imply

that the product or service is sought by the consumer when they get the idea to buy for instance; greeting cards are specific to occasions. Consumers can also be classified according to the different benefits they seek from the product. For instance, speedo pens are seen to be 'long-lasting' pens which is a benefit. User status includes non-users, exusers, potential users, first-time users and regular users of a product. Life stages can also affect the user status. Newlyweds and new parents can become heavy users of diapers whereas elderly couples might become non-users. Usage rate is characterized by light, medium and heavy product users. Heavy users tend to be a small percentage of the market but account for a high percentage of the total consumption, for instance with cigarettes. Lastly, a market can also be characterized by consumer loyalty. Consumers tend to range from being completely loyal – they buy the same product all the time, to somewhat loyal – they are loyal to two or three products of the same category, to no loyalty; where they buy different products every time.

2.5 Green Products

Henion and Kinnear (1976) define green products as products and packages that have one or more of the following characteristics: they are less toxic, more durable, contain reusable material, and/or are made of recyclable materials.

Ottman (1992) defined green products as typically durable, non-toxic, made of recycled materials, or minimally packaged. They are further categorized into three levels; the primary level is the expected value that corresponds to the expected product benefits; the desired level of value the consumer would like to receive; and lastly, the unanticipated value, which may exceeds customer expectations. Ideally, customers lean more towards examining the green products from the point of view of their packaging as well as product ingredients (Todd, 2004). According to the 1994 Oslo Convention, sustainable consumption can be defined as the use of services and related products which respond to basic needs and bring better quality life while minimizing the use of natural resources so as not to jeopardize the needs of future generations. In light of increased calls for sustainable consumption, the role that green products play in promoting sustainability is paramount to achieving this goal.

2.6 Factors Influencing Green Product Adoption

Some of the factors consumers take into consideration during the purchasing process of green products include level of consumer awareness, price, product use convenience, social compliance, environment and climate protection, long-term savings and perceived health benefits.

Consumers are willing to purchase green products to the extent to which they are aware of their existence and their benefits. People are becoming increasingly aware of the links between major environmental problems, such as water and air pollution, land degradation and chemical contamination, and everyday consumption items, such as clothing, food, housing and transport (Adams, 1990; McKusick, 1990). Furthermore, the constituents of the product and the level of awareness consumers had on the potential damaging effects to the environment of the product components was a key determining factor. As Yam-Tang and Chan (1998) found out the use of paper and glass were not considered to be very harmful to the environment probably because of the indirect effects involved. It will not lead to air pollution or noise pollution which are the major concerns. In contrast, plastics (including packaging) and pesticides were perceived to have large detrimental effects because the effects were more direct. Again, pesticides are harmful to human health and are of immediate concern to most people. It is the seriousness of the problem that affects the behaviour. Similarly, previous studies have found out that price is a key determinant towards the purchase of green products. According to a study by Partlow, Di-Pietro and Cao (2013), customers indicated that they were not willing to pay much more for green practices, only willing to pay up to 1 percent more, and believed that the establishment should bear the extra costs for those practices to be implemented. The above study was however done in the fast-food industry and may be replicated in sectors where consumers are price sensitive. Nonetheless, other studies have shown that in priceinsensitive segments, consumers do not mind paying more for a green product, so long as it genuinely has the green features that have been communicated. Therefore, dependent on the market, consumers may be willing to pay more for a product to the extent to which it did not have heavy financial implications.

The main influence on food and household product purchases is word-of-mouth. Hoyer and MacInnis (2004) find that it is four times more effective than the persuasion of sales assistants in affecting brand switching. Previous studies have shown that an initial lack of goodwill as a result of false green claims could have had an impact on the initial slow rate of adoption of the same. Although marketers need to care about whether consumers perceive greenness of their products, they must remember that consumers are unlikely to compromise on traditional product attributes, such as value, quality, price, and performance. Green products must match up on those attributes against non-green products to attract consumers. Greenness of products cannot guarantee their sales are outstanding even in the green era. According to Partlow, Di-Pietro and Cao (2013), consumers easily influence each other by word of mouth, and as such, are likely to also influence each other in the purchase of green products. Furthermore, this influence is likely to be stronger when the influencer advocates intensely for conservation of the environment, and subsequently fights for adoption of green products. In addition, this compliance can be further enforced by law regulating authorities and/or certain activist groups, such as consumer movements, thus may feel obliged to comply with the law so as to avoid getting into legal problems.

Consumers who are more concerned about the environment are more willing to purchase green products than those who are less concerned. Therefore use of green products gives the consumer a chance to save the environment. Similarly, conserving the environment brings about sustainable consumption which is a desired goal of conservation. Long – term savings for the consumers could motivate the consumer to adopt green products. Whereas they may be perceived to be more expensive that non-green products, they tend to last longer than the latter and may lead to long-term savings to the consumer. For instance, fluorescent tubes cost more initially, but they can last up to six years and are equally as effective as neon bulbs. Lastly, green products are associated with attributes such as health and safety which tend to make them more appealing to the target group.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter describes the research methodology that was used for this study. It specifically describes the research design, population, sampling technique, data collection methods and the data analysis techniques.

3.2 Research Design

A descriptive research study was used for this particular study. A descriptive research design is used when the researcher is clear about the issues at hand and seeks to describe them systematically and precisely (Kothari, 2007). Descriptive studies are supposed to describe the who, what, where, when and how of a known phenomenon. Given that the phenomenon under study was already known, the study sought to further identify market segment characteristics of consumers who adopt green products by comparing consumers in Runda and Nairobi Dam Estates.

3.3 Population of the Study

The populations of interest were households of two residential areas in Nairobi and in particular Runda and Nairobi Dam estates. According to the Oxford dictionary, a household can be defined as a house and its occupant/s regarded as a unit. The estimated number of households in Runda are 1,100 and those in Nairobi Dam are 250. This brought the total population of interest to 1350 households.

3.4 Sample Size

Thirty households were be sampled in each of the identified residential areas; that is Nairobi Dam and Runda estates. A proportional stratified sampling method was used. This technique is employed when the cases of a population fall into distinctly different categories (strata) of a known proportion of that population. In this case, the percentages of samples being drawn from the residential areas was known.

