

**ASSESSMENT OF BENEFITS AND RISKS OF
OUTSOURCING ENVIRONMENTAL, HEALTH AND
SAFETY MANAGEMENT SERVICES BY
ORGANIZATIONS IN NAIROBI, KENYA**

JAMES THIAINE

A MASTER OF SCIENCE

(Occupational Safety and Health)

**JOMO KENYATTA UNIVERSITY OF
AGRICULTURE AND TECHNOLOGY**

2016

**Assessment of benefits and risks of outsourcing environmental,
health and safety management services by organizations in
Nairobi, Kenya**

James Thiaine

**A thesis submitted in partial fulfillment for the degree of Master
of Science in Occupational Safety and Health of the Jomo
Kenyatta University of Agriculture and Technology**

2016

DECLARATION

This thesis is my original work and has not been presented for a degree in any other University.

Signature:.....Date:.....

James Thiaine

This thesis has been submitted for examination with our approval as University supervisors.

Signature:.....Date:.....

Professor RobertKinyua

JKUAT, Kenya

Signature:.....Date:.....

Pius W. Makhonge

JKUAT, Kenya

DEDICATION

This thesis is dedicated to my family for the support provided during my studies at the Jomo Kenyatta University of Agriculture and Technology.

ACKNOWLEDGEMENT

I acknowledge the support provided by various persons who assisted in making this research successful. I am very thankful to Professor Robert Kinyua and Mr. Pius W. Makhonge, my project supervisors, for their guidance and support throughout the research process. I am also greatly indebted to Mr. Charles Mburu, my corrections supervisor, for the assistance provided in preparing the final version of this thesis.

My gratitude also goes to Dan and John for assistance in data analysis, and to Irene Karanja and Stanley Mbatha of the Directorate of Occupational Safety and Health Services, Ministry of Labour, Social Security and Services for providing me with data on registered workplaces in Nairobi. I am also thankful to the respondents from various organizations in Nairobi who participated in this research.

Finally, I am grateful to the members of staff at the Institute of Energy and Environmental Technology of the Jomo Kenyatta University of Agriculture and Technology for the support accorded during my research process.

TABLE OF CONTENTS

DECLARATION	iv
DEDICATION	v
ACKNOWLEDGEMENT	vi
TABLE OF CONTENTS	vii
LIST OF TABLES	x
LIST OF FIGURES	xi
LIST OF APPENDICES	xii
ABBREVIATIONS AND ACRONYMS	xiii
ABSTRACT	xiv
CHAPTER ONE	1
INTRODUCTION	1
1.1 Background to the Study.....	1
1.2 Statement of the Problem.....	2
1.3 Justification of the Study.....	2
1.4 Hypothesis.....	3
1.5 Objectives.....	3
1.5.1 Main Objective	3
1.5.2 Specific Objectives	4
1.6 Scope of the Study	4
1.7 Study Limitations	4
1.8 Conceptual Framework.....	4
CHAPTER TWO	7
LITERATURE REVIEW	7
2.1 Introduction	7
2.2 Theoretical Principles	7
2.3 Previous Works Related to the Study	8
2.4 Critique of Literature Review	12

CHAPTER THREE.....	14
MATERIALS AND METHODS.....	14
3.1 Introduction	14
3.2 Study Design	14
3.3 Study Area.....	14
3.4 Study Population.....	16
3.5 Sampling Method.....	16
3.6 Sample Size Determination	17
3.7 Research Instruments	19
3.9 Data Processing and Analysis	19
3.10 Data Validation.....	19
CHAPTER FOUR	21
RESULTS AND DISCUSSIONS	21
4.1 Introduction	21
4.2 Biodata	21
4.2.1 Response Rate.....	21
4.2.2 Response by Industry	22
4.2.3 Response by Departments	23
4.2.4 Level of Respondents in Organisations.....	23
4.2.5 RESPONSE BY GENDER	24
4.3 Findings Based on Research Objectives	25
4.3.1 Reasons for Outsourcing EHS Management	25
4.3.2 Benefits of Outsourcing EHS Management	27
4.3.3 Risks of Outsourcing EHS Management.....	28
4.3.4 Comparison between Benefits and Risks	31
4.3.5 Hypothesis Testing.....	33
4.3.6 Establishing the Model for Risk/Benefit Analysis.....	35
CHAPTER FIVE	40
CONCLUSION AND RECOMMENDATIONS	40
5.1 Conclusion.....	40

5.2 Recommendations	41
5.2.1 Further Research	41
REFERENCES	42
APPENDICES	46

LIST OF TABLES

Table 3.1: Sample Size Distribution	18
Table 4.1: Response Rate	21
Table 4.2: Indicators for Risks and Benefits.....	32
Table 4.3: Model Summary	34
Table 4.4: ANOVA Tabulations for Determination of Significance	35
Table 4.5: Coefficients for Regression Model for Benefits.....	36
Table 4.6: Coefficients for Regression Model for Risks	37

LIST OF FIGURES

Figure 1.1. Conceptual framework	6
Figure 3.1. Map of Kenya showing location of Nairobi City County	15
Figure 3.2. Map of Nairobi City County	16
Figure 4.1. Response by industry	22
Figure 4.2. Response by departments	23
Figure 4.3. Level in organisation	24
Figure 4.4. Respondents by gender	25
Figure 4.5. Reasons for outsourcing EHS management	26
Figure 4.6. Benefits of outsourcing EHS management	27
Figure 4.7. Risks of outsourcing EHS management services	29
Figure 4.8. Graphic representation of regression coefficients	38

LIST OF APPENDICES

Appendix 1: List of organisations represented in the research.....	46
Appendix2: Research Questionnaire.....	49
Appendix3: Interview Schedule	61
Appendix 4: Letter of introduction for data collection	65

ABBREVIATIONS AND ACRONYMS

AMOS	Analysis of Moment Structures
DOSHS	Directorate of Occupational Safety and Health Services
EHS	Environment, Health and Safety
EIA	Environmental Impact Assessment
EMCA	Environmental Management and Coordination Act
EU-OSHA	European Agency for Safety and Health at Work
HR	Human Resources
ISO	International Organization for Standardization
KPO	Knowledge Process Outsourcing
NCHRP	National Cooperative Highway Research Program
NEMA	National Environment Management Authority
OGP	Oil and Gas Producers
OHSAS	Occupational Health and Safety Assessment Series
OLS	Ordinary Least Squares
OSH	Occupational Safety and Health
OSHA	Occupational Safety and Health Act
SPSS	Statistical Package for Social Scientists

ABSTRACT

The research assessed the benefits and risks of outsourcing Environmental, Health and Safety management services in selected organizations in Nairobi. The research used descriptive research design. Sampling technique was random with a sample size of 42 workplaces. Primary data was collected through questionnaires and interview while secondary data was collected from review of relevant literature. Data analysis was done using Statistical Package for Social Scientists (SPSS) data analysis software. OLS regression was used to test the hypothesis. Data was presented by means of text, tables, bar graphs and pie charts. The study found that the risks of outsourcing EHS management services were more than the benefits. The study found that the main risk associated with outsourcing EHS management services was overdependence on EHS management consultants while the main benefit was improved compliance with EHS regulations. The study recommends that organisations should be careful before deciding to outsource EHS management. Further research is needed on how to manage the risks associated with outsourcing EHS management services.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Outsourcing is the strategic use of outside resources to perform activities that are usually handled by internal staff and resources (Elmuti, 2003). Outsourcing differs from alliances or partnerships or joint ventures in that the flow of resources is one-way, from the provider to the user (Belcourt, 2006). Outsourcing has been on an increasing trend in modern work organisations throughout many years (EU-OSHA, 2012). It is increasingly becoming a common business practice for organizations to outsource some of their functions in order to concentrate on their core or primary business activities. Firms are outsourcing everything from information technology management to entire functions such as human resources (Belcourt, 2006). One of the most significant shifts in labour markets within the industrialized societies of Europe, North America and Australasia over the past twenty years has been the growth of outsourcing or subcontracting (Claire &Quinlan, 1999). According to APICS and Protiviti (2004), most companies spend between 40 percent and 60 percent of revenues with third parties through outsourcing.

The most common outsourced activities are facility maintenance, waste disposal, security, welfare services such as tea and food services, mail delivery (or courier services) and transport. In recent times, functions that have traditionally been managed in-house such as information technology, marketing, fleet management, customer relations, Environment, Health and Safety (EHS) management, human resources management, legal services, pay roll and finance are also being outsourced. Aspects of EHS management include training, audits, risk assessment, regulatory compliance and maintenance of international EHS standards such as ISO 14001:2004 and OHSAS 18001:2007 among others.

Outsourcing EHS management services presents some common challenges regardless of what is being outsourced. Whereas some arguments have been put forward in favour of outsourcing EHS management by organizations, counter-arguments have been put forward against EHS outsourcing. This research assessed the benefits and risks of outsourcing EHS management in organizations with a study of selected organizations drawn from different sectors in Nairobi.

1.2 Statement of the Problem

Business organisations are generally moving toward outsourcing certain business activities which are not central to their business mission, or which are beyond the owners' or managers' areas of expertise (Sonfield, 2014). Organizations are increasingly outsourcing Environment, Health and Safety (EHS) services. The decision to outsource EHS is not an easy one and how the outsourcing decisions are made is of great interest to organisations (National Academy of Sciences, 2011). Outsourcing activity brings a significant set of risks (APICS and Protiviti, 2004). These risks need to be well understood as organisations increasingly embrace outsourcing.

In the absence of comprehensive understanding of the full benefits and risks of outsourcing, most organisations only use cost as a determinant in deciding on whether or not to outsource. However, it is common to find that the total costs of the targeted outsourced functions are also not well understood (APICS and Protiviti, 2004). According to Lonsdale (1999), outsourcing failures are not due to an inherent problem with outsourcing but rather the lack of guiding methodology for managers.

There is limited information on risks and benefits of outsourcing EHS that would aid organizations in deciding whether to outsource EHS management services or not.

1.3 Justification of the Study

As the world makes advancements in economic and technological development, matters of environment, health and safety are taking more centre stage. At the global arena, the

performance of businesses is increasingly being measured following what is now known as the “triple bottom line” approach, which appraises the performance of businesses using social, economic (or financial) and environmental metrics. Organizations are also required by law to comply with environmental, health and safety requirements alongside other statutory requirements.

Against this background, most organizations are now mainstreaming environmental, health and safety issues in their operations. In so doing, organizations are either employing environment, health and safety officers for in-house EHS management or outsourcing their EHS management services. The concept of outsourcing is becoming more popular as organizations concentrate on their core businesses. Being an emerging concept, the potential benefits and risks are not well understood, which necessitates research in order to advise organizations accordingly. The findings of this research will be useful to organizations in making informed decisions on whether to outsource their EHS management or not and on whether to undertake partial or full outsourcing of their EHS management. The findings will also be useful to EHS consultants to justify to organizations on why they need to outsource EHS management to them. Moreover, the findings of this research will also contribute to the body of knowledge in EHS management and provide a basis upon which further research can be conducted.

1.4 Hypothesis

The null hypothesis (H0) in this research was: “There are more potential risks than benefits from outsourcing Environment, Health and Safety management services in organizations.”

1.5 Objectives

1.5.1 Main Objective

The main objective of conducting this study was to assess the benefits and risks of outsourcing Environment, Health and Safety management services by organizations.

1.5.2 Specific Objectives

The specific objectives of this research study were:

- (a) To identify and analyze the benefits of outsourcing EHS management by organizations;
- (b) To identify and analyze the risks of outsourcing EHS management by organizations; and
- (c) To compare the benefits of outsourcing EHS management against the risks in organizations.

1.6 Scope of the Study

The scope of the study was an assessment of risks and benefits of outsourcing environment, health and safety management services in selected organizations in Nairobi City County of Kenya.

