

**RELATIONSHIP BETWEEN GREEN OPERATIONS PRACTICES AND  
OPERATIONAL PERFORMANCE OF HOTELS IN THE COASTAL  
REGION, KENYA**

**BY**

**KARIMI ERIC KARIUKI**

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## **DECLARATION**

This Research project is my original work and has not been submitted for the award of a degree in any other university.

Signature: .....

Date: .....

**KARIMI ERIC KARIUKI**

**REG NO: D61/64053/2011**

This research project has been submitted for examination with my approval as the University Supervisor.

Signed .....

Date .....

**MR. ODOCK STEPHEN**

Lecturer,

Department of Management Science,

School of Business

University of Nairobi

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## **DEDICATION**

First and foremost, I dedicate this study to God for seeing me through thick and thin in this life. To my adoring parents, I extend my uttermost appreciation for their encouragement and support during my entire life time. To my beloved family who stood by my side during the entire course, many thanks to them. To all my relatives, friends and workmates who believe in me, many thanks to you all. God bless you all.

## ABSTRACT

Over the past few years, environmental concerns have led organizations to wide-spread interest in sustainable practices and their relationships to operational performance. This is reflected in a growing number of recent papers which explore the relationship between environmental operations and business performance. Along with the rapid change in global management scenario, environmental and social issues are becoming more important in managing any business. Green operations relate to all aspects related to product manufacture/remanufacture, usage, handling, logistics and waste management once the design has been finalized. The study sought to determine the extent to which green operations practices have been adopted by hotels in the coastal region, Kenya and to establish the relationship between green operations management practices and operational performance of hotels. The study used a descriptive cross-sectional census survey design. A survey design describes people responses to questions about a phenomenon or situation with aim of understanding respondent's perceptions from which truism is constructed. A cross-sectional survey however collects data to make inferences about a population of interest at one point in time. The population of the study comprised of hotels in the coastal region as at August, 2014. They were 47 in number. It was therefore a census study of all hotels in coastal region. The study used primary data. Primary data was collected by the use of a structured questionnaire. The questionnaire was administered using 'drop-and-pick' later method. The respondents were the top managers of the hotels because they are deemed to be well versed with the green practices in the respective departments. Descriptive statistics such as mean, standard deviation and frequency were used in the analysis. The study used the regression analysis to establish the relationship between the independent variable (Green operation practices) and the dependent variable (operational performance). The study established that the hotels adopt a variety of green practices in the areas of energy consumption, water consumption, waste generation, reduction and recycling and employee training and awareness creation. The study also established that there is a strong positive correlation between green operations practices and operational performance. Hotels view the green operations practices as very important hence adoption of green operations practices by hotels have a positive effect on operational performance. From the findings of the study, the researcher recommended that the hotels should adopt green operation practices in energy consumption, water consumption, waste management and awareness creation among employees. The hotels should adopt energy and water conservation programs which are cheaper to implement. These practices include water harvesting during the rainy season and encouraging switching off electrical gadgets which will not be in use. It also includes the use of solar energy for heating and cooling systems. Policies and guided frameworks on using fewer resources are also recommended to the hotels. The researcher also recommends that green operation practices and their implications on the costs should be frequently communicated to the employee. Hotels on another note should do their best to facilitate employees' participation in green practices. Hotel managers should also embrace regular environmental audits where environmental performance is constantly monitored and recorded. This can be achieved by developing organizational systems and control to facilitate environmental reporting.

## **ABBREVIATIONS AND ACRONYMS**

ANOVA:	Analysis of Variance
ESR:	Environmental social responsibility
KAHC:	Kenya Association of Hotel keepers and Caterers,
KIM:	Kenya Institute of Management
KTB:	Kenya Tourist Board
KNBS:	Kenya National Bureau of Statistics
NEMA:	National Environmental Management Authority
OP:	Operational Performance

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# **CHAPTER ONE: INTRODUCTION**

## **1.1 Background of the Study**

Over the past few years, environmental concerns have led organizations to wide-spread interest in sustainable practices and their relationships to operational performance. This is reflected in a growing number of recent papers which explore the relationship between environmental operations and business performance (Angell & Klassen, 1999). Along with the rapid change in global management scenario, environmental and social issues are becoming more important in managing any business. Green operations relate to all aspects related to product manufacture/remanufacture, usage, handling, logistics and waste management once the design has been finalized (Lund, 1984). After rapid industrialization and civilization, man realized that his practices are damaging the planet earth in an irreversible manner (Mensah, 2007). This has necessitated the need for environmental consciousness.

The relevance of particular theories that are widely applied in the green operations practices adoption literature to current research is vitally important. These theories are Stakeholder, resource based institutional and resource dependence theories. The stakeholder theory asserts that organizations generate externalities which may influence many stakeholders both within and without the organizations. These externalities will cause stakeholders to increase pressure on the organization to decrease or eliminate the damaging effects and increase beneficial effects (Sarkis, Zhu & Lai, 2011). The resource based view argues that sustained competitive advantage and improved performance by a firm may be realized by exploiting resources that are valuable, rare, imperfectly imitable and non-substitutable (Crook, Ketchen, Combs & Todd, 2008). The Institutional theory can equally be used to study how a company addresses

green issues due to external pressures (Jennings & Zandbergen, 1995). The theory has therefore become a major research direction to explain environmental related practices.

In the hotel industry, practices associated with green concerns encompass a variety of activities from pollution prevention to stakeholders' awareness campaigns regarding these activities. This research however views green practices as internal efforts or activities of a hotel to implement environmentally friendly practices towards the goal of reducing its operating costs. The hospitality industry consume significant amounts of natural resources, discharge large amounts of raw and solid waste which consequently affects the sustainability of the natural environment. The hotels, as a main sector of the hospitality industry, have benefited from environmental initiatives through improving corporate image and increasing resource and energy efficiency. In Kenya greening in hotels is a new concept that managers are yearning to embrace. There has been pressure from organizations such as Ecotourism Kenya, NEMA, Kenya Association of Hotel keepers and Caterers, Kenya Tourist Board that currently requires all hoteliers and tour operators to embrace green certifications failure to which they discourage prospective customers from engaging in business with them (Ecotourism Kenya, 2010).

### **1.1.1 Green Operation Practices**

Green operations practices refer to actions that protect the environment and/ or products made with little environmental harm because they are produced in an environmentally and ecologically friendly way (Tzschentke, Kirk & Lynch, 2008). Green operations practices therefore refer to commitment by firms to various ecologically sound practices such as saving water, saving energy and reducing solid waste (Manaktola & Jauhari, 2007). Some of the green operations practices that have been adopted by hospitality businesses include: recycling of waste and building of leadership in energy and environmental conservation.

The main purpose of green operations is to produce green products that are closely associated to practices of renew, recycling, reuse and re-usable disposal in the end of product life (Chen, Watson, Bondreau & Karahanna, 2010). Green products can facilitate the reduction of materials, waste and pollution emission as well as the enhancement of resource application. Theyel (2001) further proposed that once taking green recycle and reuse into practice, industries can effectively save material, water and energy thus improve operational performance. The reuse of materials can considerably save internal cost, exploit new market and help to achieve competitive advantage.

### **1.1.2 Operational Performance**

Venkatraman and Ramanujam (1986) assert that operational performance puts emphasis on indicators such as market share, new product introduction, product quality, marketing, effectiveness, manufacturing value-added and other measures of technological efficiency within the domain of business performance measures selected variables that include quality, efficiency and flexibility measures. This is because they have the most influential impact on a firm's operational performance. Zhu, Sarkis and Lai (2008) posit that indicators of operational performance include amount of goods delivered on time, inventory levels, scrap rate, product quality and product line and capacity utilization. Operational performance therefore takes into account the company's performance in reaching its basic objectives including productivity, quality and service delivery.

Operational performance deals with meeting cost budgets. Improving cost performance means that organizations need to identify the inefficiencies and waste in processes (Russell & Taylor, 2008). Efficiency refers to the best possible use of all available resources in order to maximize output. This results in low cost products thanks to the reduction of waste and enables the factory to give value to customers. Continuous improvement is achieved by the

proper disaggregation of the cost components that impact the total cost performance of the organization.

The measurement of cost allows quality related activities to be expressed in the language of management (Prajogo & Goh, 2007). Operational performance also means improving on speed of service and product delivery. Improving on speed prompts an organization to be able to shorten the time between the service request and delivery of the service, with frequency and at the times requested by customers. In today's competitive environment, time is a valuable tool; thus businesses that are able to respond faster than their competitors are more likely to gain a competitive advantage (Russell & Taylor, 2008).

### **1.1.3 Green Operations and Operational Performance**

Gupta and Sharma (2002) assert that green operations practices are environmentally friendly management principles in which executive levels convert natural resources into better outputs or products. According to Bohdanowicz (2005) green operations are identified through energy efficiency, water conservation and waste management. Steger (1993) posits that green operations can help firms save cost, increase market opportunity, promote usable resources efficiently and prevent pollution which would benefit industry with better regulation compliance, higher employee motivation and effective organization, lower risk and environmental responsibility and information flow distribution.

Taylor (1992) suggests that industries which implement green operations practices management can efficiently promote environmental operational performance, reduce cost and achieve more effective environmental protection that help firms avoid the expense of environmental dispute, environmental accident, environmental ban and loss from customer boycott. Achieving and sustaining operational excellence is more important than ever in today's challenging economic environment. Cost pressures, changing customer expectations,

stronger competitors and other industry and market disruptions are collectively causing a tremendous strain on operational capabilities and performance. Operational excellence is therefore no longer a desired end state but a near-term requirement for any successful company. It needs all operations to be sustainable to be able to meet the needs of the present without compromising the ability of future generations to meet their own needs .