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3.5 Data Collection Methods

Primary data was collected using semi-structured questionnaires. The questionnaire approach was chosen because it was easy to administer, since it would have been difficult to conduct interviews for the entire sample population. Questionnaires also provided a less intrusive manner of questioning the respondents, they reduced bias, were familiar to most people, and were relatively easy to analyze. The questionnaires were administered personally to respondents who filled them as the researcher waited. The questionnaire was divided into two main parts. The first part sought to collect bio data that helped shed light on how specific characteristics such as demographics and personality traits influence green product adoption. The second part collected data that attempted to enable the researcher better understand the current rate of adoption of green products. The individual sampled was the head of the household as they were likely to be knowledgeable on green products that could have been consumed within the household.

3.6 Data Analysis Methods

Data collected was first sorted out to identify inconsistencies such as unanswered questions and questions with more than one response. This was done at the editing stage and it involved a thorough scrutiny of the completed questionnaires. This ensured that the data was accurate, consistent with other information gathered, uniformly entered, complete and well arranged to facilitate coding and tabulation. The data was then coded. Coding refers to the process of assigning numerals to other symbols to answers so that responses can be put into a limited number of categories or classes (Kothari, 2007). The coded answers were obtained from the information gathered from the questionnaires which answered the objectives of the research. The Statistics Package for Social Scientists (SPSS) was used to analyze the data. After data entry, the data was analysed using descriptive statistics such as mean score and percentages. It was then presented in the form of tables in a report. Correlation co-efficient was also used to determine the magnitude of the relationship between the market segment characteristics and the adoption of green products in Runda and Nairobi Dam estates.

CHAPTER FOUR: DATA ANALYIS, FINDINGS AND DISCUSSION

4.1 Introduction

This chapter presents the results and findings of the study on the research questions with

regards to the data collected from the respondents in Runda and Nairobi Dam Estates in

Nairobi. The research objectives were to determine market segment characteristics that

influence the adoption of green products, to establish the level to which consumers in

Runda and Nairobi Dam Estate have adopted green products and compare market

segment characteristics that influence adoption of green products among residents of

Runda and Nairobi Dam Estates. The initial section covers the background information

with respect to the respondents. This enabled the researcher identify the demographic and

psychographic characteristics of the respondents. The second and subsequent sections

cover the factors affecting the adoption of green products in Kenya as well as behavioural

characteristics.

4.2 Demographic Characteristics of the Respondents

The first subsection presents the demographic characteristics of the respondents involved

in the study. Various information was sought from the respondents including gender,

nationality, occupation, age, monthly expenditure, level of education, family life cycle

stage, family size and personality type. The findings are presented in Table 4.1 below.

4.2.1 Gender

The respondents were asked to indicate their gender. The findings are shown in Table

4.1.

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Table 4.1: Gender

		Resid	Total	
		Runda	Nairobi Dam	
Gender	Male	13.3%	18.3%	31.7%
	Female	36.7%	31.7%	68.3%
То	tal	50.0%	50.0%	100.0%

Source: Research data

The findings show that 68.3 percent were female while 31.7 percent were male. This is consistent with a study conducted by Schubert et al. (2010), who found that females consistently rated the importance of green practices higher than males and thus were more likely to adopt green products.

4.2.2 Nationality of the Respondents

The respondents were asked to specify their nationalities. The results are presented in Table 4.2.

Table 4.2: Nationality of the Respondents

		Residential Area		Total
Natio	onality	Runda	Nairobi Dam	
	Kenyan	40.0%	35.0%	75.0%
	Ugandan	1.7%	6.7%	8.3%
	Tanzanian	3.3%	1.7%	5.0%
	Rwandese	1.7%	1.7%	3.3%
	Burundian	1.7%	3.3%	5.0%
	Sudanese		1.7%	1.7%
	Asian	1.7%		1.7%
То	otal	50.0%	50.0%	100.0%

Source: Research data

The findings indicate that majority of the respondents were Kenyans (75 percent), followed by Ugandans (8.3 percent), Tanzanians (5.0 percent), Burundi (5.0 percent), Rwandese (3.3 percent), Sudanese and Asians (1.7 percent respectively). As per the findings of the Green Growth in Kenya Report (2011), it was acknowledged that green product adoption in Kenya was less than ideal compared to the scenario in some of the developed countries. However, though there remains considerable work to be done, the Government has made progress in developing and implementing policies that promote the production and consumption of green products.

4.2.3 Occupation

The respondents were also asked to indicate their occupation. The results are presented in Table 4.3.

Table 4.3: Occupation

Occupation		Reside	Total	
		Runda	Nairobi Dam	
	Business	3.3%		3.3%
	Teaching	8.3%		8.3%
	NGO	11.7%	10.0%	21.7%
	Media	13.3%	18.3%	31.7%
	Housewife	11.7%	21.7%	33.3%
	None	1.7%		1.7%
Tot	al	50.0%	50.0%	100.0%

Source: Research data

The results show that 33.3 percent of the respondents were housewives followed by 31.7 percent who were in the media, 21.7 percent worked for NGOs, 8.3 percent were in the teaching profession while the remaining 3.3 percent were in the field of business. Studies by other scholars have led to inconsistent results on the nature of the relationship between occupation and adoption of green products (Hartono, 2008).

4.2.4 Age Range

The respondents were also asked to indicate their age range. The results are presented in Table 4.4.

Table 4.4: Age Range

		Residential Area		Total
		Runda	Nairobi Dam	
	Above 60 years	1.7%		1.7%
	51-60 Years	5.0%		5.0%
Age	41-50 years	8.3%	1.7%	10.0%
	31-40 Years	18.3%	20.0%	38.3%
	18-30 Years	16.7%	28.3%	45.0%
	Total	50.0%	50.0%	100.0%

Source: Research Data

The findings reveal that 45 percent of the respondents were aged between 18-30 years, followed by 38.3 percent were of the age 31-40 years, while 10.0 percent were of the age 41-50 years. These results however varied when broken down by area. In Runda estate, 18.3 percent of the respondents who had adopted green products were aged 31 – 40 years; compared to 16.7 percent who were aged 18-30 years. In Nairobi Dam estate, 28.3 percent of the respondents who had adopted green products were aged 18 – 30 years compared to 20 percent who were aged 31 – 40 years. These findings therefore agree with those of previous scholars who found that age as a demographic factor has shown inconsistent results regarding which group of consumers is more influenced by green practices. Schubert et al. (2010) found that younger people (ages 35 years or younger) tend to consider using organic foods and reducing the ecological footprint of the restaurant as important for a restaurant. In another study, Hu et al. (2010) found that older people tend to be more environmentally friendly and have a higher intention to patronize a green restaurant.

4.2.5 Monthly Expenditure

The respondents were further asked to highlight their monthly expenditure. The results are presented in Table 4.5.