1.7 Study Limitations

The limitations of this study were delays in obtaining responses from the targeted organizations and limited prior research studies on the topic of outsourcing environment, health and safety management in organizations. These limitations were overcome through consistent follow up of responses and broad literature review.

1.8 Conceptual Framework

The decision by organisations on whether to outsource EHS management services or to manage EHS in-house will be influenced by available information on the potential benefits and risks of outsourcing. Outsourcing practice is therefore dependent on both potential and known benefits and risks. The independent variables are risk and benefits of outsourcing EHS management services while the dependent variable is outsourcing EHS management services. With regard to risks, the key considerations were dependency on EHS consultants, low quality of work by consultants, compromise on

organisational information security, declined innovativeness and ambiguity on compliance responsibility.

On benefits, the key considerations were compliance with EHS regulations, access to best EHS experts, concentration on core business, cost cutting and EHS outsourcing as best practice. Comparative analysis of risks and benefits would be useful in influencing. Figure 2.1 below shows illustrates the conceptual framework.

Independent Variables

Dependent Variable

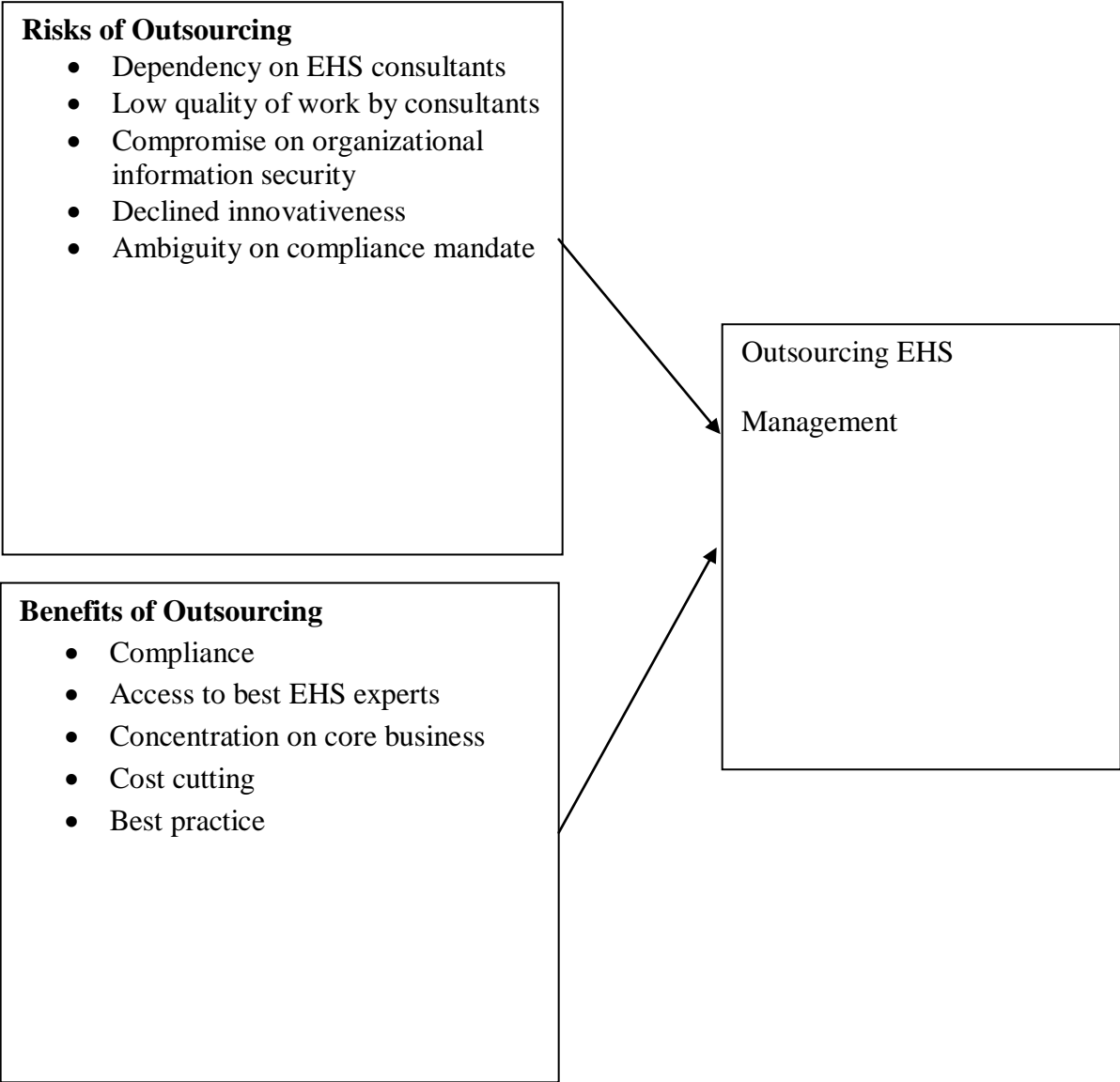


Figure 1.1: Conceptual framework

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

In this chapter, literature relevant to the subject of study has been reviewed. The theoretical principles that underpin the study are reviewed and presented. The risks and benefits of outsourcing as described from other related studies and authors are presented. The gaps in the reviewed literature have also been described.

2.2 Theoretical Principles

According to Handfield (2006), outsourcing can be defined as “the strategic use of outside resources to perform activities traditionally handled by internal staff and resources”. In the words of Handfield (2006), “in the 1990s, as organizations began to focus more on cost-saving measures, they started to outsource those functions necessary to run a company but not related specifically to the core business. Managers contracted with emerging service companies to deliver accounting, human resources, data processing, internal mail distribution, security, plant maintenance, and the like as a matter of good housekeeping”.

Traditionally, the business process outsourcing market has focused on infrastructure, data operations and cost takeout as primary drivers (Schmiedeskamp, 2005). Outsourcing has become a priority of most businesses aiming for perfection, niche identity, huge profits and great productivity (Steve, 2010).

The scope of outsourcing is widening from functions traditionally perceived as non-core to other key functions such as finance, human resources management and environment, health and safety management. According to Martin and McDermott (2001), outsourcing of EHS activities is being recognized as an effective means of achieving an organization’s EHS goals while allowing the organization to concentrate on core

competencies and control the personnel and related costs of an extensive internal EHS function. According to O'Brien and Gere (2012), as the regulatory climate transitions from a fluid, dynamic atmosphere to a mature, steady environment, the role of the environmental health and safety (EHS) professional may also evolve into a maintenance activity – making it an ideal candidate for outsourcing.

While the types and levels of EHS outsourcing vary, the primary types of EHS management outsourced include waste management, remediation activities, operation and maintenance of waste treatment facilities, regulatory compliance, EHS auditing, environmental information management systems, and permitting activities (Martin and McDermott, 2001). Other aspects of EHS that are usually outsourced include disaster planning, process safety management, emergency preparedness and response, EHS benchmarking, OSHA training, hazard communication and noise level measurements among others (Zipfel, 2012).

2.3 Previous Works Related to the Study

There are various reasons why organizations will outsource their functions to suppliers. According to Kamarazaly (2007), outsourcing creates competitive advantage when products or services are produced more effectively and efficiently by outside suppliers. Lankford and Parsa (1999) observe that advantages in outsourcing can be operational, strategic or both. According to these authors, operational advantages usually provide short-term trouble avoidance while strategic advantages offer long-term contributions in maximizing opportunities.

Narrowing down outsourcing to EHS management, outsourcing can help companies solve their two biggest EHS problems, namely: cost containment and dynamic access to EHS experts. According to Martin and McDermott(2001), regardless of the size of an organization or the complexity of its EHS programs, the benefits associated with outsourcing aspects of a facility's EHS program can be significant. The two authors argue that a strong partnership between an organization's EHS department and the

outsourcing provider can result in lower costs from reduced overhead and administrative burdens, flexibility in staffing options, fewer employee distractions from core business operations, and improved EHS program quality through provision of enhanced access to resources, assured compliance and expertise, and guaranteed responsiveness as environmental issues arise. Heikkila and Cordon (2002) have also argued that some organizations outsource their EHS management due to lack of in-house competence. O'Brien and Gere (2012) add that outsourcing provides immediate access to experts in environmental permitting and compliance management. The environmental permitting regime requires operators to obtain permits for some facilities, to register others as exempt and provides for ongoing supervision by regulators (Department for Environment, Food and Rural Affairs, 2013).

Zipfel (2012) notes that outsourcing enables companies to concentrate on their core business and to redirect resources to more strategic activities, hence improving their business focus. This view is also supported by Barone (2013) who opines that outsourcing environment, health and safety allows organisations to focus on the core aspects of their business, without sacrificing environmental, health and safety integrity. This observation has also been made by Gilley and Rasheed (2000) who noted that outsourcing non-core activities allows the firm to increase managerial attention and resource allocation to those tasks that it does best and to rely on management teams in other organisations to oversee tasks at which the outsourcing firm is at relative advantages. From a cost factor, small business owners and managers are realizing that certain tasks may be more efficiently performed by an external specialist, and thus be less costly to the small business (Sonfield, 2014).

Outsourcing environment, health and safety also ensures employee safety. According to Barone (2013), there is no margin for error when dealing with the safety and well-being of employees, and for an organization with minimal or no internal EHS staff, safety is often neglected in order to keep costs down. Barone states that outsourcing EHS can

ensure that employee safety is a top priority, as qualified EHS providers have the means and experience necessary to develop proper safety protocols and procedures.

Although outsourcing is gaining more popularity in many parts of the world, many arguments have been raised against the practice. If the risks of the outsourcing program are not clearly understood before action is taken, it is easy to make a bad outsourcing decision, even when the best supplier is chosen (APICS and Protiviti, 2004). According to Johnstone, Mayhew and Quinlan (2005), outsourcing has emerged as a major problem for Occupational Health and Safety (OHS) regulators in both Australia and the United States. It increases the likelihood of multi-employer worksites, corner-cutting, and dangerous forms of work disorganization, as well as situations where the legal responsibilities of employers are more ambiguous and attenuated. Scott (2013) observes that complex legal issues can arise where customers seek to outsource all or part of their health and safety functions. In the words of Scott (2013), the customer cannot assume that a one-sided contract, with no duty to co-operate or to provide information, which seeks to transfer all health & safety risk to the service provider, through widely worded obligations and indemnities, will allow the customer to escape from its duties under health and safety law. Scott cites the Octel case (House of Lords, 1996) and other case law that make it clear that the customer's duties under health & safety law do not end when the contract to outsource is signed.

Heikkila and Cordon (2002) have observed that several potential drawbacks to outsourcing initiatives have also become apparent. These include dependency, confidentiality and security issues; transfer of know-how that encourages new competitors and opportunism (exploitation) by service providers. The authors further argue that if companies choose to follow the dictum of insourcing core activities and outsourcing non-core activities, they may well end up with either outsourcing too many activities, or a tortuous and unhelpful definition of their core competencies that confuses rather than clarifies the outsourcing decision. According to Cahill (2010), the risks or limitations of EHS outsourcing include non-familiarity of third parties to organizational

operations, cost and reduced retention of knowledge acquired by the service providers. According to Gilley and Rasheed (2000), one of the most serious threats resulting from a reliance on outsourcing is declining innovation by the outsourcer. Teece (1987) adds that outsourcing can lead to a loss of capacity for and benefits of long-run research and development (R &D).

In outsourcing environment, health and safety, outsourcers have to be aware that the vendor may not be able to cope with the volume of outsourced work, which can result in delays. There is also the risk of outsourcing EHS to unqualified service providers as observed by Burke (2000) that the quality of the safety and health consulting field is deteriorating due to an influx of unqualified operators. There may also be a serious impact on employee morale and a risk of transferring expertise and insider knowledge to vendors (Belcourt, 2006).

