UNIVERSITY OF KWAZULU-NATAL

A CRITICAL EVALUATION OF ENVIRONMENTAL MANAGEMENT ACCOUNTING (EMA) TOOLS USED BY 3-5 STAR HOTELS IN KWAZULU-NATAL

By

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DECLARATION

I ……………………………………………………………………………. declare that

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ii) This dissertation has not been submitted for any degree or examination at any university.

iii) This dissertation does not contain other person's data, pictures, graphs or information, unless specifically acknowledged as being sourced from other persons.

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Signed:………………………………….   Date:………………………………….....
        Celani John Nyide

Signed:………………………………….   Date:………………………………….....
        Dr Lawrence Mpele Lekhanya

DEDICATION

I dedicate this dissertation to my beloved son,

Luleka Lwande Nyide.

I could not be there when you needed me the most. This is for you, my son.

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It is crucial for me, at this juncture, that I convey the words of appreciation to the following individuals who made this study a success:

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ABSTRACT

The use of environmental management accounting (EMA) remains debated in South Africa and the literature reveals that EMA is still at an infancy stage in the emerging economies, including South Africa. Currently, there is limited existing research on environmental management accounting practices available for use by the hotel sector in South Africa. Several studies maintain that conventional management accounting systems generally fall short of adequate data required for the administration of the environment. The overall aim of this study was to, therefore, investigate and describe the use of the environmental management accounting tools by the hotel sector in the 3-5 star categories in KwaZulu-Natal. The research was an exploratory study and qualitative in nature using a single case study with embedded units approach. ABC Hotel Management Group formed part of this study along its 3 hotels (2 located at Umhlanga and 1 located at Durban North) which met the selection criteria. This approach was considered appropriate so as to develop a rich and deep understanding of the use of EMA tools in the hotel sector. In-depth semi-structured interviews comprised the main method of data collection.

There were 10 participants in this case study which included the group engineer, who is the main custodian of the Group's environmental management systems, 3 general managers, 3 financial managers, and 3 maintenance managers. Additional documents were analysed which included financial statements, policy documents, the Group website, the hotels' websites, Group Energy profile Analysis (GEPA) programme, and Building Monitoring Systems (BMS). This study adopted a judgement purposive sampling because the study selected sample members that conform to some criterion. The hotel had to have an already developed environmental management system. Therefore, it had to have either a Green Leaf Eco Standard certification, Heritage Environmental certification or Fair Trade Tourism certification. The sample also consisted of hotel employees who occupy certain positions of responsibility relating to the management of the environment within the hotels.

The results of this research revealed that the hotel Group is aware of the environmental challenges which include energy and water consumption and waste management. These results are consistent with the literature review. The study showed that the Group developed the GEPA and BMS technologies to provide an environmental account in both physical and monetary units. This constitutes the use of integrated EMA tools, namely, Environmental Cost Accounting (ECA) and Material Flow Cost Accounting (MFCA). However, the study

established a number of factors that drive and/or hinder the implementation of EMA tools that would control and manage environmental costs and their root causes. The adoption of a prototype EMA model by the hotel sector is then suggested by the study.

LIST OF ACRONYMS

ABC	Activity Based Costing
BMS	Building Monitoring System
BOEMS	Best Overall Environmental Management System
BPEI	Best Practice – Economic Impact
BSI	Best Social Involvement
BSRM	Best Single Resource Management
CERES	Coalition for Environmentally Responsible Economies
CLHG	City Lodge Hotel Group
CRHG	Carlson Rezidor Hotel Group
ECA	Environmental Cost Accounting
ECIA	Environmental Capital Investment Appraisal
EDTEA	Economic Development, Tourism and Environmental Affairs
EIA	Environmental Impact Assessment
EM	Environmental Management
EMA	Environmental Management Accounting
EMAS	Environmental Management Accounting Systems
EMP	Environmental Management Practices
EMS	Environmental Management Systems
EPI	Environmental performance Indicators
ER	Environmental Reporting
EWG	Expert Working Group
FCA	Full Cost Accounting
FEDHASA	Federated Hospitality Association of Southern Africa
FTTSA	Fai Trade Tourism in South Africa
GEPA	Group Energy Profile Analysis
GLES	Green Leaf Eco Standard
GRI	Global Reporting Initiative
GSTC	Global Sustainable Tourism Council
HEMC	Heritage Environmental Management Company
HRM	Human Resources Management
IEM	Integrated Environmental Management
IEMS	Integrated Environmental Management Systems

IFAC	International Federation of Accountants
IHEI	International Hotels Environmental Initiative
ISO	International Organisation for Standardisation
ITP	International Tourism Partnership
KPI	Key Performance Indicators
KZN	KwaZulu-Natal
LCA	Life Cycle Assessment
LCC	Life Cycle Costing
LCI	Life Cycle Inventory
LCIA	Life Cycle Impact Assessment
LED	Light-Emitting Diode
LEED	Leadership in Energy and Environmental Design
MEMA	Monetary Environmental Management Accounting
MFCA	Material Flow Cost Accounting
NDE	National Department of Energy
NDT	National Department of Tourism
NEMA	National Environmental management Act
NTSS	National Tourism Sector Strategy
PDCA	Plan Do Check Act
PEMA	Physical Environmental Management Accounting
PetroSA	Petroleum Oil Gas Corporation of South Africa
PWC	PricewaterhouseCoopers
QM	Quality Management
SAPP	Southern African Power Pool
SDF	Spatial Development Framework
SEA	Strategic Environmental Assessment
STA	South African Tourism
TBL	Triple Bottom Line
TQEM	Total Quality Environmental Management
TQM	Total Quality Management
TGCSA	Tourism Grading Council of South Africa
UNEP	United Nations Environmental Programme
WF	Wilderness Foundation
WTO	World Trade Organisation

TABLE OF CONTENTS

CHAPTER FIVE: RESEARCH METHODOLOGY AND DESIGN

CHAPTER SIX: DATA ANALYSIS

LIST OF TABLES

LIST OF FIGURES

CHAPTER ONE

INTRODUCTION AND BACKGROUND TO THE STUDY

"Due to the significant impact the hotel industry has on the environment, customers' attention to environmental issues and ecological awareness, image/reputation of a hotel's brand, its greening, becomes a necessity for competitiveness. In this regard, practitioners with interests in the hotel sector are actively changing operations to reflect more eco-friendly enterprises, are performing diverse ecologically responsible practices, and are adopting sustainable programmes/guidelines" (Ham and Han, 2013: 733).

1.1 INTRODUCTION

Many studies indicate that environmental issues and concerns are world-wide phenomena (Seetharaman, Mohamed, Saravanan, 2007:137; Mőhr-Swart, Coetzee, and Blignaut, 2008:44; Jones, 2010: 126). At the current moment, various eminent environmental issues are threatening the future of humankind. These include the over-consumption of non-renewable resources and global air pollution (Chan, 2008: 187). In the hotel industry, the environmental concerns include, among other things, recycling of waste, waste management, clean air, energy and water conservation, environmental health, maintenance of permits, such as building permits and compliance with legislation, purchasing policy and environmental education (Mensah, 2006: 415). According to Chan and Hawkins (2012: 405), there is a wide interest globally centred on these environmental problems and the moral, ethical, social, and political arguments for taking action on these issues are becoming more intense and an increasing number of stakeholders are interested to participate in order to address these phenomena.

Research establishes that environmental management systems are important means for businesses to manage their environment but most previous studies were conducted in industries such as manufacturing, electronics, chemicals, construction and farming; only a few environmental management system investigations have been conducted in the hospitality and tourism industries (Chan and Hawkins 2012: 406). The South African hotel sector with specific reference to KwaZulu-Natal also needs more investigation. Therefore, this study intended to investigate more on this problem and recommend the solutions.

This chapter presents the research problem, aim and objectives. A brief summary of the literature review is discussed in this chapter, concluding with an overview of the research design used in this study.

1.2 RATIONALE

Firstly, the study revealed new knowledge and increase in information that will be available to the South African hotel sector as far as environmental and sustainability reporting is concerned in relation to the 3-5 star category in KZN. Secondly, it endeavoured to establish the factors that drive and/or hinder the implementation of tools that would control and manage environmental costs and their root causes. Lastly, a prototype model was suggested that can be utilised by industry to rectify the weaknesses that exist at present.

1.3 PROBLEM STATEMENT

The use of EMA remains debated in South Africa (Mőhr-Swart et al., 2008: 165). Farouk, Cherain, and Jacob (2012: 39) support this premise by stating that it might be because EMA is still at an infancy stage in the emerging economies, including South Africa. It appears that there is limited existing research on environmental management applications available for use by the South African hotel sector (Rogerson and Sims, 2012: 404). Literature indicates that traditional management accounting systems and attempts normally fall short of adequate or appropriate data to be used in the administration of environment (Gunarathne and Lee, 2015: 364 and Gale, 2006: 1230). It appears that many companies considerably misjudge both the costs and benefits of comprehensive environmental management (Christ and Burrit, 2013: 164). To close this gap, appropriate EMA tools conducive for the South African hotel sector need to be established. This will assist the hotel sector to improve its environmental management.

1.4 RESEARCH AIM, OBJECTIVES AND QUESTIONS

This section introduces the research aim of this study, along with the objectives and the research questions.

1.4.1 Aim
This research's main aim is to examine and describe the practice of the EMA tools by the hotel

sector in the 3-5 star categories in KZN; and to suggest the adoption of a prototype model for the implementation of EMA by these hotels.

1.4.2 Objectives

Below are sub-objectives which have been developed in order to address the main objectives of this research.

Sub-objective 1: To identify the environmental management accounting tools used for the reporting of environmental costs by the hotel sector in the 3-5 star category in KwaZulu-Natal;

Sub-objective 2: To determine to what extent the tools of environmental management accounting are used to report environmental costs by the hotel sector in the 3-5 star category in KwaZulu-Natal;

Sub-objective 3: To examine the awareness, knowledge, and experience with regards to environmental management accounting tools by KwaZulu-Natal's hotel sector in the 3-5 star category;

Sub-objective 4: To identify critical factors enabling and limiting the use of environmental management accounting by the hotel sector in the 3-5 star category in KwaZulu-Natal; and

Sub-objective 5: To propose the adoption of an environmental management accounting model to improve the implementation of environmental management accounting for the reporting of environmental costs by hotels in KZN in the 3-5 star categories.

1.4.3 Research questions

In order to achieve these objectives, the following research questions have been developed:

❖ What are the EMA tools and techniques used by the hotel sector and how effective are they?

❖ How does the lack of EMA knowledge, skills and experience influence the activities and abilities of the 3-5 star hotels to cope with environmental management and reporting?

❖ What are the factors that encourage the use of EMA tools by the 3-5 star hotels?

1.4.4 Hypotheses

The following research hypotheses were developed to guide this study and they were developed based on the sub-objectives and the researched themes of this study:

H1:   It was hypothesised that EMA practices within the hotel lector and the extent to which they are implemented is not clear in the 3-5 star category in KZN.

H2:   It was hypothesised that there was lack of awareness, knowledge, and experience with regards to the use of EMA tools by the hotel sector in the 3-5 star category in KZN.

H3:   It was hypothesised that there were critical factors enabling and limiting the use of EMA by the hotel sector in the 3-5 star category in KZN.

1.5 LITERATURE REVIEW

Burritt and Saka (2006: 1262) and Vasile and Man (2012: 566) define EMA as the identification, collection, analysis and use of two types of information for internal decision making: i) physical information on the use, flows and destinies of energy, water and materials (including wastes); and ii) monetary information on environment-related costs, earnings and savings. According to De Beer and Friend (2006: 549), EMA was created for sustainability purposes. Different regulated practices and systems for adequate environmental management, such as ISO 14000 and Integrated Environmental Management Systems (IEMS), also play a pivotal part in the environmental management frameworks to address the existing environmental phenomena facing companies and assist in measuring and improving the environmental aspects of their operations (Jones, 2010: 126).

Traditional management accounting systems and mechanisms have been reported to be unable to add value in terms of providing adequate and appropriately meaningful knowledge that would assist environmental administration and administrating-related environmental overheads (Vasile and Man, 2012: 567). This has led to the understatement of costs and benefits that would ordinarily be achieved by organisations that adopt or implement appropriate EMA tools (Christ and Burritt, 2013: 165). EMA is increasingly being investigated in order to fill in this gap.

Different organisations in the service sector have adopted various environmental initiatives to curb the scourge of adverse environmental impact on our planet (Chan, 2008: 187). An

increasing number of hotels are also taking various initiatives to address the environmental concerns, improve economic performance, and/or to develop a favourable brand name (Chan and Hawkins, 2010: 641). There are hotels that are getting advanced and implemented voluntary self-regulatory initiatives such as the international environmental management system (EMS) standard ISO 14001, in order to have appropriate systems to improve environmental performance (Chan and Wong, 2006: 482).

It is important for the hotel sector that it embarks on environmental activities to preserve our planet, and there are numerous reasons for doing that. For example, Massoud, Fayad, El-Fadel and Kamle (2010: 204) conducted a study that revealed three main motivating factors for the adoption of EMS, namely:

a) follow international industry trend and improve environmental performance;
b) enhance company image; and
c) reduce operational cost.

Hotels may also implement environmental measures aimed at reducing the consumption of energy, water, and materials, thus reducing operating costs (Jasch, 2003: 668; Tarí, Claver-Cortés, Pereira-Moliner, and Molina-Azorín, 2010: 507). Worthy mentioning, is the fact that hotels believe that implementing these tools could improve customer loyalty (Chan, 2008: 195). Kang, Stein, Heo, and Lee (2012: 566) add that customers who are more concerned about environmental issues show a greater degree of willingness to pay for the additional costs incurred by conducting green practices. The term "green" denotes eco-friendly, environmentally-friendly, or environmentally-responsible activities (Ham and Han, 2013: 731).

According to Burritt and Saka (2006: 1266); Jones (2010: 132) and Chan and Hawkins (2012: 405), businesses, including hotels, have become much more aware of the relationships among environmental performance, scarce resources, public legitimacy, and both short-term and long-term profitability. In particular, hotels are facing increasing pressure to pay appropriate attention to environmental issues, as they consume substantial quantities of energy, water, and non-durable products (Chan and Hawkins, 2012: 405). Furthermore, hoteliers have further interest in environmental protection, given that their businesses succeed due to an offering that is appealing and nontoxic (Chan and Wong, 2006: 482). As more consumer awareness programmes are being promoted concerning environmental problems, hotel customers are becoming interested in hotels that follow eco-friendly practices (Kang et al., 2012: 566).

