

**MARKOVIAN APPLICATION TO PRODUCT SWITCHING IN KENYA'S  
HOTEL INDUSTRY: A SURVEY OF SHOWER GEL AND GUESTS' SOAP**

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**DECLARATION**

I declare that this research project is my original work and has not been presented for a degree in any other university.

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May God Bless you all.

## **DEDICATION**

This project work is dedicated to my benevolent mentor Dr.Yasushi Sawazaki for his continuous support and faith in my abilities. I further dedicate it to my family and friends for their prayers and moral support.

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## ABSTRACT

Product switching is the process of changing from the routine use of one product or brand to steady use of another but similar one. Previous studies on product switching have not looked at the concept in the hotel industry in terms of the showering options involving shower gels and guest soaps. In this study we assessed the showering preferences of hotel guests and employed the Markovian model to determine their preference insistence, switching patterns and future market shares of shower gels and guest soaps in the long run. Data were collected using a mobile phone application known as Magpi and was purposefully drawn from 400 students of university of Nairobi Kenya Methodist University and Kenyatta University who had ever spent in any hotel in the last one year. The data generated were cast into Transition Matrix and further analysis was done using SPSS and Excel. The study found out that guest soap was the most available showering agent in Kenya's hotel industry where it commanded 64.3% of the market share while shower gel had only 25%. Among the clients who used guest soap only, 79.5% claimed that it was the only showering agent provided in the hotel, while 22.2% used shower gel for the same reason. guest soap seemed to have the highest percentage of people reporting challenges with its use. 45.5% said they had experienced some inconveniences with its use against the 6.1% who reported challenges with the use of the Shower gel. Loyalty to guest soap was the weakest with only 18.7% of its initial users remaining with it while rest would switch to the Shower gel or the use of both gel and soap. Shower gel had the highest retention rate of 81.6%. In the long run, the fifteen steps ahead forecast revealed a steady state probabilities of the Shower gel, guest soap and the use of both. The findings showed that shower gel will command the future market share at an estimated rate of 67% while Guest soap will be relegated to a paltry 10% of the market share.

# **CHAPTER ONE**

## **INTRODUCTION**

### **1.1 Background of the Study**

The Markovian Model is one of the most efficient techniques used to predict the market share a particular product would attain in the long term in an oligopolistic market situation. It can also be used to estimate the brand loyalty of a product and product switching behaviors. The model is anchored on the precept that the conditional probability of the following state is independent of the preceding state (Uslu and Cam, 2014). In other words, the current state in a Markov chain only depends on the most recent previous states. Analysis of the Markovian chain gives insight on how a system transits from one integer to the next which also reflects how a consumer would switch from one brand to the next. The model depends on the transition probability which is the Probability of state changes representing the chances of a customer transiting from product  $i$  to product  $j$  in the choice set (Umoh, Awa, & Ebitu, 2013).

#### **1.1.1 Product Switching**

Product switching is the process of changing from the routine use of one product or brand to steady use of a different but similar one (Awogbemi, Oloda, & Osama, 2012). It may also refer to an individual's decision to introduce or discontinue selling or using a particular product (Timoshenko, 2015). There are barriers that may prevent an organization or an individual from changing products. These barriers include the cost of searching out, evaluating, learning about new products and the psychological cost of changing from one product to another. For product switching to occur, there must be

external factors that push the consumers over the switching barriers. Bernard, Jensen, Redding and Schott, (2010) identified changes in the market environment, customer demands, government regulations, trade costs, environmental conservation and competition as the external forces that may necessitate product dropping or picking.

### **1.1.2 Soap Industry**

The global soap industry consists of small number of multinational companies that include Unilever, Colgate Palmolive, Procter and Gamble and Johnson & Johnson. On the regional and continental front we have Beiersdorf as the reigning giants in Europe, Kao Corporation leading in Asia- pacific, Paterson Zochonois in African and Nirma and Godrej in South Asia (Euromonitor, 2000). In Kenya some of the leading soap manufacturing companies include; Diamond chemicals, Unilever Kenya, Bidco Oil Refineries, Elephant soap industries, Premier oil mills, Jet Chemicals Ltd, Sudi Chemical Industries, Super Duper Cosmetics Ltd, Ecolab East Africa and PZ Cussons among others (Muthui, 2014). Market analysis on the soap industry done in 2010 revealed that soaps and detergents together consisted of approximately 15% of the consumer expenditure in European house hold goods (Euromonitor International Database , 2010).

### **1.1.3 The Hotel Industry**

The hotel industry is one of the leading consumers of soap and sanitation products in the world. However, most hotels and lodgings use guest soaps. These are small soap tablets provided to guests overnight for the purposes of showering. The clients use the soaps only once then the rest is disposed of. In the US alone it is estimated that more than 2 million bars of partially used hotel soap are thrown away every day (Clean the World,

2015). This manifest wastage has provoked the environmentalists to castigate the industry for environmental degradation. Others have argued that such insensitive wastage is an insult to resources noting that in Sub-Saharan Africa thousands of lives could be saved by recycling these bars of soaps to be used for hand washing to prevent diarrheal diseases (UNICEF, 2013). In response to these glaring facts, research done by Kasimu, Zaiton, and Hassan, (2012) showed that some hoteliers resorted to the use of refillable soaps and shampoo dispensers to reduce the wastages. However, this did not augur well with sensitive clients who expressed doubts as to the hygiene and quality of the contents of the dispensers. Others have tried recycling techniques of grinding the left over soap to use as laundry detergent for staff uniform. Millar and Baloglu, (2011), suggested that hoteliers need to tout the benefits of using refillable containers and educate their clients on the disadvantages of throwing away partially used bars of soap.

It is worth noting that the loss due to this wastage is not limited to the hoteliers alone. The manufacturers and producers of these guest soaps also invest a lot of time, labor, transport and raw materials in making products that are later not put to meaningful economic use. The concept of lean thinking that promotes zero tolerance to waste therefore needs to be employed to reduce the cost of production and create more value for the customers while using fewer resources.

## 1.2 Research Problem

Guest soap therefore poses a great challenge both to the manufacturers who go at a loss to make a product that is not put to full economic use and to the hoteliers who have to increase labor in collecting them every day and dumping the unused bars. They also cause blockage of sinks and shower drainages in hotels. The guests further go at a loss because they pay for a product that they do not wholly need. The losses and the inconveniences of the guest soap therefore require a rethinking of its production and is a justification enough to sweep it aside with the Schumpeter's gale of creative destruction. It is against this backdrop that we want to test if the hotels clients would be willing to switch from guest soap and adopt customized shower gels. Shower gel or body wash as they are popularly known are bottled liquid soaps that are used for washing the body. It consists of an emulsion of water and detergent base mixed with fragrance.

Product switching involves changing from one product to another. Awogbemi, Oloda, & Osama, (2012) looked at the relevance of product attributes in relation to switching rates and considered with three brands of soft drinks. They used Markov chains to establish the brand loyalty of the consumers of the soft drinks to forecast their future market shares in the long run. Their findings revealed that of the three drinks considered namely; Fanta, Mirinda and Mountain-Dew, consumers showed strong brand loyalty towards Fanta. Umoh, Awa and Ebitu, (2013) examined the application of Markov chain to test brand switching and brand loyalty of toothpaste users in Port Harcourt, Nigeria. They gathered data for five brands and found out that the subjects exhibited brand loyalty with Close up and Darbur being the most preferred. However, similar study has not been done in the

Kenyan context and specifically on the soap industry. Uslu and Cam (2014) analyzed the brand loyalty for consumer sport shoes in Turkey using Markov chains and found out that students were more loyal to Adidas and Nike. In 2008, Penfold, Guillet, and Zhen, did an exploratory study on the hotel co-branding and they discovered that coffee, TV, toothpaste and shower gel were most preferred features to be branded in a 4 star hotel. However, the study did not look at the switching components of these preferred features and especially the shower gel.

All these researches made meaningful contributions. Nevertheless, there is still need to focus specifically to the hotel industry and look at the willingness of the players in the industry to switch from the use of guest soap to shower gel.