In deciding whether to go for outsourcing or not, careful consideration should be taken by organizations. Martin and McDermott (2001) warn that although there are obvious benefits to outsourcing, organizations should be wary of diving headlong into an outsourcing relationship without careful consideration. Heikkilä and Cordon (2002) further advise that companies need to consider both strategic and operational issues when they make outsourcing decisions. One solution used by numerous organizations is to design and implement a program that utilizes a blend of internal and external resources. That is, internal auditors are used where feasible, and they are supplemented by third-party auditors when local knowledge and presence or a particular expertise (e.g., process safety management) is needed. This approach has some very distinct technical and cost advantages. It also adds a layer of independence that would not exist if only internal resources were utilized (Cahill, 2010). This view is also supported by Scott (2013) who opines that rather than seek to artificially transfer risk to the service provider, outsourcing contracts should be drafted to encourage communication and cooperation on all health and safety matters. Both parties (the customer and the service provider) need to be fully informed to be able to understand and manage risks and be

certain that all reasonable steps are being taken jointly to prevent accidents. Burke (2000) also advises that knowing what and why to outsource is another important skill and organisations should beware in making what Ed Quevedo calls "the migration mistake." Organisations should not just take their internal EHS program and lift it to outsiders.

2.4 Critique of Literature Review

The literature sources cited do not attempt to describe the magnitude of risk associated with outsourcing environment, health and safety management services in organizations. Moreover, the authors cited do not rank the risks and benefits indicated for outsourcing EHS management services in order of importance or significance. The cited literature also fails to give a comparison between benefits and risks of outsourcing EHS management services. Whereas Kamarazaly (2007), Lankford and Parsa (1999), Martin & McDermott (2001), Heikkila and Cordon (2002), O'Brien & Gere (2012) and other authors have all given good accounts on the benefits of outsourcing EHS management, none of the authors has made any attempt to quantify or rank the benefits. Similarly, Johnstone, Mayhew and Quinlan (2005), Scott (2013), Gilley and Rasheed (2000), Burke (2000) and other authors cited give elaborate analyses of the risks or limitations of outsourcing but do not point out the most significant risks.

Some of the authors cited above, such as Heikkila and Cordon (2002) and Burke (2000) also fail to give recommendations on how to overcome the limitations arising from outsourcing. Enumerating the limitations of outsourcing EHS management services but not giving recommendations on how to overcome the cited limitations is not very helpful to the readers.

Finally, although a number of authors have alluded to some considerations to make when deciding whether or not to outsource EHS management services, none of the authors has developed clear criteria or set of guidelines to assist organisations to make decisions on outsourcing EHS management services. Authors such as Martin and

McDermott (2001) merely warn that organizations should be wary of diving headlong into an outsourcing relationship without careful consideration but fail short of outlining the considerations to be made in deciding whether or not to outsource EHS management services.

The cited literature also appears to have left out some of the apparent risks of outsourcing. This includes information leakage arising from acts of accidental disclosure or even purposeful betrayal by consultants that work for several client firms at the same time. Despite the number of success stories of outsourcing, there are an astonishing number of contracts that have failed over the years.

CHAPTER THREE

MATERIALS AND METHODS

3.1 Introduction

This chapter describes the research design used in the study, the study area and the study population. The chapter also describes the sampling method, sample size determination formula and the instruments used in data collection. Methods used in data analysis and data validation are also described.

3.2 Study Design

This research adopted a descriptive design. Descriptive design seeks to delineate the magnitude of the risk or establish the level of situation under investigation. According to Sekaran (2003), descriptive research design is type of design used to obtain information concerning the current status of the phenomena to describe "what exists" with respect to variables or conditions in a situation. Descriptive research design will help the researcher to clearly identify and describe true characteristics of a research problem without manipulation of research variables(Mugenda,2008). Moreover, the responses (benefits and risks) were quantifiable and possible to analyze by means of statistics.

3.3 Study Area

The study on outsourcing environment, health and safety management was conducted in selected organizations located in Nairobi City County of Kenya. Figures 3.1 and 3.2 show maps of Kenya and of Nairobi City County respectively.

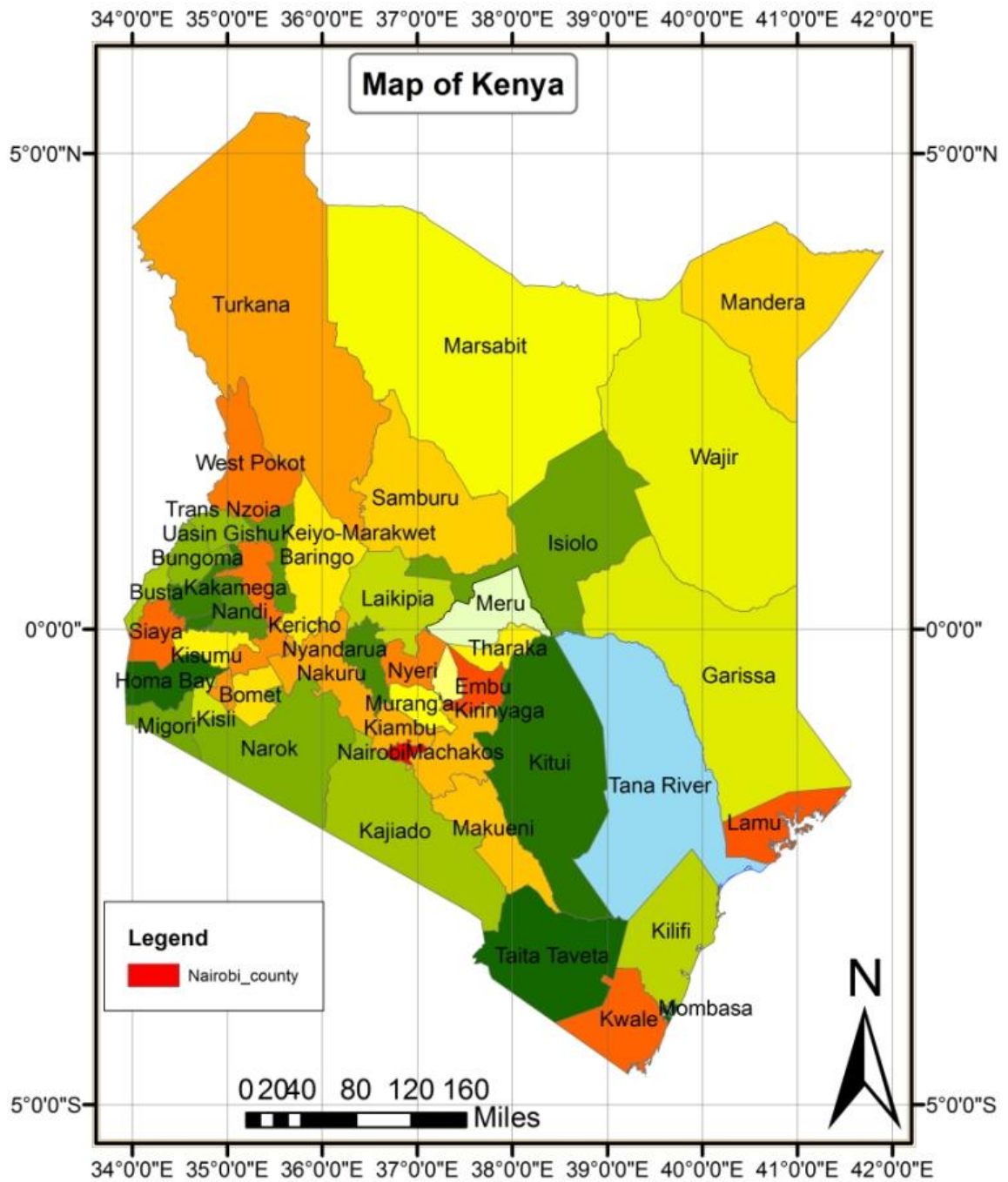


Figure3.1: Map of Kenya showing location of Nairobi City County

Source: IMAPS, 2016

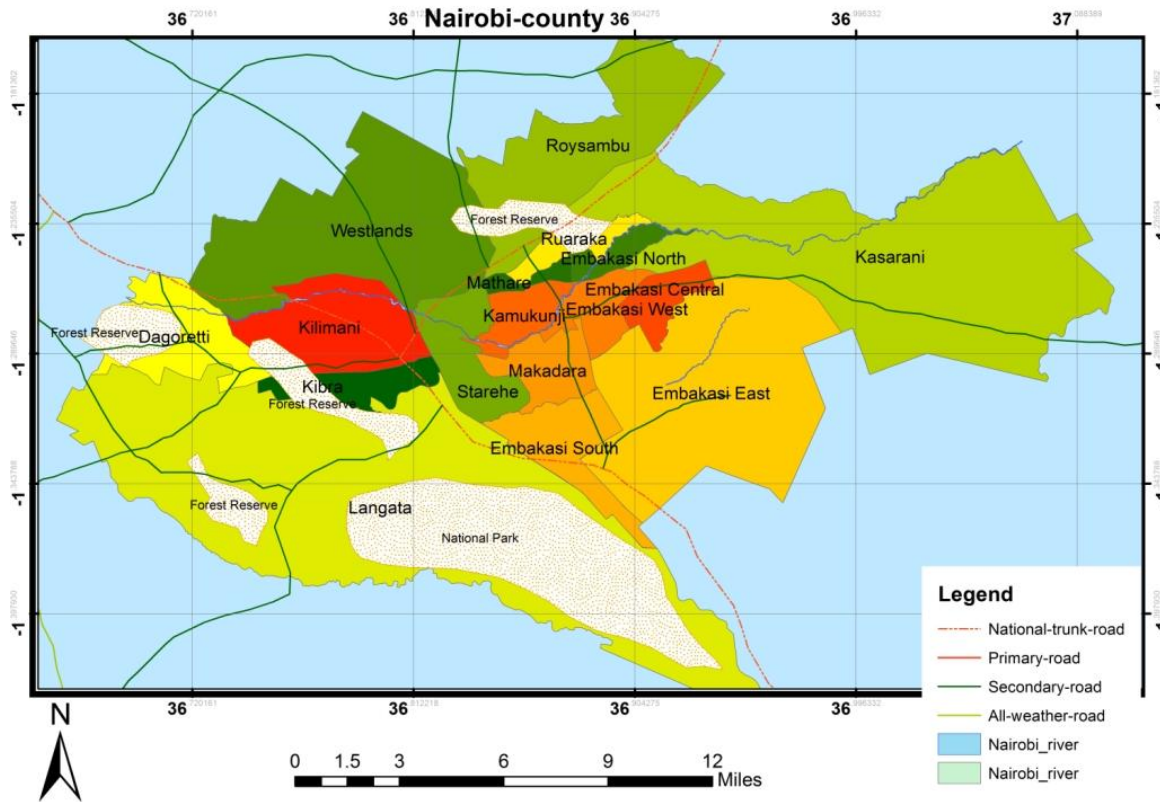


Figure 3.2: Map of Nairobi City County

Source: IMAPS, 2016

3.4 Study Population

The population from which the study sample was taken comprised of 2,917 organizations in Nairobi which were registered with the Directorate of Occupational Safety and Health Services (DOSHS) by end of year 2012. Details on study population are also summarized in table 3.1.

3.5 Sampling Method

The sampling method used in the research was stratified random sampling. The organizations in which the study was conducted were divided into 7 randomly selected categories (or strata), namely: manufacturing, motor vehicle sales and service, energy, transport and communication, EHS consultancy, hospitality (hotels and restaurants) and

“others”. A representative sample was then randomly taken from each of the seven categories (or strata).