An increasing number of hotels have started to adopt the implementation of EMS to address the environmental concerns, to improve economic performance, and/or to develop a favourable brand name (Chan and Hawkins, 2010: 641). For example, a study was conducted in the hotel sector in Hong Kong that contributed to identifying the elements and processes of EMS implementation, and elaborated on the development of an environmentally-friendly approach to managing hotel operations based on the experiences of the single case study performed in Hong Kong (Chan and Hawkins, 2012: 417). Another study found that the hotels in Turkey are far behind the developed countries in adopting and developing environmentally-responsible policies and operations (Erdogan and Baris, 2007: 611). In Poland, a study conducted by Bohdanowics (2006a: 679) reveals that Polish hoteliers were found to be at the stage of recognizing the importance of environmental concern and initiating various activities. However, due to the relatively low level of environmental knowledge and the lack of relevant policies for sustainable tourism development, most actions undertaken by Polish hoteliers are aimed at achieving immediate economic benefits, or are those required by law. According to Chan (2008: 187), many hotels are still undecided about adopting EMS. Erdogan and Baris (2007: 605) add that, while there have been various studies of the environmental protection practices of hotels, the majority has focused on large hotels catering to the demands of mass tourism on seashores and in popular resort areas.

1.6 RESEARCH DESIGN

The study consisted of a literature review and empirical study. The literature review provided an in-depth review of hotel environmental issues within management accounting. The historical review laid a foundation that guided empirical study and provided an insight and understanding into the research problem.

The research problem has the following difficulties that determine the empirical research methodology:

❖ The need to understand the application of EMA tools by KZN's hotel sector in the 3-5 star category in as far as environmental costs are concerned. This is not a problem where the frequency or application of EMA tools can be merely counted or identified. It requires discussion and interpretation to identify if these tools are actually used;

❖ The assessment of environmental costs requires the collection of data to do with organisational costs, revenue, and profits, all of which are usually regarded highly

confidential (Setthasakko, 2010: 316). It is unlikely that this data can be collected from all the companies in a large sample (Gunarathne and Lee, 2015: 367). This problem makes it difficult to constitute a suitable sample for a quantitative study; and

❖ Very little research has been done on this topic in the hotel sector and it is, therefore, not a good idea to develop adequate approaches for a quantitative study (Fukey and Isaac, 2014: 297).

Consequently, based on these three difficulties, it is apparent that the research should be an exploratory study, attempting to obtain a deeper understanding of the use of EMA tools by the KZN's hotel sector in the 3-5 star category to report environmental costs. It is therefore decided that a qualitative methodology should be used.

1.7 QUALITATIVE METHOD CHOSEN

Qualitative research methods have been described as an array of interpretative techniques which seek to describe, decode, translate and otherwise come to terms with the meaning, not frequency, of certain more or less naturally occurring phenomena in the social world (Van Maanem, 1983: 9, as quoted by Hussey and Hussey, 1997: 140). This research, which is exploratory and qualitative in nature, takes the form of a case study.

1.7.1 Case study methodology

Baxter and Jack (2008: 544) state that qualitative case study methodology provides tools for researchers to study complex phenomena within their contexts. According to Burritt and Saka (2006: 1266), a case study can provide rich descriptions, explorations and explanations of the phenomena being studied, and are of particular use where little prior study has been undertaken. Yin (2009: 9) states that a case study design should be considered when: a) the focus of the study is to answer how and why questions; b) you cannot manipulate the behaviour of those involved in the study; c) you want to cover contextual conditions because you believe they are relevant to the phenomenon under study; or d) the boundaries are not clear between the phenomenon and context. Therefore, in this study, the case study will be used because of the complex phenomena surrounding the hotel sector, particularly 3-5 star category hotels are not clearly understood (Rogerson and Sims, 2012: 404). The case of how EMA tools are applied by the 3-5 star hotel category is still in question. Therefore, knowledge and awareness of proper

tools used to address EMA problems faced by the hotel sector cannot be noticed and decisions cannot be recommended without conducting research in this regard.

1.7.2 Determining the type of case study

In this study, the exploratory type of the case study was used. This type of case study is used to explore those situations in which the intervention being evaluated has no clear, single set of outcomes (Yin, 2009: 47). Since the issue of EMA is new in the field of management accounting, specifically in South African context, its practices and applications in the industry, such as hotels are still new and it is still not clear as to how they are applied (Rogerson and Sims, 2012: 404). The use of case study as a research methodology to collect data will be appropriate for this study because it will provide rich descriptions, considerations and clarifications of the events being investigated. This approach is also consistent with similar studies performed in EMA, whether in developed economies and/or other sectors of the economy, for example, in the Japanese companies (Burritt and Saka, 2006: 1266); in the pulp and paper companies in Thailand (Setthasakko, 2010: 318); in local government in Australia (Qian, Burritt and Monroe, 2011: 100); in Universities in Taiwan (Chang, 2013: 135). The case study is relevant for this study because the investigator is attempting to establish rich awareness of the context of EMA tools used by the 3-5 star hotel sector and the processes being utilised. Saunders, Lewis, and Thornhill (2012: 179) write that the case study strategy has also considerable ability to generate answers to the question 'why?' as well as 'what? and 'how?' questions. The case study strategy is, therefore, appropriate because this research has posed questions that this study seeks to answer.

1.7.3 Reporting a case study findings

This study adopted a linear-analytic structure because it is applicable to exploratory case studies and this method is a standard approach for composing research reports (Yin, 2009: 176)

1.8 TARGET POPULATION

The target population for this study was hotels in KwaZulu-Natal that have a high quality range of accommodation classified as 3-5 star quality hotel establishments. According to the Tourism Grading Council of South Africa (TGCSA), the number of 3-5 star graded hotels in KwaZulu-

Natal stand at 103 (TGCSA, 2015). The majority of these hotels is owned or controlled by a mix of individual independent entrepreneurs and increasingly by a small group of large-owned hotel chains (Rogerson, 2013: 63).

1.9 SAMPLING AND SAMPLING METHOD

Purposive sampling was be used in this study because with purposive sampling one needs to use one's judgement to select cases that will best enable the researcher to answer research questions and to meet objectives (Saunders, Lewis, and Thornhill, 2012: 287). The hotels that formed part of the case study had to meet the discriminatory criterion: They must have an already developed EMS. Therefore, they must have a Green Leaf Eco Standard certification and/or Fair Trade Tourism certification.

In this study, the hotel Group and its embedded units are the unit of analysis. However, the Group engineer and the individual hotel management teams representing three hotels were the ones interviewed. This is because the proposal relates to the EMA tools used by the hotels and not by individuals within that hotel. Management accounting and environmental management are of particular importance and interest to this study. Therefore, participants from the finance department, resources/general management division, cleaning department and maintenance department of the targeted hotels were required to participate. There was a minimum of 3 senior staff members from the targeted hotels. This consisted of 3 general managers, 3 financial managers, 3 maintenance managers, and the Group engineer. A total of 10 individuals participated in this study. This sample size is sufficient and appropriate according to Saunders et al. (2012: 283). Creswell (2015: 77) recommends a sample size of between 3 to 10 participants for phenomenology studies like this one. According to Mason (2010: 2), the sample size of between 3 to 10 participants has been used in doctoral studies as well.

1.10 DATA COLLECTION

Data collection took the form of in-depth interviews. Yin (2009: 114) suggests three main sources of data collection for qualitative research methods and these are in-depth, open-ended interviews, direct observation and written documents. Rubin and Rubin (2012, as quoted in Flick: 2014: 208) uncover that in-depth interviews allow deep information and knowledge to be sought, with this information usually being related to personal matters, such as values and decisions, cultural knowledge or perspective. Moreover, in-depth interviews minimise the

chances to report on researchers' own perceptions; whereas direct observations and documentary evidence would require researchers to place far more of their perceptions into the interpretation of data sources (Chang, 2007: 110). Furthermore, additional documentation were analysed which were acquired from the participating hotels and/or their websites.

1.11 ADMINISTRATION OF THE INSTRUMENT

The interview was predominantly self-administered with the aid of personal assistants to give clarity on some aspects which may not be understood by respondents.

1.12 DATA ANALYSIS

Thematic coding was used to categorise findings from the hotel being investigated. Thematic grouping of text paragraphs rather than a scoring process minimises potential for bias (Chang, 2007: 116). Cross-case syntheses were used to analyse data.

1.13 RELIABILITY, BIAS AND VALIDITY

Below is the brief discussion of how the study addressed issues that relate to reliability, bias and validity of this study.

1.13.1 Reliability

In qualitative research, reliability is concerned with whether the findings from the case study can be replicated if the case study is done by alternate researchers (Easterby-Smith at al. 2008, in Saunders et al.; 2012: 381). The same interview questions were posed to all the participants as this enhances the reliability of data being collected (Voss, Tsikriktsis, Frohlich, 2002: 205). Reliability was also increased by using multiple sources of data. Therefore, apart from collecting data through semi-structured interviews, data was also collected from the analysis of company documents, such as financial reports, policy documents and also the hotels' websites. Voss et al. (2002: 206) write that an underlying principle in the collection of data in case research is that of triangulation, i.e., the use and combination of different methods to study the same phenomenon.

1.13.2 Bias

It is said that case study researches are prone to preconceived notions that might motivate them to conduct the case study and this makes the study to be biased (Flyvbjerg, 2006: 234 and Yin 2009: 72). To address the concern for bias in case study research, Yin (2009: 72) suggests that the researcher needs to be open to contrary findings. To reduce any likelihood of bias, this study will adopt what has been a norm in many case study researches cited in Flyvbjerg (2006: 235), where, if any preconceived views, assumptions, and concepts were wrong, the researchers had to revise their hypotheses to align them to new findings. The researcher will be tolerant to contrary findings. According to Yin (2009: 72), it is suggested that the researcher reports his or her preliminary findings, possibly while still in the data collection phase, to two or three critical colleagues. The colleagues should offer alternative explanations and suggestions for data collection. If the quest for contrary findings can produce documentable contradictions, the likelihood of bias will have been reduced.

1.13.3 Validity

Creswell (2015: 19) and Yin (2009: 40) write that case study research should fulfil the same requirements as any other methodology in social sciences for being considered as a rigorous research method, namely:

* ❖ Construct validity: identifying correct operational measures for the concept being studied;
* ❖ Internal validity: seeking to establish a causal relationship, whereby certain conditions are believed to lead to other conditions, as distinguished from spurious relationships;
* ❖ External validity: defining the domain to which a study's findings can be generalised; and
* ❖ Reliability: demonstrating that operations of the study, such as the data collection procedures, can be repeated, with the same results.

Several steps were taken to improve the validity of this study by following different modes of triangulation (Gunarathne and Lee, 2015: 369). To ensure validity, this study used multiple sources of evidence during the data collection phase as indicated above. This study also maintained a chain of evidence, which Yin (2009: 122) asserts that it is a principle to be followed in order to increase reliability of the information in. The principle is to allow the external observer, i.e., the reader of the case study, to follow the derivation of any evidence from initial research questions to ultimate case study conclusions.

1.14 STRUCTURE OF DISSERTATION

CHAPTER ONE introduced readers to what has been described as the problem statement of the study. The chapter made the reader aware of the purposes, aims and objectives, as well as the limitations of the study. The reader was guided as to what motivated the problem and highlighted what will be done to solve the problem.

CHAPTER TWO covered the first part of the literature review with the intention of providing a summary of previous research on the philosophies and advancement of the South African hotel sector and their efforts on environmental management.

CHAPTER THREE consisted the second part of the literature review. This part of the literature review focused more on the international perspective in as far as the environmental management initiatives and practices within the hotel sector are concerned. This chapter also discussed the awareness of various environmental management practices and initiatives by the hotel sector with the aim of investigating the extent at which these practices are used by the hotel sector. This section also investigated the factors (internal or external) that enabled or hindered the application of environmental management practices by the hotel sector.

CHAPTER FOUR discussed the emergence of EMA and its practice within the hotel sector. This section also discussed various EMA tools and concluded by examining the factors that enable or limit the application of EMA tools within the hotel sector.

CHAPTER FIVE discussed in detail the research methodology. The qualitative research methodology and the use of the case study were explained.

CHAPTER SIX comprised the analysis and results, presenting the qualitative analysis of the data obtained through the questionnaires. It described how the data was processed into meaningful results that the reader will be able to interpret and understand.

CHAPTER SEVEN focused on the interpretation of the results for this study, relative to the findings of the literature review.

CHAPTER EIGHT is the final chapter of the dissertation and contained the conclusions that

were drawn from the findings in chapters five and six. It also contained the various recommendations that are made for further research.

1.15 CONCLUSION

This chapter served as an introduction by discussing the background for this research. The rationale for conducting this research was outlined together with the research problem, research objectives and research questions. This chapter also outlined chapters for this research project. The following chapter is a literature review pertinent to the South African hotel sector and the environment.

CHAPTER TWO

THE SOUTH AFRICAN HOTEL SECTOR AND THE ENVIRONMENT

"A clean environment is a basic component of quality service and is thus important for the development of travel, tourism, and hotel industries. Sustainable prosperity of travel, tourism, and hotel businesses also calls for the inclusion of environmental protection components in every phase of their business venture, from the preparation and application of site plans and business programs and policies to daily routine practices" (Erdogan and Baris, 2007: 604)

2.1 INTRODUCTION

Hospitality and tourism is a booming industry. However, several studies have reported negative environmental impacts caused by this sector. Some hoteliers find it difficult to embrace environmental management mechanisms to address the hotels' impact on the environment. Cost verses benefit is always an issue when it comes to the introduction of such systems (Post and Altman, 1994: 76; Vasile and Man, 2012: 556 and Sucheran, 2013: 56). The implementation of EMA tools would inevitably result in upfront investments. With their entrepreneurial acumen, hoteliers would expect measurable return on their investments. Literature does indicate that implementing EMA systems does not only reduce environmental impacts caused by businesses, it also results in cost reduction and there is also a potential for improvement in the business's market share (Erdogan and Baris, 2007: 612).