Table 4.5: Monthly Expenditure

Monthly Living Expenses		Residential Area		Total
		Runda	Nairobi Dam	
	30,000-50,000	3.3%		3.3%
	51,000-70,000	10.0%	16.7%	30.0%
	71,000-90,000	13.3%	26.7%	36.7%
	91,000-110,000	16.7%	6.7%	23.4%
	111,000-130,000	3.3%		3.3%
	151,000-250,000	1.7%		1.7%
	251,000-350,000	1.7%		1.7%
Total		50.0%	50.0%	100.0%

Source: Research data

The findings show that in Runda estate, 16.7 percent of the respondents spend between 91,000-110, 000 shillings every month, followed by 13.3 percent who spend 71,000-90,000 shillings and 10 percent between 51,000 and 70,000 shillings. In Nairobi Dam, 26.7 percent spend between 71,000 to 90,000 shillings, followed by 16.7 percent who spend between 51,000 to 70,000 shillings and 6.7 percent who spend above 91,000 to 110,000 shillings respectively.

According to the Kenya National Bureau of Statistics (KNBS), individuals spending between Ksh. 23, 670 and Ksh. 199,999 per month can be categorized as middle income earners; while those spending more than Ksh. 200,000 per month can be categorized as high income earners. It can therefore be deduced that based on the monthly household expenditure, respondents in Runda estate can be categorized as high income earners while respondents in Nairobi Dam estate can be categorized as middle income earners.

This is consistent with a study done by Hu et al. (2010), who found out that income is generally thought to be positively related to environmental sensitivity. The most common justification for this belief is that individuals can, at higher income levels, bear the marginal increase in costs associated with supporting green causes and favoring green product offerings.

4.2.6 Level of Education

The respondents were asked to indicate their highest levels of education. The results are presented in Table 4.6.

Table 4.6: Level of Education

Level of Education		Residential Area		Residential Area		Total
		Runda	Nairobi Dam			
	Secondary	3.3%		3.3%		
	Tertiary	1.7%	6.7%	8.4%		
	College	18.3%	18.3%	36.6%		
Education	Undergraduate	13.3%	25.0%	38.3%		
	Post-Graduate	3.3%		3.3%		
	Masters	5.0%		5.0%		
	Phd	5.0%		5.0%		
	Total	50.0%	50.0%	100.0%		

Source: Research data

The findings revealed that 38.3 percent of the respondents had obtained an undergraduate degree, followed by college (36.6 percent), tertiary 8.4 percent, Masters (5 percent), Phd (5 percent), and finally secondary and post-graduate levels (3.3 percent respectively). This is in line with the findings of Partlow, Di-Pietro and Cao (2013), who further found out that the more educated a person is, the more that they tend to know about green practices and the higher value that they place on those green practices.

4.2.7 Family Life Cycle Stage

The respondents were further asked to indicate what stage of the family life cycle stage they were currently in. The results are presented in Table 4.7.

Table 4.7: Stage of the Family

Stage of Family Life		Residential Area		Total
		Runda	Nairobi Dam	
	Single	3.3%		3.3%
	Newly Married	8.3%		8.3%
	New Parents	5.0%		5.0%
	Family with children at home	11.7%	20.0%	31.7%
	Family with no children at home	15.0%	30.0%	45.0%
	One surviving Spouse	6.7%		6.7%
	Total	50.0%	50.0%	100.0%

Source: Research data

The findings indicated that 45 percent of the respondents were families with no children at home, followed by 31.7 percent families with children at home, with 8.3 percent newly married, 6.7 percent having one surviving spouse and finally 3.3 percent were single. Kotler and Armstrong (2012) stated that families with no children at home are likely to be price insensitive and are likely to adopt green products, compared to new/ young families or those with children at home.

4.2.8 Family Size

The respondents were asked to indicate the sizes of their immediate families. The results are shown in Table 4.8.

Table 4.8: Family Size

Family Size		Residential Area	
		Runda	Nairobi Dam
	1-2 members	36.7%	86.7%
Members of Family	3-5 Members	36.7%	13.3%
	6-8 Members	13.3%	
	More than 9 members	13.3%	
	Total	100%	100%

Source: Research Data

The results identified that households in both Runda and Nairobi Dam with 1-2 members were the majority in adopting green products (36.7 percent in Runda and 86.7 percent in Nairobi Dam), followed by 3-5 members (36.7 percent in Runda and 13.3 percent in Nairobi Dam), 6-8 members (13.3 percent in Runda and 0 percent in Nairobi Dam) and 13.3 percent with more than 9 members. This is consistent with Kotler and Armstrong (2012) who found out that family sizes influence consumption patterns. Larger families are likely to consume more than smaller families.

4.3 Behavioural Characteristics of the Respondents

The study also sought to establish the behavioural characteristics among consumers in Runda and Nairobi Dam Estates that influence adoption of green products. The specific variable that was tested was the loyalty status as indicated in their buyer behaviour. The results are indicated in Table 4.9.

Table 4.9: Buyer Behaviour Towards Green Products

	Estate		Total
Buyer behaviour towards green products	Runda	Nairobi Dam	
I buy the same brand every time	33.3%	31.7%	65.0%
I buy two or three brands of a given green product	13.3%	8.4%	21.7%
I buy a different brand every time	3.3%	10.0%	13.3%
Total	50.0%	50.0%	100.0%

Source: Research data

The study revealed that 33.3 percent of the respondents in Runda and 31.7 percent in Nairobi Dam buy the same brand every time. This formed the majority at 65.0 percent. It was followed by 21.7 percent who buy two or three brands at the same time (13.3 percent in Runda and 8.4 percent in Nairobi Dam) and 13.3 percent (3.3 percent in Runda and 10 percent in Nairobi Dam) who buy a different brand every time. This is consistent to the findings of Kotler and Armstrong (2012) in explaining consumer loyalty. Consumers tend to range from being completely loyal – they buy the same product all the time, to somewhat loyal – they are loyal to two or three products of the same category, to no loyalty; where they buy different products every time. It can therefore be deduced that majority of the respondents in Runda and Nairobi Dam estate are completely loyal to one brand of a particular green product, followed by 21.7 percent who are somewhat loyal and 13.3 percent who are not loyal to a particular brand of a green product.

4.4 Psychographic Characteristics of the Respondents

The respondents were asked to briefly describe their personalities which was the psychographic variable under study. The responses were then put in four categories consistent with those identified by Rogers (2003) when he developed the adopter categories. The results are indicated in Table 4.10.