3.6 Sample Size Determination

A sample size of 42 workplaces was drawn from the population of the 2,917 DOSHS-registered workplaces in Nairobi. The sample size of 42 workplaces was representative of the population since random sampling method was used. The sample size of 42 was deemed to be acceptable according to the Survey System (2012) who state that the mathematics of probability proves the size of the population is irrelevant unless the size of the sample exceeds a few percent of the total population that one is examining.

The sample size of 42 was calculated using the Creative Research Systems Survey sample size determination formula (Creative Research Systems, 2012).

$$ss = \frac{Z^2 * (p) * (1-p)}{c^2}$$

Where:

Z = Z value (i.e. 1.96 for 95% confidence level)

p = percentage picking a choice, expressed as decimal (i.e. 0.5 used for sample size needed)

c = confidence interval, expressed as decimal (i.e. 0.15)

ss = Sample size

Using the above formula:

$$ss = \frac{1.96^2 * (0.5) * (1-0.5)}{0.15^2}$$

$$ss = 42$$

To select the individuals from the seven strata, simple random sampling method was used. Table 3.1 shows the population per stratum and the sample size selected from each stratum.

Table 3.1: Sample Size Distribution

Stratum (h)	Population (N_h)	Sample size (n_h)
Manufacturing	834	12
Motor vehicle sales and service	278	4
Energy	486	7
Transport & communication	139	2
EHS Consultancy	347	5
Hospitality	208	3
Others	625	9
TOTAL	2917	42

The sample size per stratum was determined using the proportionate stratification sample size determination formula,

$$n_h = (N_h / N) * n$$

where

n_h = the sample size for stratum h,

N_h = the population size for stratum h,

N = total population size, and

n = total sample size (Sample Size: Stratified Random Samples, 2015).

The actual organizations that received questionnaires from each stratum were selected by simple random sampling. A list of organisations from which respondents were drawn is found in appendix 1.

3.7 Research Instruments

The research instruments used in this study were questionnaires and interview guide. One questionnaire was administered to each selected workplace. The target respondents to whom questionnaires were issued in the organisations were EHS officers and human resource managers in the organizations where the study was done. An interview was held with the then acting Director of Occupational Safety and Health Services, Ministry of Labour, Social Security and Services. In organisations with no human resources managers and EHS officers, other relevant managers such as technical manager and administration manager were asked to complete the questionnaires. The questionnaire and interview guide used in the study are found in appendices 2 and 3 respectively.

3.9 Data Processing and Analysis

The research generated both quantitative and qualitative data. Data analysis was done using Statistical Package for Social Scientists (SPSS) data analysis software. Descriptive and inferential statistics were used. Inferential statistics used regression to determine level of association between the two comparatives (benefits and risks of outsourcing). OLS Regression was used to test the hypothesis used in the research. In order to establish a model for benefits and risks analysis, structural equation modeling using Analysis of Moment Structures (SPSS & AMOS 16) was used.

3.10 Data Validation

Validation is the process of ensuring that the data entered is sensible and reasonable. According to Mugenda and Mugenda (2003), validation is one way of trying to reduce the number of errors in the data being entered into the system. Data validation is intended to provide certain well-defined guarantees for fitness, accuracy, and consistency for any of various kinds of user input into an application or automated

system. In this study, data validation was done in the coding stage in the SPSS Software whereby simple range and constraint validation were coded to ensure user input for consistency with a minimum/maximum range, or consistency with a test for evaluating a sequence of characters. Additionally, the researcher performed cross-reference validation which included tests for data type validation, combined with one or more operations to verify that the user-supplied data was consistent with the required data that was provided.

CHAPTER FOUR

RESULTS AND DISCUSSIONS

4.1 Introduction

This chapter is a presentation of findings obtained from field responses and data, divided into two parts. The first section deals with the biodata, while the second section presents findings of the study based on the research objectives. Discussions are also made under each result.

4.2 Biodata

4.2.1 Response Rate

The study targeted 42 organizations collecting data with regard to assessment of benefits and risks of outsourcing environmental, health and safety management by organizations in Kenya. From the study, responses were obtained from 38 out of the targeted 42 workplaces, translating into a response rate of 90%. Four of the targeted organizations did not respond to the questionnaires administered. According to Mugenda and Mugenda, (2003) a 50% response rate is adequate, 60% good and above 70% rated very good. This implies that based on this assertion, the response rate in this case of 90% is very good. The results are shown in table 4.1 below.

Table 4.1: Response Rate

	Questionnaires administered (one per workplace)	Questionnaires completed & returned	Percentage	Remarks
Responses	42	38	90 %	Very good response

4.2.2 Response by Industry

The study established the type of industry that the organizations from which the respondents were drawn belonged. The results are shown in figure 4.1.

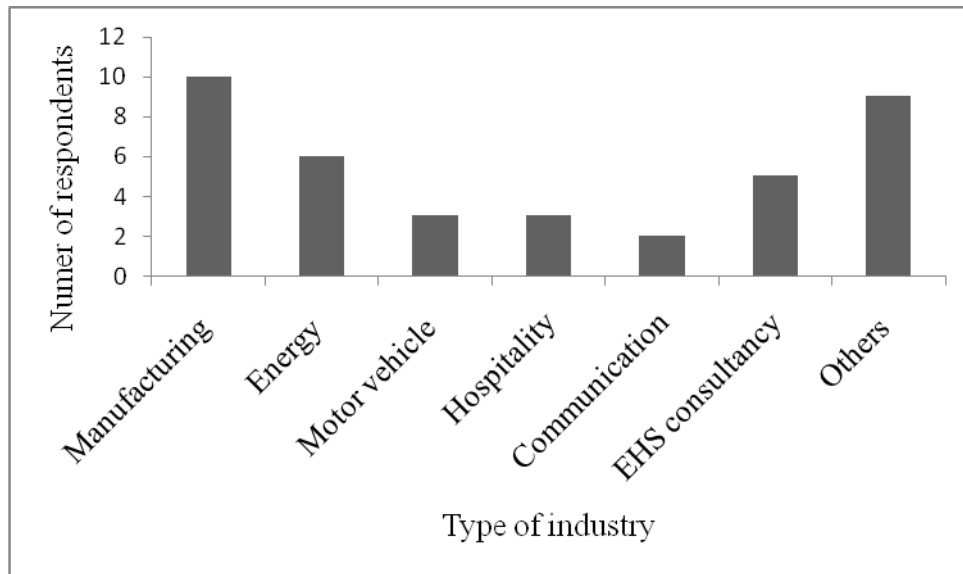


Figure 4.1: Response by industry

With regard to type of industries represented by the respondents, 10 (26.3 %) of the respondents were from Manufacturing industry. 6 (15.8 %) were from the Energy industry while 3 (7.9 %) were from Motor Vehicle and Hospitality industries respectively. 2 (5.3 %) of the respondents were from the Transport and Communication industry, while 5 (13.2 %) were from EHS Consultancy industry. 9 (23.7 %) were from other types of industries.

4.2.3 Response by Departments

Figure 4.2 shows the departments from which respondents came in the organisations that participated in the study. Although the primary target respondents were human resource managers and EHS officers, some organisations did not have these positions and therefore other relevant managers responded.

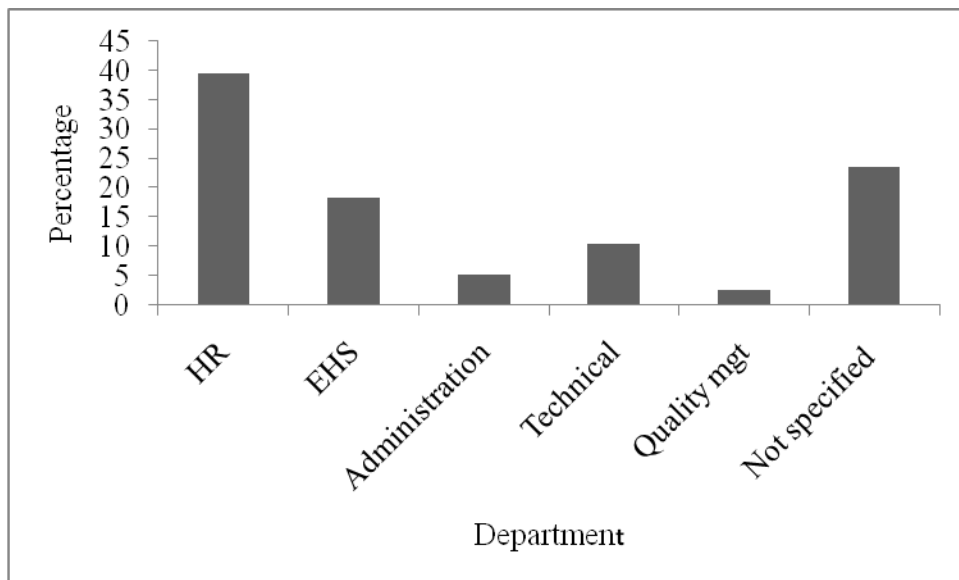


Figure 4.2: Response by departments

15 (39.5 %) of the respondents indicated that they were from the Human Resources department; 7 (18.4%) indicated that they were from EHS department; 4 (10.5 %) indicated that they are were from Technical department; 2 (5.3 %) indicated that they were from Administration department and 1 (2.6 %) respondent indicated that she was from Quality Management department. 9 (23.7 %) of the respondents were from other departments that they did not specify.

4.2.4 Level of Respondents in Organisations

Respondents were asked to state their positions in their organisations. The results obtained are as shown in figure 4.3.

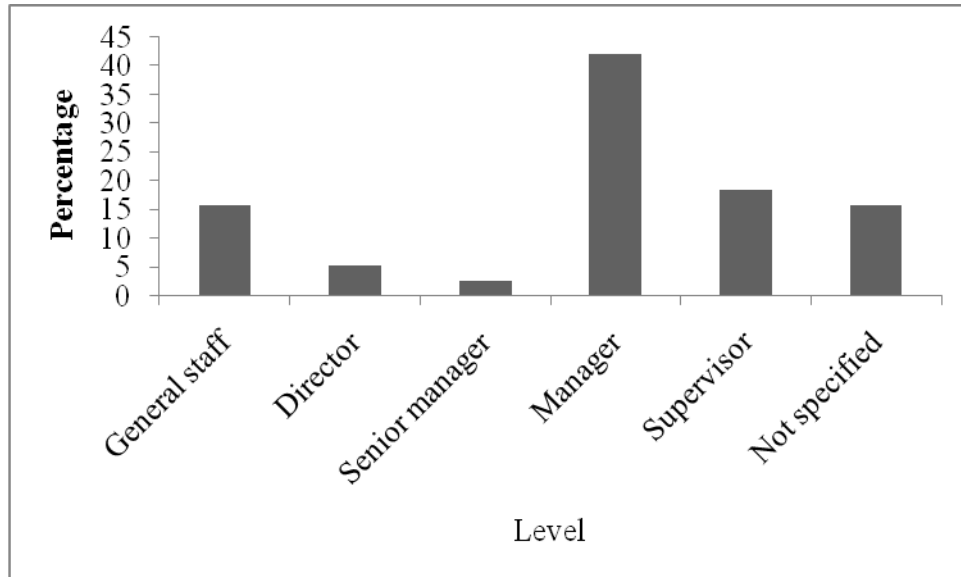


Figure 4.3.: Level in organization

With regard to position in the organization, most of the respondents (42.1%) were managers; 18.4% were supervisors; 15.8% were the general staff; 5.3% were directors while 2.6% were senior managers. 15.8% of the respondents did not indicate their level in the organization. From this finding, most of the respondents were therefore at a decision making level in their organisations.

4.2.5 Response by Gender

The study analyzed the gender distribution of the respondents. The results are as shown in figure 4.4.