Limited research has been done in the area of EMA practices by hotels in South Africa. Therefore, the effectiveness of the application of EMA tools within this sector is still unknown (Leonard and Dlamini, 2014: 1). Government's intervention in ensuring hotels' compliance with environmental regulations is also unknown in the South African sector. It is worth mentioning that several hotel groups have developed initiatives that are aimed at reducing their hotels' environmental costs. However, more academic attention is required to understand the initiatives to encourage greening in tourism accommodation generally in South Africa (Hoogendoorn, Grant and Fitchett, 2015: 123).

This chapter, therefore, discusses the overview of the tourism sector within the South African context. It also covers the main environmental challenges facing the South African hotel sector and the environmental management practices (EMPs) used by this sector in order to address the environmental challenges.

2.2 AN OVERVIEW OF THE TOURISM SECTOR IN SOUTH AFRICA

According to the Tourism Grading Council of South Africa (TGSA), South Africa's official grading organisation, as quoted by Van der Merwe and Wöcke (2007: 2), a hotel is defined as an establishment that provides accommodation to the travelling public, and has a reception area and offers at least a 'breakfast room' or communal eating area. Bohdanowicz (2006b: 1) defines the hotel as a tourism business unit which, as its main endeavour, rents room accommodation to the general public for a minimum duration of one night. Frequently, this activity is supported by the provision of food and drink and other related services. Shoval and Cohen-Hattab, as quoted by Rogerson (2013: 60), state that the hotel is considered the most prominent and representative expression of tourism due to physical prominence in the urban landscape. Hotels are known to play a significant role in providing facilities for the transaction of business, for meetings and conferences, for entertainment and recreation (Rogerson, 2013: 60). Arguably, hotels play a significant role in job creation and entrepreneurship advancement. According to Kirsten and Rogerson (2002: 30), the afore-mentioned role depends on the nature and location of the hotel, the size and source of investment, the policy accompanying the investment and the entrepreneurial support available.

The accommodation sector of South Africa's tourism industry has seen tremendous growth since the country's re-entry into the global tourism economy (Hoogendoorn et al., 2015: 123 and Rogerson 2013:60). According to the Annual Report 2013/2014 by the National Department of Tourism (NDT, 2015a), the World Travel and Tourism Council estimated that South Africa's travel and tourism sector contributed approximately R102 billion ($10.4 billion) to the country's economy, directly supporting an estimated 620 000 jobs in 2012. An upward trajectory in tourism numbers is evident for the period 1990 – 2010. As a consequence of pressures for boycotts of South Africa and the subsequent formal imposition of international sanctions, the country's tourism economy stagnated throughout the 1980s. During this phase of 'stagnation' in international tourism, investment in new product development was low and driven by an industry focus upon the White South African domestic tourist. Under late

apartheid, the years of political turmoil witnessed a national State of Emergency, which further undermined possibilities for developing international tourism. In an expanding international tourism economy, South Africa was avoided by European and North American travellers (Rogerson and Visser, as quoted by Rogerson, 2013: 60). Figure 2.1 shows famous places that are visited in South Africa. The hotels' activities in these visited sights inevitably lead to the degradation of the environment (Janković and Krivačić, 2014: 104).

Figure 2.1 South Africa tourist map.

Source: Safari Co. (2015)

According to South African Tourism (STA, 2015), the country is endowed with a well-established tourism industry with an exciting sector of emerging entrepreneurs. The country is strong on adventure, sport, nature and wildlife, and is a pioneer and global leader in responsible tourism. The country's top 10 cities, where most of the country's tourism space is dispersed, are: 1) Cape Town; Western Cape; 2) Johannesburg, Gauteng; 3) Durban, KwaZulu-Natal; 4) Pretoria, Gauteng; 5) Port Elizabeth, Eastern Cape; 6) Bloemfontein, Free State; 7) Nelspruit, Mpumalanga; 8) Kimberly, Northern Cape; 9) Polokwane, Limpopo; and 10) Pietermaritzburg, KwaZulu-Natal (STA, 2015).

PricewaterhouseCoopers (PWC, 2015: 16) expects the number of available rooms in hotels to increase by 0.7% in 2015 and to average 0.9% compounded annually to 63 600 in 2019 from 60 800 in 2014. Growth, however, will be limited by the imposition in May 2014 of two new requirements needed to obtain a visa. One requirement mandates that foreign visitors must appear in person at a South African consulate to apply for visas to have biometrics taken. A second policy requires that parents and guardians travelling with minors must have an unabridged birth certificate that shows the names of both parents. If a minor is travelling with one parent, an affidavit from the other parent is required granting consent for the trip. The purpose of the latter policy is to stop child trafficking. Tourism industry commentators in South Africa say this has already adversely affected travel from China and India, as potential visitors from these countries may have to travel long distances to a large city to obtain the necessary documentation before travelling to South Africa (PWC, 2015: 16).

2.3 ENVIRONMENTAL CHALLENGES FACING THE SOUTH AFRICAN HOTEL SECTOR

Hotels have been built, and continue to be built as a symbol of attractions, with the design requiring a substantial amount of energy, water and other resources used by the various mechanical systems to make them habitable (Bohdanowicz, 2006b: 1). The services offered by the hotel and the operational mechanisms applied, if not efficiently managed, can lead to a significant amount of energy and water used by this industry being wasted. According to Erdogan and Baris (2007: 604), the hotel industry, because of the nature of its functions, characteristics, and services, consumes substantial quantities of energy, water, and non-durable products. It has been estimated that most environmental impacts created by the hotel industry can be attributed to site planning and facility management; excessive consumption of local and

imported non-durable goods, energy, and water; and emissions into the air, water, and soil. Mensah (2006: 415) also maintains that, within the hotel sector, the areas of concern for the environment include recycling of waste, waste management, clean air, energy and water conservation, environmental health, maintenance of permits such as building permits and compliance with legislation, purchasing policy and environmental education.

Literature reveals that hotels have become increasingly aware of the relationships among environmental performance, scarce resources, both short-term and long-term profitability and public legitimacy (Chan and Hawkins, 2012: 405). Based on the legitimacy theory, for example, firms disclose their environmental performance on their reports based on public or political pressure (Cho and Patten, 2007: 639). Suchman (1995: 574) defines legitimacy as a generalised perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially construction system of norms, values, beliefs, and definitions. Bansal and Clelland (2004: 94) extended the legitimacy definition to define corporate environmental legitimacy as the generalised perception or assumption that a firm's environmental performance is desirable, proper, or appropriate. Alrazi, de Villiers, and van Staden (2015: 45) mention that an organisation demonstrates legitimacy when its environmental performance adheres to preferences and expectations of stakeholders.

Hotels are facing increasing pressure to pay appropriate attention to environmental issues, as they consume substantial quantities of energy, water, and non-durable products (Chan and Hawkins, 2012: 405). Moreover, the hotel industry has an additional stake in protecting the environment, because its business success depends on providing attractive and safe surroundings (Chan and Hawkins, 2012: 405). According to Janković and Krivačić (2014: 106), the hotel inputs and outputs concerning the environment cost lies in the use of energy which causes lower atmospheric pollution, lower water consumption that causes less wastewater and less distortion of the hydrological cycle, better use of other productive factors which cause less contamination of soil and less land used for rubbish tips. The major environmental issues and costs that were under investigation were, therefore, limited to energy, water and waste management as it is indicated above that hotels consume substantial amounts of these factors of production. Sustainability in hotels' operations and existence is important and equally so the preservation of the environment.

Rogerson and Sims (2012: 392) assert that South Africa is ranked as a competitive destination internationally for nature tourism. However, the country has a poor track record for reducing carbon dioxide emissions. According to Tsai, Lin, Hwang, and Huang (2014: 13), carbon dioxide is emitted generally by the direct use of fossil fuels and indirectly by electricity consumption in the tourism sector. Therefore, it is argued that innovative local solutions are required to provide support for low carbon destinations, enhanced travel and accommodation efficiencies and accessible carbon offsets as part of wider efforts to grow the ecotourism and experiential tourism market in South Africa (Rogerson and Sims, 2012: 392). However, the lack of appropriate policies is affecting the possible growth rate of the depreciation of possible harmful emissions, and overuse of energy and water consumption (Leonard and Dlamini, 2014: 2). There is the existence of responsible tourism guidelines for the South African hospitality industry, as revealed by Goodwin, Spenceley, and Maynard (2002: 17) and illustrated in Table 2.1 below.

Table 2.1 Responsible Tourism Guidelines for the South African Hospitality Industry

Guideline	Action
Air quality and pollution	Managing and reducing, where possible, emissions into the atmosphere ❖ limiting or reducing emissions into the air (e.g., cleaning air filters, exhaust systems, reducing odours) ❖ eliminating or minimising the effects of noise pollution (e.g., reducing vibrations, fitting silencers) ❖ ensuring quality air in public areas through air flow and purification
Energy management	Measuring and monitoring or appropriate long and short-term energy usage ❖ regularly monitoring all energy usage ❖ investigating the findings of adverse energy measurements ❖ fitting of energy saving technology and devices (e.g., power correction, time

	clocks)
	❖ use of insulation on hot water pipes and tanks
	❖ use of natural power e.g. solar power
Procurement policies	Conducted with minimal impact on the environment
	❖ implementation of programmes to ensure the purchase of goods which have minimal negative impact on the environment – if possible, from local suppliers and historically disadvantaged businesses
	❖ investigation into the environmental practises of suppliers
	❖ use of natural and recyclable materials
Waste and pollution	Collecting, storing and recycling of waste material and by-products
	❖ sorting and separating different types of waste such as cans, glass and paper
	❖ ensuring that no waste escapes, particularly liquids
	❖ introducing schemes to manage waste, using local communities, thus empowering them to participate
	❖ in recycling schemes
	❖ recycling used cooking oil
Water Conservation	Measuring and monitoring water use and conserving this natural resource:
	❖ regularly monitoring water usage
	❖ implementing water saving programmes
	❖ fitting water saving devices
	❖ recycling water where appropriate

Source: Adopted from Goodwin et al. (2002: 17)

Even though the South African government has noted the importance of responsible tourism and environmental sustainability, it is argued that the existing policies do not maintain clear strategies for managing the impact on the environment contributed by the hotels (Leonard and Dlamini, 2014: 4). To expand on this argument, Wyngaard and de Lande (2013: 230) state that ambiguous policies and the lack of a trained workforce within the Department of Environmental Affairs and Tourism add to the challenges. As a result, the South African government is challenged by the international organisations to enforce its own legal framework (Wyngaard and de Lange, 2013: 310). A detailed history of the development and the existence of environmental policies with the South African hotel sector will be discussed later in this chapter.

Below is the discussion of the major environmental challenges faced by the hotel sector congruent to the responsible tourism guidelines, as mentioned above, focusing on the three major environmental challenges that form part of the research objectives.

2.3.1 Water challenges in South Africa

The average annual rainfall in South Africa is 464 mm – half of the world's average (Doneva, van Sarka, Bloka, and Dintchev, 2012: 3003). The availability of water is uncertain because water supply is reliant on weather conditions. This is supported by Kasim, Gursoy, Okumus, and Wong (2014: 1092) who state that weather conditions may disrupt water supply. Many countries extract water from deep ground sources during dry seasons and this causes many non-renewable resources to deplete and this may cause future humanitarian crises if no remedial action is taken (Kasim et al., 2012: 1092). As alluded to above, the South African tourism sector has been experiencing significant growth over the years. However, this growth is prone to come with unsustainable consumption practices endangering ecosystems and natural resources if caution is not exercised by hotel operators. According to Erdogan and Baris (2007: 612), the hotel's water consumption depends on the type, standards, and size of the facility, on the services and facilities offered, on the climate and irrigation needs, and on existing water conservation practices. Water and energy management is normally organized in a similar manner in hotels. Charara, Cashman, Bonnella, and Gehr (2011: 231) also maintain that there is a correlation between water consumption and the number of rooms, average room rate, property size and number of employees.

Most water consumption occurs in hotel rooms, the laundry units, and the kitchen facilities (Erdogan and Baris, 2007: 612). According to Gössling, Peeters, Hall, Ceron, Dubois, Lehmann, and Scott (2012: 9), water consumption by hotels is far higher than household consumption, due largely to the collective consumption of water in hotels (watering of gardens that must be kept attractive, daily cleaning of rooms, filling of swimming pools, kitchen and, above all, doing the laundry). Furthermore, holidaymakers have a 'pleasure' approach to the shower or bath and generally use more water than they would normally. As quoted by Wyngaard and de Lange (2013: 309), Alexander asserts that up to 1 499 litres of water may currently be used daily in a single luxury hotel room and hotels may produce food waste of up to 46% of a hotel's total waste, which is clear evidence of the impact on the environment caused by the hospitality industry in this regard.

South Africa is considered a drought prone country with an arid climate over 69% of its total surface area, which makes it one of the 20 driest countries in the world Wyngaard and de Lange (2013:310). Literature reveals that South Africa is facing physical water scarcity with demand estimated to outstrip supply at the current consumption rates (Gulati, Jacobs, Jooste, Naidoo and Fakir, 2013: 157). Some parts of the country have witnessed water shedding (restrictions) to address the scourge of water shortages. According to Moore (2015: 1), parts of KZN – northern Ethekwini, the South Coast, and the rural north – are facing water restrictions as dams dry up. Much of South Africa is about to be declared an official drought zone. Water and electricity resources are under the greatest demand in South Africa, and current availability cannot sustain the consumption levels of tourist accommodation (Hoogendoorn et al., 2015: 134).

2.3.2 Energy crises in South Africa

South Africa is an energy-intensive economy, meaning that the country uses a large amount of energy for every rand of economic output (Winkler, 2006: 4). The coal and oil are the main means of meeting South Africa's energy needs and the coal alone accounts for about 72% of energy (Lin and Wesseh, 2014: 842). Only a small percentage of the energy consumption mix comprises of natural gas, hydro, biomass and nuclear (Doneva et al., 2012: 3004). The energy industry of South Africa is regulated by the National Energy Regulator of South Africa (NERSA), established in 2005. South Africa also has a national oil and natural gas company – the 'Petroleum Oil and Gas Corporation of South Africa' (PetroSA). It manages the licensing of oil and natural gas exploration in the country. Eskom is the national electricity production,

transmission and distribution company (Doneva et al., 2012: 3005). The electricity system has grown rapidly during the last few decades. As the highest in Sub-Saharan Africa, South Africa has reached a 75% rate of electrification nationwide and also exports electricity to neighbouring countries through the Southern African Power Pool (SAPP) (Lin and Wesseh, 2014: 842). Figure 2.2 depicts the different climatic zones of South Africa and their impact on energy consumptions.