#### **1.1.4 Hotel Industry in the Coastal Region, Kenya**

In Kenya tourism earnings which are a key source of foreign exchange earnings. In the financial year 2012/2013 the sector earned the country about 1.1 billion U.S. dollars compared to the 1.18 billion dollars in the previous period, which is a 7.4 percent decline. The decline was due to the uncertainty surrounding the 2013 presidential elections as well as the Euro Zone crisis (Kenya National Bureau of Statistics, 2013). In the 1<sup>st</sup> quarter of 2014, the sector recorded a negative growth of 3.0 per cent during the first quarter of 2014. This was an improvement from a decline of 12.8 per cent during the same quarter in 2013. The poor performance in the sector was primarily due to a decline in bed occupancy in coastal beach hotels on account of insecurity concerns (Kenya National Bureau of Statistics, 2014). The number of international visitor arrivals decreased from 1.7 million in 2012 to 1.5 million in 2013. The decline in international arrivals was attributed to travel advisories by traditional tourist markets due to security concerns.

Accommodation in Kenya especially in the coastal region is of a high standard and unique, hence guest can absorb the real flavours of Africa. For those on safari, the lodges, tented camps, bush homes and home stays can handle a wide range of group size. On the coast, the hotels offer a variety of accommodation fronting the white sandy beaches while for business tourists, the city hotels are classic and numerous offering good meeting facilities. There is a continuing pressure for hotels in Kenya to go green in terms of their designs or overall

operations to match the demands of customers and to compete on a global scale. Further, the pressure to have lean operations is forcing hotels to go green. This pressure is pushing local hotels in Kenya to go green in order to be at par with other global hotels. Green hotel is an environmentally sensitive hotel that operates its business in a manner that minimizes degradation of the environment (Iwanowski & Rushmore, 1994). The specific areas of focus are energy efficiency, recycling, water conservation and clean air practices (Bohdanowicz, 2005).

A hotel operation requires and uses energy on a daily basis for 24 hours, irrespective of seasonality, number of guests and its location (Kasim, 2007). The energy consumed by hotels is used for space heating, cooling, ventilation, hot water, lighting, laundry, kitchen, recreation and miscellaneous uses. The use and consumption of different forms of energy by hotels leads to the release of harmful gases into the atmosphere and leads to air pollution. The emission of such harmful gases results in the alteration of biogeochemical cycles and also release of carbon dioxide leading into global warming.

Hotels also have high water consumption depending on each hotel's accommodation capacity, standard and the type of facilities and services provided (Bohdanowicz, 2008). Luxury hotels in particular consume large amounts of water for leisure purposes such as swimming pools, spas and golf course irrigation. Alexander (2008) found that in a high standard hotel organization the hotel room would require 396 gallons of water per day, which is enough to support 14 local people. Water consumption at these rates and without monitoring or control, will likely lead to water shortages. According to Alexander (2008) there is a variety of waste produced by a hotel and it consists of paper, food, various metals, plastics, aluminium and glass. Kasim (2007) estimates that hotel waste consists of 46% of food waste, 25.3% of paper, 11.7% of cardboard, 6.7% of plastics, 5.6% of glass and 4.5% of



metal waste. This indicates that waste management is a serious environmental issue for hotels.

The warm temperatures in most parts of the coastal region attract tourists making tourism the main stay of the economy in the region since it creates employment to thousands of residents in the hotel industry, tour operators, and suppliers among other local traders. Estimates indicate that approximately 300,000 visitors visit the coast annually. Adopting green operations practices therefore will make the hotels environmentally sensitive. An environmentally sensitive hotel operates its business in a manner that minimizes degradation of the environment. Green operations focus on energy efficiency, recycling, water conservation and clean air practices. The ultimate result of going green will be to reduce hotel operational costs and harmful environmental impacts. Key areas of concern such as energy consumption, water consumption and waste generation, reduction and recycling would therefore be adequately addressed by going green.

## **1.2 Research Problem**

Green operations practices are gaining increasing interest among researchers and practitioners of operations management. This is driven mainly by the escalating deterioration of the environment including diminishing raw material resources, overflowing waste sites and increasing levels of pollution. It includes being environment friendly as well as good business sense and higher profits (Wilkerson 2005). A growing number of corporations are developing company-wide environmental programs and green products sourced from markets around the world (Min & Galle, 1997). Balancing economic and environmental performance has equally become increasingly important for organizations facing competitive, regulatory, and community pressures (Shultz II & Holbrook, 1999). The present day competitive

environment requires organizations to implement strategies to reduce the environmental impacts of their products and services and thus to establish their environmental image.

The hotel industry in the coastal region of Kenya plays an important role in economic growth of Kenya as well as employment creation (KNBS, 2014). The hospitality industry incurs huge operating costs due to its nature of consuming large amounts of energy and water resources. The operational nature of the hotel business, open 365 days per year, makes it consume more energy and water, thus they experience high operating costs (Foster, Sampson & Dunn, 2000). Hotels equally incur huge costs in the operational departments of housekeeping, kitchen and laundry. While there are a number of ways in which costs can be addressed, green operations practices have been found significant in managing the costs of operations in organizations and enhance operational performance (McCrea, 2010). These practices can be adopted by hotels in Kenya in the areas of energy and water conservation, waste reduction, indoor air quality and environmental education.

Yusof and Jamaludin (2013) studied best practices of green island resort. The objective was to find out the best practice and the factors that influence the best practice of the resort operators. The research method employed was structured observation, documents analysis and in depth interview. The study found out that green initiatives help to cut down the running cost and each resorts adopts different best practice that suit their operation and environment. Partlow, Cao and DiPietro (2013) also conducted a study on green practices in upscale foodservice operations. The study adopted a survey design. The results revealed that customers believed that they are knowledgeable about green practices but they would like to know more about them. Customers also expressed preferences related to restaurants that are environmentally friendly and use environmentally safe products.

In another study, Szuchnicki (2009) examined the relationship between importance of green practices in restaurants and customers intention to return. The results established that green practices were indeed important to customers and that they do, in fact affect return intention within the family-dining segment. Respondents were found to be most concerned with restaurant operations practices, followed by conservation and carbon footprint reduction. A study in Kenya by Mungai and Irungu (2013) examined an assessment of management commitment to application of green practices in 4 – 5 Star hotels in Mombasa, Kenya. This study also sought to determine the relationship between management's environmental commitment and organizational involvement in green practices. It concluded that hotel managers should embrace regular environmental audits where environmental performance is constantly monitored and recorded. Environmental education and training were also considered valuable in developing awareness, knowledge, positive attitude, skills and participation in green practices.

The hotel industry as a whole has expressed concerns regarding decreasing service standards. There is need to adopt green operations practices by hotels to facilitate decrease of materials cost and end treatment cost, protect resources and enhance the enterprise reputation. From the foregoing discussion, it is evident that there is a study gap on green operations practices adoption in the hotel industry in the coastal region, Kenya. This study therefore sought to answer the question: Is there a relationship between green operation practices and operational performance of hotels in the coastal region, Kenya?

### **1.3 Research Objectives**

- i. To determine the extent to which green operations practices have been adopted by hotels in the coastal region, Kenya.

- ii. To establish the relationship between green operations management practices and operational performance of hotels in the coastal region, Kenya.

#### **1.4 Value of the study**

The study offers valuable contribution to theory, policy and practice. First the study adds value to the body of operational management discipline especially in the more demanding concerns of attaining lean management that will form the basis of further research by identifying the knowledge gap that arises from this study. This research also offers scholars a foundation into the extent of application of green operation practices.

The findings of this study can be useful when developing policy guidelines for making changes in the institutional frameworks and policy interventions. The study can be used as a basis of formulating green policies for the hotel industry in Kenya. This study also provides insights into the area of legislation especially on energy use, water consumption and treatment, waste management and recycling. The understanding of the green operation practices adopted by the hotel industry in Kenya can help the Governments and other stakeholders to design targeted policies and programs that will actively stimulate the growth and sustainability of the hotel industry in the country.

In practice, the study findings can benefit management and staff of companies in the hotel industry who may gain insight into how their companies can effectively manage their green practices. This study offers an understanding on the importance of adopting a green practices and thus offer competitive advantage to the firms. Several practices on green operations and their effects have been discussed and for the benefit of the managers. Companies need to adapt to the changing needs of the current business set up and requirement of various customers and providers of services. As a result, companies in the hotel industry in the country and other affiliated institution will derive great benefit from the study.

## **CHAPTER TWO: LITERATURE REVIEW**

### **2.1 Introduction**

This chapter provides a discussion of the various theories that provide explanations regarding the concept of green operations, studies that have been done that are relevant to this study and a summary of the literature review. The chapter begins with a discussion of the relevant theories, followed by the empirical review, and finally a summary of the literature review.

### **2.2 Theoretical Foundations of the Study**

This section focuses on theoretical review of green operations management practices. This study is anchored on three theories which include stakeholder theory, resource-based view and the institutional theory.

#### **2.2.1 Stakeholder Theory**

A stakeholder is any group or individual who can affect or is affected by the achievement of an organization's objectives (Freeman, 1984). Stakeholder theory suggests that companies produce externalities that affect many parties which are both internal and external to the firm. This often causes stakeholders to increase pressures on companies to reduce negative impacts and increase positive ones. Various categorizations have been used to group stakeholders and include direct or indirect, primary and secondary, or based on multiple dimensions of legitimacy, urgency, and power (Mitchell, Agle & Wood, 1997). Internal and external groups will influence organizational practices.