### **1.3 Research Objectives**

The main objectives of the study are:

1. To assess the preferences in showering agents as used by the hotel guests and their willingness to switch brands between guest soaps and shower gels.
2. To employ Markov chains to determine the steady-state probabilities for the guest soap and shower gel.

### **1.4 Value of the Study**

The findings of this study will give manufacturers of guest soap a better understanding on the hotel guest's preference on showering options. They will know whether to continue producing the guest soaps with all its challenges or to shift gears and invest more on research and development to come up with more convenient, sustainable, and environmental friendly alternatives.

The identification of the steady state probabilities for the bar soap and shower gel will help forecast the future market shares and demands for the soaps and Gels hence help players in the industry to plan for their productions.

## CHAPTER TWO

### LITERATURE REVIEW

#### 2.1 Introduction

In this section we shall review the documented scholarly works that are relevant to the soap industry, innovation, and product switching in the hotel industry. The literature includes related studies conducted in various context and their findings, and arguments advanced by other scholars on the issue under study in this research.

#### 2.2. Theoretical Foundation of the Study

Among the common operations management theories noted and applicable to this study are lean thinking, Schumpeter's gale of creative destruction, green innovation and Markovian models. The research also borrows theories from other fields such as marketing and Psychology and looks at the reasons for brand loyalty and switching.

##### 2.2.1 The Markovian Model

Markov chain is a mathematical model for stochastic systems whose states, discrete or continuous, are governed by a transition probability. The current state in a Markov chain only depends on the most recent previous states. Analysis of the Markovian chain gives insight on how a system transits from one integer to the next which also reflects how a consumer would switch from one brand to the next. The probability of moving from state  $i$  in  $n$ th time step would be given as  $(n)$ :

$P_{ij} = P \{X_n = j / X_0 = i\}$  and for single-step transition  $P_{ij} = Pr \{X_1 = j / X_0 = i\}$

The Transition probability ( $P_{ij}$ ) is defined as the probability of state changes representing the chances of a customer transiting from brand  $i$  to brand  $j$  in the choice set (Umoh, Awa, & Ebitu, 2013).

Markov chain is concerned with sequences of random variables, which correspond to the states of a certain system, in such a way that the state at one time period depends only on the one in the previous time periods (Ng & Ching, 2006). In our case we assume that in a particular hotel there are only three options for showering. A guest may use shower gel only, a bar of guest soap only or both. We further assume that a consumer of the bar of guest soap only may switch to use shower gel only or both in his/her next shower with a probability of  $\alpha(> 0)$ , while a consumer of customized shower gel only may switch to the bar soap only or both in his/her next usage with a probability of  $\beta(> 0)$ . A user of both shower gel and soap may switch to using shower gel only or guest soap only in his/her next shower with a probability of  $\mu(>0)$ . It will therefore behoove us to find the probability that a user of bar soap will still remain a user of the same soap in the  $n$ th showering and also the possible future market shares of the two showering products in the long run. The solutions to the above hypothetical problems will be anchored on the assumption that the future behavior of the consumer depends on his/her current situation.

We shall describe the consumer behavior by using Markov chain. Let's take Let  $X(n)$  be a 2-state process (taking values of  $\{0, 1\}$ ) of using either bar soap or shower gel: we shall have  $X(n) = 0$  if the consumer uses bar soap on the  $n$ th time and  $X(n) = 1$  if the consumer uses shower gel on the  $n$ th time. Since the future state (the showering item to use) depends on the current state only. We can then formulate the transition matrix

probabilities as:

$$P_{00} = 1 - \alpha, P_{10} = \alpha, P_{11} = 1 - \beta \text{ and } P_{01} = \beta.$$

Then the one step transition matrix would be:

$$\begin{pmatrix} 1 - \sigma & \sigma \\ \beta & 1 - \beta \end{pmatrix}$$

From the transition matrix obtained above, it will be possible to determine both the market environment in the future and the intensive transitional probabilities between shower gel and bar soap (Umoh, Awa, & Ebitu, 2013).

### **2.2.2 Product Switching**

Product switching is the process of changing from the routine use of one product or brand to steady use of a different but similar product (Awogbemi, Oloda, & Osama, 2012). Customer switching or defection in service environment means that that a customer forsakes one service provider for another (Garland, 2002). This can be partial or total defection. In total defection the customer severs all transactions with the product or firm while in the partial case the client starts making purchases with the other competitors but still maintains some transactions with the pioneering firm. Firms need to be aware and guard their customers from straying to competitors brands because it costs 5 to 7 times more to generate a new customer than to retain the current one (Boone & Kurtz, 2007). On the other hand, Venkatesan, (1973) opined that customers love familiar stimuli hence new products may be treated with suspicion of unfamiliarity. However with the acquisition of knowledge, the unfamiliar becomes familiar and new products gain acceptance. Schiffman and Kanuk, (2009) observed that consumers make either trial or repeat purchase. The trial behavior allows firsthand experience of new brands which then

leads to repeat purchase if the product is perceived to be more satisfactory than the previously familiar one. Therefore if a consumer's propensity to switch is known, then the parameters can be modeled to forecast future market share and the relative positioning of the competing brands (Rajkumar & Charlas, 2012).

### **2.2.3: Switching Cost**

According to Bell, Auh and Smalley, (2005) Switching costs are the onetime costs that consumers incur when they switch from one product to another. These costs include; the cost of searching out, evaluating, learning about new products and the psychological costs involved in changing from one product or supplier to another (Burnham, Frels, & Mahajan, 2003). These costs act as barriers that prevent clients from switching. It gives the pioneering products a competitive advantage over follower products (Bowman & Gatignon, 1996).

### **2.3. Waste Reduction**

Roos, Womack and Jones, (1990) coined the term 'lean production' to refer to a manufacturing paradigm that emphasizes on continuous minimization of waste. It is also known as 'lean manufacturing' or just lean. However, the concept originated from Ohno and Shingo of Toyota hence giving it the name Toyota Production Systems. Lean Thinking can also be viewed as a set of principles, philosophies and business processes that enable the elimination of waste and add value to customers (Vlachos & Bogdanovic, 2013). The main objective of lean manufacturing is to reduce waste as far as human efforts, inventory, time to market and manufacturing space is concerned. Waste may take many forms and may be found hidden in policies, procedures, processes, product designs

and in operations (Seth & Gupta, 2005). Waste utilizes resources without adding value to the product. Russell and Taylor, (1999) described waste as anything other than the minimum amount of equipment, effort, material, parts space and time that are essential to add value to the product. The overriding principle of lean thinking therefore is to reduce cost through continuous improvement hence increase the firm's profit (Roos, Womack, & Jones, 1990). In the hotel industry, the concept of waste reduction is not new and it is logical to assume that lean practices can improve customer satisfaction by reducing waste and defects from products and services offered to customers (Levy, 1997).

### **2.3.1 Waste and the Environment**

Environmental management is the systematic approach to finding practical ways of saving water, energy and materials and reducing negative environmental impacts. The impacts could be cultural, ecological and or social. It also encompasses sustainability, resource management and pollution control issues (Kirk, 1995). The concept of environmental management is very relevant in the hotel industry. Hotels and resorts use large amount of environmental resources such as water and energy and generate lots of waste such as waste water and solid wastes. Research done by Muthini, Tole and Otieno, (2003) on the solid waste pollution loads in beach hotels on the Kenyan south coast's revealed that the mean per-capita waste generation rate was 1.9 kg per person per day. Such high amount of solid waste generation has prompted researches such as Rugman and Verbeke, (1998) to enjoin firms to undertake environmental management to avoid colliding with forces such as stakeholder environmentalism, competitive pressures and environmental regulations.

On the other hand, environmental management has had neoclassical economic opponents whose Agency theory postulates that firms exist to mainly maximize shareholders wealth therefore engaging in environmental management would be tantamount to misuse of corporate resources (Friedman, 1970). However in a counter argument, Institutional theorists maintain that external institutions exert influence on individual firms and that the firms social objective is not always profit maximization and hence they should engage in environmental management to meet external pressures for legitimacy and to obtain trust of the external institutions (Hoffman,1997). Stewardship theory further lends a voice of support for environmental management by asserting that there is a moral responsibility for managers to do the right thing without regard to how such actions influence corporate performance (Donaldson and Preston, 1995).