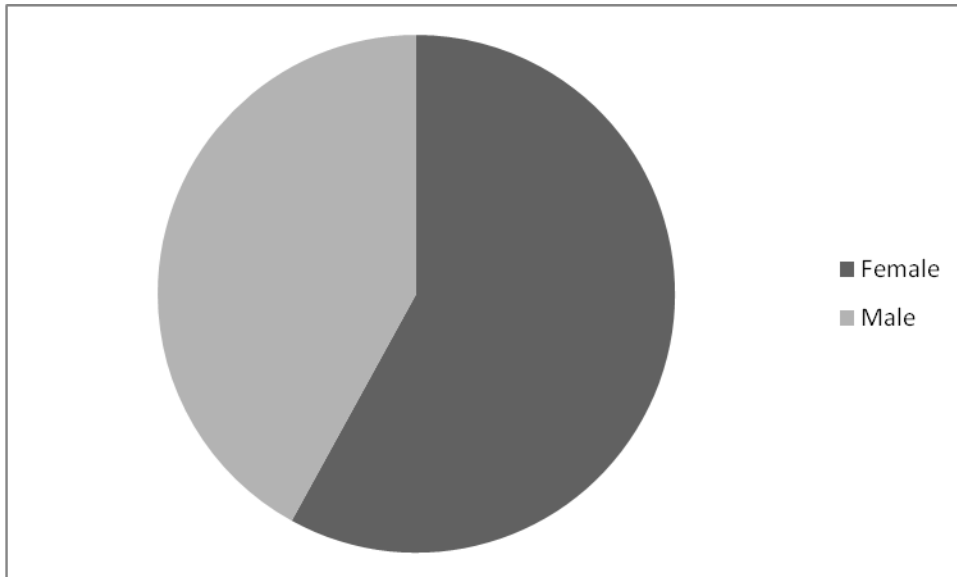


Figure 4.4: Respondents by gender

With regard to gender, the study established that 22 (58%) of the respondents were female while 16 (42%) were male. From this finding, both female and male gender were adequately represented in the study, although members of the female gender were more. This can be explained by the fact that the position of human resources manager is mainly held by members of the female gender in many organisations.

4.3 Findings Based on Research Objectives

4.3.1 Reasons for Outsourcing EHS Management

The study sought to determine why organizations outsourced Environment, Health and Safety management services. The results are presented in figure 4.5.

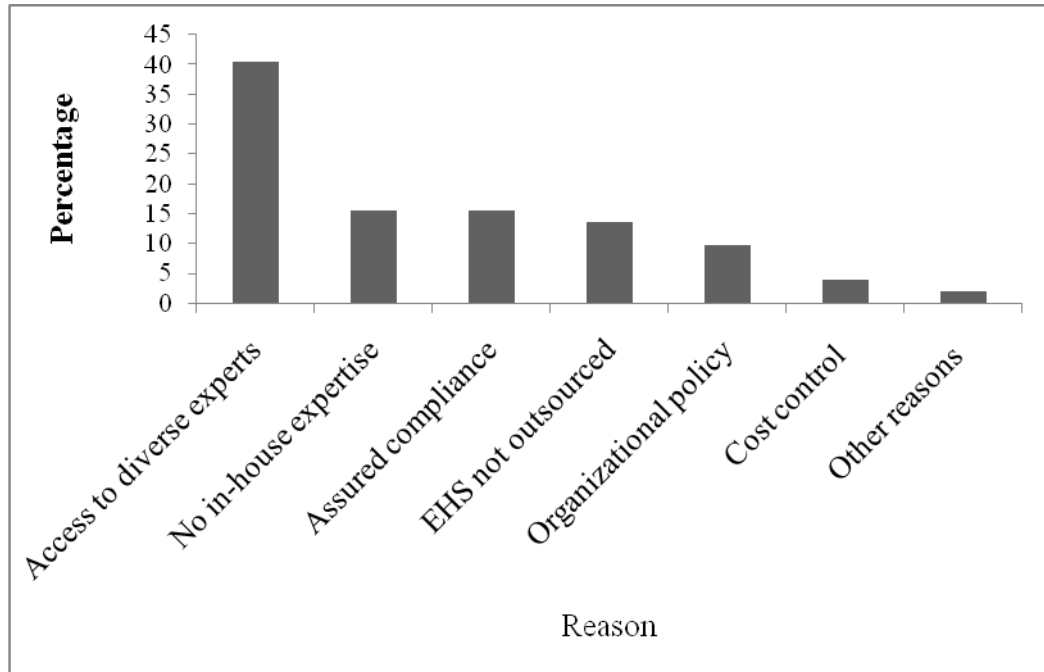


Figure 4.5: Reasons for outsourcing EHS management

From the findings in the figure above, the most of the organizations (40.4%) indicated that the reason for outsourcing EHS management was because it would enable them to have dynamic access to diverse and best EHS experts. 15.4% cited lack of in-house expertise and another 15.4% said that through outsourcing EHS management, their organizations were assured of compliance. 13.5% of the respondents said that EHS management was not outsourced in their organisations while 9.6% indicated that it was their organization's policy to outsource non-core functions. Control of personnel and other EHS related costs only accounted for 3.8 % of the reasons as to why organisations outsourced their Environment, Health and Safety management services.

These findings concur with observations by Heikkila and Cordon (2002) as well O'Brien and Gere (2012) that organizations outsource their EHS management to enable them access to experts in Environment, Health and Safety management. The finding from the research that cost cutting is not the key driver to outsourcing disagrees with APICS and Protiviti (2004) who observed that the top three drivers that most often cause an

outsourcing review are 1) the need to reduce cost or internal headcount, 2) internal capacity constrained by increasing market demand, and 3) internal manufacturing or service performance is insufficient or does not meet requirements.

4.3.2 Benefits of Outsourcing EHS Management

The study sought to determine from the experience of outsourcing EHS management the benefits that the organizations had realized. The results are presented in figure 4.6.

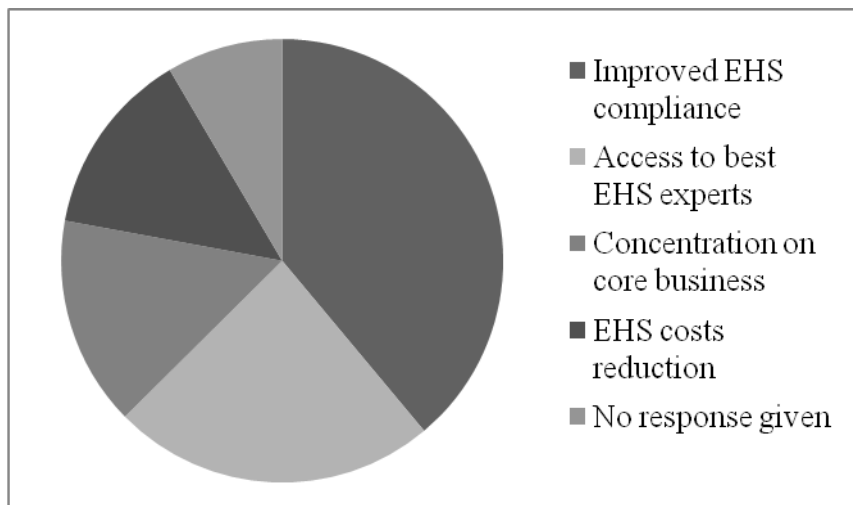


Figure 4.6: Benefits of outsourcing EHS management

Improved compliance with EHS regulations was cited as the greatest benefit that organisations had realized from outsourcing (38.9 %), followed by access to the best experts in EHS management (23.7 %) while reduction of EHS related costs was the least benefit obtained from outsourcing EHS management (13.6 %).

This is an interesting finding in that whereas the main reason as to why organisations outsourced their EHS management services was to get access to best EHS experts, the main benefit realized from outsourcing was not access to experts but improved EHS regulatory compliance at 38.9%. It appears like improved EHS regulatory compliance is largely an indirect and spontaneous benefit realized from outsourcing.

The result that outsourcing EHS management has enabled organisation to access the best experts in EHS management as alluded to by 23.7% of the respondents agrees with Belcourt (2006) that the use of experts reduces the risks and liabilities for organizations. Specialists know the legislation better than anyone and can assure the user organization that all their practices comply with legislation.

At 13.6%, cost cutting as a real benefit from outsourcing EHS management services is again disappointingly low. This finding on cost reduction concurs with Sonfield (2014) who avers that small business owners and managers are realizing that certain tasks may be more efficiently performed by an external specialist, and thus be less costly to the small business. Cost saving as a benefit realized from outsourcing EHS management is also consistent with findings of Kremic et al (2006) who reports that in a survey of 7500 public organizations in Australia, the outsourcing of cleaning services saved an average of 46 % over in-house performance of the service. Improved employee safety was not given by the respondents as a benefit realized from outsourcing EHS management services as alluded to by Barone (2013).

The benefit of independence in EHS management was also not brought out by the respondents. Cahill (2010) had observed that outsourcing also adds a layer of independence that would not exist if only internal resources were utilized. The fact that outsourcing EHS management can also eliminate conflict-of-interest situations where internal, corporate auditors are asked to audit programs or procedures that they helped to develop was not given by the respondents. The other benefits given by the respondents agree with various authors including Zipfel (2012); Gilley and Rasheed (2000) and EU-OSHA (2012) who had observed that outsourcing allows the firm to focus on core functions.

4.3.3 Risks of Outsourcing EHS Management

The study sought to determine the risks of outsourcing EHS management. Risk is the measure of the likelihood of occurrence of an undesirable event and of the potentially

adverse consequences which this event may have upon people, the environment or economic resources (OGP, 1984). Risk may be described qualitatively or quantitatively. Dependency on EHS consultants as a risk of outsourcing EHS management services can be described as high since some of the tasks that consultants undertake are compliance related; and the cost of non-compliance is extremely high. The results are presented in figure 4.7 below.