Table 4.10: Personality Types and Adopter Categories

Adopter Categories	Residential Area			
	Runda	Nairobi Dam	Mean Total	
Innovators	20.0%	20.0%	20.0%	
Early Adopters	10.0%	33.3%	21.7%	
Early Majority	56.7%	43.3%	50.0%	
Late Majority	10.0%	3.4%	6.7%	
Laggards	3.3%		1.7%	
Total			100%	

Source: Research Data

The findings identified that 50 percent of consumers had personality traits similar to those characterized by those in the early majority categories, followed by 21.7 percent who were classified as early adopters, 20 percent as innovators, 6.7 percent as late majority (10 percent in Runda and 3.4 percent in Nairobi Dam) and lastly 3.3 percent as Laggards (Runda only). According to Rogers (2003), innovators are usually the first to try out new products; early adopters who adopt new products albeit carefully after evaluating risks observed from the innovators' experience; early majority who adopt new ideas before the average person; late majority who tend to be skeptical and adopt a product only after a majority of people have tried it and laggards who are traditionally bound and will adopt a product when it has become a tradition in itself. This is consistent with Ellis – Chadwick and Jobber (2013) who found that an individual's personality leads to consistent responses to their environment; and subsequently influences product adoption.

4.5 Cross-tabulation of Demographic Factors of the Respondents and Adoption of Green Products

A cross-tabulation of the demographic factors identified above, namely gender, nationality, occupation, age, monthly expenditure, level of education, family life cycle

stage, and family size in relation to the adoption of green products in Runda and Nairobi Dam estates was carried out. The results are shown in Table 4.11.

Table 4.11 Cross – tabulation of Demographic Factors

	Resident	ial Area	
Adoption of Gre	Adoption of Green Products		Nairobi Dam
Demographic factors	Pearson Correlation	.870***	.672**
Demographic factors	N	30	30

Source: Research Data

The findings indicated an r value of 0.87 for Runda and 0.672 for Nairobi Dam. According to the Pearson's correlation interpretation criteria, a value falling between 0.75 and 0.89 is a strong correlation; while a value lying between 0.5 and 0.74 is moderately strong (Munyoki, 2011). It can therefore be interpreted that there is a strong correlation between demographic factors and adoption of green products in Runda estate compared to a moderate correlation between demographic factors and adoption of green products in Nairobi Dam estate.

4.6 Cross-tabulation of Behavioural Factors of the Respondents and Adoption of Green Products

A cross-tabulation of behavioural factors and adoption of green products was also done. The results are shown in Table 4.12.

Table 4.12 Cross – tabulation of Behavioural Factors

	Resident	ial Area	
Adoption of Green Products		Runda	Nairobi Dam
Behavioural factors	Pearson Correlation		.756**
Denavioural factors	N	30	30

Source: Research Data

The findings indicated an r value of 0.880 for Runda and 0.756 for Nairobi Dam. According to the Pearson's correlation interpretation criteria, a value falling between 0.75 and 0.89 is a strong correlation (Munyoki, 2011). It can therefore be interpreted that there is a strong correlation between behavioural factors and adoption of green products in both Runda and Nairobi Dam Estates.

4.7 Cross-tabulation of Psychographic Factors of the Respondents and Adoption of Green Products

A cross-tabulation of psychographic factors and adoption of green products was also done. The results are shown in Table 4.13.

Table 4.13: Cross – tabulation of psychographic factors

	Resident	ial Area	
Adoption of Green Products		Runda	Nairobi Dam
Psychographic factors	Pearson Correlation Peychographic factors		.507**
1 Sychographic factors	N	30	30

Source: Research Data

The findings indicated an r value of 0.731 for Runda and 0.507 for Nairobi Dam. According to the Pearson's correlation interpretation criteria, a value falling between 0.5 and 0.74 is moderately strong. It can therefore be interpreted that there is a moderate correlation between psychographic factors and adoption of green products in both Runda and Nairobi dam estates.

4.8 Awareness of Green Products

The respondents were asked to indicate their level of awareness of green products, whether they had purchased or used a green product before and whether they were still using the green product. The results are indicated in Table 4.14.

Table 4.14: Awareness of Green Products

Statement	Yes		No	
	Runda	Dam	Runda	Dam
Awareness of green products	60%	36.7%		3.3%
Purchased or used a green product or service	60%	36.7%		3.3%
before				
Still using green products	60%	35%		5.0%

Source: Research data

The findings indicated that majority of the respondents in total (96.7 percent), were aware of green products and had therefore purchased and used them. On the other hand 95.0 percent of the respondents still use green products. The drop in the number of those still purchasing green products was attributed to the need to try out other new products in the market that were non-green. This was consistent with Roger's theory of adoption in which he opined that consumers go through several stages during the product adoption process.

This include awareness – consumer is first exposed to the product innovation; interest – interest in the product makes them search for more information on it; evaluation – decide whether or not to believe that this product or service will satisfy the need; trial – use of the product on a limited basis and adoption – if favourable, the consumers uses it on a full basis. If unfavourable, the consumers reject it completely. It can therefore be deduced that 60 percent of consumers in Runda have adopted green products compared to 35 percent in Nairobi Dam; against 40 percent of consumers in Runda and 60 percent of consumers in Nairobi Dam who have not adopted green products. Lastly, the findings indicated that respondents in Runda estate were more aware of green products compared to residents of Nairobi Dam estate. This therefore supports the findings of Hartono (2008) who noted that even within urban areas, the neighbourhood/ areas one lives is related to the likelihood of purchasing green products. For instance, the more affluent the

geographical area, the more likely the consumers in that region will hold favourable attitudes towards buying green products and vice-versa.

4.9 Adoption of Green Products

In order to examine the adoption of green products among consumers in Runda and Nairobi Dam Estate, factors influencing the adoption of green products as well as the level to which green products have been adopted in both Runda and Nairobi Dam Estate were tested.

4.9.1 Factors influencing the level of adoption of green products

The respondents were given a list of factors that influence the adoption of green products and asked to indicate to what extent they agreed or disagreed with those statements. The scores ranged from 1 which meant that the respondents strongly disagreed with the statements to 5 which meant that the respondents strongly agreed with the statements. The results are indicated in Table 4.15.

Table 4.15: Factors influencing adoption of Green Products

Statement	Mean	Mean	Overall
			Mean
	Runda	Nairobi	
		Dam	
I'm aware that non – green products may contain	4.67	4.18	4.43
harmful substances that damage the environment			
directly or indirectly.			
I buy green products regardless of the price.	4.57	3.75	4.16
Green products have better functional capability	4.88	3.82	4.35
than non-green products.			
I buy green products in order to comply with the	3.5	3.62	3.56
law.			
I buy green products following recommendations	3.4	3.51	3.46
from my social groups.			
Buying green products enables me play my part	4.68	4.18	4.43
in conserving the environment.			
Green products tend to be healthier and safer to	4.60	4.22	4.41
use.			
Green products tend to last longer which leads to	3.88	3.21	3.56
long-term savings.			