Peattie and Ratnayaka (1992) observed that environmental management allows firms to reshape competitive rules to obtain first mover advantages. Barret, (1991) concurs by stating that adopting environmental management forces firms to apply strict green standards into their green products that can create differentiation strategies. Anderson and Bateman, (2000) coined the term “environmental Champions “or “eco-champions to refer to individuals who convince and enable organizations to turn environmental issues into successful corporate programs and innovations. Willard, (2009) Views eco-champions as “sustainability entrepreneurs”, hence environmental management can be seen as a source and a drive for innovations.

## **2.4. Innovations**

Innovation is the application of new and creative ideas and the implementation of inventions (Decelle, 2004). It involves thinking creatively to generate solutions that add value in terms of economic and social impacts. It is also critical in creating competitive advantage and improving governance. It can redefine products, processes, and services that involve individuals, organizations and institutions (Schilirò, 2015). Joseph Schumpeter (1934), observed that the entrepreneur's capacity to innovate is the fundamental impulse that sets and keeps the capitalistic engine in motion. He stresses the importance of radical innovations that transform existing markets and create new ones. Moreover, intangible skills such as entrepreneurial ability, communication skills, adaptability, and tacit knowledge contribute meaningfully to innovations and especially in services industry.

Chen, Lai and Wen (2006) describes green innovations as the implementation of new ideas that relate to green products or processes, including the innovations in technologies that are involved in energy-saving, pollution-prevention, waste recycling, green product designs or corporate environmental management. They further observe that green innovations have become one of the most strategic tools to obtain sustainable development in manufacturing industry because of the popular environmental trends. Green innovations can be used to enhance product value and hence offset the costs of environmental investments. It can also improve corporate image and make companies more successful (Porter & Van der Linde, 1995). It can therefore be argued that developing green innovations is a mutually beneficial solution for firms that face the conflict between economic survival and environmental protection. Gladwin, Kennelly

and Krause, (1995) concurs that firms that adopt green innovations normally lead new business models and change competitive rules to generate business opportunities. The same view is corroborated by Hartman and Stafford, (1997) who stated that, “being green is not a cost of doing business, but a catalyst for innovation, new market opportunities and wealth creation”.

### **2.4.1 Creative Destruction**

The neologism “creative destruction” was first used by Joseph Schumpeter to describe an economy wide process which “incessantly revolutionizes the economic structure from within, incessantly destroying the old one, incessantly creating a new one” (Schumpeter, 1950). The phenomenon occurs when something new kills or replaces something older. For example the computers with printers replaced the type writers that were previously omnipresent in offices. Sometimes the changes are so inevitable that the process is metaphorically referred to as “Schumpeter’s gale of creative destruction”. In modern times, entrepreneurship has been singled out as one of the means to successfully navigate the dynamic process of creative destruction. Entrepreneurial responses can be described as: the creation and implementation of new services, the accelerated development of or implementation of an existing idea, or the expansion of an existing service to enter a new market (Gliedt & Parker, 2007).

## **2.5 The Hotel Industry**

A hotel is a commercial establishment that provides paid lodging, meals and other guest services on a short term or temporary basis. For an establishment to qualify as a hotel, it must have a minimum of six letting bedrooms three of which must have a private bathroom facility. Hotels can be classified into five divisions denoted by stars to include 1-star, 2-star, 3-star, 4-star, and 5-star (Business Dictionary, 2015).

Hotels and restaurants are major consumers of water, chemicals, energy, supplies and disposable items. As a result it generates a significant amount of solid waste, waste water and other environmental pollutants (Hall & Lew, 2009). Due to these concerns, the tourism industry and the hotel sector is under mounting pressure to adopt more environmentally friendly practices. Graci & Dodds, (2009) observed that; increasing environmental regulations, managers ethical concerns, customer demands and the need for better aesthetics are the reasons behind the pressures. Additional sources of pressure was identified by Lee, Hsu, Han and Kim ,(2010) who singled out a new breed of environmentally conscious investors and an emerging trend of green consumerism as other influencing factors. In 2008, Deloitte report indicated that large number of business travelers had real concerns about the environment hence raising the bar on their expectation from the hotels in terms of environmental stewardship. The study further revealed that 40% of the respondents were willing to pay more to stay at a green hotel.

Waste management is one of the recognized methods of environmental stewardship. It is estimated that every international tourists in Europe generates 1 kg/per person/per day of solid waste. In USA the number is double at 2kg/per person/per day (UNEP, 2003) while in Kenya the waste generation per person per day in hotels stands at 1.9kg (Muthini, Tole

& Otieno, 2003). However, approximately 30% of these wastes generated can be recycled or reused (Bohdanowicz, 2005). It is worth noting that poor waste disposal can lead to water and soil pollution through leaching of contaminants.

## **2.6 The Soap Industry**

The global soap industry consists of small number of multinational companies that are popularly known for their strong brands. The leading global players include Unilever, Colgate Palmolive, Procter and Gamble and Johnson & Johnson. On the regional and continental front we have Beiersdorf as the reigning giants in Europe, Kao Corporation leading in Asia- pacific, Paterson Zochonois in African and Nirma and Godrej in South Asia (Euromonitor, 2000). Market analysis on the soap industry done in 2010 revealed that soaps and detergents together consisted of approximately 15% of the consumer expenditure in European house hold goods (Euromonitor International Database, 2010). Bar and liquid soaps accounted for 40% of the market of personal wash sector and 10% of the global total personal care market. As at the year 2000, the world market for soaps and detergent was worth \$88 billion USD. Over the years, the global consumption of soap has grown by 29%. The mature markets of North America grew by 14 % while the regions of Middle East and Africa expanded their growth by 72% and 65% respectively (Datamonitor, 2000). In Africa Unilever is the leading dealer in the English speaking countries while PZ Cussons is leading in the French speaking nations. In West Africa, the market penetration is estimated at 98% with the local manufacturers making 10-15% of the soap used (London School of Tropical Medicine and Hygiene, 2000). In Kenya some of the leading soap manufacturing companies include; Diamond chemicals, Unilever Kenya, Bidco Oil Refineries, Elephant soap industries, Premier oil mills, Jet Chemicals

Ltd, Sudi Chemical Industries, Super Duper Cosmetics Ltd, Ecolab East Africa and PZ cussions among others (Muthui, 2014).

The market in the soap industry can be described as growing with cut throat competition among the leading brands. Market expansion has been achieved through new product development such as hand washing liquid soaps and shower gels. Moreover, growing concerns about the environment has also led to the development eco-friendly products that are biodegradable or contained in re-usable or refillable packets. In the recent years, the trend to use more natural ingredients has gained momentum leading to new product innovation such as liquid soaps, soap free synthetic detergents and no- wash soaps. These new entrants have swayed the market in their favor from the traditional bar soaps giving them an ever increasing share of the toilet soap market (London School of Hygiene and Tropical Medicine, 2000).

In Europe, shower products commands the lion share of sales at 69.8%. in France, Shower products consists of 96.5% of sales giving their clear preference for showering over bathing. However, in UK and Russia, consumers prefer bathing to showering. Shower gel sales account for 40.3% and 40.7% of their markets respectively (Data Monitor 2012). In Spain However, shower products are most popular with 92% of the population preferring them. In general, Shower gel commands 67% of shower product usage in Europe (Kantar WorldPanel, 2013). This market is driven mostly by female users. Although more and more men are now using the gels, it is estimated that 80% of their products are bought by their wives. There is fear that the purchase of cosmetic products like showers gel calls into question their manliness and associates them to female tendencies and gays lifestyle (Data panel Europe, 2002).

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

In this section we shall discuss the methodology that was used to gather, analyze data, and report the results. The chapter explains the research design that was adopted for this study, the population for this study and the methods and tools that were used to collect and analyze the data.

#### **3.2 Research Design**

Descriptive research design was employed to study the behaviors and preferences of hotel clients. A survey questionnaire was administered to clients who had ever spent in a hotel in the last one year. Descriptive design was deemed appropriate as it gave a lot of information and insights as to the clients showering agent preferences. The data collected was then cast into Markov brand switching model to test product switching behavior between bar soaps and shower gels.