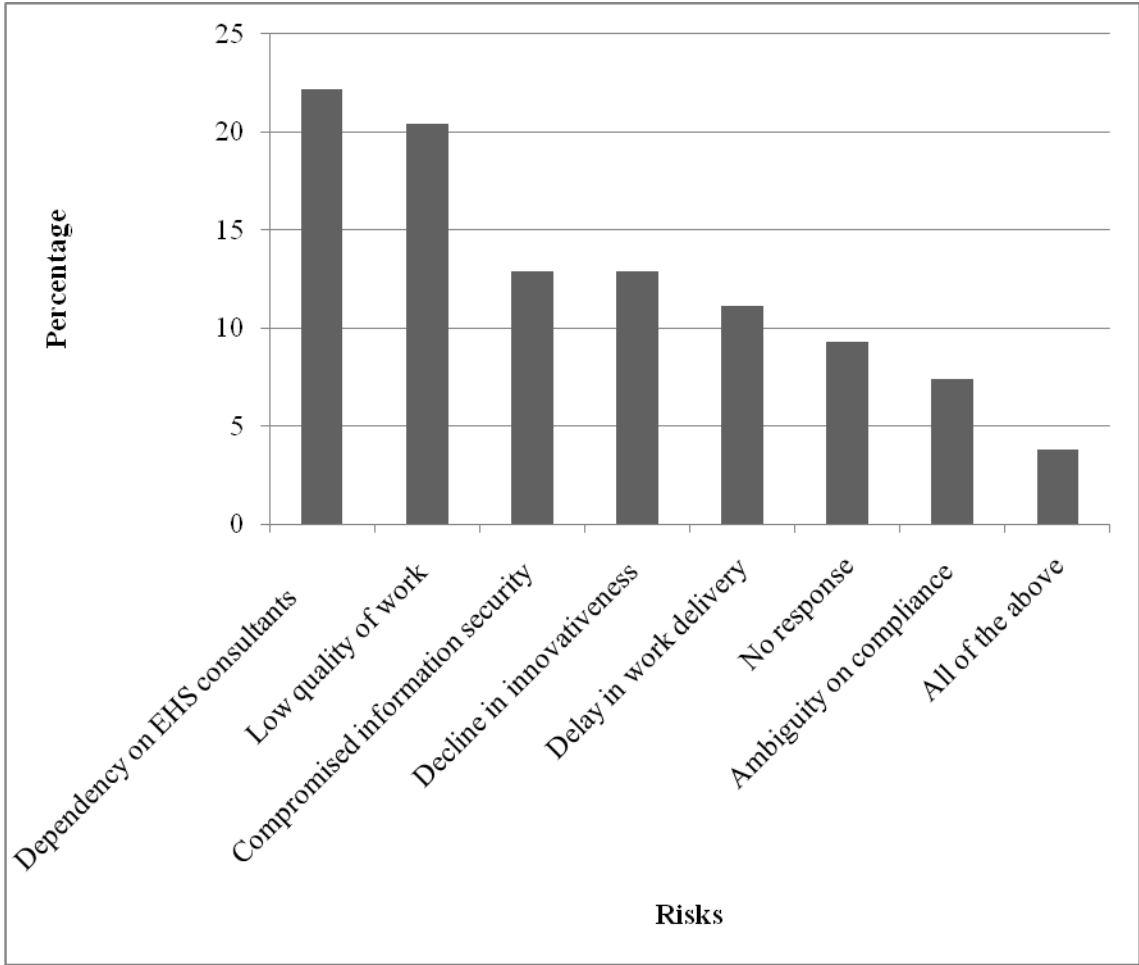


Figure4.7. Risks of outsourcing EHS management services

From the results above, the greatest risk from outsourcing EHS management was the creation of dependency on EHS consultants by organisations (22.2 % responses). The second greatest risk of outsourcing EHS management was low quality of work done by

consultants (20.4% responses). This was followed by decline in innovativeness in EHS management within the organization and compromise on confidentiality and security of key organizational information (both at 12.9 % responses). Delay in delivery by consultants due to workload accounted for 11.1 % of the responses while the lowest risk of outsourcing cited by the respondents was the creation of the wrong impression that EHS compliance was not their organization's responsibility (7.4 % of the responses).

These findings on the risks of outsourcing EHS management services concur with results of a study conducted by APICS and Protiviti in 2004 that identified some of the risks of outsourcing as decline in on-time delivery performance and end customer satisfaction levels because of delays at third parties and lowered product or service quality, affecting customer satisfaction.

The fact that dependency on EHS consultants was cited as the greatest risk of outsourcing EHS management services concurs with EU-OSHA (2012) that outsourcing EHS management leads to dependence on the quality of the service provider by the outsourcing organisation. However, this finding is to a large extent surprising since organisations really only seek for assistance from service providers and not to entirely depend on them. This finding agrees with Heikkila and Cordon (2002), who, without ranking the risks, observes that potential drawbacks to outsourcing include dependency, confidentiality and security issues; transfer of know-how that encourages new competitors and opportunism (exploitation) by service providers. Although decline in innovativeness emerged as the third most serious risk cited by respondents, this finding vindicates the observation by Gilley and Rasheed (2000) that one of the most serious threats resulting from reliance on outsourcing is declining innovation by the outsourcer. This finding also concurs with Sanchez (2010) that during outsourcing, losing key talent at home is likely and managers must have a plan to mitigate the likelihood of key talent departing before the knowledge process has been fully transitioned to the KPO vendor.

Low quality of work by consultants to whom EHS management services are outsourced was the second most serious risk as cited by the respondents. Unfortunately many authors cited in the literature do not seem to consider this risk as important and have therefore left it out altogether in their works, save for Burke (2000) who has observed that there is also the risk of outsourcing EHS to unqualified service providers. Burke has warned that the quality of the safety and health consulting field is deteriorating due to an influx of unqualified operators.

4.3.4 Comparison between Benefits and Risks

In order to compare the benefits and risks of outsourcing, structural equation modeling using Analysis of Moment Structures (SPSS & AMOS 16) was used. Structural equation modeling was used since it is well suited to test a group of weights simultaneously in the form of a model with a significant level 0.05. In this model, the coefficients of risks were denoted as R1, R2, R3, R4 and R5 while the coefficients of benefits were denoted as B1, B2, B3, B4 and B5. Indicators of risks and benefits were then generated. The results are presented in table 4.2.

Table 4.2: Indicators for Risks and Benefits

Benefits	Identification	Question Items (Observable variables)
1. Outsourcing EHS management has enabled us to improve in our EHS regulatory compliance	B1	Improved EHS regulatory compliance
2. Outsourcing EHS management has enabled us access best EHS experts	B2	Access to dynamic and best EHS experts
3. Outsourcing EHS management has enabled us to concentrate on our core business	B3	Concentration in core business
4. Outsourcing EHS management has enabled us to achieve best practice	B4	Best practice
5. Outsourcing EHS management has enabled us to cut down on EHS related costs	B5	Reduction in EHS costs
Risks		
1. Outsourcing EHS management has	R1	Ambiguity on compliance responsibility

created ambiguity on
compliance
responsibility

2. Outsourcing EHS R2 Dependency on EHS consultants
management has
created dependency
on external EHS
consultants

3. Outsourcing has R3 Compromised confidentiality and information
security information
compromised on
organisational
confidentiality and
information security

4. Outsourcing EHS R4 Decline in innovativeness
management has led
to decline in
innovativeness in
EHS management
within our
organization

5. Outsourcing EHS R5 Low quality of work by consultants
has resulted in low
quality of work by
consultants

4.3.5 Hypothesis Testing

The null hypothesis (H0) in this research was: “There are more potential risks than benefits from outsourcing Environment, Health and Safety management in organizations.” The indicators were measured using an ordinal likert scale ranked as follows: Strongly Agree=5, Agree=4, Neutral=3, Disagree=2 and Strongly Disagree=1. The scores were then aggregated. For dependent variables, binary coding was done

using 0 as score for organizations that had outsourced EHS management services or 1 for organizations that had not outsourced their EHS management services. Table 4.3 shows the models developed from hypothesis testing using OLS regression. Model one (1) shows results of outsourcing and benefits while model two (2) shows the results of outsourcing and risks.

Table 4.3: Model Summary

Model	R	R Square	Adjusted R Squared	Std. Error of the Estimate
1	.481 ^a	.231	.111	.47168
2	.850 ^a	.723	.669	.28786

a. Predictors: (Constant), Whether Company Outsources

R, R-squared and Adjusted R is a statistical measure of how close the data are to the fitted regression line. It is also known as the coefficient of determination, or the coefficient of multiple determinations for multiple regressions. In the table 4.3, model 1 for benefits had an Adjusted R-Squared of 11.1 % while model 2 for risks had an adjusted R-Squared of 66.9%.

To test the level of significance of risks and benefits in the two models, ANOVA was used. The results of ANOVA computations are shown in table 4.4.

Table 4.4: ANOVA Tabulations for Determination of Significance

Model		Sum of Squares	df	Mean Square	F	Sig.
1 Benefits	Regression	2.144	5	.429	1.927	.117
	Residual	7.119	32	.222		
	Total	9.263	37			
2: Risks	Regression	6.694	6	1.116	13.465	.000
	Residual	2.569	31	.083		
	Total	9.263	37			

From table 4.4, the level of significance (p-value) for benefits was 0.117 while that for risks was 0.000. The p-value for risk was significant as it is much less than the 0.05 significance level. The p-value for benefits was not significant as it was higher than the 0.05 significance level. Based on the small p-value (0.000) for risks, the study therefore failed to reject the null hypothesis that that there are more potential risks than benefits from outsourcing Environment, Health and Safety management services in organizations. The null hypothesis was thus true from the findings of the research.

4.3.6 Establishing the Model for Risk/Benefit Analysis

Structural equation modeling using Analysis of Moment Structures (SPSS & AMOS 16) was used to test the structural weights between the risks and benefits indicators in order to establish a model. Structural equation modeling was used since it is well suited to test

a group of weights simultaneously in the form of a model with a significant level 0.05. The model had five indicators for benefits and five indicators for risks, each of which was measured by a number of observable variables. Risks were measured using five observable variables, namely: R1, R2, R3, R4 and R5. Benefits were also measured using five observable variables B1, B2, B3, B4 and B5. Tables 4.5 and 4.6 show the resultant coefficients for regression model for benefits and risk respectively.

Table 4.5: Coefficients for Regression Model for Benefits

Coefficients

Model		Unstandardized		Standardized		
		Coefficients		Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	3.970	1.154		3.440	.002
	Improved compliance	-.433	.160	-.708	-2.698	.011
	Access to best experts	.071	.111	.126	.638	.528
	Concentrate on core business	-.267	.167	-.484	-1.603	.119
	Implementation of best practices	.132	.117	.267	1.127	.268
	EHS costs reduction	-.182	.146	-.269	-1.242	.223

Table 4.6: Coefficients for Regression Model for Risks
Coefficients

Model		Unstandardized		Standardized		
		Coefficients		Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	3.074	.614		5.007	.000
	EHS compliance ambiguity	-.725	.124	-.952	-5.837	.000
	Dependence on EHS consultants	.391	.100	.506	3.925	.000
	Compromised information security	.070	.068	.133	1.029	.312
	Declined innovativeness	-.226	.091	-.334	-2.483	.019
	Low quality of work	.416	.073	.796	5.680	.000

The graphic representation of the regression coefficients along with standardized regression weights are shown in figure 4.8.