Source: Research data

The findings indicate that consumers in both Runda and Nairobi Dam agree that non – green products contain harmful substances that damage the environment directly or indirectly; and thus is a factor that encourages them to adopt green products. This is consistent with Adams and McKusik (1990) who found that consumers are willing to purchase green products to the extent to which they are aware of their existence and their benefits. They are becoming more aware of the links between major environmental problems and everyday consumption items and thus avoiding products that are seen to

have serious detrimental effects on the environment. Consumers in Runda and Nairobi Dam estates both agree that green products tend to be healthier and safer to use. Residents of Runda and Nairobi Dam Estate both agree that adopting green products enables them play a role in conserving the environment; which is also consistent with the findings of Partlow, Di-Pietro and Cao (2013), who found that green products are associated with attributes such as health and safety which tend to make them more appealing to the target group; and that adopting green products enables consumers play a role in conserving the environment. However, residents of Runda estate agreed that they buy green products regardless of price, compared to Nairobi Dam residents who were neutral on the same. This is consistent with Partlow, Di-Pietro and Cao (2013), who found that dependent on the market, consumers may willing to pay more for a product to the extent to which it did not have heavy financial implications. Residents of Runda estate agreed that green products have better functional capability, compared to residents of Nairobi Dam who were neutral. Hoyer and McInnis (2004) opined that green products must match up on those attributes against non-green products to attract consumers. Greenness of products cannot guarantee their sales are outstanding even in the green era. Residents in both Runda and Nairobi Dam were neutral as to whether they bought green products so as to comply with the law.

They were also neutral on whether they bought green products following recommendations from their social groups and lastly, they were also neutral as to whether green products lasted longer. According to Partlow, Di-Pietro and Cao (2013), consumers easily influence each other by word of mouth, and as such, are likely to also influence each other in the purchase of green products. Furthermore, this influence is likely to be stronger when the influencer advocates intensely for conservation of the environment, and subsequently fights for adoption of green products. In addition, this compliance can be further enforced by law regulating authorities and/or certain activist groups, such as consumer movements, thus may feel obliged to comply with the law so as to avoid getting into legal problems. They further opined that green products were perceived to last longer and so the aspect of long-term savings may appeal to the green consumer.

4.9.2 Level To Which Consumers in Runda and Nairobi Dam Estates Have Adopted Green Products

In order to test the level of adoption of green products a correlation analysis was conducted between buyer behavior and adoption of green products. The results are shown in Table 4.16.

Table 4.16: Level of adoption of Green Products

		Reside	ential Area
Adoption of Green Products		Runda	Nairobi Dam
Buyer behaviour	Pearson Correlation	.886**	.863**
Buyer behaviour	N	30	30

Source: Research Data

The findings indicated an r value of 0.886 for Runda and 0.863 for Nairobi Dam. According to the Pearson's correlation interpretation criteria, a value falling between 0.75 and 0.89 is a strong correlation (Munyoki, 2011). It can therefore be interpreted that the level of adoption of green products in Runda is stronger compared to that in Nairobi Dam estate. These findings further support the work of several authors (Straughan and Roberts, 1999), (Laroche, Bergeron and Forleo, 2001), (Roberts, 1996) and Partlow, Di-Pietro and Cao (2013) who found that demographic, psychographic, geographic and behavioural characteristics influence adoption of green products.

4.9.3 ANOVA Analysis of Market Segment Characteristics in Runda and Nairobi Dam estates

An ANOVA analysis was conducted in order to determine the level of significance of the market segment characteristics. The results are indicated in Table 4.17 to Table 4.19.

Table 4.17: ANOVA analysis of Runda Estate

		ANOVA				
		Sum of Squares	df	Mean Square	F	Sig.
	Between Groups	12.581	9	1.398	20.259	.000
Behavioural	Within Groups	1.385	20	.069		
	Total	13.967	29			
	Between Groups	23.681	9	2.631	6.09	.000
Demographic	Within Groups	8.648	20	.432		
	Total	32.329	29			
	Between Groups	14.592	9	1.621	5.083	.001
Psychographic	Within Groups	6.375	20	.319		
	Total	20.967	29			
Factors influencing	Between Groups	14.489	9	1.610	19.397	.000
adoption of green	Within Groups	1.663	20	.083		
products	Total	16.152	29			

Source: Research Data

Table 4.18: ANOVA analysis of Nairobi Dam Estate

		ANOVA				
		Sum of Squares	df	Mean Square	F	Sig.
	Between Groups	9.498	6	1.583	27.293	.000
Behavioural	Within Groups	1.343	23	.058		
	Total	10.841	29			
	Between Groups	2.173	6	.362	4.363	.004
Demographic	Within Groups	1.901	23	.083		
	Total	4.074	29			
	Between Groups	.286	6	.048	.696	.001
Psychographic	Within Groups	1.581	23	.069		
	Total	1.867	29			
Factors	Between Groups	4.804	6	.801	25.838	.000
influencing	Within Groups	.723	23	.031		
adoption of	Total	5.527	29			
green products	10111	3.321	2)			

Source: Research Data

Table 4.19: ANOVA Analysis of both Runda and Nairobi Dam Estate

		ANOVA				
		Sum of Squares	df	Mean Square	F	Sig.
	Between Groups	2.856	1	2.856	7.516	.000
Demographic	Within Groups	22.056	58	.380		
	Total	24.912	59			
	Between Groups	.759	1	.759	1.145	.002
Behavioural	Within Groups	38.462	58	.663		
	Total	39.221	59			
Psychographic	Between Groups	.278	1	.278	.452	.001
	Within Groups	35.655	58	.615		
	Total	35.933	59			
Factors	Between Groups	1.453	1	1.453	4.059	.001
influencing	Within Groups	20.770	58	.358		
adoption of green	Total	22.223	59			
products	Totai	22.223				

Source: Research Data

The findings indicated that the level of significance of behavioural, demographic and psychographic factors in both Runda and Nairobi Dam estate was between 0.001 and 0.004. Given that this was below the 0.05 level, it can be interpreted that behavioural, demographic and psychographic factors significantly influenced adoption of green products in both Runda and Nairobi Dam estates.