As major shareholders scrutinize the short- and long-term risks and opportunities of climate change, companies must be prepared to justify their environmental actions. Going green can affect an entire organization hence the need to get as many stakeholders involved as possible. Practically, poor environmental performance leads to poor company's relationship with its

stakeholders. This will affect the firm's reputation and shareholders will suffer financial losses on their investments if a firm is found liable to environmental damage.

### **2.2.2 Resource-Based View**

The theory explains that the identification and possession of internal strategic resources contributes to a firm's ability to create and maintain a competitive advantage and improve performance (Crooket al., 2008). A resource is considered strategic if it is valuable, non-substitutable, rare or specific and inimitable in order to contribute to improving the performance of the firm. The theory is of the view that firms attempt to identify strategic resources that will most likely make them more competitive in the market and then employ these resources to exploit their value (Sirmon, Hitt & Ireland, 2007). Environmental management in an organization is a strategic resource because it can lead to a higher firm performance. It supports pollution prevention, product stewardship and sustainable growth (Christmann, 2000).

Firms incorporate continuous learning and innovation in environmental technologies, stakeholder integration and the use of best practices in reducing the environmental impact of their operations. The environment might be a constraining factor impacting sustainable competitive advantage. Certain types of resources owned and controlled by firms have the potential and promise to generate competitive advantage, which eventually leads to superior organizational performance (Miller & Ross, 2003). These resources are human, physical, organizational and financial as well intangible resources. Green operations help to reduce wastage of resources by encouraging less consumption, re-using of resources and recycling.

### **2.2.3 Institutional Theory**

Institutional theory examines how external pressures influence a company (Hirsch, 1975). The theory suggests that organizations operate within a social network and their behaviors are

not confined to dyadic relationship. It implies that a strong motivating force behind firm behavior is socially based and that it is embedded within institutions and interconnected organizational networks (Iacobucci & Hopkins 1992). Within institutional theory, there are three forms of isomorphic drivers namely, coercive, normative, and mimetic (DiMaggio & Powell, 1983). Coercive isomorphic drivers occur from influences exerted by those in power including Government agencies (Rivera, 2004). Normative isomorphic drivers cause enterprises to conform in order to be perceived as having legitimate organizational activities especially in relation to environmental management practices (Ball & Craig, 2010). Mimetic isomorphic drivers however occur when enterprises imitate the actions of successful competitors in the industry, in an attempt to replicate the path of their success (Aerts, Cormier & Magnan, 2006).

The theory explains how a company addresses green issues due to external pressures (Jennings & Zandbergen, 1995). Firms submit to institutional pressures to maintain their social legitimacy, in addition to seeking economic efficiency. The formal rules of environmental institutions relate to environmental legislations, regulations, performance standards and various formal administrative guidelines that organizations can achieve through adoption of green operations. The hospitality and tourism industry is under pressure from different institutions to become more environmentally friendly including consumer demand, increasing environmental regulation, managerial concern with ethics, customer satisfaction and the need for aesthetics.

#### **2.2.4 Resource Dependence Theory**

It is if the view that member firms in any process of production or service provision should be dependent and collaborate to seek higher performance gains in the long-run instead of pursuing short-term benefits at the expense of others. Firms are dependent on resources

provided by others in order to sustain growth, as well as other organizations that may be dependent on them (Pfeffer & Salancik, 1978). The important assumption of this theory is that firms cannot be fully self-sufficient with regards to strategically critical resources for survival. They need to depend on resources from outside parties to compete (Heide, 1994) and carefully manage this dependency with other firms to strive for sustainable development (Ulrich & Barney, 1984).

All firms need to control or access critical resources including standards, procedures, enabling technologies, materials sources and distribution channels. This can be achieved by adopting effective green practices. Firms lacking the required resources to attain their goals are likely to develop relationships with others for acquisition of the resources. This perspective considers customer and supplier relationships as important linkages for firms to reduce the uncertainty surrounding their operating environment (Carter & Rogers, 2008). In many instances, inter-organizational relationship is essential for managing the internal and external coordination to gain the performance outcomes where partner coordination and resources sharing are beneficial for environmental and productivity improvements (Zhu, Sarkis & Lai, 2008).

## **2.3 Green Operations Practices**

This section discusses the green operations practices.

### **2.3.1 Energy Consumption**

A hotel operation requires and uses energy on a daily basis for 24 hours, irrespective of seasonality, number of guests and its location (Kasim, 2007). The energy consumed by hotels is used for space heating, cooling, ventilation, hot water, lighting, laundry, kitchen, recreation and miscellaneous uses. Bohndanowicz (2008) reveals that the use and consumption of different forms of energy by hotels leads to the release of harmful gases into the atmosphere



and leads to air pollution. The harmful gases said to be emitted due to consumption of different energy resources by hotels is estimated at 160 and 200 kg of carbon dioxide per square meter of room floor area, depending on the type of fuel used to generate electricity (Kirk, 1998). The emission of such harmful gases results in the alteration of biogeochemical cycles and also release of carbon dioxide leading into global warming (Gossling, 2006).

Hotel sector could make a major positive contribution to the environment by taking some measures to reduce energy consumption which will, in turn, reduce pollution and resource depletion. Thus while the hotel sector consumes a big proportion of electricity as compared to other tourism sectors, hotel operators still have a chance to implement energy saving campaigns and environmental management systems. According to Muzambi, Nelson and Zengeni, (2013) specific green practices that the hotels can employ include collection of used oil during oil change operations for later use, use of biomass energy, use of high energy efficient lighting through the property, use of energy saving bulbs, use of solar energy and use of sensors or timers to save electricity in intermittent areas.

### **2.3.2. Water consumption**

Hotels may have high water consumption depending on each hotel's accommodation capacity, standard and the type of facilities and services provided (Bohdanowicz, 2008). Kasim (2007) noted that luxury hotels in particular consume large amounts of water for leisure purposes such as swimming pools, spas and golf course irrigation. It has been estimated that the consumption of water by guests in a hotel per night will depend on several factors like the hotel standard and facilities that are provided for the guest. The amount of water consumed by hotels is more than the normal household consumption, thus larger consumption means a larger quantity of contaminated water will be released in the environment, thus polluting the water bodies and harming the environment (Kirk, 2008).

Technology, knowledge and sustainability programmes are needed for organizations to consume water more efficiently and to minimize contamination of water supplies. Water conservation is a necessary step taken by hotels to control and minimize waste. Several green practices can be adopted to optimize water usage. Hotels should have an active system to detect and repair water leakage in toilets and shower heads, reclaim water for reuse, use landscape with native plants to minimize water consumption, ensure extensive use of rainwater and practice rainwater harvesting and desalination of sea water (Jauhari & Manaktola, 2007).

### **2.3.3. Waste Generation, Reduction and Recycling**

Kasim (2007) reported that hotel waste generation is on a much larger scale as compared to waste generated by households. This indicates that waste management is a serious environmental issue for hotels that are located where there are problems of limited land areas to dispose solid waste. Pollution from beach hotels through solid wastes, sewerage and detergents is taking a heavy toll on the beaches and fisheries. It is not in the interest of hotel keepers to invest in expensive waste management facilities, while the local authorities lack the capacity to monitor infringements and enforce the law.

To counter these problems, hotels should offer a linen reuse option to multiple night guests, institute proper sewage management, recycle cardboards and papers, use reusable utensils and post consumer recyclable products, serve proper portion of food to reduce wastage and use environmentally preferable cleaning products (Jauhari & Manaktola, 2007).

### **2.3.4 Employee Training and Awareness**

Educating staff members about sustainability can prove to be a challenge for any management or human resources team. Yet employee engagement is a crucial to the success

of the hotel's green initiatives. By training personnel as the hotel introduces policies and procedures, it leads to empowerment of people to implement new practices effectively, producing better results and moving the hotel closer to achieving its goals.

Bohndanowicz (2008) posits that effective green practices require hotels to train employees for better environmental performance, have visible communication about green practices, provide environmentally friendly products and implement waste reduction and management strategy. Irungu and Mungai (2013) are equally of the view that hotel managers should embrace regular environmental audits where environmental performance is constantly monitored and recorded. Environmental education and training are valuable in developing awareness, knowledge, positive attitude, skills and participation in green practices.

## **2.4 Determinants of Operational Performance**

Irrespective of a strategy that a firm decides to employ, there are factors which impact significantly on their operational performance. This section discusses two such factors, that is; size of hotel and the training level of employees.

### **2.4.1 Size of the Hotel**

The variable size has been widely employed to classify companies of different industries including hotels. Claver-Cortés, Molina-Azorín, Pereira-Moliner, and López-Gamero (2007) found out in their studies that hotels of larger size achieve higher levels of performance as the greater firm size generally means higher possibilities to incur in economies of scale. In the hotel industry, the size has been demonstrated to explain factors such as the level of innovation (Orfila-Sintes & Mattson, 2009), the quality and the environmental management practices, as well as the type of growth strategy implemented in the company (Claver, Molina and Pereira, 2007).

Claver et al. (2007) also states that hotels of larger size achieve higher levels of innovation as well as quality and degree of implementation of environmental management practices. However, large hotels apply less risky growth strategies than the smaller ones. The company's size is generally determined by the number of people employed. However, in the hotel industry size is mainly assessed with the number of beds or guest-rooms offered.