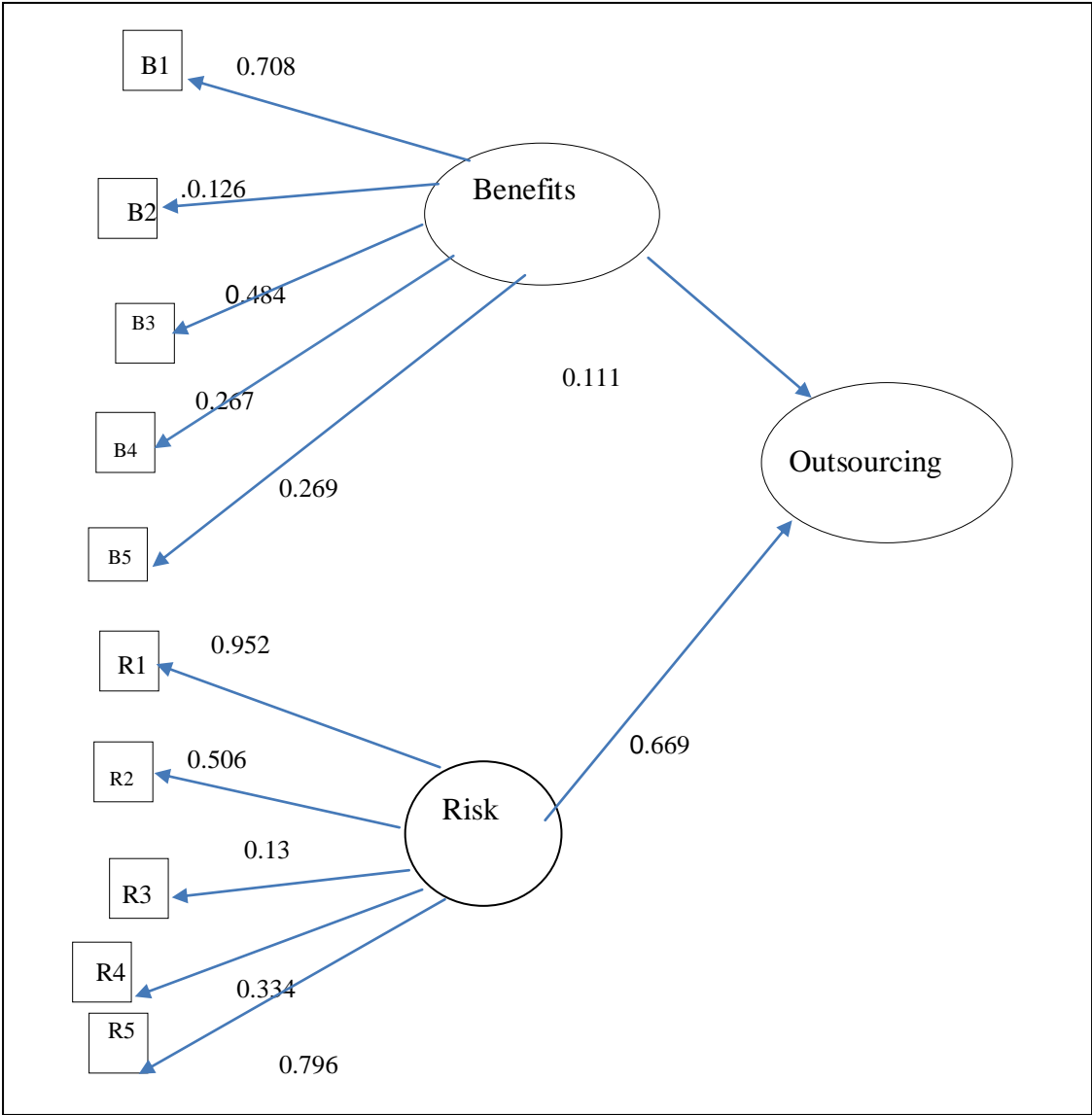


Figure 4.8: Graphic representation of regression coefficients

The aggregate variable risks accounted for 0.669 (66.9%) of the overall model structure and had the strongest path estimate compared to the aggregate variable benefit which had a weaker path estimate of 0.111 (11.1%), which correspond to the values of adjusted R squared in the Regression Model 1 and 2 in table 4.3. It can thus be deduced that there are more risks associated with outsourcing than there are benefits.

The structural weights for the determinants were as follows: Risk of ambiguity on EHS compliance responsibility (0.952), Risk of dependency on EHS consultants (0.506), Risk of compromise on organizational confidentiality and information security (0.133), Risk of decline in innovativeness (0.334) and risk of low quality of work done by consultants (0.796).

The coefficients for benefits were generally weaker than those of risks and were as follows: Improved compliance (0.708), dynamic access to EHS experts (0.126), concentration in core business (0.484), implementation of best practice (0.267) and reduction in EHS related costs (0.269). The overall aggregate score for benefits was found to be 11.1%. This implies that the benefits were perceived to be weaker than the risks of outsourcing the EHS Management services in organizations.

This finding concurs with Bruce (2013) who states that outsourcing isn't for everyone and it won't solve all problems. Bruce states that some of the risks faced in outsourcing include fears of poor customer service to employees, loss of control or trust, difficulty in managing vendor relationship and overdependence on outsourcing company.

The results also concur with APICS and Protiviti (2004) who had observed that without a detailed, disciplined methodology and procedures, companies will often suffer from inconsistently applied policies and strategies, higher risks and more serious risks, and processes that will be ad hoc rather than well-defined and/or optimized, which will tend to reflect lower efficiency, inconsistent supply results, and higher operating costs.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATIONS

5.1 Conclusion

This study has found that the reasons for outsourcing EHS management services vary from organization to organization. The main reason as to why organizations outsource EHS management services is that it enables organizations to have dynamic access to diverse and best EHS experts. Other reasons for outsourcing EHS management services include organizational policy to outsource non-core functions, control of personnel and EHS costs, lack of in-house expertise in EHS management and better compliance with EHS regulations.

The main benefit realized by organizations from outsourcing EHS management services is improved compliance with EHS regulations. Other benefits include EHS costs reduction, concentration of organizational resources on core business and access to best EHS experts.

The main risk associated with EHS management services is overdependence on EHS management consultants, which could diminish in-house innovativeness and affect development of internal EHS management capacity. Other risks of outsourcing EHS management services include low quality of work done by consultants, compromise on confidentiality and security of key organizational information, delay in results delivery by consultants and the creation of the wrong impression that EHS compliance is not the outsourcing organization's responsibility.

The study found that there are more risks than benefits from outsourcing of EHS management.

5.2 Recommendations

Based on the findings of this study:

- a) Organizations need to be careful before deciding to outsource EHS management. They should only outsource aspects that, by law, have to be done by a consultant such as EHS audits and statutory trainings.
- b) It is important to build in-house organizational capacity in EHS management.

This can be done through employment of an in-house EHS officer, establishing an EHS department or establishment of an in-house EHS team that should be well trained.

- a. Organizations should periodically engage services of EHS consultants to audit the efficacy of the EHS management system and bring in best practices from other organizations.
- b. If organizations decide to outsource part or whole of their EHS management function, the roles and responsibilities of both parties should be clearly spelt out in the outsourcing contract to avoid ambiguity in obligations such as compliance.

5.2.1 Further Research

Further research could be conducted on how to manage the risks associated with outsourcing EHS management services to ensure successful outsourcing, considering that outsourcing is being widely adopted by organizations. Research could also be conducted on development of a model or criterion for guiding organizations in deciding whether or not to outsource EHS management services.

REFERENCES

- APICS & Protiviti (2004). Managing the risks of outsourcing: A survey of current practices and their effectiveness. Retrieved February 21, 2016 from <http://www.protiviti.com>
- Barone, S. (2013). Six Reasons You Should Outsource Environmental, Health, & Safety (Web log post). Retrieved August 21, 2014 from <http://www.triumvirate.com>
- Belcourt, M. (2006). Outsourcing: The Benefits and the Risks. *Human Resource Management Review*, 16, 269–27. York: Elsevier Inc.
- Bruce, S. (2013, October 21). Outsourcing: The Good, the Bad, the Far-Flung. Retrieved August 21, 2014 from <http://hrdailyadvisor.blr.com/2013/10/21/outsourcing-the-good-the-bad-the-far-flung/>
- Burke, A. (2000, May 24). Outsourcing - How to make it work for you. Retrieved August 21, 2014 from <http://www.ishn.com/articles/83085-outsourcing-how-to-make-it-work-for-you>
- Cahill, L.B. (2010, November 17). Outsourcing EHS Audits: Does it Make Sense? Retrieved August 2013 from <http://ehsjournal.org/http://ehsjournal.org/lawrence-b-cahill/ehs-audit-outsourcing-environmental-audits-larry-cahill/2010/>
- Claire, M. & Quinlan, M. (1999). Effects of Outsourcing on Occupational Health and Safety: A Comparative Study of Factory-Based Workers and Outworkers in the Australian Clothing Industry. *International Journal of Health Management*, 29 (1), 83–107
- Creative Research Systems. (2012). The Survey System. Retrieved June 2012 from <http://www.surveysystem.com>
- Department for Environment, Food & Rural Affairs. (2013). Environmental Permitting Guidance: Core guidance For the Environmental Permitting (England and Wales) Regulations 2010, London.

- Environmental Management and Coordination Act. (1999). Nairobi, Government Printer.
- Elmuti, D. (2003). The Perceived Impact of Outsourcing on Organizational Performance. *American Journal of Business*, 18 (2), 33-42
- EU-OSHA - European Agency for Safety and Health at Work. (2012). Procurement of Maintenance Services and Health and Safety at Work. E-Facts 63.
- Gilley, K.M. and Rasheed, A. (2000). Making More by Doing Less: Analysis of Outsourcing and Its Effect on Firm Performance. *Journal of Management*, 26(4), 763-790
- Handfield, R. (2006, June 1). A Brief History of Outsourcing. Retrieved February 21, 2016 from <https://scm.ncsu.edu/scm-articles/article/a-brief-history-of-outsourcing>
- Heikkila, J. and Cordon, C. (2002). Outsourcing: A Core or Non-core Strategic Management Decision? *Strategic Change*, 11, 183-193
- House of Lords. (1996, November 14). Judgment - Regina v Associated Octel Ltd. Retrieved May 20, 2014 from <http://www.publications.parliament.uk/pa/ld199697>
- ISO/TC 207. (2004). Environmental Management Systems – Requirements with guidance for use.
- Johnstone, R., Mayhew, C. and Quinlan, M. (2005). Outsourcing Risk? The Regulation of Occupational Health and Safety Where Subcontractors are Employed. *Comparative Labour Law and Policy Journal*, 351-393
- Kamarazaly, M.A. (2007). Outsourcing Versus In-house Facilities Management: A Framework for Value Adding Selection. Institute of Technology and Engineering. College of Sciences, Massey University at Wellington, New Zealand.
- Kremic, T., Tukel, O.I. and Rom, W. O. (2006). Outsourcing Decision Support: A Survey of Benefits, Risks, and Decision Factors. *Supply Chain Management: An International Journal*, 11(6) 467–482.

- Lankford, W.M. and Parsa, F. (1999). Outsourcing: A Primer. *Management Decision*, 37 (4), 310-316.
- Lonsdale, C. (1999). Effectively Managing Vertical Supply Relationships: A Risk Management Model for Outsourcing. *Supply Chain Management: An International Journal*, 4 (4), 176-83.
- Martin, A.B. and McDermott, I.L. (2001). Outsourcing: A Growing Trend in EHSM Management. *Environmental Quality Management*, 11 (2), 45-50. John Wiley & Sons, Inc., USA
- Mugenda A. G. and Mugenda O. M. (2003). Research Methods: Quantitative and Qualitative Approaches. Nairobi, Acts Press
- Mugenda, A.G. (2008). Social science Research: Theory and Principles. Nairobi, Acts Press
- National Academy of Sciences. (2011). Decision Making for Outsourcing and Privatization of Vehicle and Equipment Fleet Maintenance. NCHRP REPORT 692. Washington D.C., National Cooperative Highway Research Program
- O'Brien and Gere. (2012, June 28). Environmental Health and Safety Outsourcing. Retrieved from www.obg.com
- OGP. (1984). Applications and Limitations of Risk Assessment in Offshore Exploration and Exploration. *OGP Report* 11.1/98
- OHSAS Project Group. (2007). Occupational Health and Safety and Management Systems - Requirements
- Sample Size Calculator. (2012, June 28). Retrieved from <http://www.surveysystem.com/sscalc.htm>
- Sample Size: Stratified Random Samples. (2015, March 15). Retrieved from <http://stattrek.com/sample-size/stratified-sample.aspx>
- Sanchez, C. (2010). The Benefits and Risks of Knowledge Process Outsourcing. *Ivey Business Journal*. Ivey Business School. Western University, Canada. Retrieved May 20, 2015 from <http://iveybusinessjournal.com/publication/the-benefits-and-risks-of-knowledge-process-outsourcing/>

- Schmiedeskamp, J. G. (2005). The Evolution of Outsourcing: Moving Beyond Costs to Competitive Advantage. Retrieved November 20, 2015 from <http://www.mengonline.com>
- Scott, M. (2013). Outsourcing Health and Safety – A step too far? RPC Built Environment. Retrieved August 21, 2014 from <http://www.rpc.co.uk>
- Sekaran, U. (2003). Research Method for Business: A Skill Building Approach, 4th Edition, John Wiley & Sons.
- Sonfield, M.C. (2014). Outsourcing Strategies for Small Businesses: Issues, Theoretical Bases, and Guidelines. *Small Business Institute Journal*, 10 (2), 35-43
- Steve. (2010, May 29). Evolution of Business Process Outsourcing. (Web log post). Retrieved July 15, 2013 from <http://www.blog.kpoweb.com>
- Teece, D. (1987). *Capturing Value from Technological Innovation. Integration, Strategic Partnering and Licensing Decisions*, In B. Guile and H. Brooks (Eds), *Technology and Global Industry*, pp 65-95, Washington: National Academy Press
- Wood, P., Shinebourne, J. & Stapleton, B. (1996). Dissertation Guide. Thames Valley University, London
- Zipfel, M.J. (2012) Environment, Health and Safety Outsourcing: Trends and Benefits. Retrieved July 21, 2014 from www.envtsafety.com