4.10 Discussion of findings

The study established that in Runda estate, adoption of green products was influenced primarily by behavioural characteristics, followed by demographic characteristics and lastly by psychographic characteristics. In Nairobi Dam estate, adoption of green products was influenced primarily by behavioural characteristics, followed by demographic characteristics and lastly by psychographic characteristics.

The behavioural characteristics tested were the loyalty status as well as the level of awareness. Most consumers in Runda estate indicated that they bought the same brand of green products every time, followed by consumers who bought two or three brands of a given green product and lastly by consumers who bought a different brand every time. It can therefore be concluded that in Runda estate, more consumers are completely loyal to green products, followed by those who are somewhat loyal and lastly followed by those who are not loyal to a particular brand. In Nairobi Dam, most consumers indicated that they bought the same brand every time, followed by those who bought a different brand every time and lastly by consumers who bought two or three brands of a given green product. Therefore, most of the consumers are completely loyal to a particular brand of a green product, followed by those who are not loyal to a specific brand and lastly by consumers who buy two or three brands of a given green product. Consumers in Runda showed more loyalty to a specific brand /s compared to consumers in Nairobi Dam. Lower levels of loyalty to a brand in Nairobi Dam was attributed to the desire to try out other green and even non – green products within the same product category. This is consistent to the findings of Kotler and Armstrong (2012) in explaining consumer loyalty. Consumers tend to range from being completely loyal – they buy the same product all the time, to somewhat loyal – they are loyal to two or three products of the same category, to no loyalty; where they buy different products every time.

On the level of awareness, the study established that consumers in Runda estate were more aware of green products compared to consumers in Nairobi Dam estate. A greater number of consumers in Runda estate had purchased or used a green product before and were still using green products compared to a lower number of consumers in Nairobi Dam estate. It was observed that there was a decrease in the number of consumers who were still using green products compared to those who had purchased or used a green product before in Nairobi Dam. This was attributed to the need to try out different non green products within the same product category. This is therefore consistent with the findings of Hartono (2008) who noted that even within urban areas, the neighbourhood or area one lives in is related to the likelihood of purchasing green products. For instance,

the more affluent the geographical area, the more likely the consumers in that region will hold favourable attitudes towards buying green products.

The study established that demographic factors had a stronger influence among consumers in Runda estate compared to Nairobi Dam estate. Demographic factors included age, gender, occupation, income, education and family life cycle. The findings revealed that in Runda, a higher number of respondents were from an older age group, thus were in favour of adopting green products; which is consistent with the study of Hu et al. (2010) who found that older people tend to be more environmentally friendly. Runda also had a higher number of female respondents compared to Nairobi Dam. This finding agrees with a study done by Schubert et al. (2010), who found that the development of unique gender roles, skills, and attitudes has led most researchers to argue that women more consistently rated the importance of green practices higher than males and were more likely to adopt green products. In addition, the study established that based on the monthly household expenditure, respondents in Runda had higher incomes compared to respondents of Nairobi Dam estate. Regarding the level of education, respondents in Runda who cumulatively had attained a minimum level of a college degree and higher was greater compared to those in Nairobi Dam.

This is in line with the findings of Partlow, Di-Pietro and Cao (2013), who further found out that the more educated a person is, the more they tend to know about green practices and the higher value that they place on those green practices. It further emerged that a higher number of families in Runda did not have children at home compared to Nairobi Dam where a higher number of families had children at home, similar to the findings of Kotler and Armstrong (2012) who opined that families with no children at home were likely to adopt green products due to price insensitivity as well as health concerns.

The study also sought to identify whether psychographic characteristics influenced adoption of green products in both Runda and Nairobi Dam estates. Based on their personalities as the psychographic variable, it was established that a higher number of

respondents in Runda compared to Nairobi Dam estate could be classified as early majority; and thus were likely to adopt new products/ ideas before the average person (Rogers, 2003).

On the factors that influence adoption of green products, the findings indicated that a higher number of consumers in Runda were in agreement with the factors that influenced adoption compared to a lower number of consumers in Nairobi Dam. They indicated they were aware that non – green products could contain harmful substances that damage the environment directly or indirectly; they had bought green products regardless of price; believed that green products had better functional capability that non – green products; that buying green products had enabled them play their role in conserving the environment and lastly, were healthier and safer to use. They were however neutral as to whether they bought green products out of compliance with the law; whether recommendations from social groups influenced them to adopt green products and whether green products lasted longer. Consumers in Nairobi Dam estate, however indicated that they were neutral on whether green products had a better functional capability compared to non - green products; whether they bought green products in order to comply with the law; whether social groups influenced them to adopt green products and whether they bought green products regardless of the price. They nonetheless agreed that green products were healthier and safer to use; helped them play a part in conserving the environment and that non – green products may have substances that could harm the environment directly or indirectly.

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter consists of the summary of findings, conclusions and recommendations based on the research findings which were drawn after analyzing the data.

5.2 Summary of the findings

The study established that in Runda estate, adoption of green products was influenced primarily by behavioural characteristics, followed by demographic characteristics and lastly by psychographic characteristics. In Nairobi Dam estate, adoption of green products was influenced primarily by behavioural characteristics, followed by demographic characteristics and lastly by psychographic characteristics.

The behavioural characteristics tested were the loyalty status as well as the level of awareness. Consumers in Runda showed more loyalty to a specific brand /s compared to consumers in Nairobi Dam. In Runda estate, more consumers are completely loyal to green products, followed by those who are somewhat loyal and lastly followed by those who are not loyal to a particular brand. In Nairobi Dam, most of the consumers are completely loyal to a particular brand of a green product, followed by those who are not loyal to a specific brand and lastly by consumers who buy two or three brands of a given green product.

On the level of awareness, the study established that consumers in Runda estate were more aware of green products compared to consumers in Nairobi Dam estate. A greater number of consumers in Runda estate had purchased or used a green product before and were still using green products compared to a lower number of consumers in Nairobi Dam estate. It was observed that there was a decrease in the number of consumers who were still using green products compared to those who had purchased or used a green product before in Nairobi Dam. This was attributed to the need to try out different nongreen products within the same product category. It can therefore be concluded that based on loyalty status and the levels of awareness, consumers in Runda Estate had behavioural

traits that were more favourable towards the adoption of green products compared to consumers in Nairobi Dam Estate whose behaviour was less favourable.