#### **3.3 Population of the Study**

Data was collected from university students who had ever spent in any hotel in the last one year and could remember the showering agent they used in their last stay. We opted for university students instead of current hotel guests because it would be hard to obtain permission from hoteliers to interview their clients. Three universities were sampled for their convenience; University of Nairobi, Kenyatta University and Kenya Methodist University. This is because students from these universities both undergraduates and post graduates come from all over the country and have spent in hotels with different star

ratings in different parts of the country hence they offered information that reflects the hotel industry in Kenya.

### **3.4 Sample Size**

According to Mugenda and Mugenda (2003) the general formula deriving sample size for a survey is:

Necessary Sample Size = (Z-score) X Standard of Deviation (1-StdDev) / (margin of error).

At 95% confidence level, 5 standard deviation, and a margin of error (confidence interval) of +/- 5%. The desired sample size would be;

$$((1.96)^2 \times .5(.5)) / (.05)$$

$$(3.8416 \times .25) / .0025$$

$$.9604 / .0025$$

$$384.16.$$

Based on this the researcher settled on a sample size of 400 which is above the required minimum size to cater for non responses.

### **3.5. Data Collection Procedures**

The study relied on primary data that was collected using questionnaire. The questionnaire was made up of two sections. The first section dealt with demographic matters while the second part sought to find what the client used, their preference and willingness to switch brands. The second section formed the basis of the Markovian matrix. Data was collected electronically using mobile phone technology application known as Magpi. Data already entered was then exported to SPSS for further analysis. A

pilot study was done to pretest the questionnaire on a purposeful sample of 30 respondents to refine the questionnaire, correct inconsistencies and clear any ambiguities before the actual survey.

### **3.6. Data Analysis**

Since there were 3 states in the study, the state space took the following form,

$S = \{\text{Shower Gel only, Guest soap only, Both Shower gel and Soap}\}$

The states were mutually exclusive and wholly exhaustive in that a hotel guest could:

- i. Use only shower gel.
- ii. Use only the Guest soap.
- iii. Use both shower gel and Guest soap.

The data collected about the relationship between the hotel guest's current choice of showering agent and the next choice of preference was transformed into Markov Transition Matrix probabilities to measure product switching tendencies. Further analysis was done using descriptive statistics to get meaningful snapshots of the distribution of measurements. The findings are presented in tables and charts for additional analysis and comparison.

# **CHAPTER FOUR**

## **DATA ANALYSIS, RESULTS, AND**

### **DISCUSSION**

#### **4.1 Chapter Overview**

This section considers the objectives of the research question which were to assess the showering agent preferences and the willingness of respondents to switch brands between shower gel and guest soap and to employ Markov chains to determine the steady-state probabilities for the guest soap and shower gel.

To meet these objectives, data was collected from the University of Nairobi, Kenyatta University and Kenya Methodist University students who had ever spent in any hotel in the last one year. A total of 400 students were interviewed. This section uses descriptive statistics to outline the findings.

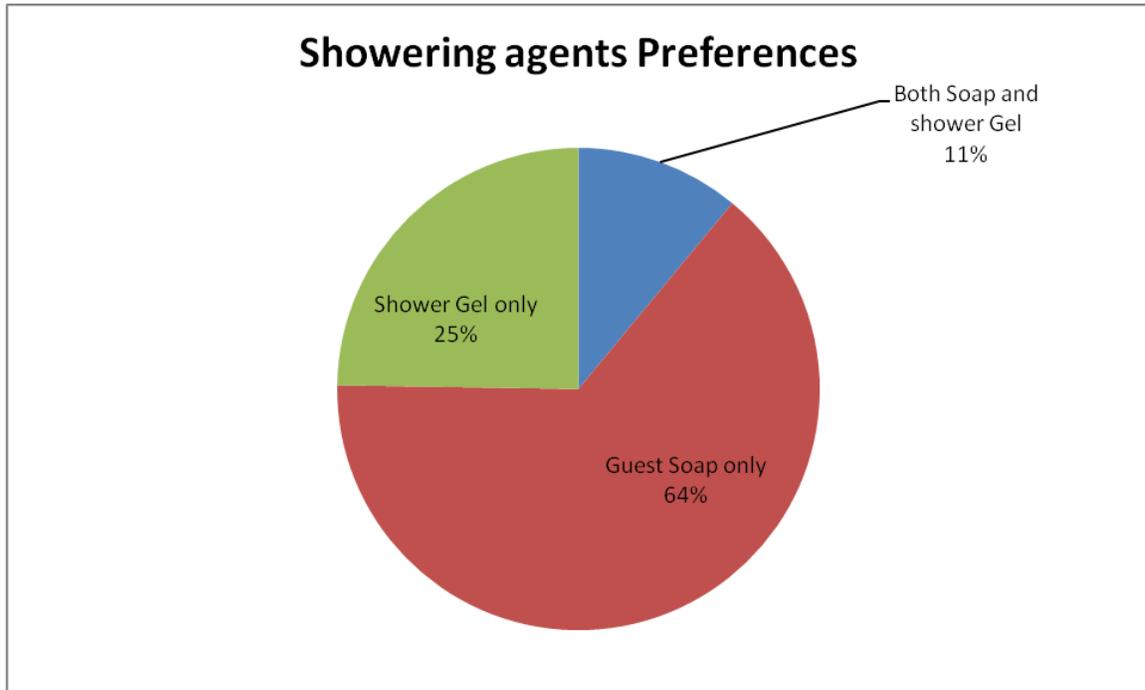
#### **4.2 Descriptive Statistics**

This section addresses objective one of the research question which was to assess the showering agent preferences and the willingness of respondents to switch brands.

##### **4.2.1 Showering Preferences**

Guest soap was the most popular showering agent with 64.3 % (257) of the respondents using it during their last hotel of stay. Shower gel came second with 24.8% (99) while only 11% (44) used both gel and soap as shown in Figure 4.1.

**Figure 4.1: Showering Agents Preferences**



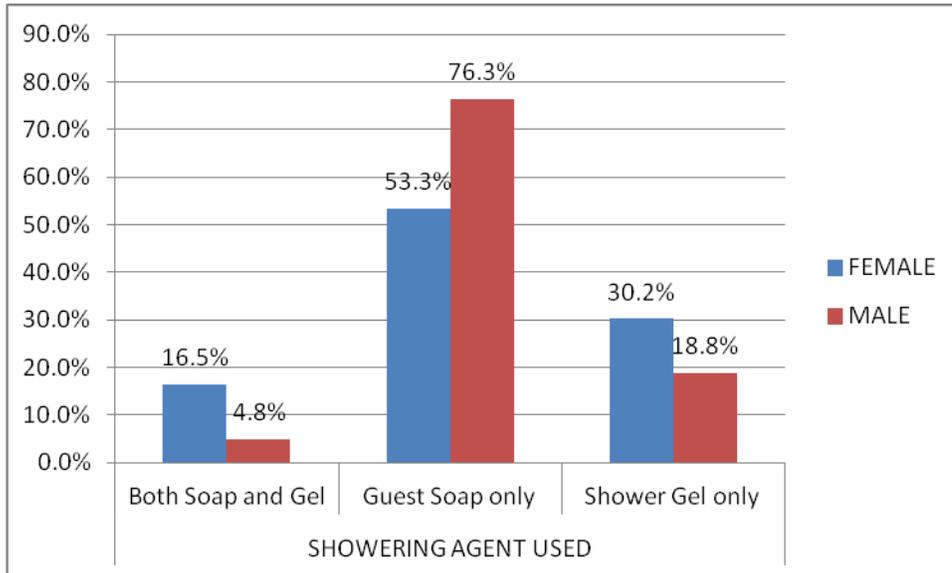
**Source: Research Data, 2015**

#### **4.2.2 Preference by Gender**

Gender seemed to play a role in the preferences. Men preferred Guest soap as compared to the Gel with 76.3% (142) stating they used soap only as compared to 53% (113) of Females who used the same. On the converse, more ladies used the Gel as compared to the soap with 30.2% (64) preferring to use the gel only as compared to 18.8% (35) of the male respondents that used the same. This may be because men are more conservative and traditionally oriented to their familiar brands (Blanchin et al, 2007). As echoed by one of the respondents who believed that shower gel and other cosmetics should be left for women. There was also a belief that cosmetics like shower gel are mostly used by effeminate men and homosexuals. The use of products such as shower gel therefore calls to question the masculinity of men. This may explain why 47.2% (67) of the males who

used guest soaps in their last hotel of stay had never used shower gel as compared to 17.7% (20) of their female counterparts.