Figure 2.2 Different climatic zones of South Africa
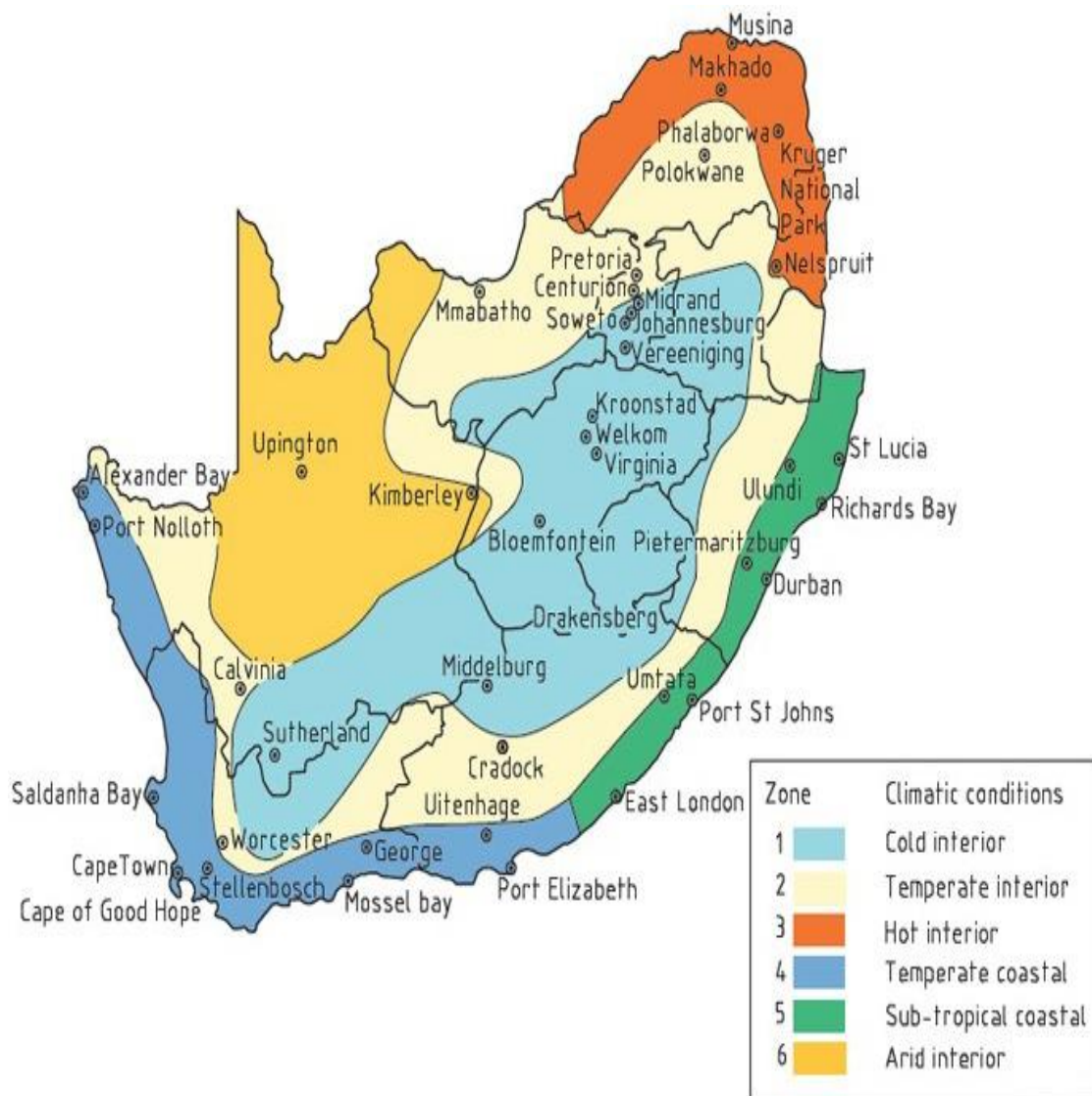
Source: SANS 10400 Building Regulations (2015).

The country is currently experiencing energy crises and the demand for electricity continues to increase. The increasing demand has surpassed the available supply and this has led to rolling blackouts. Beginning towards the end 2007, the country experienced the widespread rolling blackouts as supply could not meet the demand. Even though rolling blackouts or load shedding, as it is referred to, were suspended in May 2008, it has been re-introduced since November 2014. Blackouts are understood to implicate the wider sub-Saharan region, which depends on Eskom for more than 60% of its electricity (Rafey and Sovacool, 2011: 1142). The government of South Africa asserts that the energy constraints are not a permanent crises for the country (National Department of Energy, (NDE), 2015: 17). However, Lin and Wisseh (2014: 842) assert that investment in new power projects with targeted capacity of over 40 000 MW is expected to be achieved by 2030. South African electricity rates have been increasing gradually for all sectors and these have created serious concerns among energy-intensive industries as well as poorer households.

Erdogan and Baris (2007: 604) reveal that, for the hotel industry, energy use is a cost factor and generally requires the consumption of non-renewable resources and hotels, by virtue of their operations, are high energy consumers. Tsai et al. (2014: 13) write that hotels and homestay facilities account for considerable amounts of energy consumption. Energy consumption of hotels generally relates to the floor area, number of guest rooms, occupancy rate and building construction year (Tsai et al., 2014:13). Much of energy consumption in hotels occurs in respect of heating, cooling and electricity (Bohdanowics, 2006: 665). Literature reveals that, in spite of the prevailing environmental impacts, most hoteliers still find it difficult to implement EMPs because they believe that it will impact adversely on the customer experiences with their service offering (Massoud et al., 2010: 204; Kang et al., 2012: 565; Janković and Krivačić, 2014: 106). However, Chan and Hawkins (2012: 405) argue that an increasing number of customers are now seeking eco-friendly establishments.

2.3.3 Waste management challenges

It has been stated above that approximately 1 499 litres of water may currently be used daily in a single luxury hotel room and hotels may produce food waste of up to 46% of a hotel's total waste (Wyngaard and de Lange, 2013: 309). Pirani and Arafat (2014: 320) estimate that a hotel guest generates up to 1kg of waste per day on average. This is a serious concern for the environment. Waste generated by organisations impacts on both costs and the environment in

several ways, such as lost income through a combination of lost materials and disposal costs (Fakoya and van der Poll, 2013: 136). The South African Constitution, Act No. 108 of 1996 (Schedule 5, Part B), as quoted in Fakoya (2014: 119), states that waste management service delivery is a municipal function. Therefore, waste management both in industrial and residential areas is the responsibility of the municipalities. Waste management activities by municipalities include the collection of garbage, rubbish, and trash; the transportation and disposal by incineration or by other means; and the removal of human waste products either through drains, sewers or by other means (Fakoya, 2014: 119).

Janković and Krivačić (2014: 16) maintain that the consumption of energy from non-renewable resources, the consumption of drinking water, as well as the amount of solid waste and waste waters are the biggest generators of environmental costs in hotels. The main environmental waste-related issues emanate from food processing activities including high water consumption, the discharge of high strength effluent and the consumption of energy (Massoud, et al., 2010: 202). Noise, odour and solid waste generation may also be issues of concern for some food processing activities. Although the heavy organically loaded effluent is not toxic, if not managed properly, it may result in the degradation of the aquatic marine environment and fresh water resources. The significance of the environmental impacts is also associated with the quantity generated. Food processing activities and hygiene standards necessitate the use of large quantities of fresh water. Likewise, they require high levels of thermal energy consumption in process heating, cooling, and refrigeration.

Depending on the raw material, food processing activities may generate significant quantities of organic solid waste in the form of inedible material, expired food products and rejected products from sorting and grading. The generated solid waste may present a risk from pesticide residues, strong leachate and offensive odour generation. Another commonly generated solid waste is damaged packaging material. Air emissions from food processing plants are mostly attributed to energy consumption, cooking and decomposition of organic waste (Massoud et al., 2010: 202). Hotels are organisations that provide high standard accommodation to guests who, in turn, have high expectations of the service they receive. Therefore, the use of water and production of waste is higher than what is usually produced domestically (Wyngaard and de Lange, 2013: 310).

Several studies argue that municipal waste management in developing countries is experiencing challenges due to population increases and growth in urbanisation (Regassa, Sundaraa, and Seboka, 2011; Pirani and Ararat, 2014: 320; Fakoya and van der Poll, 2013: 136; Fakoya, 2014: 119). These challenges include, among others the lack of well-defined line of authority, ineffective sanitation rules, inadequate organisational capacity, unreliable services, and erratic collection schedules (Regassa et al., 2011: 180). In a study conducted by Fakoya (2014: 120), it was discovered that waste management challenges in South Africa relates mainly to poor waste service delivery, particularly in rural municipalities, failure by municipalities to provide waste services in informal settlements and unregulated dumping of waste. Inadequate organisational capacity is another institutional problem that contributes to poor municipal waste service delivery in South Africa. Although waste management is mostly controlled by municipalities, there are often discrepancies in the enforcement, regulation and administration of waste management functions between the different municipalities, since each municipality makes its own by-law.

2.4 EMPs WITHIN THE SOUTH AFRICAN HOTEL SECTOR

Attempts to embrace global EMPs is increasingly common amongst the South African establishments. However, literature suggests that more academic research still needs to be conducted to encourage more participation by the wider hotel industry as there is still limited research in this area within the South African hotel industry (Hoogendoorn et al., 2015: 123; Rogerson and Sims, 2012: 404). Several studies have been conducted in this area and the results reveal that hotel managers are still reluctant to implement EMPs due to resource constraints (Sucheran, 2013: 249; Wyngaard and de Lange, 2013: 310). Hoogendoon et al. (2015: 135) add that lack of directives and tangible incentives hinder the implementation of EMPs. On the other hand, Rogerson and Sims (2012: 404) maintain that the South African hotel industry, in line with the international trend, is adopting EMPs in order to improve profits and enhance public relations.

Several establishments have implemented various environmental management initiatives to improve financial performance, enhance their brand image and/or to comply with legislation. These initiatives will be discussed in the next section below. The South African government alludes that it is helping the various tourism businesses in the country to achieve the triple bottom-line, namely, economic growth, ecological sustainability and social responsibility (NDT,

2015: 32). Sucheran (2013: 110) mentions that South Africa responded to the 1992 United Nations Conference on Environment and Development with the 1996 White Paper on the Development and Promotion of Tourism in South Africa. In its National Tourism Sector Strategy (NTSS), the NDT sets two actions to address responsible tourism in South Africa, which are depicted in Table 2.2 below.

Table 2.2 NDT actions aimed at addressing eco-friendly tourism in South Africa

Action	Sub-actions
1. Develop and implement a programme to set, adhere to and measure attainment of responsible tourism' standards.	Finalise and implement the national minimum standards for responsible tourism.
	Conduct research on the current implementation of 'responsible tourism' measures, and promote awareness among tourism businesses.
	Encourage tourism marketing organisations to include message about 'responsible tourism' issues.
	Develop universal access standards for the tourism sector.
	Develop training programmes and funding mechanisms specifically aimed at green issues and products within the tourism industry, including all sub-sectors.
	Develop and implement a voluntary accord within the tourism industry to reduce its carbon footprint in relative terms, and monitor this on an ongoing basis.
	Facilitate the implementation of environmentally responsible practices within the tourism transport sector.

	Work with investment facilitation entities/organisations to encourage the development of 'green buildings' for new developments.
	Engage relevant stakeholders to facilitate funding for energy-efficiency conversions or renewable-energy projects in the hospitality sector.
2. Promote South Africa's 'responsible tourism' practices regionally and internationally.	Participate in and influence global forums and initiatives on environmentally responsible tourism.
	Develop indicators for progress in the field of environmentally responsible tourism, and report on these indicators in the relevant forums.

Source: NDT (2015b: 33)

With specific reference to the KZN tourism sector, the KZN Provincial Department of Economic Development, Tourism and Environmental Affairs (DEDTEA) mentions that it has developed a KZN tourism master plan to guide the planning, development and marketing of the tourism sector in KwaZulu-Natal. This will ensure a coordinated approach in implementing interventions from both private and public sectors (DEDTEA, 2015: 4). The extent to which these interventions will improve the EMPs used by the KZN hotel sector is yet to be investigated.

Below is the discussion of the existing main EMPs implemented within the hotel sector. The focus will be on those that encompass the major environmental costs incurred by hotels.

2.4.1 Water conservation practices

A conservation measure used by the South African hotels the most is the installation of water saving shower heads and, where possible, the use of greywater (Rogerson and Sims, 2012: 402). According to Blanky, Rodríguez-Martínez, Halpern, and Friedler (2015: 558), greywater is an

alternative source and it is wastewater generated from domestic water-related activities without inputs from toilets (black water) and kitchen (dark greywater), meaning that it consists of wastewater produced by bathtubs, showers, wash basins and laundry machines. Hoogendoorn et al. (2015: 132) also add that the installation of water conservation systems by hotels require infrastructural changes that will reduce water use such as the installation of low-flow showerheads and filters on pipes.

The deterioration of environmental resources requires technologies, such as rainwater harvesting, to be adopted as it is considered as a separate source of water supply to ground or surface water and it provides a suitable substitute to surface water supplies (Wyngaard and de Lange, 2013: 311). Rainwater harvesting has been suggested by various researchers as a means to ease water availability problems and it has been reported that rainwater promotes water savings (Ghisi, 2006: 1544). Wyngaard and de Lange (2013: 311) state that rainwater harvesting is an available technology that has been utilised for many generations without the need of sophisticated plumbing. The process involves storing rain water for future use, namely, consumption and other human purposes, and this acts as a buffer to conserve the water available from the natural environment. Therefore, some hotels have implemented rainwater harvesting technologies directed towards water conservation practices (Wyngaard and de Lange, 2013: 312). However, Gössling et al. (2012: 12) contest that rainwater storage can be a viable alternative for smaller hotels where only limited amounts of water are used. Very few hotels are making serious attempts to use alternative sources of water, such as rainwater collection, which could be utilised at relatively low cost, especially as it is a requirement to install rainwater tanks (Charara et al., 2011: 242).

2.4.2 Energy efficiency practices

Rogerson and Sims (2012: 402) assert that cost considerations are the vital drivers for environmental conservation practices, such as energy efficiency, in particular. The most common initiatives are related to the introduction of new technologies or systems which aimed at energy reduction with corresponding long-term cost savings. All hotels, where possible, have changed from use of high electrical demand appliances, such as stoves and ovens, to gas powered appliances. Another widespread innovation is heat pumps to reduce the energy costs of boilers. Renewable energy use in the form of solar panels is so far limited but has been successfully introduced by few hotels resulting in a considerable reduction in energy needs.