The study also established that demographic factors had a stronger influence among consumers in Runda estate compared to Nairobi Dam estate. Demographic factors included age, gender, occupation, income, education and family life cycle. The findings revealed that in Runda, a higher number of respondents were from an older age group, thus were in favour of adopting green products. Runda also had a higher number of female respondents compared to Nairobi Dam. In addition, the study established that based on the monthly household expenditure, respondents in Runda had higher incomes compared to respondents of Nairobi Dam estate. Regarding the level of education, respondents in Runda who cumulatively had attained a minimum level of a college degree and higher was greater compared to those in Nairobi Dam. It further emerged that a higher number of families in Runda did not have children at home compared to Nairobi Dam where a higher number of families had children at home.

The study also sought to identify whether psychographic characteristics influenced adoption of green products in both Runda and Nairobi Dam estates. Based on their personalities as the psychographic variable, it was established that a higher number of respondents in Runda compared to Nairobi Dam estate could be classified as early majority; and thus were likely to adopt new products/ ideas before the average person; thus contributing towards a higher rate of adoption of green products compared to Nairobi Dam Estate.

On the factors that influence adoption of green products, the findings indicated that a higher number of consumers in Runda were in agreement with the factors that influenced adoption compared to a lower number of consumers in Nairobi Dam. Consumers in Runda Estate indicated they were aware that non – green products could contain harmful substances that damage the environment directly or indirectly; they had bought green products regardless of price; believed that green products had better functional capability

that non – green products; that buying green products had enabled them play their role in conserving the environment and lastly, were healthier and safer to use. They were however neutral as to whether they bought green products out of compliance with the law; whether recommendations from social groups influenced them to adopt green products and whether green products lasted longer. Consumers in Nairobi Dam estate, however indicated that they were neutral on whether green products had a better functional capability compared to non – green products; whether they bought green products in order to comply with the law; whether social groups influenced them to adopt green products and whether they bought green products regardless of the price. They nonetheless agreed that green products were healthier and safer to use; helped them play a part in conserving the environment and that non – green products may have substances that could harm the environment directly or indirectly.

5.3 Conclusions

The study concludes that the adoption of green products in Runda and Nairobi Dam estates is influenced by behavioural, demographic, geographic and psychographic characteristics. Given that the correlation between behavioural, demographic, geographic and psychographic and adoption of green products in Runda was higher than that of Nairobi Dam estate; and that a higher number of residents in Runda estate were more aware of green products and were still using them compared to Nairobi Dam estate, the study further concludes that the level of adoption of green products in Runda estate is stronger than in Nairobi Dam estate. On the factors that influence adoption of green products, the study further concludes that a higher number of consumers in Runda were in agreement with those factors compared to a lower number of consumers in Nairobi Dam; and these factors therefore were taken into account when consumers were purchasing green products or alternative non – green products.

5.4 Recommendations for Policy and Practice

The researcher recommends that firms selling green products could consider developing green products that are more affordable to consumers in the middle income bracket. The

study established that consumers in Runda Estate had higher incomes compared to those in Nairobi Dam Estate and thus bought green products regardless of price. Moreover, consumers in Nairobi Dam were more sensitive to price. Therefore manufacturers of green products should develop competitively priced green products across the income groups in order to encourage middle income consumers to take up more green products. Given that consumers in Runda Estate were more aware of green products compared to those in Nairobi Dam estate, the researcher further recommends that more awareness be created among consumers in middle income segments and even by extension, lower income segments so as to encourage adoption of green products. This could involve conducting increased promotion and marketing activities targeted at consumers in the middle income bracket as an attempt to increase their level of knowledge of green products.

Firms or manufacturers of green products should also develop marketing strategies that would increase brand loyalty towards their green products within middle income consumers. The number of consumers in the middle income segment still using green products had dropped and this was attributed to the need to try out other non – green alternatives. This therefore means that there is a need by firms to enhance brand loyalty towards their green products in order to curtail a switch to non – green alternatives and also increase the number of consumers using green products.

With regards to the factors that influence adoption of green products, marketers need to develop tactics which communicate that green products have the same, if not better functional capability compared to non – green products especially among middle income consumers; who seemed to be unsure of this aspect. Switching to non – green products is an indication that more needs to be done to reassure consumers that green products work just as well if not better. These communication strategies could also be extended to other areas where consumers in both high and middle income markets were neutral about. For instance, a green product that enables the consumer in either segment comply with or

better enforce any environmental law, appeals to their social groups and enables them make long – term savings is highly likely to be adopted.

Lastly, marketers should capitalize and incorporate factors which consumers in both the upper and middle income segment indicated strongly influenced them to adopt green products in their marketing activities. These include the fact that green products are perceived to be healthier and safer; and that they do help the consumer play a role in conserving the environment.

5.5 Recommendations for further study

Given that consumers in Runda, an upper income area, were more aware of green products compared to those in Nairobi Dam estate, it is recommended that more awareness be created among consumers in middle income segments and even by extension, lower income segments so as to encourage adoption of green products. Additionally, as the study was limited to upper and middle market segments, further studies can be done comparing green product adoption in other market segments such as lower middle class and low income segments; and upper and low income segments. It was also noted that there was a drop in the number of consumers who were still using green products in Nairobi Dam estate. Further studies can be done to establish what specific factors led to this decrease. The study also examined adoption of green products as a whole. It is recommended that further studies be done to examine the level of adoption of green products among consumers in relation to specific product categories; as well as in the provision of green services.

5.6 Limitations of study

The key limitation of the study was the difficulty experienced in accessing the head of the household. Most of them were away at work during the daytime. This therefore forced the researcher to collect data during the late evening or early night hours. In addition, the study was limited to two residential areas in Nairobi. Further studies could extend to the whole of the Nairobi region and the country by extension.

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APPENDICES

Appendix I: Letter of Introduction

UNIVERSITY OF NAIROBI

P.O. BOX 30197 – 00100

NAIROBI

SEPTEMBER 2014

Dear Sir/Madam,

I am a postgraduate student currently undertaking a Master of Science (MSc.) Degree in

Marketing. One of the requirements for the course involves undertaking a research study

and for this I am undertaking a research study titled: "A comparative study of market

segment characteristics that influence the adoption of green products: A case of Runda

and Nairobi Dam Estates".

You have been selected to undertake the study. This letter, therefore is to kindly request

you to assist me by providing the data needed as outlined in the attached questionnaire.

Information provided will be used solely for the purpose of this research and all

respondents will remain anonymous and will be treated confidentially. A copy of the final

report will be availed to you upon request. Your assistance with this request will be

highly appreciated.