#### **2.4.2 The Training Level of Employees**

Training has direct relationship with the employees 'performance. Training is a formal and systematic modification of behavior through learning which occurs as result of education, instruction, development, and planned experience (Michael Armstrong, 2000). More costly but effective training can save money that is wasted on cheap but inefficient training (Ginsberg, 1997). Michael Armstrong (2000) asserts that training has acquired a strategic value for hotels since service quality depends on employee customer care effectiveness.

The more training means high performance and vice versa in the Pearl Continental Hotels situated at Karachi. The skill and competency levels of employees are heavily dependent on the amount and type of training they get. According to Ul Afaq, Yusoff, Khan, Azam and Thukiman (2011), the productivity of hotels depends on their overall performance in providing different services to the targeted customers according to their needs. The performance of these hotels is dependent on the skill and competency levels of employees who actually work there. Modern business trends demands more efficiency, accuracy and effectiveness in less time and cost and this can be achieved only through design, development and deployment of excellent training programmes to the employees.

#### **2.5 Empirical Review**

Traditionally, environmental issues have attracted the attention of researchers in various areas of operations management. Nginiatedema and Li (2014) carried out a study on green

operations and organizational performance. This study investigated the influence of green operations on organizational performance for the top 500 publicly traded companies in the US. Based on metrics for environmental impact and green reputation, manufacturing companies scored lower on the environmental impact metric and higher on the green reputation metric than companies in services industries. Additionally, the overall impact of green operations was found to be different between the manufacturing and service firms studied.

Martinez (2013) carried on a study on integrating green into business strategies and operations. He articulated a framework for environmental social responsibility (ESR) which prescribes the integration of environmental concerns in day to day culture, processes and activities of a firm. The study considered ESR integration as a managerial challenge whereby individual agents of management endeavor to balance objective rationale with subjective moral/ ethics in the quest for a considerate environmental response. The study suggested a new direction for theory based on the concept of syncretism. Empirical evidence was obtained from 37 interviews with business consultants and managers in a UK brewery. The findings indicate that systematic pressures are often put forward as constraints to ESR integration, whether this translates into shareholders disapproval, economic instability and market volatility.

Szuchnicki (2009) examined the influence of restaurant green practices on customer return intention. The study examined the correlation between customer return intention and the institution of green practices within a restaurant setting. The findings show that a restaurant that is certified green or implementing measures to become more sustainable has higher customer retention, than those who choose to operate using traditional operational practices.

Irungu and Mungai (2013) conducted an assessment of management commitment to application of green practices in 4 – 5 Star hotels in Mombasa, Kenya. This study sought to establish the current state of green practices in four to five star hotels in Mombasa, Kenya. The results indicated that 88.9 percent of the managers were not satisfied with their current issues while 81.5 percent were focusing on improving the green concepts. The study concluded that hotel managers should embrace regular environmental audits where environmental performance is constantly monitored and recorded. Environmental education and training were also considered valuable in developing awareness, knowledge, positive attitude, skills and participation in green practices.

Kim (2009) conducted an investigation into hotel employees' perception of green practices. The study examined how employees of the hotel industry perceived green practices. Research results revealed that performance levels of green practices implemented by hotels were lower than the importance levels of those same green practices as perceived by hotel employees. This study suggested that hotels need to spend more time and effort in communicating their green practice to employees. Training to improve green practices should be versatile and job-specific with strategies developed to motivate the employees to engage in green practices. The study also proposed hotels should deploy green practices and carefully plan them by training and motivating employees.

Yusof and Jamaludin (2013) conducted a study on best practice of green island resorts. The objective of this study was to find out the best practice and the factors influence the best practice of the resort operators. The research method employed was structured observation, documents analysis and in depth interview. The study found out that green initiatives helped to cut down the running cost and each resorts adopted different best practice that suit their operation and environment.

Ongori, Iravo and Munene (2013) factors affecting performance of hotels and restaurants in Kenya: a case of Kisii County, Kenya. The study aimed at investigating factors responsible for these trend in performance and management practices that can enhance sustainable performances of hotels and restaurants in Kisii County. The target population was all employees, customers and managers of large hotels and restaurants in Kisii County. A sample of five hotels with over twenty rooms and workers was selected using the stratified random sampling technique using such characteristics as location, years of existence and general performance. Assessment of strategic plans, employee skills and knowledge and customer satisfaction levels revealed gaps in strategic management of these organizations. The study found out those factors for successful and sustainable performance of hotels and restaurants relies on top management ability to strategically analyze both external and internal environment and plan for strategic service offerings.

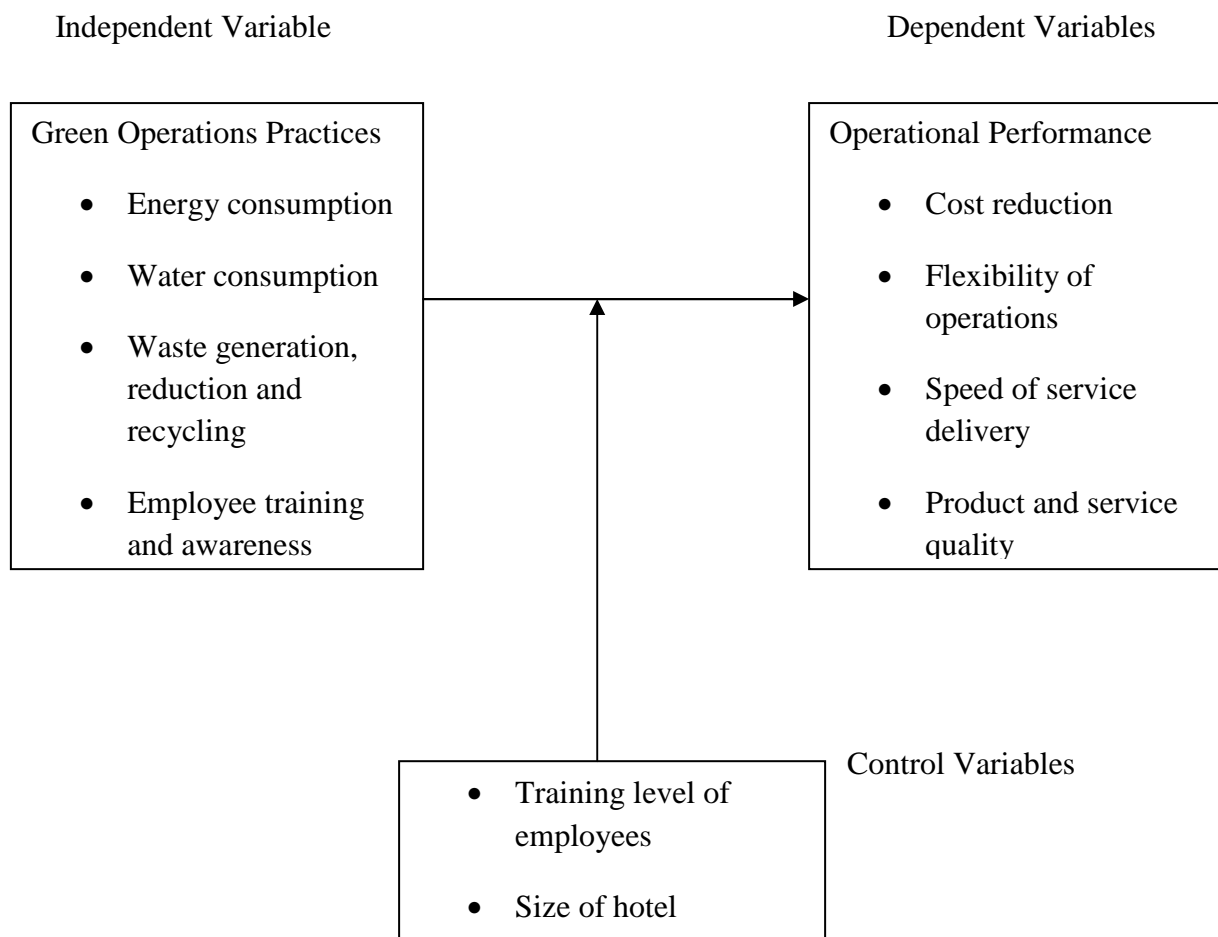
## **2.5 Summary of Literature Review**

The cited studies explain various dimensions of green practices. Nginiatedema and Li (2014) found out that the overall impact of green operations was found to be different between the manufacturing and service firms studied. Martinez (2013) found out that systematic pressure is often put forward as constraints to environmental social responsibility integration. On the effects green practices on performance, Szuchnicki (2009) found out that a restaurant that is certified green or implementing measures to become more sustainable has higher customer retention, than those who choose to operate using traditional operational practices. Irungu and Mungai (2013) concluded that hotel managers should embrace regular environmental audits where environmental performance is constantly monitored and recorded.

In other studies, Musau and Bruce (2003) that there is willingness among tourists to pay a premium for environmentally friendly products and services including accommodation. Kim

(2009) suggested that hotels need to spend more time and effort in communicating their green practice to employees. Operational performance is a unique area in addressing organizational performance. It puts emphasis on indicators such as market share, new product introduction, product quality, and marketing, effectiveness, manufacturing value-added and other measures of technological efficiency within the domain of business performance. This study intends to address the knowledge gap on the effects of green practices on operational performance. The study was guided by the following Conceptual Framework.

**Figure 2.1: Conceptual Framework**





## **CHAPTER THREE: RESEARCH METHODOLOGY**

### **3.1 Introduction**

This chapter presents the research methodology that was applied in conducting the study. It covers the research design, target population, sampling design, and data collection methods and data analysis techniques.