Several hotels use smart technologies to monitor all energy inputs, outputs and consumption. The introduction of Light-Emitting Diode (LED) lighting is also common and given considerable impetus by a rebate scheme which was offered by Eskom.

2.4.3 Waste management systems

Waste management systems are reordered in all establishments with multiple sorting, separating and recycling stations provided in back of house areas in order to allow more efficient and effective waste management. In addition, final waste collection points have been redesigned to make them more effective for sorting of hotel waste. A minority of hotels have introduced programmes also for the recycling of building material, such as metals and of electronic waste, such as old or broken lights. Another creative initiative within the hotel sector involves use of ink cartridges for recycling with proceeds used for planting trees as a carbon-offset measure (Rogerson and Sims, 2012: 402). There is also a growing innovation of on-site worm farms to reduce organic waste and produce worm tea which is diluted with water, providing a fertilizer for hotel gardens (Wyngaard and de Lange, 2013: 311; Rogerson and Sims, 2012: 402).

2.5 ENVIRONMENTAL MANAGEMENT INITIATIVES WITH THE SOUTH AFRICAN HOTEL SECTOR

Below is a discussion on some of the environmental initiatives used by the South African hotel sector. The majority of these initiatives relate to the improvements in energy consumption, water use efficiency and waste management. It is worth noting that hoteliers subscribe to these initiatives voluntarily. Van der Merwe and Wocke (2007: 9) point out that very few hotels participate in these initiatives because they are voluntary. The environmental initiatives are without government regulation specifying detailed requirements and thus enterprise compliance regarding environmentally friendly operations is voluntary (Rogerson and Sims, 2012: 402). Mulvan, as quoted by (Rogerson and Sims, 2012: 402), asserts that, at present, there is no official South African 'green' (environmental management) rating system which can be applied to the hotel establishment industry in this country. This supports the argument by Leonard and Dlamini (2014: 2) that the South African government is yet to assist the tourism and hospitality sector in establishing a greening principle that will serve as a guide in implementing the environmental management initiatives.

2.5.1 The Heritage environmental certification programme

According to Sucheran (2013: 120), the Heritage Certification Programme is recognised by the United Nations World Tourism Organisation as a leader in Africa in providing those in the service industry with a globally recognised, professional standard for rating the environmental and sustainability practices of their business. The Heritage Environmental Management Company (HEMC) provided an environmental rating initiative for the hospitality industry since 2001. The company's certification programme caters for hotels, game lodges and resorts, zoos and aquaria, meetings and events, golf courses, residential estates, banking and retail businesses. Standards are based on internationally recognised sustainability and responsible business initiatives, including ISO 14001. The ISO 14000 series standards consist of 20 environmental standards that are voluntary and process-based of which ISO 14001 is the only standard against which an organization can become certified for EMS (Chan and Wong, 2006: 482). The ISO 14001 standard will be discussed further in the next chapter.

Members of the Heritage network have to undergo an on-site review every year, and, if they comply with the standards, they are awarded one of three levels of recognition according to their performance, sustainability and responsible business practices. According to HEMC (2015) the awards are as follows:

❖ **SILVER class**

Businesses that are awarded the Heritage SILVER Class have recognised and accepted that they have an environmental impact and have taken practical steps to address them. This will include implementing the Heritage EMS and establishing the necessary operational strategies and structures necessary to ensure sustainable business practice. Each SILVER Class property must achieve a minimum of 50% compliance with the Heritage standard, although the full implementation of the EMS is not required (HEMC, 2015).

❖ **GOLD class**

To achieve GOLD Class, businesses must have fully implemented the Heritage EMS and demonstrate that they are managing their activities in compliance with the Heritage standard. These businesses have an established Environmental Committee and published and compliant standards for all operational activities as far as they impact on the environment. A minimum

score of 75% compliance with Heritage standards is required for Gold Class properties, and there must be demonstrable effort to ensure continual environmental performance (HEMC, 2015).

❖ **PLATINUM class**

Platinum Class businesses are those that have achieved full compliance with the Heritage standard, and which have a fully integrated EMS in operation. These businesses operate their activities with the highest consideration of its environmental performance, community involvement and in a socially responsible manner. To achieve PLATINUM Class, a business must achieve a minimum score of 94% on its annual assessment and clearly demonstrate compliance with the principle of continual improvement (HEMC, 2015).

The organisation also runs two environmental awareness campaigns, namely, Touch Africa Lightly campaign that addresses awareness of the impacts of tourists on the environment and 'GreenLine', Africa's latest responsible tourism rating programme that enables smaller tourism accommodation establishments of less than 20 rooms to enjoy the benefits of being environmentally responsible (Sucheran, 2013: 121). HEMC has, what it calls, the Heritage Standard that has been developed over a period of ten years in line with other internationally recognised systems (HEMC, 2015). In developing the standard, HEMC has considered its objective and that of companies that approach them around the issues of sustainability and corporate governance to meet all the expectations of an increasingly responsible business world. The Heritage Standard addresses the following key environmental indicators, as illustrated by Table 2.3.

Table 2.3 The Heritage Standard's key environmental indicators

The Standard	Key environmental indicators
1. Purchasing and Procurement	❖ *Environmental Policy* ❖ *Supplier Selection* ❖ *Purchasing Activities* ❖ *Recyclability*

	❖ *Administrative systems* ❖ *Sponsors and Associates*
2. Business partnerships	❖ *Memberships and Associations* ❖ *Eco-status of Associates and Business Partnerships*
3. Design and Construction	❖ *Design* ❖ *Technology* ❖ *Hazardous Materials* ❖ *Environmental Impact*
4. Transport and Vehicle Maintenance	❖ *Transport Systems* ❖ *Parking Facilities* ❖ *Maintenance Facilities*
5. Fauna, Flora and Game	❖ *Indigenisation* ❖ *Pest Control* ❖ *Game Management (where applicable)* ❖ *Land Management*
6. Communications and Marketing	❖ *Training and Awareness* ❖ *Internal/External Communications* ❖ *Feedback Systems* ❖ *Environmental Marketing* ❖ *Recognition and Publicity*
7. Resource Management	❖ *Noise Management*

	❖ *Energy Management* ❖ *Water Management* ❖ *Waste Management* ❖ *Chemicals and Hazardous Materials Management* ❖ *Air Quality Management*
8. Community Involvement	❖ *Employment Practice* ❖ *Education and Training* ❖ *Community Support* ❖ *CSR*
9. General	❖ *Environmental Management Plan* ❖ *Emissions Management* ❖ *Climate Change Mitigation and Management* ❖ *Environmental Health and Safety* ❖ *Legal Compliance and Risk Management*

Source: Heritage Environmental Management Company (2015)

Sucheran (2013: 122) states that, in KwaZulu-Natal, a total number of 15 hotels have received Environmental Heritage certification, all of which belong to the Tsogo Sun Group. Five of these establishments have received Silver status, 9 have obtained Gold status and the Drakensberg Sun Resort prides itself with Platinum status. Table 2.4 illustrates these Heritage certified accommodation establishments.

Table 2.4 Heritage Certified accommodation establishments in KwaZulu-Natal

Hotel	Heritage certification status
Beverly Hills Hotels	Gold
Blackrock Casino	Gold
Cabana Beach Resort	Gold
Drakensberg Sun Resort	Platinum
Garden Court Blackrock Newcastle	Gold
Garden Court Marine Parade	Silver
Garden Court South Beach	Gold
Garden Court Ulundi	Silver
Garden Court Umhlanga	Silver
Golden Horse Casino	Silver
Southern Sun Elangeni	Gold
Southern Sun North Beach	Gold
StayEasy Pietermaritzburg	Silver
Suncoast Hotel and Towers	Gold
Umhlanga Sands Resort	Gold

Source: Sucheran (2013: 123)

2.5.2 Fair Trade in Tourism South Africa (FTTSA) certification programme

According to Fair Trade in Tourism South Africa (FTTSA, 2015), FTTSA is a pioneering initiative that promotes equitable and sustainable tourism development in South Africa through a range of activities including awareness raising, capacity building, advocacy and the facilitation of the world's first Fair Trade tourism certification programme. According to FTTSA (2015), this organisation is one of the 10 first certification bodies to be recognized by Global Sustainable Tourism Council (GSTC). GSTC serves as the international body for raising

increased knowledge and understanding of sustainable tourism practices, promoting the adoption of universal sustainable tourism principles and building demand for sustainable travel (Lacher, 2012: 131). The process of obtaining a FTTSA certificate can take up to six months and consists of three phases, namely, a self-assessment by the establishment, a site assessment by FTTSA's certification manager and a review of the assessor's report by an independent panel.

The FTTSA certification programme awards a special certification Trademark (label), as shown in Figure 2.3, to tourism enterprises in South Africa that meet specific sustainability criteria based on global Fair Trade standards and locally relevant issues such as skills development, ownership and HIV/Aids management".

Figure 2.3 FTTSA Trademark label

Source: FTTSA (2015)

The FTTSA certificate is awarded to tourism enterprises that meet specific criteria, including:

❖ Fair wages and working conditions;

❖ Fair operations and purchasing;

❖ Fair distribution of benefits;

❖ Ethical business practice; and

❖ Respect for human rights, culture and environment.

The FTTSA certification is:

❖ Based on quantifiable criteria;

❖ Valid for a 12-month period, renewable annually;

❖ Based on an independent, on-site assessment of the applicant's business, which is carried out by a specially trained consultant; and

❖ Certified businesses are physically re-assessed every two years.

The FTTSA-certified status is currently awarded to sixty six tourism businesses in South Africa. These include accommodation of all standards, activities, attractions and volunteer tourism programmes. In KwaZulu-Natal, only two are carrying the Fair Trade label, namely, Sani Lodge Backpackers situated in Underberg and Three Trees Hill Lodge located in Bergville.

2.5.3 Green Leaf Eco-Standard

According to Green Leaf Eco Standard (GLES, 2015), the initiative is specifically constructed as a sustainability and certification assessment tool for the performance management of any international organisation or property. The Green Leaf™ Eco Standard (GLES) is a series of modules specifically constructed as sustainability and certification assessment tools for the performance management of any international organisation or property. In its name, Green Leaf™ stems from the symbol representing the philosophy of people and place in environmental leadership and conservation of the Wilderness Foundation. Eco Standard is an integrated concept which promotes the synergy of environmental, social and economic systems to facilitate behavioural and material adaptations in a business beyond the triple bottom-line" (GLES, 2015). Wilderness Foundation (WF) is a nature conservation organisation involved in sustainable social intervention programmes (WF, 2015).

Organisations wishing to be certified under the GLES undergo a consultation, audit and verification process. A brief history on the development and current status of the GLES is illustrated on Figure 2.4 below.

Figure 2.4 History of the Green Leaf™ Eco Standard
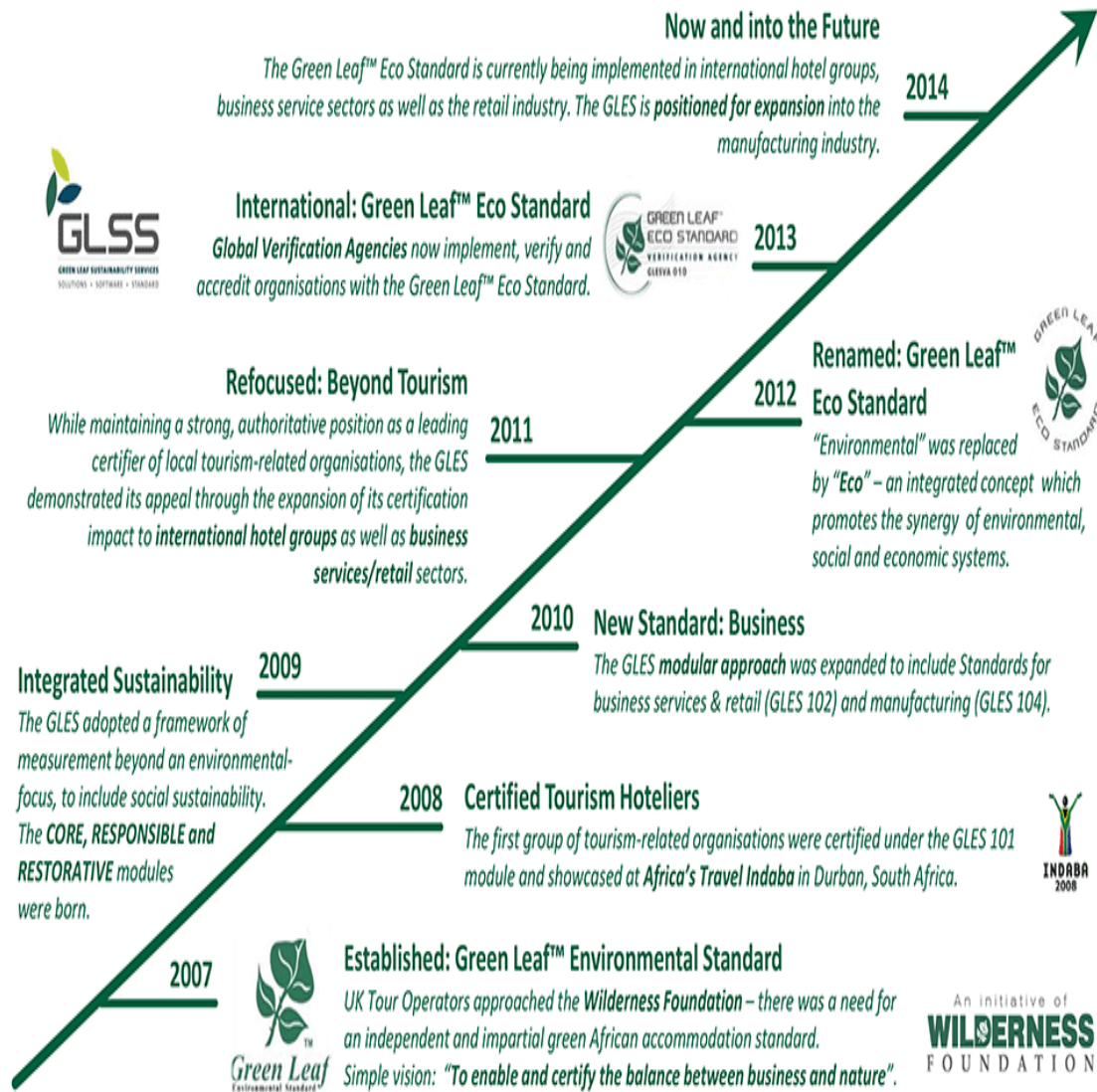
Source: GLES (2015)

According to Sucheran (2013: 126), in particular, GLES standards are based on water management, energy management, waste management, baseline management, green procurement, policy and effectiveness, distribution and transport, CSR, enterprise development and carbon emissions reduction. Since its inception, GLES has certified five hotel groups in South Africa. These include:

- **City Lodge Hotel Group (CLHG)**

According to the Wilderness Foundation (WF, 2015), the City Lodge Hotel brand within the City Lodge Hotel Group has been certified by the Green Leaf™ Eco Standard, acknowledging the significant improvements that have been made in the important areas of energy efficiency, water efficiency, waste management, responsible procurement and staff and guest awareness of environmental responsibility issues. While the certification initially applies only to the City Lodge Hotel brand, the group has largely implemented the same technology and procedures in its Courtyard Hotel, Town Lodge and Road Lodge brands. GLES (2015) asserts that over the past three years, the City Lodge Hotel Group has rolled out a group wide energy efficiency initiative across all four of its brands with the emphasis focused on the installation of LED lighting (around 40 000 bulbs) and heat pumps and the monitoring and reduction of energy consumption. The group is also a member of Eskom's 49M energy efficiency campaign which commits partners to a 15% reduction in electricity usage.