APPENDICES

Appendix 1: List of organisations represented in the research

Category One: Manufacturing

1. Galaxy Paints
2. Laborex Kenya Ltd
3. Mabati Rolling Mills
4. Mastermind Tobacco (K) Ltd
5. Nairobi Bottlers Ltd
6. Procter & Gamble Services Ltd
7. Simlaw Seeds Company Ltd
8. Promasidor Kenya Ltd
9. Style Industries Ltd
10. Sumaria Industries Limited
11. Kandia Fresh Produce Supplies Ltd

Category Two: Motor Vehicle Sales and Service

1. Subaru Kenya
2. Toyota Kenya Limited
3. Toyotsu Auto Mart Kenya Ltd.

Category Three: Energy

1. KenGen
2. Kenya Nuclear Electricity Board
3. Kenya Power and Lighting Company
4. Libya Oil Kenya Limited
5. Tullow Kenya B.V
6. Vivo Energy

Category Four: Transport and Communication

1. Airtel Networks Kenya
2. Alcatel-Lucent

Category Five: EHS Consultancy

1. Core Occupational Solutions
2. Kat Systems Consultants
3. Quality Inspectors Ltd
4. Spark Shield Fire Systems
5. Manpower Services (K) Ltd

Category Six: Hospitality

1. Meridian Hotel
2. Sankara Nairobi Hotel

3. Tamimi Kenya Ltd

Category Seven: Others

1. Commercial Bank of Africa Kenya
2. County Government of Nairobi
3. Heritage Insurance Co. (K) Ltd
4. Jubilee Insurance
5. Judiciary
6. Kenyatta National Hospital
7. Lewa Wildlife Conservancy (Nairobi Office)
8. University Of Nairobi

Appendix 2: Research Questionnaire

JAMES THIAINE

REGISTRATION No. EET32-0176/2009

JOMO KENYATTA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY

INSTITUTE FOR ENERGY AND ENVIRONMENTAL TECHNOLOGY

RESEARCH QUESTIONNAIRE

Introduction

My name is James Thiaine and I am a student at the Jomo Kenyatta University of Agriculture and Technology where I am undertaking a masters degree in Occupational Safety and Health. As part of fulfillment of the requirements of the masters degree, I am undertaking a research project whose title is “*Assessment of Benefits and Risks of Outsourcing Environmental, Health and Safety Management by Organizations in Kenya.*” As part of the research, I am consulting organizations such as yours to enable me gather useful information towards my research project. I will be very grateful if you can take a few minutes to respond to the questions in this questionnaire. The information you provide will be held in utmost confidence, and will be used for the said purpose only. Timely response will be highly appreciated.

Section A: Basic data

Name (optional)	_____
Department	1. Human Resources Management [] 2. Administration [] 3. Environment, Health and Safety (EHS) [] 4. Customer Relations [] 5. Marketing [] 6. Corporate Affairs [] 7. Finance [] 8. Technical [] 9. Other (Please specify) [] _____
Name of organization	_____
Industry	1. Motor vehicle/Automobile [] 2. Supermarket [] 3. Energy []

	4. Transport/Communication []
	5. EHS Consultancy []
	6. Hospitality []
	7. Manufacturing []
	8. Other (please specify) []

No. of employees in the organization	1. Below 20 []
	2. 21 to 50 []
	3. 51 to 100 []
	4. 101 to 150 []
	5. 151 to 200 []
	6. 201 to 500 []
	7. Over 500 []
Level in organization	1. General Staff []
	2. Supervisor []
	3. Manager []
	4. Senior Manager []
	5. Director []

Gender	1. Male [] 2. Female []
Number of years worked in the organization	(1) Less than 5 [] (2) 6 to 10 [] (3) 11 to 15 [] (4) 16 to 20 [] (5) 21 to 25 [] (6) Over 25 []
Level of education	1. O Level [] 2. College (Diploma) [] 3. University (Bachelors degree) [] 4. University (Postgraduate Degree/Diploma) [] 5. Other (please specify) [] <hr/>

Section B: Questions

1. Are Environment, Health and Safety (EHS) issues regarded as important in your organization?

1. Yes	[]
2. No	[]

2. How is Environment, Health and Safety managed in your organization?

1. We have an in-house Environment, Health and Safety Officer	[]
2. We outsource EHS management to a consultant	[]
3. We have an in-house EHS Officer but we outsource some EHS functions to a consultant	[]

3. If your organization outsources EHS management wholly or partially to a consultant, which particular aspects does your organization outsource to a consultant?

1. EHS compliance audits	[]
2. EHS training	[]
3. Emergency preparedness and response	[]

4. Risk assessment	[]
5. Maintenance of international EHS standards (ISO 14001:2004 and OHSAS 18001:2007)	[]
6. Waste management	[]
7. All of the above	[]
8. Others (please specify)	
—	
—	
—	
—	

4: If you outsource EHS management, why does your organization outsource Environment, Health and Safety Management?

1. It is our organizational policy to outsource non-core functions	[]
2. To control personnel and other EHS related costs	[]

3. Due to lack of in-house competence	[]
4. Through outsourcing EHS management, we are assured of compliance	[]
5. It enables us to have dynamic access to diverse and best EHS experts	[]
6. Other reasons (please specify)	

Q 5: From your experience of outsourcing EHS management, what benefits has your organization realized?

1. Outsourcing EHS management has enabled us to cut down on EHS related costs	[]
2. Outsourcing EHS management has helped improve our compliance with EHS regulations	[]
3. Outsourcing EHS management has enabled us to access the best experts in EHS management	[]
4. Outsourcing EHS management has enabled us to concentrate on our core business	[]

<p>5. Other benefits (please specify)</p> <hr/> <p>—</p> <hr/> <p>—</p> <hr/> <p>—</p> <hr/>	<input type="text"/> <input type="text"/> <input type="text"/>
<p>6. Outsourcing has not been beneficial to our organization</p>	<p>[]</p>

Q 6: From your experience of outsourcing EHS management, what risks have you encountered?

<p>1. Outsourcing EHS management has created the wrong impression that EHS compliance is not our organization's responsibility</p>	<p>[]</p>
<p>2. Outsourcing EHS management has created dependency on external EHS consultants</p>	<p>[]</p>
<p>3. Outsourcing EHS management has compromised on confidentiality and security of key organizational information</p>	<p>[]</p>

4. Outsourcing EHS management has exposed our organization to exploitation by EHS consultants	[]
5. Outsourcing has led to decline in innovativeness in EHS management within our organization	[]
6. The consultants have sometimes delayed in delivery due to workload	[]
7. Sometimes the quality of work done by consultants has been low	[]
8. All of the above	[]
9. Other risks (please specify) <hr/> – <hr/> – <hr/> – <hr/> –	

7. Read the following statements and then indicate by a tick whether you strongly agree, agree, disagree or strongly disagree with the statement.

	Strongly agree	Agree	Disagree	Strongly disagree
There are more potential risks than benefits from outsourcing Environmental, Health and Safety management in organizations				

8: Given a chance to advise organizations on outsourcing of EHS management, which EHS aspects would you advise organizations to outsource?

1. EHS compliance audits	[]
2. EHS training	[]
3. Emergency preparedness and response	[]
4. Risk assessment	[]
5. Maintenance of international EHS standards (ISO 14001:2004 and OHSAS 18001:2007)	[]
6. Waste management	[]
7. All of the above	
8. Others (please specify)	<input type="text"/>

-	

9. What key considerations would you advise organizations to make when deciding on whether or not to outsource EHS management to consultant?

10. In your opinion, which is the best approach to EHS management in organizations?

1. Employment of an in-house Environment, Health and Safety Officer	[]
2. Outsourcing EHS management to a consultant	[]
3. A blended approach involving managing EHS in-house and outsourcing some functions to an EHS consultant	[]

11. What is your justification for the choice in question (10) above?

Thank you

Appendix 3: Interview Schedule

JAMES THIAINE

REGISTRATION No. EET32-0176/2009

JOMO KENYATTA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY

INSTITUTE FOR ENERGY AND ENVIRONMENTAL TECHNOLOGY

**INTERVIEW SCHEDULE FOR THE DIRECTORATE OF OCCUPATIONAL
SAFETY AND HEALTH SERVICES (DOSHS)**

Introduction

My name is James Thiaine and I am a student at the Jomo Kenyatta University of Agriculture and Technology where I am undertaking a masters degree in Occupational Safety and Health. As part of fulfillment of the requirements of the masters degree, I am undertaking a research project whose title is “*Assessment of Benefits and Risks of Outsourcing Environmental, Health and Safety Management by Organizations in Kenya.*” As part of the research, I am visiting your organization to enable me gather useful information towards my research project. I will be very grateful if you can take a few minutes to respond to the questions in this interview. The information you provide will be held in utmost confidence, and will be used for the said purpose only.

Section A: Basic data

Name (optional)	<hr/>
Department	<hr/>
Position	<hr/>

Section B: Questions

1. According to Section 11 of the Occupational Safety and Health (2007), the occupier of a workplace shall cause a thorough safety and health audit of his workplace to be carried out at least once in every period of twelve months by a safety and health advisor, who is usually not an employee of the organization being audited.

From your experience as the regulator, what are: -

a) the risks or limitations faced by organizations when they outsource health and safety audits to consultants (health and safety advisors)?

b) The benefits or advantages to organizations when they outsource health and safety audits to consultants (health and safety advisors)?

2. From your experience as the regulator for occupational safety and health in Kenya, what are the major concerns arising from health and safety audits and fire safety audits usually done by consultants (advisors and fire safety auditors)?

3. From your experience as the regulator for occupational safety and health in Kenya, which aspects of health and safety management do organizations in Kenya usually outsource?

4. What key aspects or criteria would you like organizations to consider or use in outsourcing health and safety management to consultants?

5. Do you strongly agree, agree, disagree or strongly disagree with the statement that *“There are more potential risks than benefits from outsourcing Environmental, Health and Safety management in organizations”*?

Strongly agree	Agree	Neutral	Disagree	Strongly disagree

6. What other comment would you like to make with regard to outsourcing health and safety management by organizations?

Thank you

Appendix 4: Letter of introduction for data collection



**JOMO KENYATTA UNIVERSITY
OF
AGRICULTURE AND TECHNOLOGY**

INSTITUTE OF ENERGY AND ENVIRONMENTAL TECHNOLOGY
P.O. BOX 62000, NAIROBI, KENYA. Tel: (067) 52251/52711/52181-4, Fax: (067) 52164 Thika, Email: director@ieet.jkuat.ac.ke

6th July, 2012

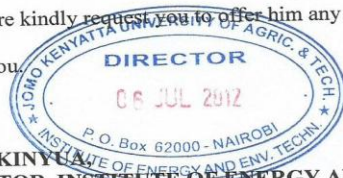
TO WHOM IT MAY CONCERN

RE: JAMES THIAINE – REG.NO EET32-0176/2009

The above named person is a Master of Science (Occupational Safety and Health) student in this Institute. He is currently involved in his research project on “Assessment of Benefit and Risks of Outsourcing Environmental, Health and Safety Management by Organizations”

I therefore kindly request you to offer him any assistance that he may require.

Thank you



DR. R. KINYUA
DIRECTOR, INSTITUTE OF ENERGY AND ENVIRONMENTAL TECHNOLOGY



JKUAT is ISO 9001:2008 CERTIFIED
Setting Trends in Higher Education and Innovation