With Kind Regards,

NJERI GICHUHI

MSC. MARKETING

UNIVERSITY OF NAIROBI

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Appendix II: Questionnaire

This questionnaire is for a research that aims to establish market segment characteristics that influence adoption of green products. Green products have been defined as products and packages that have one or more of the following characteristics: they are less toxic, more durable, contain reusable material, are minimally packaged and/or are made of recyclable materials.

This questionnaire has two sections and will take one less than 10 minutes to complete. Information provided for this research will be used solely for the purpose of this research and all respondents will remain anonymous. There are no right or wrong answers. It is your candid opinion that is of interest.

Section 1: Bio Data

Section 11 Dio Duta			
1. Please indicate you	ur gender		
Male []		Female []	
Please indicate your	nationality	y	
2. What is your occu	pation/ pro	ofession?	
3. What is your age r	range?		
18 - 30 []		51 - 60 []	
41 - 50 []		61+ []	
31 - 40 []			
4. On average, how r	nuch do y	ou spend monthly on living expenses?	
Below 30,000	[]	131,000 – 150,000	[]
30,000 - 50,000	[]	151,000 - 250,000	[]
51,000 - 70,000	[]	251,000 – 350,000	[]
71,000 – 90,000	[]	351,000 – 450,000	[]
91,000 – 110,000	[]	451,000 +	[]
111,000 – 130,000	[]		
6. What is your curre	ent level of	f education?	
Primary []		Under-graduate	[]
Secondary []		Post-graduate	[]
Tertiary []		Masters	r 1

College []		PhD.	[]
Professional Cours	se []		
Other (please speci	ify)		<u> </u>
7 a. Which of the f	following be	st describes the current stage of your fami	ly life?
Single	[]	Family with children at home	[]
Newly married	[]	Family with no children at home	[]
New parents	[]	One surviving spouse	[]
7 b. How many me	embers const	titute your immediate family?	
8. How would you	briefly desc	ribe your personality?	
9. Are you aware o	of green proc	lucts?	
10. Have you purch	hased or use	d a green product or service before?	
10 b. Are you still	using green	products?	
Reason			
Section 2			
a) Adoption of	of green pro	oducts	
11. Within the last	six months,	how often have you used green products?	?
Not at all []]	Frequently []	
Rarely []	Unsure []	
Occasionally []		
Reason			

12. Which of the below best describes your behavior whenever you buy the green				
product?				
I buy the same brand every time []				
I buy two or three brands of a given green product []				
I buy a different brand every time []				
13. Which of the following statements best describes your approach to trying out green				
products?				
I would be willing to take the risk and try out a new green product that's not been used				
before []				
As an opinion leader, I'd be willing to lead other consumers in taking up green products				
[]				
I'd adopt green products after a few others have tried it first				
[]				
I'd adopt green products only after a majority of other consumers have tried it				
[]				
I'd use green products only if forced to				
[]				
14. Please rate the below statements which are based on factors likely to influence you to				
buy/ consume green products/ services. Responses vary from strongly disagree (1) to				
strongly agree (5)				

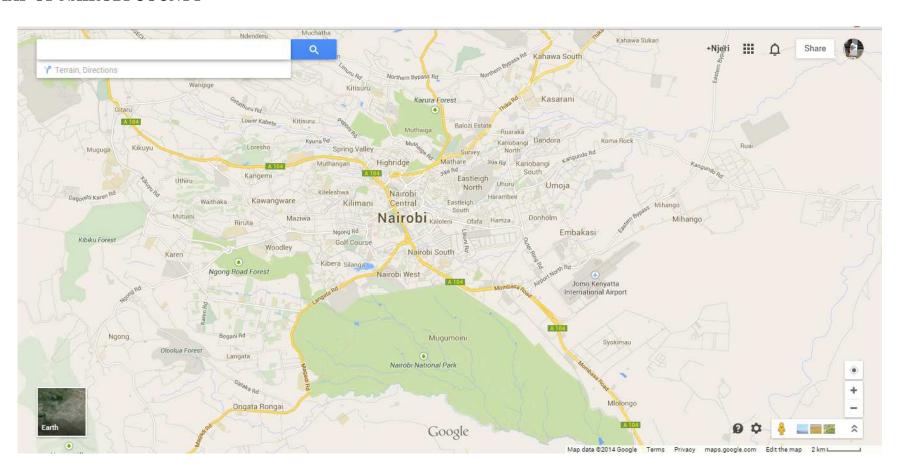
	Strongly	Agree	Neutra	Disagree	Strongly
	Disagree (1)	(2)	1(3)	(4)	Agree (5)
I'm aware that non - green products					
contain harmful substances that damage					
the environment directly or indirectly.					
I buy green products regardless of the					
price.					
Green products have better functional					

capability than non-green products.			
I buy green products in order to comply			
with the law.			
I buy green products following			
recommendations from my social groups.			
Buying green products enables me play			
my part in conserving the environment.			
Green products tend to be healthier and			
safer to use.			
Green products tend to last longer which			
leads to long-term savings.			

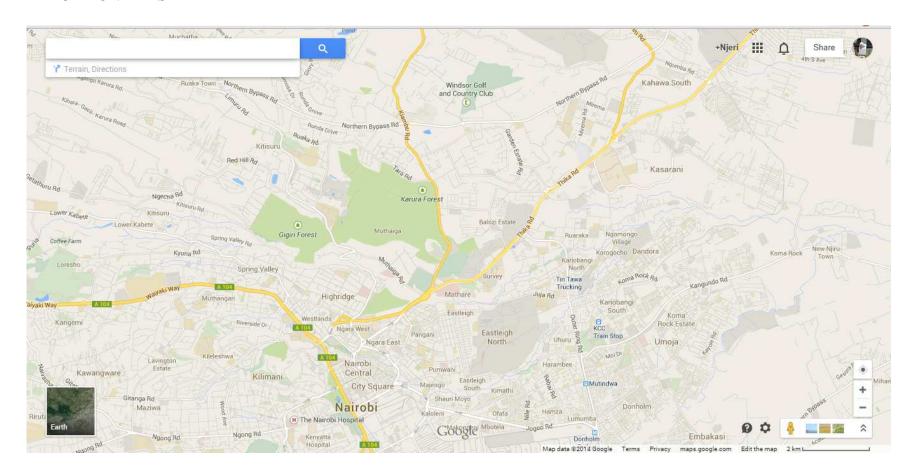
Please indica	te other factors you	u think may ir	nfluence you to a	dopt green product
Thank you for your time				

Appendix III: Maps of Nairobi, Runda Estate, Nairobi Dam Estate

MAP OF NAIROBI COUNTY



MAP OF RUNDA ESTATE



MAP OF NAIROBI DAM ESTATE