- **Three Cities Group**

Three of the group's hotel have achieved the GLES status and three of them are in KZN. Green Business Guide (2015) mentions that the Three Cities Gateway Hotel in Umhlanga, KwaZulu-Natal, the flagship of the Three Cities environmental programme, has come a long way since the project began in 2012. This newly built hotel includes the latest efficient technologies implemented to reduce the environmental impacts of the hotel. It is complemented by the staff who have taken responsibility for the holistic energy management of the building that has subsequently lead the hotel to achieve the Green Leaf™ Eco Standard Certification. It is reported that the hotel has since reduced its energy and water consumption per guest by 12% and 26%, respectively, since joining the programme in 2012 (Green Business Guide, 2015). Botes (2013: 1) writes that the hotel has been designed to minimise the amount of energy used in the hotel and, subsequently, its carbon footprint, as depicted in Figure 2.5. There is a growing insurgence of hotels labelled as green hotels or eco-hotels and this study uses these terms interchangeably. Janković, Peršić and Zanini-Gavranić (2011: 121) concede that the term "green" or "eco" hotel describes hotels that strive to be more environmentally friendly through the efficient use of energy, water, and materials while providing quality service.

Figure 2.5 Umhlanga's green hotel: Gateway Hotel

Source: Botes (2013:1)

❖ **Carlson Rezidor Hotel Group (CRHG)**

Carlson Rezidor Hotel Group is one of the world's largest and most dynamic hotel companies. It has an expanding portfolio of more than 1 370 hotels in operation and under development, a

global footprint covering over 110 countries (CRHG, 2015). CRHG has four of its South African properties GLES certified and none of them is in KwaZulu-Natal.

❖ **Shamwari Hospitality and Sanbona Game Reserve**

Seven of Shamwari Hospitality establishments and three Sanbona lodges have the GLES status (GLES, 2015). None is in KZN.

2.5.4 Lilizela Tourism Awards

The Federated Hospitality Association of Southern Africa (FEDHASA) is the custodian of Lilizela Tourism Awards and is supported by the national Department of Tourism. Until 2012, they were known as 'Imvelo Responsible Tourism Awards'. These awards were initiated to coincide with the World Summit on Sustainable Development that was held in South Africa in 2002. They recognise tourism and hospitality businesses that make a real, measurable and sustained contribution to Responsible Tourism (FEDHASA, 2015). The winner of each category receives the Lilizela Awards trophy and all finalists making it to the finals receive a certificate of excellence.

Hospitality and tourism establishments or businesses, irrespective of size, can enter any of the following Lilizela Award categories:

❖ **Best Social Involvement (BSI) Programme**

The judging is based the business's efforts made to ascertain the integration of its activities with its local community.

❖ **Best Practice - Economic Impact (BPEI)**

The economic impacts of tourism and the effect that the business has on its local community are the focus of this category. The judges need to understand the extent to which the business contributes to the economic benefit of the community and the business's ability to quantify the impacts that it has on the community.

❖ **Best Overall Environmental Management System (BOEMS)**

This category aims to determine the extent to which the establishment is managing its environmental impacts as a business in a sustainable and responsible manner. The judges are looking for a system that encompasses and integrated approach to environmentally sustainable and responsible business practice.

❖ **Best Single Resource Management (BSRM) Programme**

Three awards are made in this category, one each for water management, energy management and waste management. Each category must be entered separately.

❖ **Investing in people award**

The need for well trained, educated and developed individuals in the tourism industry is the focus of this award. The judges consider the extent to which the business has taken practical steps to develop the human resource component of the business, specifically the efforts that have been made in excess of any national minimum standards or guidelines.

The 2014 and 2013 winners in the hotel sector are depicted below in Table 2.5 and Table 2.6, respectively. The researcher deliberately analysed the environmentally-related awards which impact on the EMA tools used by the South African Hotels. Therefore, only two are found to be relevant in this regard, namely, the BOEMS and BSRM. It must also be mentioned that these awards are not only limited to hotels. These tables illustrate the year the awards were won, name of the hotel and province, category and their star grading. Between 2014 and 2013, the hotels that displayed good environmental practices have been from Western Cape, Gauteng, and Bloemfontein. Most of these hotels are part of the Tsogo Sun group, one of the leading hotel groups in South Africa.

Table 2.5 Lilizela Award winners for 2014.

2014		
Hotel Name and Province	Category	Star rating
V & A Waterfront, Western Cape	BSRM – Energy	4
Sandton Sun, Gauteng	BSRM – Waste	5
Southern Sun – Newlands, Western Cape	BSRM – Waste	4
Southern Sun - Bloemfontein, Free State	BSRM - Waste	4
Hotel Verde, Western Cape	BOEMS	4

Source: Lilizela (2015)

Table 2.6 Lilizela Award winners for 2013

2013		
Hotel Name and Province	Category	Star rating
V & A Waterfront, Western Cape	BSRM – Water	4
Leriba Hotel & Spa, Gauteng	BOEMS	4

Source: Lilizela (2015)

The above-mentioned initiatives were included in this study because they serve as the catalyst for environmental management by the hotel sector. It is interesting to note that there are incentives, in the form of the Lilizela Awards, to encourage hoteliers to manage their operations in a way that also protects our environment.

2.6 ENVIRONMENTAL MANAGEMENT POLICIES AND LEGISLATION IN THE SOUTH AFRICAN HOTEL SECTOR

Companies operating in South Africa have to adhere to quite a number of environmental Acts and regulations. Organisations that adopt and implement EMS need to create a clear and

committed environmental policy on environmental protection. This policy has to conform to the country's environmental regulations and practices. Setthasakko (2010: 316) points out that there is an increasing trend for companies to provide data concerning environmental policy, programmes and performance in annual reports and stand-alone environmental reports.

According to Hunter, Salzman, and Zaelke (2007: 531), the environmental impact and related issues can be considered in four contexts, that is:

i)   Global environmental issues;

ii)   Trans-boundary environmental impacts;

iii)   The activities of international institutions; and

iv)   National laws addressing national environmental impacts.

These categories focus on the recognition of environmental assessment in international law. The majority of the existing environmental impact assessments jurisprudence in South Africa is based on the Environment Conservation Act requirements. Therefore, hotels have to develop their environmental policies in line with the Environment Conservation Act requirements. In South Africa, environmental assessment dates back to the early 1970s (Strydom and King, 2009: 973). Table 2.7 provides a detailed summary of environmental assessment benchmark events which are divided into four stages, namely, inception, formation, formalisation, and refinement.

Table 2.7 Historic environmental assessment benchmark events in South Africa

	Up to early 1990s – Inception
1976	**South African Council for the Environmental Report:** The report proposed methods and procedures for environmental evaluation in South Africa.
1979	**Symposium 'Shaping our environment':** Emphasised the value of Environmental Impact Assessments (EIA) as an aid to the management of environmental change to incorporating principles of EIA into guidelines for use by professional planners.
1980	**White paper on National Policy Regarding Environmental Conservation:** Aimed to formulate a national policy on environmental conservation and proposed that environment (both natural and manmade) should become a normal consideration in the planning and development cycle of projects.
	Environmental Planning Professionals Inter-disciplinary Committee: Proposed

	guidelines to assist planning professionals in taking environmental aspects into account.
1982	**Environmental Conservation Act 100 of 1982:** Provided for the establishment of statutory Council for the Environment, which played a significant role in the development of EIA thinking.
	The President's Council: (an advisory council to the President) requested to advise on the principles according to which priorities between development and conservation can be stated.
1983	**Council for the Environment and a subcommittee for EIA:** The EIA committee initiated research, workshops and consultations on EIA to develop a mechanism that would suit the South African context.
1984	**President's Council:** Published two reports that requested compulsory introduction of EIA for development projects outside Guide Plan areas.
1985	**National Workshop on significance and necessity of EIA:** Government officials, professionals and academics indicated unanimous support for the introduction of EIA as part of a 'comprehensive holistic planning procedure'.
1987	**Working Group (consisting of the EIA Committee and members of the Council for the Environment):** Was appointed to develop the philosophy on environmental assessment for South Africa.
1989	**Environmental Conservation Act 73 of 1989:** Made provision for an environmental policy (Section 2) and EIA (Sections 22, 23 and 26).
	Integrated Environmental Management (IEM) report: Set out the principles and a procedure for the evaluation of policy, programmes and projects.
	Early to middle 1990s – Formation
1992	**IEM Guidelines Series reports:** Served as guidance on the implementation of IEM. **EIA for the Eastern Shores of Lake St Lucia:** Presented the largest and most expensive assessment at the time conducted according to IEM philosophy and included both strategic and project level issues.
	Middle 1990s to middle 2000s – Formalisation
1996	**Strategic Environment Assessment (SEA) – a Primer Report:** Aimed to initiate debate in order to develop and agreed convention or protocol on SEA in South Africa.
1997	**EIA Regulations:** Promulgated in terms of ss21, 22 and 26 of the Environment

	Conservation Act 73 of 1989 for listed project level actions only.
1998	**White Paper on an Environmental Management Policy for South Africa:** Laid the foundation for SEA to be included into future legislation.
	IEM Discussion Document: Aimed to clarify IEM for environmental authorities and the private sector before it became legislated. It included SEA within the procedures for 'land use zoning plans and schemes'.
	National Environmental Management Act 108 of 1998 (NEMA): Included enabling legislation for SEA under Chapter 5.
2000	**SEA Guidelines for South Africa:** Set out a definition, approach, principles and process elements for SEA.
2001	**SEA Guidelines for water use in catchments:** Provided specific guidance for SEA within the water sector.
2002	**Land Use Bill:** Included specific provisions for SEA of provincial and local Spatial Development Frameworks (SDFs).
2004	**NEMA Amendment Act 8 of 2004:** Included specific enabling provisions for SEA.
	IEM information series 10: Provides an introductory information source on SEA.
2006	**From 2006 onwards – Refinement** **New EIA regulations:** Provides new IEA regulation in terms of Section 24 of NEMA. **New Guideline Series on EIA:** The guideline series aims to provide a user-friendly interpretation of the EIA Regulations.
2007	**Amendments to New EIA Regulations:** The amendments aim to refine definitions and listed activities. **New SEA Guidance:** The new SEA guidance provides a description of practice and the different interpretations of SEA in South Africa.

Source: Strydom and King (eds) (2009: 974 – 975).

Companies operating in South Africa have to adhere to quite a number of environmental acts and regulations. As discussed above, organisations that adopt and implement EMPs need to create a clear and committed environmental policy on environmental protection. This policy has to conform to the country's environmental regulations and practices. Setthasakko (2010: 316) points out that there is an increasing trend for companies to provide data concerning

environmental policy, programmes and performance in annual reports and stand-alone environmental reports.

Research is still needed to evaluate the adherence and effectiveness of these regulations, particularly in the hotel industry. Leonard and Dlamini (2014: 2), for instance, allude that government has yet to assist in establishing environmental management accounting principles to guide the tourism and hospitality sectors. The lack of appropriate policies is affecting the possible growth rate of the depreciation of possible harmful air emissions, and overuse of energy and water consumption. The lack of control measures, as far as environmental sustainability is concerned, can be attributed to government as they have not put in place strict policies that clearly state what is expected of the tourism and hospitality industry surrounding the green revolution.

2.7 CONCLUSION

Tourism in South Africa contributes significantly to the economy and this sector is still expected to grow in the near future. Inevitably, this future growth will be strenuous on the limited non-renewable resources and, hence, cause environmental threats. It is clear from the literature review that the hotel sector has established the fact that there is a relationship between the environmental performance and scarce resources and thus it recognises the need to address its impact on the environment by introducing strategies that improve its environmental performance. These strategies, focus mainly on energy efficiency, water use efficiency and waste management are necessary. These EMPs go a long way in motivating hoteliers in reducing, controlling and managing their environmental costs. However, South Africa, as a drought prone country, is experiencing water shortages, and the country's energy demand surpasses the available supply, hence the unpopular electricity blackout.

Various agencies including FEDHASA have introduced various initiatives aimed at counter attacking the negative environmental impacts that emanate due to hotels' operations, even though still at an infancy stage. The awards aimed at recognising hotels that implement environmental management practices are commendable and hopefully the wider hotel sector will be motivated to implement such systems. Also, the South African government needs to ascertain that environmental laws are adhered to by the hotels and provide viable incentives to encourage the implementation of these laws. An awareness on the importance of implementing

and adhering to environmental legislation should be top priority for the government. This can be achieved through collaborative work between government and the private sector.

The next chapter discusses the emergence of EMPs in the hotel sector globally and critically evaluates best practices embraced internationally.

CHAPTER THREE

ENVIRONMENTAL MANAGEMENT PRACTICES WITHIN THE HOTEL SECTOR: AN INTERNATIONAL OVERVIEW

"The fulfilment of the environmental objectives requires the hotel to develop and implement environmentally sustainable business practices, as well as to implement reliable tools to assess environmental impact, of which environmental accounting and reporting are particularly emphasized" (Janković and Krivačić, 2014: 103).