### **3.2 Research Design**

The study involved a descriptive cross-sectional census survey design. A survey design describes people responses to questions about a phenomenon or situation with aim of understanding respondent's perceptions from which truism is constructed (KIM, 2009). A cross-sectional survey collects data to make inferences about a population of interest at one point in time. Mugenda and Mugenda (2003) asserts that the purpose of descriptive survey research is to determine and report the way things are and it helps in establishing the current status of the population under study. This design was the most appropriate since it ensures that the data obtained gives appropriate answers to the research questions.

### **3.3 Target Population**

The population of the study comprised of hotels in the coastal region as at August, 2014. They are 47 in number. The list of this population is shown in appendix IV. Since this is a relatively small population, a survey of all the 47 hotels was undertaken making this a census study.

### **3.4 Data Collection**

This study used primary data. Primary data was collected by the use of a structured questionnaire (Appendix I). The questionnaire was administered using drop-and- pick-later method. The questionnaire had three sections, the first section was about general information of the respondents, the second section dealt with the green operations practices and the last

section was about the operational performance variables. The data collected helped to assess the adoption of green practices in energy consumption, water consumption, waste generation, reduction and recycling and employee training and awareness creation. The respondents were the top managers of the hotels because they are deemed to be well versed with the green practices in the respective departments. One respondent per hotel was considered.

### 3.5 Data Analysis

The data collected was cleaned, validated, and edited for accuracy, uniformity, consistency and completeness. Descriptive statistics was used to determine the extent to which green practices have been adopted. Regression analysis was then be used to test the relationship between green operations practices and operational performance.

The following regression model was used:

$$Y = a + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + b_6X_6 + \varepsilon,$$

**Where:**

Y = Operational performance index (Dependent variable).

a = Constant

$b_1, b_2, b_3$  and  $b_4$  are constants

$X_1$  = energy consumption

$X_2$  = water consumption

$X_3$  = waste generation reduction and recycling

$X_4$  = Employee training and awareness creation

$X_5$  = Size of the hotel (Control variable)

$X_6$  = Training level of employees (Control variable)

$\varepsilon$  = Error term.

The multiple correlation coefficient  $R$  was used to test the strength of the relationship between the independent variables and the dependent variable. The strength of the Model in explaining the relationship between green operations practices and operational performance of the hotels was then tested using  $R^2$ .

### **3.6 Operationalization of Study Variables**

Independent variable consisted of specific green operations practices which were derived from four general categories namely energy management, waste management, water conservation and employee training and awareness creation. The dependent variable was operational performance. Operational performance was measured by the extent of reduced operational cost reduction and harmful environmental impacts. The size of the hotel and nature of employees were the control variables. The size of the hotel was measured by the level of bed capacity while the training level was measured by the level of qualification of employees.

**Table 3.1 Operationalization of the Independent Variables**

<b>independent variables</b>	<b>indicators</b>
1. Energy consumption	<ul style="list-style-type: none"><li>i. The use of alternative and cheap energy e.g. biomas and solar</li><li>ii. Extent of use of daylight to avoid artificial lighting</li><li>iii. The use of clean AC units regularly to prevent bacteria</li><li>iv. Extent of use of energy saving bulbs</li><li>v. Extent of use sensors or timers to save electricity in intermittent areas</li></ul>
2. Water Consumption	<ul style="list-style-type: none"><li>i. Existence of an active system to detect and repair water leakage in toilets and shower heads</li><li>ii. Extent of reclaiming of water for reuse</li><li>iii. Use of landscape with native plants to minimize water consumption</li><li>iv. The extent of rainwater harvesting and desalination of sea water</li></ul>
3. Waste generation, reduction and recycling	<ul style="list-style-type: none"><li>i. Extent of linen reuse option to multiple night guests</li><li>ii. Proper sewage management</li><li>iii. The extent of reuse materials and modified for other purposes</li><li>iv. Recycling of cardboards and papers</li><li>v. The use of reusable utensils rather than disposable ones</li><li>vi. Serving of proper portion of food to reduce food waste</li><li>vii. The extent of adoption of paperless policy including use of electronic software/system</li></ul>

	viii. The extent of use of environmentally preferable cleaning products
4. Employee training and awareness creation	<ul style="list-style-type: none"> <li>i. Whether there is training employees for better environmental performance</li> <li>ii. Existence of visible communications about green practices</li> <li>iii. Participation in environmental partnership or certification</li> <li>iv. Establishment of active recycling program for materials in all sections of the hotel</li> <li>v. Establishment of system for prompt disposal of packaging materials and crates to reduce wastage</li> <li>vi. Utilization of environmentally responsible cleaners throughout the property</li> <li>vii. Provision of environmentally friendly products i.e. low toxicity, organic or locally grown</li> <li>viii. Encouragement of business with environmentally friendly service providers</li> <li>ix. Existence of waste reduction and management strategy</li> <li>x. Existence of reefs conservation program</li> <li>xi. Existence of programmes to help the surrounding community</li> <li>xii. Conducting environmental education and Eco park program</li> <li>xiii. Existence of non-smoking policy for indoor air quality</li> </ul>

**Table 3.2: Operationalization of the Dependent Variables**

<b>Dependent variables</b>	<b>indicators</b>
1. Cost Reduction	<ul style="list-style-type: none"><li>i. Decrease in energy bills</li><li>ii. Decrease in cost of water usage</li><li>iii. Reduced cost of food</li><li>iv. Reduced labour cost</li><li>v. Reduced hotel prices</li></ul>
2. Flexibility of Operations	<ul style="list-style-type: none"><li>i. Variety of services</li><li>ii. Readily available services</li><li>iii. Volume flexibility</li><li>iv. Mix flexibility</li><li>v. Easy reservation of rooms</li></ul>
3. Speed of Service Delivery	<ul style="list-style-type: none"><li>i. High level of regulatory compliance</li><li>ii. Communication via the internet</li><li>iii. Online booking rates</li><li>iv. High service rates</li></ul>
4. Product and Service quality	<ul style="list-style-type: none"><li>i. High brand value</li><li>ii. High customer loyalty</li><li>iii. Increase in the number of customers</li><li>iv. High sales revenue</li></ul>

**Table 3.3: Operationalization of the Control Variables**

Control variables	indicators
1. Size of hotel	Number of employees
2. Training level of employees	Level of education

## CHAPTER FOUR: DATA ANALYSIS AND FINDINGS

### 4.1 Introduction

This chapter contains data analysis and findings from the study. The analysis is focused on the study objectives. The research sought to determine the extent to which green operations practices have been adopted by hotels in the coastal region, Kenya and to establish the relationship between green operations management practices and operational performance of the hotels. The findings are presented as a report of the questions answered by the respondent. Out of the 47 hotels targeted, 40 responded. This formed a response rate of 85%. The response rate was adequate for the study since it is above 50% as recommended by Mugenda (2003).

### 4.2 General information

The respondents were characterized by the years they have been in operations, the number of employees and the level of training of employees.

#### 4.2.1 Years of Operation of Hotel

**Table 4.1: Years of Operation of Hotel**

	Frequency	Percent	Valid Percent	Cumulative Percent
1-9years	9	22.5	22.5	22.5
10-19years	5	12.5	12.5	35.0
20-29years	16	40.0	40.0	75.0
30-39years	10	25.0	25.0	100.0
Total	40	100.0	100.0	

Source: Research data



The respondents were asked to indicate the number of years they have been in business. Majority of the respondents representing 40% responded that they have been in business for 20-29 years consequently another 25% also indicated that they have been in business for 30-39 years. 22.5% of the respondents said they have been in business for 1-9 years, also 12.5% of the respondents said they have been in business for 10-19 years. From the results it can be inferred that majority of the respondents have the necessary experience hence they could give objective responses.

#### **4.2.2 Size of the Hotel**

**Table 4.2: Number of Employees**

	Frequency	Percent	Valid Percent	Cumulative Percent
1-20	1	2.5	2.5	2.5
21-30	4	10.0	10.0	12.5
31-40	12	30.0	30.0	42.5
41-50	2	5.0	5.0	47.5
above 51	21	52.5	52.5	100.0
Total	40	100.0	100.0	

Source: Research data

The respondents were asked to indicate the number of employees that worked in their hotels. By the results shown in table 4.2 above, majority of the respondents representing 52.5% said the number of employees is above 51. 30% said they have between 31-40 employees, while the least representing a 2.5% said that they have between 1-20 employees.

### 4.2.3 Level of Training of Employees

**Table 4.3: Level of Training of Employees**

	Frequency	Percent	Valid Percent	Cumulative Percent
Diploma in hotel management	5	12.5	12.5	12.5
Degree in hotel management	23	57.5	57.5	70.0
Masters degree in hotel management	11	27.5	27.5	97.5
Doctorate degree in hotel management	1	2.5	2.5	100.0
Total	40	100.0	100.0	

Source: Research data

The respondents were asked to indicate the level of training of their employees. From table 4.3 it can be seen that majority of the respondents representing 57.5% said their employees had a degree in hotel management, 27.5% indicated that their employees had a masters degree in hotel management, 12.5% of the respondents indicated that their employees had a diploma in hotel management and the least was 2.5% which indicated that their employees have a doctorate in hotel management. From these results it can be inferred that the bulk of respondents had training in hotel management and therefore were in apposition to give the required information.

### 4.3 Extent of Adoption of Green Operations Practices by Hotels

The researcher sought to investigate the extent to which the hotels have adopted green practices. The respondents were asked to indicate the extent to which the green practices are important to the hotels. The green operations practices are adopted in the activities relating to energy consumption, water consumption, waste generation, reduction and recycling and employee training and awareness creation. The following subsections discuss the results; a

likert scale was used where 1= unimportant, 2= less important, 3= moderately important, 4=very important and 5= extremely important.