**Figure 4.2: Showering Agent preferences by gender**



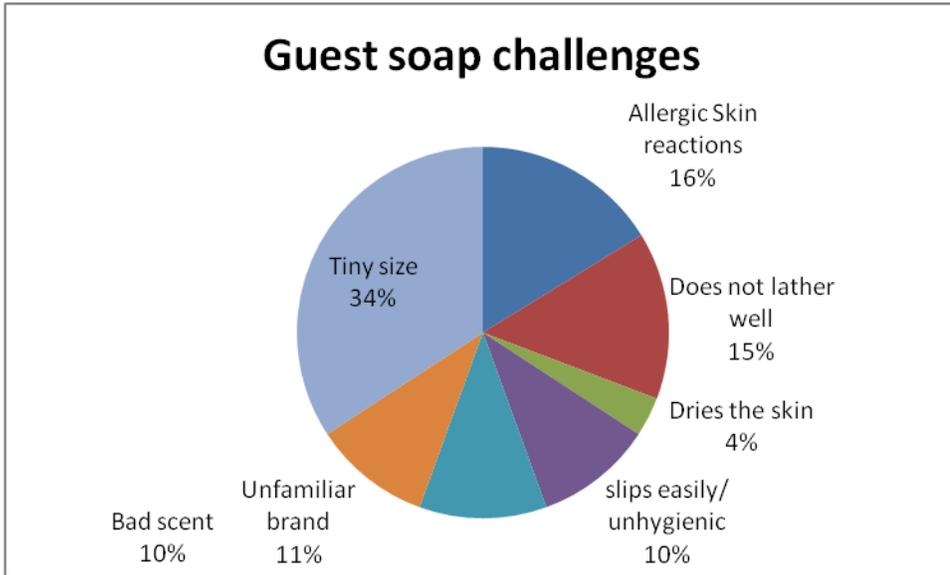
**Source: Researcher, 2015**

### 4.2.3 Guest Soap Preference and Use

Among the respondents who used guest soap only, some did not fully enjoy the experience, 34% (40) complained about its size as being too tiny hence it is hard to handle during showering. 16% (19) claimed they had allergic skin reaction after using hotels guest soap. 14.5% (17) said they were frustrated by the poor lathering ability of the soap. Moreover, 11% (13) of respondents said they were not familiar with the guest soap brands offered in the hotels, they therefore opted to purchase their own brands for use. 10.3% (12) observed that the soap slips easily and falls on the floor making it unhygienic, the scent was not very favorable to 10.3% (12) of the respondents who bemoaned the

characteristic smell of guest soap that makes it easy for people to know that one had spent in lodging or a hotel.

**Figure 4.3: Guest Soap Challenges**



Among the 117 respondents who reported challenges with guest soap, 86.3% (101) would be willing to discontinue its use in favor of shower gel while 8.5% (10) would not switch despite the challenges. This loyalty may be explained by the unwillingness of some respondents to try out new or unfamiliar products. They believe in the credo, “ better the devil you know than the angel you don’t know”. Some respondents explained that they did not know much about the chemical formulations of the gel hence, were not sure about its safety. Others claimed that shower gels contain Paraben, a chemical allegedly obtained from human placenta hence it was unethical to use. On the contrary, out of the 140 respondents who reported no challenge with the use of guest soap, 56.4% (79) were willing to switch to shower gel despite their contentment with the soap. They represents the class of the society who are attracted by new products and are willing to try it if it

holds a promise of a more superior or enjoyable experience. The perception that shower gel held such a promise was reinforced by the guest soap users who had had previous experience with the gel.

### 4.3 Willingness to Switch Brands

#### 4.3.1 Guest Soap Loyalty

The loyalty to the guest soap seemed dwindling with 70% (180) of its initial users stating that they would switch to shower gel if they got an opportunity in the next hotel of visit. 18.7% (48) of the respondents would stay put with the soap while only 11.3% (29) will use the shower gel alongside the soap. This was expected since, 45.5% (117) of respondents who used the soap reported having challenges with it while another 79.3 % of its users who had previously used shower gel described gel experience as more enjoyable.

**Table 4.1: Willingness to switch from Guest Soap to Shower Gel**

**Discontinue\_Gsoap**

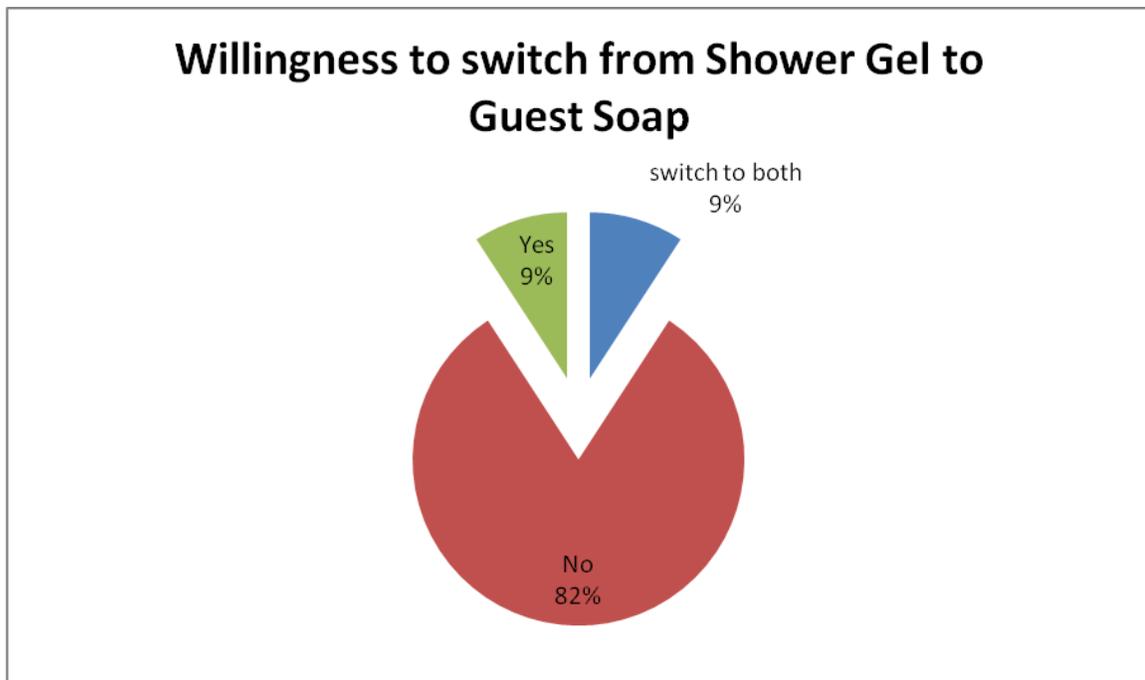
	Frequency	Percent	Valid Percent	Cumulative Percent
I_d_rather_use_both	29	7.2	11.3	11.3
Valid No_	48	11.9	18.7	30.0
Yes__	180	44.8	70.0	100.0
Total	257	63.9	100.0	
Missing	145	36.1		
Total	402	100.0		

**Source: Research Data, 2015**

### 4.3.2 Shower Gel Loyalty

Shower gel clearly had the strongest loyalty rates amongst its users. Of the 99 respondents, 81.6% (80) would stick with the gel in their next hotel of visit while 9.2% (9) would switch to the use of the guest soap only. 9.2% (9) respondents would prefer to use both gel and soap. This was also expected because only 6.1% of its users had reported challenges with it. However, despite this strong loyalty rates, only 24% (16) of clients who used it in hotels also used it always at home. 47% (32) used it only occasionally while 27% (18) used soap only at home. Those that used it occasionally or not at all at home explained that the shower gel was very expensive hence the cost was a barrier to its regular use. Others observed that the gels were not readily available in the local shops. Moreover, it was noted that the gel was not as multipurpose and long lasting as soap

**Figure 4.4: Willingness to Switch from Shower Gel to Guest Soap**



Source: Research Data, 2015

### 4.3.3 Product Switching by Gender

Gender seemed to play a role in the switching matrix between Guest Soap and Shower gel. Men were more loyal to the use of guest soaps in hotels with 23.2% (47) of them who had used the soap in their last hotel insisting that they would not change to the use of shower gel in their next hotel of visit (Table 4.1). This was almost double the number of their female counterparts who only had 12.4% (14) of such loyalty to the soap. This may be explained by Blanchin et al assertion that men are more conservative and loyal to familiar brands. On the same breath, Males were more willing to discontinue the use of Shower gel in favor of guest soap than their female counterparts. This was represented by 14.3% (5) of males who would switch as compared to 6.3% (4) of females who would do the same .