3.1 INTRODUCTION

Hotels are gradually implementing environmental measures aimed at reducing the consumption of energy, water, and materials, thus reducing operating costs (Jasch, 2003: 668; Tarí, Claver-Cortés, Pereira-Moliner, and Molina-Azorín, 2010: 507). At the same time, hoteliers believe that, doing so, could enhance customer loyalty (Chan, 2008: 195). Kang, Stein, Heo, and Lee (2012: 566) add that customers, who are more concerned about environmental issues, show a greater degree of willingness to pay for the additional costs incurred by conducting green practices. Moreover, environmental laws are escalating and increasing market and consumer pressure have raised corporate awareness of environmental issues. Environmental practices for water and energy use, waste management, the quality of indoor air and the reduction of indoor noise levels are now steadily increasing throughout the world (Scanlon, 2007: 713). Therefore, more and more hotels incorporate principles and objectives of environmental responsibility in their business policy and strategy.

The previous chapter looked at the South African sector and their impact on the environment coupled with the environmental practices currently in use to reduce environmental costs while improving their financial performance. This section, therefore, reviews the existing and available body of knowledge to establish how other researchers have investigated the phenomena of environmental management within the hotel sector outside the confines of South Africa. Mouton (2009: 87) states that the review of existing literature provides the researcher with clues and suggestions about what avenues to follow. Therefore, the purpose of this chapter is to gain an understanding of EMPs and its application in the hotel sector. Challenges and

perceived barriers on the implementation of environmental management practices in the hotel sector are presented on this section.

3.2 THE EMERGENCE OF ENVIRONMENTAL MANAGEMENT INITIATIVES IN THE HOTEL SECTOR

Environmental issues and concerns are world-wide reality. It was mentioned in the introductory chapters that there are a number of significant environmental threats to the future of humanity, including the over-consumption of non-renewable resources and global air pollution (Jones, 2010: 125). Due to these environmental problems, the moral, ethical, social, and political arguments for taking action on environmental issues are becoming more persuasive and more widely accepted (Chan and Hawkins, 2012: 405). A significant amount of research on the environmental management systems and initiatives has been done on industries, such as manufacturing, chemicals, farming, construction, farming, and electronics, but limited research has been done on the service industries (Chan and Hawkins, 2012: 408). Even though the economic impacts of the service industries are significant, their environmental impacts are yet to be better known and are overlooked (Shrake, Bilec and Landis, 2013: 263).

Various companies in the service sector, in the hospitality sector in particular, have adopted various environmental initiatives to curb the scourge of the adverse environmental impact on our planet (Pirani and Arafat, 2014: 320). According to Chan and Hawkins (2010: 641), the hotel industry is embarking on a drive to engage on various initiatives, whether for the sake of the environment, for economic reasons, or to build a positive image. It was discussed in the previous chapter that these initiatives, which are voluntary self-regulatory programmes such as the international EMS standard ISO 14001, are implemented in order to develop systematic approaches to improve environmental performance (Pirani and Arafat, 2014: 320; Chan and Wong, 2008: 482). Environmental management in hotels started in the form of initiatives by various associations and activities which began when the Prince of Wales launched the International Hotels Environmental Initiative (IHEI) in 1993 (Mensah, 2006: 418). Bohdanowicz (2006: 666) adds that the importance of high environmental quality for the development of tourism was acknowledged by the World Trade Organisation (WTO) in the late 1970s with the establishment of the Environmental Committee. Following the 1992 Rio Earth Summit, which identified tourism as one of the priority areas for sustainable development, the

green movements within the hotel industry gained momentum and recognition (Bohdanowicz, 2006: 666; Mensah, 2006: 418; Scanlon, 2007: 712).

Research reveals that concerns for environmental issues are less intense in developing economies such as India (Kang, Stein, Heo and Lee, 2012: 569). For example, in Brazil, the adaptation of EMS, such as ISO 14001, is still low compared to the developed countries (de Oliveira, Serra and Salgado, 2010:1803). Massoud et al. (2010: 200) confirm this finding by adding that the adoption of the EMS in developing countries of Central and Eastern Europe accounts for an insignificant proportion and Latin America, Africa and the Middle East together account for less than 3% of ISO 14001 certified organisations worldwide. Developed countries, on the other hand, are trend setters in as far as the implementation of the EMS is concerned. For example, the Hotel Association of Canada has what is called Green Leaf Eco-rating System which is used to rate the hotels' environmental performance (Hsiao, Chuang, Kuoc and Yu, 2014: 199).

There are over 100 global sustainable tourism certification schemes already in use (Jarvis, Weeden, and Simcock, 2010: 84). Alongside initiatives in energy and water conservation, waste reduction, recycle and reuse initiatives, building infrastructure, community outreach, and environmental education and awareness, credible certification programmes, such as Leadership in Energy and Environmental Design (LEED), Green Key, Green Tourism Award, etc., are increasingly being embraced by hoteliers (Rahman, Park and Chi, 2015: 5). Other initiatives which are spearheaded by the multinational hotel chains in developed countries such as the International Hotels Environment Initiative (IHEI) and the International Tourism Partnership (ITP) (Liu and Sanhaji, 2010: 66; Mensah and Blankson, 2013: 1213). These certification programmes and initiatives encourage hotels to implement and install comprehensive environmental practices to help in cost cutting and reduction of impacts by the hotels to the environment (Rahman et al., 2015: 5).

3.3 EMPs IN THE HOTEL SECTOR

EMPs are defined by Siti-Nabiha, Wahid, and Ariffin (2010: 15) as the techniques, policies and procedures which an organization use that are specifically aimed at monitoring and controlling the impact of its operations on the natural environment. Chan and Hawkins (2012: 405) mention that organisations have implemented a few informal EMPs to save energy and cut costs.

However, hotel managers face the important question of how to implement environmental practices in a more systematic and structured manner? The most widespread management practices are those that are low cost and those that can be carried out during the hotels' normal operating processes, specifically savings in energy and water, and waste management (Oreja-Rodríguez and Armas-Cruz, 2012: 66). EMPs, whether formal or informal, always cover the main environmental domains against which the firm's environmental performance is assessed, that it, water, energy and waste management and these are presented in Table 3.1 below.

Table 3.1 Main environmental domains

Domain	Checklist
Water	❖ To monitor water consumption and rationalise its use. ❖ To save and protect local resources.
Energy	❖ To control energy and monitor its consumption. ❖ To save energy and reduce atmospheric pollution.
Wastes	❖ To reduce waste at the source and improve waste management. ❖ To implement a recovery and recycling strategy.

Source: Author's research

According to Siti-Nabiha et al. (2010: 15), EMPs are conceptualized to include two dimensions:

❖ **Comprehensiveness of EMS**

EMS is a preferred EMP amongst various organisations in various industries. Due to its popularity and its systematic and structured nature, EMS will be discussed further in the next section.

❖ **Management of stakeholders' relations**

Seuring and Gold (2013: 2) point out that stakeholder management is crucial for driving sustainability performance. As discussed below, drivers that encourage the implementation of EMPs generally emanate from pressures of external and internal stakeholders such as government, investors, customers, suppliers, community groups and employees as well as from organizational culture or moral values related to doing the right or acceptable things (Siti-Nabiha et al., 2010: 15). Whilst there are legal, ethical and economic imperatives for businesses undertaking environmental management, the influence of stakeholders cannot be overemphasized (Mensah, 2014: 228).

3.3.1 Eco-labelling and certification

Mensah and Blankson (2013: 1215) argue that, in as much as EMPs are centred on cost savings, waste management, recycling, energy and water conservation are popular in the hospitality industry. Voluntary environmental management practices, such as eco-labelling and certification, are also becoming popular environmental management tools in the hospitality industry (Mihalič, Žabkar and Cvelbar, 2012: 714). According to Bratt, Hallstedt, Robèrt, Broman, and Oldmark (2011: 1631), voluntary environmental eco-labelling programmes have a history of 30 years, starting with the German Blue Angel in the late1970's. A proliferation of eco-labelling programmes started ten years later and eco-labelling programmes currently exist in large numbers and many forms at national, European and international levels. Most of the European Union member states have introduced national eco-labelling programmes. Berghoef and Dodds (2013: 264) define an ecolabel as that which identifies products that have been measured and certified against established environmental leadership criteria. Eco-labels are embraced because they are reported to help individuals, corporations and governments make informed purchasing choices that reduce their ecological footprint (Berghoef and Dodds, 2013: 264). EMSs have been designed such that they factor in eco-labelling guidelines through the inception of ISO 14024. The number of eco-labels has grown fast and, in many cases, it is not clear what is included in the labelling criteria. This risks increasing confusion and eroding the trust and confidence in these labels (Bratt et al., 2011: 1632).

3.3.2 Environmental Auditing

Environmental auditing is another EMP. However, it is not popular in the hotel sector (Mensah and Blankson, 2013: 1215). It is a voluntary environmental management programme that is defined by Evans, Liu, and Stafford (2015: 11) as a systematic, documented, periodic and objective review by regulated entities of facility operations and practices related to meeting environmental requirements. This is achieved by facilitating management control of environmental practices and assessing compliance with company policies, which would include meeting regulatory requirements (Viegas, Bond, Ribeiro, and Selig, 2013: 165). Government, often times, provide policies that provide explicit incentives for firms to voluntarily adopt environmental auditing, as firms that choose to report and correct violations discovered during the course of a voluntary environmental audit are eligible for significant penalty reductions (Evans et al., 2015: 11). The development of ISO 14000 EMS series has been such that it factors in environmental auditing, as pointed out by Chan (2008: 188). The ISO 14010 serves as the guidelines for environmental auditing, with the emphases on general principles, whilst ISO 14011 provides the guidelines for environmental auditing with specialisation in audit procedures, and ISO 14012 is aimed at the qualification criteria for environmental auditors (Simon, Yaya, Karapetrovic and Casadesús, 2014: 500).

3.3.3 Life Cycle Assessment

Life cycle assessment (LCA) is a method used to quantify the environmental impacts of a given product, process, or service throughout its entire life cycle from raw materials' extraction to end of life (Shrake, Bilec and Landis, 2013: 263). According to Zidoniene and Kruopiene (2015: 533), LCA is a decision tool employed in identifying and evaluating probable environmental consequences of certain proposed development actions. It is widely accepted globally as a means to improve environmental performance of products or services. LCA is standardised by ISO 14040 and ISO 14064 which set out the guiding principles under four categories, namely, Goal and Scope Definition; Life Cycle Inventory (LCI) analysis; Life Cycle Impact Assessment (LCIA) and Interpretation (Zidoniene and Kruopiene, 2015: 534; Shrake et al., 2013: 263; Chan, 2008: 188; Filimonau, Dickinson, Robbins, and Huijbregts, 2011: 1919). Several studies reveal that LCA is one of the EMPs. However its use in the hospitality sector is limited (Filimonau et al., 2011: 1919).

3.4 EMS AND ISO 14001

Literature reveals that EMSs are widely embraced globally across all sectors. Other EMPs were discussed above and it was discovered that they are an integral part of EMS designs. Therefore, this section specifically looks at the practices of EMSs in the hotel sector, along with ISO 14001, which sets out guidance for use of this EMP. An EMS can be described as a methodology through which organizations operate in a structured manner in order to ensure protection of the environment (de Oliveira, Serra and Salgado, 2010: 1798). In other words, organisations define the impacts of their activities and then propose actions to reduce them. The International Organisation for Standardisation (ISO) is a non-governmental organization established in 1947 to develop worldwide standards to improve international communication and collaboration, and to facilitate the international exchange of goods and services (Chan and Wong, 2006: 482). The ISO 14000 series standards consist of 20 environmental standards that are voluntary and process-based of which ISO 14001 is the only standard against which an organization can become certified for EMS (Chan and Wong, 2006: 482). Internationally, ISO 14001 is the most widely recognised and most frequently used standard for EMS (Singh, Brueckner, and Padhy, 2015: 102). Chan and Hawkins (2012: 406) reveal that ISO EMS has become the preferred approach to managing the environmental aspects of a company's operations, as it depends less on government regulations and more on voluntary, proactive efforts within the organisation.

According to de Oliviera et al. (2010: 1798) and Massoud et al. (2010: 200), ISO 14001 specifies the characteristics of the components of a management system. It requires that adopting organisations create an environmental policy, set objectives and targets, implement a programme to achieve those objectives, monitor and measure the programme's effectiveness, correct problems, and conduct reviews aimed at improving the EMS. Chang and Wong (2006: 482) assert that the ISO 14001 EMS consists of five core principles (illustrated in Figure 3.1) and, therefore, hotels that hope to be accredited with this standard must meet these principles.

Figure 3.1 EMS-ISO 14001 model

Environmental Policy
- ❖ Regulatory compliance
- ❖ Pollution prevention
- ❖ Continual improvement
- ❖ Signed by top management

Management Review
- ❖ Review environmental performance
- ❖ Review EMS performance
- ❖ Review priorities and objectives
- ❖ Allocate appropriate resources

Planning
- ❖ Identify environmental interactions
- ❖ Set objectives and targets
- ❖ Create environmental management programmes

Checking and Corrective action
- ❖ Monitor and measure environmental interactions.
- ❖ Establish non-conformance and corrective and preventive action systems

Implementation and Operation
- ❖ Define organisational structure and responsibilities
- ❖ Conduct training
- ❖ Demonstrate awareness and competence
- ❖ Establish communication procedures
- ❖ Document EMS through policies, plans, procedures
- ❖ Establish document control
- ❖ Establish operational control

Source: Chang and Wong (2006: 483)

❖ Environmental policy

The organisation must develop a clear and committed policy on environmental protection, including the commitment to comply with relevant environmental legislation and regulations, and to make continual efforts to improve.

❖ Planning

The firm must analyse the macro and micro aspects in the planning stage.

❖ Implementation and operation

The firm need to develop a structure and a set of responsibilities, training procedures, operational controls, and documentation.

❖ Checking and corrective action

This entails monitoring performance against possible future legislative requirements and take corrective and preventive action in cases of non-conformance.

❖ Management review.

The enterprise must review the EMS at predetermined intervals to cater for the changes and needs of environmental policy.