### 4.3.1 Energy Consumption

The researcher sought to find out the extent to which energy consumption activities are important to hotels.

**Table 4.4: Descriptive Statistics of Energy Consumption**

	N	Mean	Std. Deviation	Rank
Collect used oil during oil change operations for later use	40	2.20	.939	11
Use biomas energy	40	2.65	1.027	10
Clean AC units regularly to prevent bacteria	40	4.45	.959	1
Use high energy efficient lighting through the property	40	3.27	.806	8
Use energy saving bulbs	40	4.35	.864	2
Use of solar energy	40	3.55	1.061	6
Make use of daylight to avoid artificial lighting	40	4.28	.905	3
Use of energy star rated equipment e.g. refrigerator and copiers	40	4.00	.784	4
Set temperature appropriately in the back of the house	40	4.00	.961	4
Use sensors or timers to save electricity in intermittent areas	40	3.48	1.261	7
Wetland purification system	40	2.85	1.231	9
Valid N (listwise)	40	3.553		

Source: Research data

From the table 4.3, the most commonly practiced energy consumption practices are clean AC units regularly with a mean of 4.45 followed by the use of energy saving bulbs and the use of solar energy both with a mean 4.35. The next most practiced energy consumption was use of daylight to avoid artificial lighting which had a mean of 4.28. This is followed by the use of

energy star equipment which had a mean of 4.00. The least practice is collecting used oil change operations for later use; this had a mean of 2.20.

#### 4.3.2 Water Consumption

The researcher sought to find out the extent to which water consumption activities are important to hotels.

**Table 4.5: Descriptive Statistics of Water Consumption**

	N	Mean	Std. Deviation	Rank
Have an active system to detect and repair water leakage in toilets and shower heads	40	4.20	.966	1
Reclaim water for reuse	40	2.85	1.252	5
Landscape with native plants to minimize water consumption	40	3.38	1.030	2
Extensive use of rainwater	40	3.17	1.083	4
Rainwater harvesting and desalination of sea water	40	3.22	1.121	3
Valid N (listwise)	40	3.364		

Source: Research data

In the table 4.4 the most commonly practiced green application in water use is maintenance of an active system to detect and repair water leakage in toilets and shower heads with a mean of 4.20. This was followed by landscape with native plants to minimize water consumption which had a mean of 3.38. This was followed by harvesting of rain water and desalination of sea water which had a mean of 3.22. The least practice is reclaiming of water for reuse which had a mean of 2.85. It can therefore be inferred that Green practices in water consumption were applied on a moderate scale by the hotels studied.

### 4.3.3 Waste Generation, Reduction and Recycling

The researcher sought to find out the extent to which waste generation, reduction and recycling activities are important to hotels.

**Table 4.6: Descriptive Statistics of Waste Generation Reduction and Recycling**

	N	Mean	Std. Deviation	Rank
Offer a linen reuse option to multiple night guests	40	3.32	1.309	8
Proper sewage management	40	4.15	.864	2
Reuse materials and modified for other purposes	40	3.50	.934	7
Recycling of cardboards and papers	40	3.45	1.085	6
Using reusable utensils rather than disposable ones	40	3.82	1.174	4
Purchasing/using post-consumer recyclable products	40	3.70	.883	5
Serves proper portion of food to reduce food waste	40	4.20	.853	1
Using environmentally preferable cleaning products	40	4.07	.944	3
Valid N (listwise)	40	3.776		

Source: Research data

From the table 4.6 above, the hotels practice a strong application of serving of proper food portion to reduce wastage as shown by the mean of 4.20. This is followed by a moderate application of proper sewage management which had a mean of 4.15, then the use of environmentally preferable cleaning materials with a mean of 4.07; this was followed by the use of reusable utensils with a mean of 3.82. The least practiced application is offer a linen reuse option to night guests which had a mean of 3.32.

### 4.3.4 Employee Training and Awareness Creation

The researcher sought to find out the extent to which employee training and awareness creation activities are important to hotels.

**Table 4.7: Descriptive Statistics of Employee Training and Awareness Creation**

	N	Mean	Std. Deviation	Rank
Train employees for better environmental performance	40	3.90	.955	5
Have visible communications about green practices	40	3.85	.893	8
Participate in environmental partnership or certification	40	3.90	.982	5
Establish system for prompt disposal of packaging materials and crates to reduce wastage	40	4.07	.917	4
Utilize environmentally responsible cleaners throughout the property	40	4.20	.791	2
Provide environmentally friendly products	40	4.10	.709	3
Encourage business with environmentally friendly service providers	40	3.72	.905	11
Waste reduction and management strategy	40	3.38	1.213	12
Reefs conservation program	40	3.48	1.261	10
Helping the surrounding community	40	3.90	.955	5
Conduct environmental education and Eco park program	40	3.57	1.130	10
Non-smoking policy for indoor air quality	40	4.37	.868	1
Valid N (listwise)	40	3.87		

Source: Research data

From the table 4.7, the mostly applied practice is the non- smoking policy for indoor air quality with a mean of 4.37, followed by utilize environmentally responsible cleaners throughout the property having a mean of 4.20; followed by providing environmentally friendly products which had a mean of 4.10. The least practiced application is the waste reduction and management strategy with a mean of 3.38.

#### 4.3.5 Overall Adoption of Green Operations Practices

The researcher summarized the various green operations practices and ranked them in order to find out which was mostly important to hotels.

**Table 4.8: Overall Adoption of Green Operations Practices**

	N	Mean	Std. Deviation	Rank
Energy consumption	40	3.597	.538	1
Water consumption	40	3.365	.671	4
Waste generation Reduction and recycling	40	3.778	.410	3
Employee training and Awareness	40	3.870	.496	2
Valid N (listwise)	40	3.652		

Source: Research data

From table 4.8 above, the green operations practices were analyzed to find out which practices are important to the hotels. From the results, energy consumption which had a mean of 3.5977 was viewed by the respondents as the most important practice. This was followed by employee training and awareness which had a mean of 3.8708 then waste generations, reduction and recycling which had a mean of 3.7781. The least implemented green operations practice was water consumption which had a mean of 3.365.

#### 4.4 Relationship between Green Operation Practices and Operational Performance

In this section regression analysis was done to determine if there is a relationship between green operations practices and operational performance.

**Table 4.9: Average Responses of Each Aspect of Green Operations Practices and Corresponding Operational Performance**

RESPONDENT	X1	X2	X3	X4	X5	X6	Y0
1.	4.09	4.4	3.63	4.08	3	2	3.53
2.	3	3.2	3.5	3.5	5	4	3.01
3.	4.09	4.6	4	4.5	4	4	3.78
4.	3.91	3	3.75	4.17	5	3	3.44
5.	4.09	4.2	4.5	4	5	3	3.73
6.	4.27	4.6	4.25	4.67	5	4	4.03
7.	4	4	4.38	3.83	5	3	3.66
8.	3.82	3.4	3.75	3.92	5	5	3.49
9.	3.27	3.4	3.88	3.5	5	4	3.24
10.	3.91	3.4	4	3.75	5	3	2.99
11.	4	3.2	3.63	4.08	5	3	3.2
12.	4.55	4	4.13	4.33	3	2	3.4
13.	3.45	2.6	3.63	4	2	3	3.91
14.	3.36	3.4	3.75	4	3	3	3.19
15.	3.73	1.6	3.38	3.5	3	3	2.91
16.	4.09	3.6	4.25	3.92	4	4	3.54
17.	3.18	2.4	4	3.5	5	3	3.23
18.	3.82	3	3.25	3	5	2	4.63
19.	4.18	3.4	4.38	4.17	3	3	3.65
20.	4.27	3.6	3.38	4.58	3	3	3.78
21.	3	3.2	2.75	3.25	5	4	3.31
22.	3.36	2.4	3.75	2.75	5	3	2.59
23.	3.27	4.2	3.63	3.92	1	2	3.18
24.	4	3	3.75	4.83	5	4	3.76
25.	3.73	4.4	4.38	4.17	5	4	3.65
26.	4.18	4	4.75	4.58	5	4	4.85
27.	3.45	3	4	4	3	2	3.35
28.	4.09	4.2	3.75	3.83	3	3	4.09
29.	2.73	3	3.25	3.08	5	3	2.89
30.	2.73	3	3.38	3.42	3	3	2.81
31.	3.45	3	3.5	3.5	3	3	3.11
32.	3.27	3	3.38	3.33	3	3	3.21
33.	3.91	4.2	3.63	3.67	3	3	3
34.	3	2.6	3.25	4	5	3	3.05
35.	3	2.8	3.38	3.5	5	3	3.06
36.	3.27	3.2	4.25	3	2	3	3.14
37.	3.36	3.4	3.63	4	5	4	3.46
38.	3.73	2.8	3.88	4.5	2	3	3.2
39.	3.36	3.4	3.63	4	5	4	3.46
40.	1.91	2.8	3.88	4.5	5	5	3.2

Source: Research data



**Where;**

**Y**= Operational Performance

**X1**= Energy Consumption

**X2**=Water Consumption

**X3**=Waste Generation, Reduction and Recycling

**X4**=Employee Training and Awareness Creation

**X5**=Size of Hotel

**X6**= Training Level of Employees

Table 4.9 shows the mean of the independent variables and the dependent variables. This data was used to perform regression analysis as shown below.