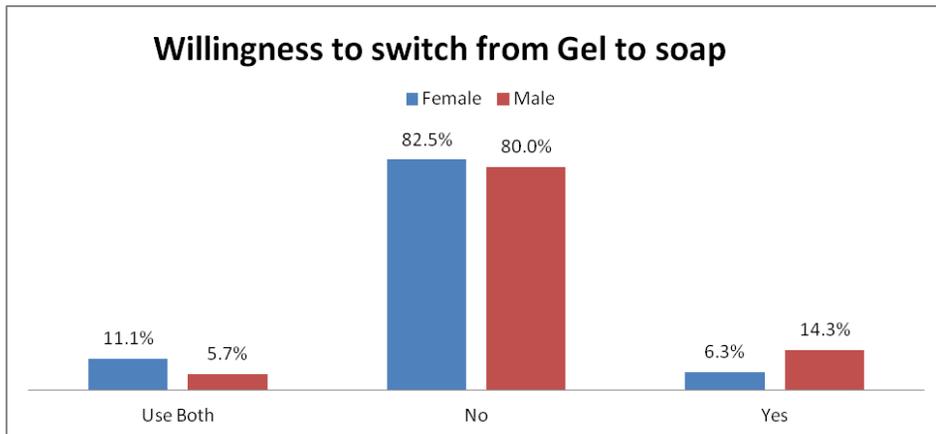
**Table 4.1: Willingness by gender to switch from Guest soap to shower gel**

**Gender \* Discontinue\_Gsoap Crosstabulation**

		Discontinue_Gsoap			Total	
		I_d_rather_use_b oth	No_	Yes__		
Gender	Female	Count	11	14	88	113
		% within Gender	9.7%	12.4%	77.9%	100.0%
Gender	Male	Count	17	33	92	142
		% within Gender	12.0%	23.2%	64.8%	100.0%
Total		Count	28	47	180	255
		% within Gender	11.0%	18.4%	70.6%	100.0%

**Source: Research Data, 2015**

**Figure 4.5: Willingness by gender to switch from Shower gel to Guest soap**



**Source: Research Data, 2015**

#### **4.4 Environmental and Wastage Concerns**

In testing the wastage concerns of guest soap and how the clients feel about paying for a soap that is not put to full economic use, 38.3% (98) of the respondents didn't feel anything about the wastage while 52.7% (135) raised red flag on the economic losses of such wastage. 5.9% (15) felt the cost of such wastage was negligible while only 3.1% (8) of respondents had environmental concerns about the disposal of the left over soaps. This paints a grim picture of the Kenyan hotel clients since; Barret (1991), Rugman and Verbeke (1998) and Graci and Dodds (2009) had indicated that 40% of hotel clients in Europe and America were conscious about environmental management in hotels and would pay more for hotels that had adopted green operations.

It is also ironic that organizations such as *clean the world* has been advocating for the collection and recycling of used guest soaps from American Hotels arguing that such insensitive wastage would be an insult to resources noting that in Sub-Saharan Africa

thousands of lives could be saved by recycling the bars of soaps to be used for hand washing to prevent diarrheal diseases, yet in Africa itself, 38.3% of the most educated part of the Kenyan population do not feel it's a wastage while 5.9% think the economic impacts of the waste is negligible. This can be attributed to the fact there is very little concern for the environment among most Kenyans as can be seen in the wholesale dumping of wastes in the streets and homes. It seems more of a cultural issue that has defied the constant awareness on environmental stewardship.

**Table 4.3: Soap wastage and environmental Concerns**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	I_don_t_feel_anything	98	24.4	38.3
	I_feel_concerned_about_the_wastage____	135	33.6	52.7
	I_have_environmental_Concerns_about_its_disposal_	8	2.0	3.1
	The_cost_is_negligible____	15	3.7	5.9
Total	256	63.7	100.0	
Missing	146	36.3		
Total	402	100.0		

**Source: Research Data, 2015**

## 4.5 The Markovian Analysis

In this section we shall be addressing the second objective of the study which was to employ Markov chains to determine the steady state probabilities for the guest soap and shower gel.

### 4.5.1 Transition States

There were a total of nine transition states as listed below:

**Table 4.5: Transition States**

<b>State</b>	<b>Frequency</b>	<b>Percentage %</b>
Shower gel only	99	15
Guest soap only	257	40
Both guest soap and shower gel	44	7
Shower gel to Guest Soap	9	1
Shower Gel to Both	9	1
Guest soap to Shower Gel	180	28
Guest soap to Both	29	5
Both To shower gel only	10	2
Both to Guest soap only	3	0
<b>Total</b>	<b>640</b>	<b>100</b>

**Source: Research Data, 2015**

## 4.5.2 Preference Insistence and Switching Rates

**Table 4.6: Switching rates**

Shower Gel (SG)	Number of users	Percentage %	Probability
Preference insistence	80	82	0.82
Switch to Guest Soap	9	9	0.09
Switch to Both	9	9	0.09
<b>Sub-Total</b>	<b>98</b>	<b>100</b>	<b>1.0</b>
<b>Guest Soap</b>			
Preference insistence	48	19	0.19
Switch to Shower Gel	180	70	0.70
Switch to Both	29	11	0.11
<b>Sub-Total</b>	<b>257</b>	<b>100</b>	<b>1.0</b>
<b>Both Shower Gel and Guest Soap</b>			
Preference insistence	30	70	0.70
Switch to Shower Gel	10	23	0.23
Switch to Guest Soap	3	7	0.07
<b>Sub-Total</b>	<b>43</b>	<b>100</b>	<b>1.0</b>

Source: Research Data, 2015

## 4.5.3 Transition Matrix

The Transition Matrix therefore will be as follows:

$$P_{ij} = \begin{matrix} \text{Shower Gel} \\ \text{Guest Soap} \\ \text{Both} \end{matrix} \begin{pmatrix} \text{Shower Gel} & \text{Guest Soap} & \text{Both} \\ 0.82 & 0.09 & 0.09 \\ 0.70 & 0.19 & 0.11 \\ 0.23 & 0.07 & 0.70 \end{pmatrix}$$

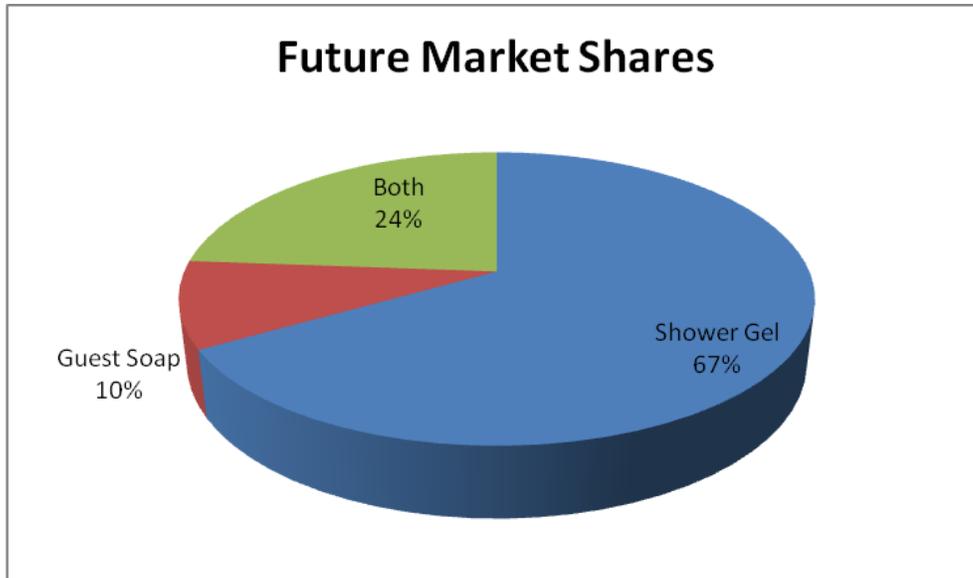
**4.5.4 Computation of Steady State Probabilities of the Showering Agent preferences. (15 STEPS AHEAD FORECAST)**