**Table 4.10: Regression Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.630 <sup>a</sup>	.397	.287	.38653232	.397	3.617	6	33	.007

Source: Research Data

From table 4.10, adjusted  $R^2$  is 0.287 which means that there was 28.7% positive variation in operational performance index due to changes in independent variables and control variables, and 71.3% is variation of the dependent variable due to other factors not in the model. The correlation coefficient tells us the strength of the relationship between the variables. The study found that the correlation coefficient was 0.630 thus there was a strong positive correlation between the green operations practices and operational performance.

It can also be observed from table 4.10, that the coefficient of correlation is 0.63 meaning that there is a positive relationship between independent and the dependent variable. This was subjected to a test of significance as follows:

$H_0: r = 0$  (the coefficient of correlation is not significant)

$H_1: r \neq 0$  (the of coefficient correlation is significant)

It is a one tail test at 5% level of significance  $df = n - 2 = 40 - 2 = 38$ , the decision rule would therefore be to reject  $H_0$  if computed t is greater than 1.686

Computed  $t = r\sqrt{n-2}/\sqrt{1-r^2} = 0.63\sqrt{40-2}/\sqrt{1-0.63^2} = 5.00$

Decision: Since computed t (5.00) is greater than critical t, the null hypothesis is rejected implying that the coefficient of correlation is significant.

**Table 4.11: Analysis of Variance**

	Sum of Squares	df	Mean Square	F	Sig.
Regression	3.243	6	.540	3.617	.007 <sup>a</sup>
Residual	4.930	33	.149		
Total	8.173	39			

Source: Research Data

From ANOVA table the significant value for the model was 0.007 which means that the model was statistically significant since it is lower than 0.05.

**Table 4.12: Regression Coefficients**

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
(Constant)	.739	.682		1.083	.287	-.649	2.126
Energy consumption (x1)	.313	.159	.368	1.968	.058	-.011	.637
Water consumption (x2)	.110	.115	.161	.957	.345	-.124	.343
Waste generation reduction and recycling (x3)	.048	.185	.043	.258	.798	-.328	.423
Employee training and awareness (x4)	.185	.159	.201	1.162	.253	-.139	.509
Size of hotel (x5)	.056	.063	.145	.891	.379	-.072	.183
Training level of employees (x6)	.019	.113	.031	.169	.867	-.210	.248

Source: Research data

From the table 4.12 the following regression equation was established:

$$Y = 0.739 + 0.313X_1 + 0.110X_2 + 0.048X_3 + 0.185X_4 + 0.056X_5 + 0.019X_6$$

From the equation the study found that holding training level of employees, water consumption, waste generation reduction and recycling, size of hotel, employee training and awareness, energy consumption, operational performance index (dependent) would be 0.739.

A factor increase in energy consumption would lead to an increase in operational performance by factor of 0.313, a unit increase in water consumption would lead to an

increase in operational performance by 0.110, an increase in a unit of waste generation, reduction and recycling by a factor of one would lead to an increase of 0.48 in the firm's operational performance, a unit increase in employee training and awareness would lead to an increase in operational performance by 0.185, a unit increase in size of hotel would lead to a 0.056 increase in operational performance and lastly, a unit increase of training level of employees would lead to 0.19 increase in operational performance. This information shows that there's a positive relationship between, training level of employees, water consumption, waste generation reduction and recycling, size of hotel, employee training and awareness, energy consumption and operational performance.

From table 4.13, it can be observed that the nature of the positive significant relationships between the operational performance and energy consumption, water consumption, waste generation, reduction and recycling and employee training and awareness. The study found that operational performance index was positively significant related to energy consumption with a correlation coefficient of 0.537. The correlation analysis also revealed that operational performance index was positively significant related to water consumption having a correlation coefficient of 0.451. The study also revealed that operational performance was positively significantly related to waste generation, reduction and recycling with a correlation coefficient of 0.383. The study also revealed operational performance index is positively significant related with employee training and awareness with a positive correlation coefficient of 0.451. Operational performance index was found to be positively related to Size of hotel and Training level of employees but insignificant with correlation coefficients of 0.115 and 0.092 respectively.

**Table 4.13: Significance of Correlation between Individual Variables**

		Operational performance index	Energy consumption	Water consumption	Waste generation reduction and recycling	Employee training and awareness	Size of hotel	Training level of employees
Operational performance index	Pearson Correlation	1.000	.537**	.451**	.383*	.451**	.115	.092
	Sig. (2-tailed)		.000	.004	.015	.004	.478	.573
Energy consumption	Pearson Correlation	.537**	1.000	.517**	.464**	.434**	-.101	-.214
	Sig. (2-tailed)	.000		.001	.003	.005	.537	.184
Water consumption	Pearson Correlation	.451**	.517**	1.000	.459**	.416**	-.037	.049
	Sig. (2-tailed)	.004	.001		.003	.008	.818	.765
Waste generation reduction and recycling	Pearson Correlation	.383*	.464**	.459**	1.000	.423**	.045	.134
	Sig. (2-tailed)	.015	.003	.003		.007	.785	.410
Employee training and awareness	Pearson Correlation	.451**	.434**	.416**	.423**	1.000	-.020	.258
	Sig. (2-tailed)	.004	.005	.008	.007		.904	.108
Size of hotel	Pearson Correlation	.115	-.101	-.037	.045	-.020	1.000	.516**
	Sig. (2-tailed)	.478	.537	.818	.785	.904		.001
Training level of employees	Pearson Correlation	.092	-.214	.049	.134	.258	.516**	1.000
	Sig. (2-tailed)	.573	.184	.765	.410	.108	.001	

Source: Research Data

## **CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS**

### **5.1 Introduction**

This chapter summarizes the research findings and also presents conclusions and recommendations of the study. The conclusions are drawn from the findings of the study which sought to find out the extent to which hotels view green operational practices to be important, and the effect of green operations practices on operational performance.

### **5.2 Summary of Findings**

The objectives of the study were to establish the extent to which hotels view green operational practices to be important, and the effect of green operations practices on operational performance. The target respondents were heads of operations departments, general managers, logistics managers, distribution managers and their supervisors. Most of them have been in business for over 10years. Most of the respondents had an annual turnover of over kshs. 2million.

#### **5.2.1 The Extent to which Green Operations Practices are Important to Hotels**

The research outcome provides an insight on the extent to which green operations practices are important to hotels. Energy consumption, water consumption, waste generation, reduction and recycling, and last but not least employee training and awareness were the green operations practices under research in this section and the respondents agreed that the practices are indeed important to the hotels. Energy consumption was viewed by the respondents as the most important practice. This was followed by employee training and awareness, then waste generations, reduction and recycling. The least implemented green operations practice was water consumption.

The results agree with Muzambi, Nelson and Zengeni, (2013) specific green practices that the hotels can employ include collection of used oil during oil change operations for later use, use of biomass energy, use of high energy efficient lighting through the property, use of energy saving bulbs, use of solar energy and use of sensors or timers to save electricity in intermittent areas.

### **5.2.2 The Effect of Green Operations Practices on Operational Performance**

The study results shows that the coefficient of correlation is 0.63 meaning that there is a positive relationship between independent and dependent variables. This shows a positive relationship between the green operations practices and operational performance. The following regression equation was established:

$$Y = 0.739 + 0.313X_1 + 0.110X_2 + 0.48X_3 + 0.185X_4 + 0.056X_5 + 0.019X_6$$

From the above equation the study found that water consumption, employee training and awareness and size of the hotel have a positive influence on operational performance but are not significant as given by 0.48, 0.185 and 0.056 level of significance. Waste generation, reduction and recycling and training level of employees however has positive and significant effect on operational performance given by the level of significance 0.110 and 0.019 respectively. Energy consumption also has a positive effect with a slight significance at 0.313.

### **5.3 Conclusions**

From the findings the study there is a strong positive correlation between green operations practices and operational performance; Hotels view the green operations practices as very important hence adoption of green operations practices by hotels have a positive effect on operational performance.

The results agree with Muzambi, Nelson and Zengeni, (2013) specific green practices that the hotels can employ include collection of used oil during oil change operations for later use, use of biomass energy, use of high energy efficient lighting through the property, use of energy saving bulbs, use of solar energy and use of sensors or timers to save electricity in intermittent areas.

#### **5.4 Recommendations**

From the findings of the study, the researcher recommends that the hotels should adopt green practices in energy consumption, water consumption, waste management and awareness creation among employees. The hotels should adopt energy and water conservation programs which are cheaper to implement. These practices include water harvesting during the rainy season and encouraging switching off electrical gadgets which will not be in use. It also includes the use of solar energy for heating and cooling systems. Policies and guided frameworks on using fewer resources are also recommended to the hotels. The current state in the country at the moment is that there is no adequate documented framework but the hotels can formulate their own greening policies at organizational level. A framework will give the employees a guideline of the practices and how the practices can reduce the operating costs they incur in their department.

Employee awareness is also an important drive in establishing the relationship of green tourism and operating costs. It would be recommended that green practices and their implications on the costs should be frequently communicated to the employee. By frequently communicating this information to the employees, it encourages more participation and hence in the same way increases their awareness levels. In doing so they should also highlight the benefits of the practices not in the sense of costs but specifically to the employees. This serves as a motivator to the employees to participate actively in the green movement. Hotels



on another note should do their best to facilitate employees' participation in green practices. If this is done the employees will not feel disadvantaged or inconvenienced in doing some of the practices such as using stair cases. The hotels can facilitate this by positioning offices or storerooms at convenient positions that would not strain the employees. Training should also be based on needs and interest of departments individually. Hence green goals can be made department specific focusing on their interests and needs. This gives the employees opportunities to give their contributions and ideas and at the same time encourage participation. The use of modern waste management techniques can also be utilized in these hotels which include re-cycling, re-use and transformation.