**Table 4.7: Steady states Probabilities**

Steady state probabilities			
	Shower Gel	Guest Soap	Both
0	0.248	0.643	0.11
1	0.68	0.15	0.17
2	0.70	0.10	0.20
3	0.69	0.10	0.21
4	0.68	0.10	0.22
5	0.68	0.10	0.23
6	0.67	0.10	0.23
7	0.67	0.10	0.24
8	0.67	0.10	0.24
9	0.67	0.10	0.24
10	0.67	0.10	0.24
11	0.67	0.10	0.24
12	0.67	0.10	0.24
13	0.67	0.10	0.24
14	0.67	0.10	0.24
15	0.67	0.10	0.24

**Source: Research Data, 2015**

**Figure 4.6: Forecasted Market shares for Guest Soap and Shower gel in the Hotel Industry**



**Source: Research Data, 2015**

#### **4.6 Discussion**

The transition probability is the probability of state changes representing the chances of a customer switching from the Guest Soap to Shower gel or vice versa. When the transition probabilities are cast into transition matrix and multiplied with the initial market share matrix the result acts as a forecast for the next state of market share. However, when the multiplication is done continuously, in the long run a steady state is reached whereby no further multiplication changes the result. This represents a saturated market share that has stabilized.

From the Table 4.7 above, the transition matrix was analyzed using Excel. We discovered that with the value of 0.67, shower gel only will be the most preferred showering agent in

hotels as compared to Guest soap or the use of both. The shower gel market will stabilize at 67% of the market share hence marketers should strive to reach that target. Unless the quality of guest soap is improved and efforts are made to retain its clients, it is predicted that its market share will drop down to 10% and stabilize there.

#### **4.7 Comparison with Theory and Other Related Studies**

Other scholars have argued that environmental conservation, waste reduction and lean thinking are very important to the hotel industry. Rugman and Verbeke (1998) encouraged firms to undertake environmental management to avoid colliding with forces such as stakeholder environmentalism, competitive pressures and environmental regulations. Graci and Dodds (2009) observed that; increasing environmental regulations, managers ethical concerns, customer demands and the need for better aesthetics are the reasons behind the pressures.

Lee, Hsu, Han and Kim (2010) singled out a new breed of environmentally conscious investors and an emerging trend of green consumerism as other influencing factors. However, in Kenya's hotel industry such forces as stakeholder environmentalism and consumer demands seems to be lacking. Peattie and Ratnayaka (1992 ) assertion that environmental management allows firms to reshape competitive rules to obtain first mover advantages and Barret (1991) suggestion that adopting environmental management may forces firms to apply strict green standards into their green products that can create differentiation strategies may not find ready application in Kenya. Of the respondents who used Guest soap only, 3.1% had environmental concerns while of those who used both soap and gel 0% had such concerns (Table 4). The hotel managers in

Kenya may therefore comfortably buy into the Agency theory that postulates that firms exist to mainly maximize shareholders wealth therefore engaging in environmental management would be tantamount to misuse of corporate resources (Friedman, 1970).

The findings nevertheless were in line with Venkatesan (1973) who stated that customers love familiar stimuli hence new products may be treated with suspicion of unfamiliarity. Of the respondents who used soap only and had never experienced the Gel 17% said they would never attempt to use it because they did not know much about the chemical formulations and were not certain about its safety. Moreover, Schiffman and Kanuk (2009) statement that consumers make either trial or repeat purchase where the latter behavior allows firsthand experience of new brands which then leads to repeat purchase if the product is perceived to be more satisfactory than the previously familiar one was echoed in the research findings. Of the Respondents who used guest soap only but had had previous experience with the shower gel, 18.9% said the use of shower gel was very enjoyable while 60.4% said it was enjoyable. Consequently, this was reflected in their final preference where 90% of the respondents who described the shower gel experience as enjoyable confirming their willingness to decamp from the guest soap. On the same breath, 100% of guest soap users who described the shower gel experience as very enjoyable were ready to switch permanently from the Guest soap.

Bowman and Gatignon (1996) assertion that switching costs act as barriers that prevent clients from switching and gives the pioneering products a competitive advantage over follower products was mirrored in the research findings. Guest soap seemed to have very low switching costs which provided a very small barrier that could not prevent clients from switching. While initially guest soap had the largest market share of 64.3% (Figure

4.1) in the long run Shower gel is forecasted to overtake it and stabilize at a 67% of the market share (Figure 4.7). These findings are in harmony with the ones stated by Data Monitor in 2012 that the market share for shower gels in Europe has stabilized at 69.8% and also with Kantar World Panel (2013) that showed that shower gel market share in the region was at 67%. This implies a striking similarity between the forecasted market shares for shower gel in Kenyan with the current market share in Europe. It may be argued that the historical links between Kenya and Britain is influencing the former in the showering agents' preferences.

From the findings, we feel confident that this research has fully met its objectives which were to assess the showering agent preferences of hotel clients and their willingness to switch brands between guest soaps and shower gels. This was to be done by employing Markovian model to determine the steady state probabilities for the guest soap and shower gel in the long run.

## **CHAPTER 5**

### **SUMMARY, CONCLUSION, AND RECOMMENDATIONS**

#### **5.1 Introduction**

This chapter provides a summary of the study findings and draws conclusion in line with the objectives of the study. It also discusses the findings, implication to policy and their contribution to theory and practice. It gives recommendations related to product switching between Guest soap and Shower gel in the hotel industry. It also proposes areas for further studies and highlights some of the study limitations.

#### **5.2 Summary of Findings**

The objectives of the study were to assess the preferences in showering agents as used by the hotel guests and their willingness to switch brands between guest soaps and shower gels. Markov chains were then employed to determine the steady-state probabilities for the guest soap and shower gel.

The study found out that guest soap was the most available showering agent in Kenya's hotel industry where it commanded the lion's share of the market share with a constant presence in many hotels as the only provided agent for showering. Moreover, the guest soap seemed to have the highest percentage of people reporting challenges with its use as compared to shower gel. Major challenges cited against guest soap included its size that was considered too tiny. It slips easily and falls on the floor making it unhygienic, the scent was not very favorable to some while others claimed it was too hard to lather well in water. Due to these challenges some respondents preferred buying their own soaps. On the other hand the challenges leveled against the Shower gel included difficulty in use

when one did not have a bathing cloth. Unlike solid soap that could easily be held and applied to the body, the shower gel may not be held in the hands and applied directly. Others also claimed that the towels get dirty more frequent if one uses the gel. It was also claimed that its use requires a lot of water to rinse from the body. Some female respondents associated its continuous use with an itchy sensation in the urinary tract.

It was interesting to note that 22% of the respondents had never used shower gel. Of these 83% would like to try it out while 17% would never attempt to use it. Most of them said that they did not know much about the chemical formulations of the gel hence, were not sure about its safety. Others claimed that shower gels contain Paraben, a substance allegedly obtained from human placenta hence it was unethical and disgusting to use.

Shower gel had a very favorable rating amongst the respondents who had used soap only with majority rating its experience as more enjoyable.

Loyalty to guest soap was the weakest with only 18.7% of its initial users remaining with it while rest would switch to other alternatives as compared to Shower gel which had the highest retention rate. The findings further showed that most of respondents who used shower gel only in hotels do not use the same at home. They explained that the shower gel was very expensive hence the cost was a barrier to its regular use. Others observed that the gels were not readily available in the local shops. Moreover, there were concerns that the gel was not as multipurpose and long lasting as soap.

In the long run, the fifteen steps ahead forecast revealed a steady state probabilities of the Shower gel, guest soap and the use of both. The findings showed that shower gel will

command the future market share at an estimated rate of 67% while Guest soap will be relegated to a paltry 10% of the market share.

### **5.3 Conclusion**

The study predicts that Shower will command the lion's share of the market in Kenya's hotel industry. The poor quality of the guest soap as reported by many respondents will work against it in favor of the gel. The perception that shower gel is easier to use, is more hygienic, offers more luxurious and enjoyable experience and is packaged in a way that can be reused or carried home by the clients seems to give it decided advantages over the guest soap. Shower gel therefore has the potential to generate the Schumpeter's gale of creative destruction to sweep away the guest soaps off the hotel rooms.

The switching behavior among respondents seems to be driven more by intrinsic factors than extrinsic ones. The intrinsic factors include the desire to try a new product because it holds the promise of a superior quality and outright dissatisfaction with the current product of use. The extrinsic factors involve things like the price reduction incentives and seasonal promotions. In order to avoid the effects of the price, the study was done in a hotel setting where the costs are catered for beforehand.

The shower gel market in Kenya's hotel industry; though new, has a strong potential for growth as will be seen in coming years. However, as noted in the research there are stereotypes and unfounded beliefs that may delay the quick growth and stabilization of the gel market. But with the increasing advertisement and awareness creation, we expect that such notions will be neutralized especially among men to clear the way for the gel to reach its forecasted potential.

## **5.4 Recommendations**

In the Markovian product switching model used, it was clear that the switching was caused by intrinsic factor that is dissatisfaction with the current product of use. To prevent this, manufacturer need to invest in research and development to come up with high quality products that will retain customers and attract new ones. Especially should the manufacturers of guest soap invest more on the quality of the soap to lather well in water. They should also offer different scents for the soap to avoid the characteristic smell of guest soaps. The size is also of concern to the hotel clients should find the optimum size and package that would be suitable for the clients. Manufacturers of shower gel further need to research more on the complaints about allergic reactions and advise users accordingly. They should also consider attaching a bathing cloth with the gel since it is difficult to apply the gel directly on the body

There is need to build strong brand name loyalty that is familiar to clients to prevent Product switching. Soap manufacturers should have a well known brand specifically customized for hotels based on the expected quality as per the hotels star rating.

The marketers of shower gel also need to concentrate more on the males to debunk the myths about shower gels and change their perception about its use. They should clearly explain the safety of the chemical formulations of the gel. Shower gel has great potential among those who have once used it hence its marketers should invest in giving out free samples to attract new customers.

As the market share of shower gel is estimated to stabilize at 67%, the players in the industry should closely monitor the growth of the market share and invest in new product

innovation and expansion of their product lines to beat the saturating market. They may also consider venturing into nearby countries whose markets are not saturated.

### **5.5 Limitations of the Study**

This study may be limited in that our data was collected only from university students hence may not be accurately generalized to the whole population. We also did not consider other aspects that may promote product switching such as level of income, change in social class, role of new product launch and promotions among others.

We also did not look at individual brands of guest soap and shower gels. There may be differences in quality, sizes and fragrances which respondents might have considered differently. Another component that may have limited the study was the cultural dimension of showering preferences. We did not consider the role culture and gender play in the shower gel and soap market because it would have made the study too complex for the scope and time frame available.

The cost of doing the study was also a limitation. Data collection costs, printing costs, binding costs, transport and internet costs was a challenge based on the high sample size used.

## **5.6 Suggestions for Further Research**

We encourage future researchers to consider other variables that influence product switching such as level of income, change in social class and role of new product launch in conducting a similar study. We suggest that a similar study be done in the house hold setting since ours was limited to hotel industry alone.

We also recommend that the issue of culture and gender preferences be studied as determinants to the uptake and use of shower gels.

Future studies may also need to look at specific brands of guest soap and shower gel and compare their individual markets shares and switching behaviors.

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## APPENDICES

### Appendix 1: Questionnaire

#### PART A: Background of Respondent

1. Hotel name:.....

2. Hotel Star Rating.....

3. Nationality

Kenyan       Others.....

4. Gender

Male       Female

5. Age

20-24 years       25-29 years

30-34 years       35-39 years

40-44 years       Over 45 years

6. Highest level of education

Primary School       Secondary school

Diploma/ Certificate       University degree

Masters/ PhD

#### PART B: Personal Preferences

7. In the last one year, have you spent in any hotel?

Yes       No

8. If Yes what type of showering agent did you use during your stay in this hotel?

Guests Soap only

Shower Gel only

Both Soap and Shower Gel

If Guest Soap, why do you prefer it over shower gel?

- I am more familiar with it.
- I have had skin reactions with it in my previous use with shower gel.
- Only Guest soap was provided in the rooms.
- Use of Guest soap offers a more enjoyable experience.
- I don't trust Shower gels.

i. How do you feel about paying for a soap that is only used once and then the rest is discarded?)

- The cost is negligible
- I have environmental Concerns about its disposal
- I feel concerned about the wastage.
- I don't feel anything

ii. If you have wastage or environmental concerns , what would suggest to be done in order to reduce it?

- I don't have such concerns
- Use non-soap fillers
- Use Shower gels that can be reused or carried home.
- Others (Specify)

iii. Are there any challenges you experience with using the guest soap?

Yes                       No

If yes state them.....

iv. Have you ever used a shower gel?

Yes  No

v. If No, would you like to try it out?

Yes  No

vi. If No, why-----

vii. If you have ever used shower gel how can you describe the experience?

Very enjoyable

Enjoyable

Just normal

Not enjoyable

viii. Given a chance would you discontinue the use of Guest soap in favor of Shower gel?

Yes  No  I'd rather use both

ix. If no explain your reasons-----

-----

9. If you used shower Gel only why did you prefer it over guest soap?

- Only shower gel was offered
- It offers more luxurious and enjoyable experience
- It is easier to use
- It is less wasteful
- It is more hygienic
- It is easier to carry home the left over.
- It lathers well in water and has more foams.

i. Are there any challenges you experience with using the Shower Gel?

Yes  No

ii. If Yes state the challenges.....

iii. Do you use shower gel back at your home?

Yes Occasionally  Yes: Always  
 Yes but alongside toilet soap  Not at all

iv. If no or occasionally why?

- It is expensive.
- It is not as long lasting as toilet soap.
- My family does not like it.
- It is not multipurpose as in it can only be used for showering.
- I once experienced skin reactions with it.

v. Given a chance would you discontinue the use shower gel of in favor of guest soap?

Yes  No  I'd rather use both

10. If you used both shower gel and guest soap what are your reasons?

- To test and experience the shower gel.
- I'm used to it that way.
- Because both were provided.
- I need soap to wash my face and others while I use gel to clean my body.
- Others specify.....

i. How do you feel about paying for a soap that is only used once and then the rest is discarded?

- The cost is negligible
- I have environmental Concerns about its disposal
- I feel concerned about the wastage.
- I feel nothing about it

ii. If you have environmental or wastage concerns, what would suggest to be done in order to reduce it?

- I don't have such concerns
- Use non-soap fillers
- Use Shower gels that can be reused or carried home.
- Others (Specify)

iii. Do you use both shower gel and toilet soap back at your home?

- Yes Occasionally
- Yes: Always
- I use Toilet soap only
- I use shower gel only

iv. If you use toilet soap only or both occasionally why?

- Gel is expensive.
- It is not as long lasting as toilet soap.
- My family does not like the gel.
- It is not multipurpose as in it can only be used for showering.
- I once experienced skin reactions with it.

v. In the future do you intend to continue using both or you may change to either soap only or gel only?

I intend to continue     I may change     Not sure

11. If you were change which showering agent would you opt for?

Shower Gel                       Guest soap

\*\*\*\*\*Thank you for your Time and support\*\*\*\*\*