Hotel managers should also embrace regular environmental audits where environmental performance is constantly monitored and recorded. This can be achieved by developing organizational systems and control to facilitate environmental reporting. Targets for each department should be set and results continuously monitored. The hotel management should create environmental awareness through developing a team in charge of environmental management/training as well as having a written environmental policy which is regularly reviewed and updated. This is likely to address the gap between management commitment and green practices application. The environmental policy as well should address neglected areas such as control of harmful emissions. Hotel management should promote partnerships with external stakeholders such as supporting local communities in environmental activities, cooperating with NGOs training customers in environmental management as well as teaming up with local government and recycling firms to promote waste sorting and recycling.

### **5.5 Limitations of the study**

Firstly, the study was limited in scope by the fact that it only covered hotels in the coastal region. The study would give a better picture for policy reasons if it reflected the whole

country. Secondly, the researcher faced some resistance from some of the respondents as they feared that the information they gave would be used by competitors to fight them business wise. This was however resolved through the issuance of the introduction letter and explanation that the information would be confidential. Thirdly, the researcher also faced challenges in terms of resources such as finances for commuting to the different hotels and time in the sense that, a lot of time was needed for going to the hotels, meeting with managers, convincing them to fill the questionnaires and finally going back to pick them.

### **5.6 Suggestions for Future Research**

The study only covered hotels in the coastal region, there is need to conduct a research on all hotels in Kenya. Further research would be appropriate better formulate the relationship of green practices and employee involvement and perception including motivational tools to enhance participation and strategies for the design of ongoing green training and communication. Clearly, research remains to be conducted in the area of green practices and employees issues in the hotel industry. Green practices is a customer-oriented approach, a study would be conducted to establish its significance in the other industries apart from the hotel industry. Also a study looking at the other factors affecting operational performance could be conducted. Finally a similar research should be carried to investigate bed capacity as a control variable.

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## **APPENDICES**

### **Appendix I: Letter Of Introduction**

UNIVERSITY OF NAIROBI,  
SCHOOL OF BUSINESS,  
P.O BOX 30197 NAIROBI

Dear Sir/Madam,

### **RE: RELATIONSHIP BETWEEN GREEN OPERATIONS PRACTICES AND OPERATIONAL PERFORMANCE OF HOTELS IN KENYA**

The above subject matter refers.

I am a Postgraduate student undertaking a Master of Business Administration (MBA) degree at the University of Nairobi. I am currently undertaking a research on the title outlined above. Your organization has been chosen to be used for this research. I would therefore like to request for your assistance in completing the questionnaire attached to enable me complete the research. The information you provide will be treated with strict confidence and will only be used for academic purposes (this research).

Your cooperation in completing the questionnaire will be highly appreciated.

Yours faithfully,

**Erick Karimi**

MBA Student.



## Appendix II: Questionnaire

### PART A: BIODATA OF HOTEL

1. Name of the Hotel \_\_\_\_\_
2. Years of operation
  - i. 1-9years
  - ii. 10-19years
  - iii. 20-29years
  - iv. 30-39years
3. Number of employees (size of hotel)
  - i. 1-20
  - ii. 21-30
  - iii. 31-40
  - iv. 41-50
  - v. above 51
4. training level of employees
  - i. Certificate in hotel management
  - ii. Diploma in hotel management
  - iii. Degree in hotel management
  - iv. Masters degree in hotel management
  - v. Doctorate degree in hotel management

### PART B: HOW IMPORTANT IS EACH ATTRIBUTE TO THE HOTEL

The following is a list of green practices. Please indicate your level of agreement to each of the following items regarding the importance level of green practices to your hotel using the scale of 1-5 where 1= Unimportant; 2 = Less Important; 3 = Moderately important; 4 = Very Important & 5 = Extremely important	How important is it?				
	Unimportant	Less important	Moderately important	Very important	Extremely important
	1	2	3	4	5
<b>Energy Consumption</b>					
Collect used oil during oil change operations for later use					
Use biomass energy					
Clean AC units regularly to prevent bacteria					

Use high energy efficient lighting through the property					
Use energy saving bulbs					
Use of solar energy					
Make use of daylight to avoid artificial lighting					
Use of energy star rated equipment e.g. refrigerator and copiers					
Set temperature appropriately in the back of the house					
Use sensors or timers to save electricity in intermittent areas					
Wetland purification system					
<b>Water Consumption</b>					
Have an active system to detect and repair water leakage in toilets and shower heads					
Reclaim water for reuse					
Landscape with native plants to minimize water consumption					
Extensive use of rainwater					
Rainwater harvesting and desalination of sea water					
<b>Waste generation, Reduction and Recycling</b>					
Offer a linen reuse option to multiple night guests					
Proper sewage management					
Reuse materials and modified for other purposes					
Recycling of cardboards and papers					
Using reusable utensils rather than disposable ones					
Purchasing/using post consumer recyclable products					
Serves proper portion of food to reduce food waste					
Using environmentally preferable cleaning products					
<b>Employee Training and Awareness creation</b>					
Train employees for better environmental performance					
Have visible communications about green practices					
Participate in environmental partnership or certification					
Provide environmentally friendly products					
Encourage business with environmentally friendly service providers					
Reefs conservation program					
Conduct environmental education and Eco park program					
Non-smoking policy for indoor air quality					

## SECTION C. OPERATIONAL PERFORMANCE

Indicate the extent to which the following operational outcomes have been enhanced as a result of implementing green operations practices.  1= Not at all; 2 = Small extent; 3 = Moderate extent; 4 = Great extent; 5 = Very great extent	What is the extent				
	Not at all	Small extent	Moderate extent	Great extent	Very great extent
	1	2	3	4	5
<b>Cost</b>					
Decrease in energy bills					
Decrease in water bills					
Reduced cost of food					
Reduced labour cost					
Reduced hotel prices					
<b>Flexibility</b>					
Variety of services					
Readily available services					
Volume flexibility					
Mix flexibility					
Easy reservation of rooms					
<b>Product and Service Quality</b>					
Strong brand value					
High customer loyalty					
Increase in the number of customers					
High sales revenue					
<b>Speed of Service Delivery</b>					
Online booking rates					
Improved communication					
High service rates					
High regulatory compliance					

THANK YOU VERY MUCH

### **Appendix III:Hotels In Coastal Region**

1. Prideinn Hotel Mombasa
2. Voyager Beach Resort
3. Sarova Whitesands Beach Resort & Spa
4. Severin Sea Lodge
5. Kenya Bay Beach Hotel
6. PrideInn Hotel Nyali
7. Travellers Beach Hotel & Club
8. The Funzi Keys
9. BEST WESTERN PLUS Creekside Hote
10. Neptune Beach Resort
11. Emerald Flamingo Beach Resort & Spa
12. Bamburi Beach Hotel
13. Kahama Hotel
14. Makwetu Resort
15. Bahari Beach Hotel
16. Midview Central Hotel
17. Reef Hotel
18. The Plaza Beach Hotel
19. Hotel Radiance
20. Indiana Beach Apartment Hotel
21. Bliss Resort
22. Nyali International Beach Hotel
23. Hillpark Hotel - Tiwi Beach
24. Nyali Beach Holiday Resort
25. Northcoast Beach Hotel
26. Bamburi Beach Resort
27. Castle Royal Hotel
28. Pavilion Holiday Resort
29. Mombasa Beach Hotel
30. New Palm Tree Hotel
31. Pa Pweza Adamsville Beach Suites
32. Jambo Village Hotel
33. Jundan Hotel
34. Milele Beach Hotel
35. Royal Court Hotel
36. Vasco da Gama
37. Lotus Hotel
38. Ogali's K-Coast Hotel
39. Alliance Safari Beach Hotel
40. Manson Hotel
41. Sai Rock Beach Hotel
42. Hotel Sapphire Limited
43. Sai Rose Hotel
44. Sentrim Royal Castle Hotel
45. Sheba Resort & Lodges
46. Panaroma Gardens Hotel
47. Silver Star Beach Hotel

## Appendix IV: Letter Of Introduction And Proposal Correction Form



**UNIVERSITY OF NAIROBI  
MOMBASA CAMPUS**

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Telephone: 020-8095398 Telegrams: "Varsity", Nairobi Telex: 22095 Varsities	Tel: 020 8095398 Mombasa, Kenya
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**DATE: 18<sup>th</sup> SEPTEMBER, 2014**

**TO WHOM IT MAY CONCERN**

The bearer of this letter, **Karimi Eric** of Registration Number **D61/64053/2011** is a Master of Business Administration (MBA) student of the University of Nairobi, Mombasa Campus.

She is required to submit as part of her coursework assessment a research project report. We would like the student to do her project on ***Relationship between Green Operations Practices and Operational Performance of Hotels in the coastal Region***. We would, therefore, appreciate if you assist her by allowing her to collect data within your organization for the research.

The results of the report will be used solely for academic purposes and a copy of the same will be availed to the interviewed organization on request.

Thank you.

  
**Joseph Aranga**  
Assistant Coordinator, School of Business-Mombasa Campus





**UNIVERSITY OF NAIROBI  
SCHOOL OF BUSINESS**

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**PROPOSAL CORRECTION FORM**

Student Name Karimi Eric

Registration Number DS/64053/2011

Department Management Science

Specialization Operations Management

Title of Project Proposal Relationship between Green Operations  
Practices and Operational Performance of Hotels in the  
Coastal Region

The student has done all the corrections as suggested during the Proposal Presentation and can now proceed to collect data.

Name of Supervisor Odeck S. O. Signature *[Signature]* Date 18/9/2014