Phan and Baird (2015: 47) point out that, often times, there is the variation in the extent to which organisations implement different EMPs given that the adoption of EMSs and the certification of EMSs is voluntary. Chan and Hawkins (2012: 406) also acknowledge that there are different approaches in the application of EMSs.   Consequently, EMSs can differ significantly across organisations in the comprehensiveness of their coverage and the ambitiousness of their objectives (Phan and Baird, 2015: 47). Singh et al. (2015: 298) point out that organisations may well adopt EMS-ISO 14001 standard as a means of merely signalling good environmental practices to market while, in real terms, their environmental performance may indeed be lower than that of their peers. The ISO 14001 standard does not specify a particular level of environmental performance that organisations need to achieve. Instead, it focuses on requiring organisations to comply with the specified characteristics of the system with such compliance expected to assist organisations in achieving their own environmental objectives (Phan and Baird, 2015: 47).

3.4.1 EMS application and organisational performance

Various studies often ask a common question of how EMS is adopted and implemented by organisations. However, according to Chan and Hawkins (2012: 406), limited research has been conducted to investigate the formation and the implementation processes of EMS. However,

certified companies are explicitly required by ISO 14001 to implement procedures to monitor and measure the key characteristics of their activities that can have a significant environmental impact in order to determine how the organisation is managing the improvement of its environmental performance (Comoglio and Botta, 2012: 93). Research indicates that the application of an EMS enhances staff morale and generates other benefits, such as enhanced competitiveness and financial performance (Ariffin et al., 2013: 107; Chan and Hawkins (2010: 642). The implementation of EMSs by firm is an indication of their commitment towards environmental management. Meade and del Monaco, as quoted by Secheran (2013: 62), proposes that hotels embrace to the following approach when developing an EMS:

❖ An assessment is firstly carried out in order to determine: improvements to be made, costs of improvements and the changes in consumption and waste generation to be expected. The assessment also acts as a baseline against which to measure change;

❖ The hotel then decides on objectives such as using water more efficiently. Targets are set for these objectives, such as installing low-flow shower heads;

❖ Thereafter, an action plan is formulated whereby the hotel identifies the individuals or departments responsible for achieving the targets. Often times, this results in changes in activities performed by employees and results in major improvements; and

❖ Finally, the hotel must measure and note the impact and any changes from the baseline. This information will determine whether the EMS is working.

Table 3.2 shows an overview of several studies conducted on EMSs application and organisational performance.

Table 3.2 Overview of previous research in EMS application and organisational performance

AUTHOR	ORIGINAL TITLE AND YEAR OF PUBLICATION	KEY FINDINGS AND CONTRIBUTIONS
Janković, S. and Krivačić, D.	Environmental accounting as perspective for hotel sustainability: Literature review (2014)	The study reported that there is still a resistance to undertake formal environmental management programmes, which include the development and

		implementation of EMS. The implementation of these programmes often includes major changes in business processes and involve certification costs. It is possible to develop EMS if the management's commitment for environmental issues is incorporated in corporate environmental policy and if business practices incorporate environmental management. Hotels have to detect, measure, record and analyse environmental costs in order to optimise them. Information about environmental costs and other environmental performance indicators have to be communicated to stakeholders.
Mensah, I.	Stakeholder pressure and hotel environmental performance in Accra, Ghana (2014)	The study revealed that stakeholders exert pressure on organisations to implement EMPs. This is because stakeholders have the capacity to influence the achievement of the objectives of the organisation. Organisational characteristics such as size of facility contributed to the influence of stakeholders on environmental management practices of organizations. Thus, the performance of hotels also depends on how well stakeholder environmental pressures are managed. Internally, hotels should have the requisite resources; personnel with the knowledge and skills for undertaking environmental management, processes and systems that engender improved environmental performance.
Mensah, I. and	Determinants of hotels'	Once again, this study alluded to the fact

Blankson, E.	environmental performance: Evidence from the hotel industry in Accra, Ghana (2013)	that size and class of hotel emerged as the best predictors of hotels' environmental performance. The study reported that the adoption of EMS and standards is facilitated by the organisations' complementary resources related to labour and capital. Larger and upscale hotels demonstrated a better environmental performance since they tend to have more financial and technical resources.
Sucheran, R.	Environmental Management in the Hotel and Lodge Sector in KwaZulu-Natal, South Africa (2013)	The main findings of the research indicated that although participants were aware of the detrimental environmental impacts of the accommodation sector, environmental management programmes were very much in its infancy. The study reported that EMSs are associated with high costs and complexities. Consequently, the resource insufficient small-scale establishments are unable to make the costly technological investments for environmental management and are thus precluded from meeting the environmental management standards and improved organisational performance.
Chan, E.S.W. and Hawkins, R.	Application of EMSs in a hotel context: A case study (2012)	To develop a rich and deep understanding of the application of EMSs in the hotel industry, a qualitative case study was conducted. The EMS examination of the implementation stage of the studied hotel revealed the strengths of a formal EMS when applied to a hotel. The study discovered that most of the core EMS requirements - Policy, Planning, Procedures and Control, Training and Education,

		Communication, and Review and Continual Improvement components are applicable in a hotel environment. Together, they provide a hotel with a baseline for improving its environmental performance and to assess its environmental management.
Oreja-Rodríguez, J.R. and Armas-Cruz, Y.	Environmental performance in the hotel sector: the case of the Western Canary Islands (2012)	The objective of this study was to determine whether the implementation of environmental practices, such as EMS, do improve environmental performance. In light of the results of the empirical analysis, it was concluded that a large number of hotels in the Western Canary Islands, Spain, have a high environmental performance because of the current EMPs in use. Particularly, the hotels in the province of Santa Cruz de Tenerife are advanced in the control of their impact upon the environment.
Tarí, J.J. Claver-Cortés, E. Pereira-Moliner, J. and Molina-Azorín, J. F.	Levels of quality and environmental management in the hotel industry: Their joint influence on firm performance (2010)	This study analysed the commitment to quality and environmental management and their separate and joint effects on hotel performance. The study reported that commitment to quality management (QM) and environmental management (EM) has positive effects on some firm performance variables. This may be due to the fact that these practices may reduce costs and improve the hotel image, which could impact on operational and financial performance. The hotels that are proactive in implementing QM and EM practices are the ones that are more profitable because

		this kind of hotel achieves the maximum on each performance variable analysed.

Source: Author's research

The literature maintains that the implementation of EMSs is influenced by the pressures put to organisations by their stakeholders. Even though the implementation of such systems has gained popularity, they are still being resisted in the developing economies. This is because they come with costs and complexities that are likely to change organisational structure and operations. In as much as there are reported organisational and environmental management benefits as a result of implementing such systems, it is most likely that big corporations would implement them because they have the resources required for the successful implementation of such systems.

3.5 AWARENESS OF EMPs WITHIN THE HOTEL SECTOR

It is believed that hotel and tourism associations play an important role in serving as agents for promoting EMPs and guidelines for hotels to go green (Bohdanowicz, 2006a: 668; Hsieh, 2012: 100). These guidelines, as reported by Hsieh (2012: 100), encompass the establishment of an environmental committee at each property, energy saving programmes, and recycle-reuse-reduce programmes. In addition, the hotel and tourism associations are reported to have facilitated the development of elements of an environmental programme such as: environmental policies; suggesting a staff or team to be in charge of environmental management; creating an implementation plan to reduce the excessive consumption of goods, energy and water, and to reduce emissions; developing a plan to raise environmental awareness among hoteliers; providing the support to business partners by providing environmentally friendly training and consultation; participating in local community activities, and conducting research, seeking published information on environmental matters, and having a plan to audit environmental performances (Hsieh, 2012: 100).

Chan, Hona, Chan and Okumus (2014: 11) write that environmental knowledge, environmental awareness and environmental concern are the three triggers for hotels to embrace environmental management practices, as shown in Figure 3.2.

Figure 3.2 Environmental triggers and intention to implement EMP
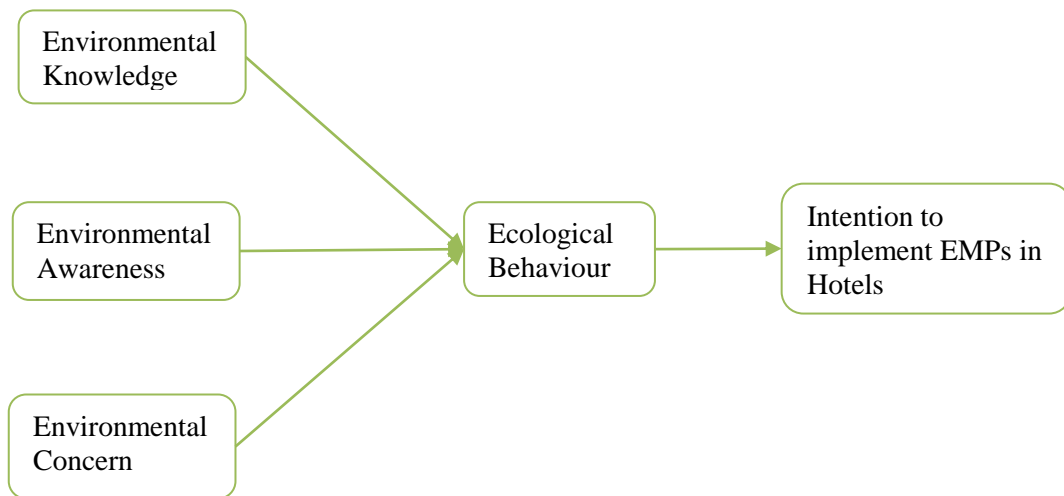
Source: Adopted from Chan et al. (2014: 24)

Bohdanowicz et al (2011: 799) assert that empowerment of employees and raising environmental awareness play an important part in implementing EMPs. However, the awareness of environmentally friendly practices is generally poor among hoteliers in developing countries (Bohdanowicz, 2006b: 676; Erdogan and Baris, 2007: 605). A more recent study also reports that hotel managers seem to have neglected areas that would contribute towards environmental performance improvement, such as voluntary, initiatives which should provide a new sense of awareness for hotel managers to balance their environmental scorecard through the adoption of a more holistic approach to environmental management (Mensah and Blankson, 2013: 1227). Several hotel groups have not as yet implemented any environmental practices, and, as such, they have nothing to disclose on their web sites (Hsieh, 2012: 113). Government, environmental organizations and academia can work together to offer environmental training workshops to increase environmental awareness and provide hotel managers (Hsieh, 2012: 113). However, Garay and Font (2012: 335) point out that the gap is closing in environmental awareness and actions taken by hotels towards embracing EMPs, as compared to studies conducted about 10 years ago.

Ham and Han (2013: 733) maintain that, because of major impacts the hotel sector has on the environment, customers' attention to environmental issues and ecological awareness, and image/reputation of a hotel's brand, their environmentally-friendly practices are becoming a

necessity for competitiveness. These authors add, that in this regard, practitioners with interests in the hotel sector are actively changing operations to reflect more eco-friendly enterprises, are performing diverse ecologically responsible practices, and are adopting sustainable programmes/guidelines. According to Ni, Chan and Wong (2012: 184), hotel chains place more interest in EMPs, as compared to independently owned hotels. Management-company-operated hotels (hotel chains) set up environmental protection teams, awareness campaigns and energy saving programmes to address environmental performance and accounting. Independent hotels, on the other hand, are possibly less interested in designing EMA (Ni et al., 2012: 184).

Some countries have stringent environmental policies that are accompanied by incentives that exert pressure or elicit organisations to implement eco-friendly practices. The level of environmental awareness is thus greater in such circumstances (Hoogendoorn et al., 2015: 128). Certification programmes mentioned above are also getting popular and necessitate hotels to install rigorous environmental practices and initiatives and help form credibility in the eyes of the consumers and they signify high standard in environment management (Rahman, 2015: 5). In a study conducted by Liu and Sanhaji about "green" initiatives in the lodging sector in America, it was reported that the growth of certified buildings surpassed all expectations (Liu and Sanhaji, 2010: 68). Most of the influential environmentally-friendly initiatives originated from Europe and America, such as The Green Key, The Green Key Eco-Rating Programme, and The Green Leaf Eco-rating Programme (Luo, Zhang, Ma and Cao, 2012: 3308). The certification coverage of these programmes has extended to other countries. For example, in 2012, it was reported that around 1 700 hotels in about 28 countries have acquired the green key certification; 19 countries have joined the green key eco-rating programme; 3 countries have joined the green leaf eco-rating programme (Luo et al., 2012: 3308). The programmes normally attract the already environmentally and socially aware market segment of consumers, but they serve as a communication vehicle for awareness transfer to the market at large (Bratt et al., 2011: 1632).

3.6 DRIVERS AND BARRIERS OF IMPLEMENTING EMPs

The adoption of EMPs is triggered by certain factors such as human resources, compliance to legislation, market factors, just to name but a few. However, the literature, as per the above discussion, pointed out that there are limiting factors that impede the application of EMPs. This section discusses both the drivers and barriers of implementing EMPs.

3.6.1 EMP drivers

Drivers are defined as motivation and inducements that motivate business organizations to adopt EMPs (Siti-Nabiha et al., 2010: 17). Literature, in the area of environmental management, identifies several drivers of EMS. The drivers of corporate environmental management in the tourism and hospitality industry have not been different from what is obtained in the generic environmental management literature (Mensah, 2014:230). These include consumer demand, increasing environmental regulation, managerial concern with ethics, customer satisfaction, maintenance issues concerned with the physical plant and the need for aesthetics. According to the study conducted by Zutshi and Sohal (2004: 376), it emerged that 'improving corporate image' and 'compliance with regulations' were the two main drivers for organisations to implement EMPs. Phan and Baird (2015: 47) and Comoglio and Botta (2012: 93) assert that the implementation of EMPs provides an opportunity to improve public image and complying with existing environmental regulations and laws, which might not necessarily mean an improvement in environmental management. In a study conducted by Hillary (2004: 564), stakeholders, particularly customers, emerged as the main drivers behind the implementation of EMPs. Table 3.3 shows stakeholders driving the adoption of EMPs. Massoud et al. (2010: 206), however, argue that customer awareness of environmental problems in developing economies is still relatively low. Therefore, considering implementing EMPs as a marketing tool is the least perceived driver in such economies. Consequently, Ervin, Wu, Khanna, Jones and Wirkkala (2012: 397) argue that uncertainty in stakeholder pressures can be deemed as barriers to the effective implementation of EMPs.

Table 3.3 Stakeholders driving the adoption of EMPs

Top 5 stakeholders	Other important stakeholders
Customers	Insurers
Local government	General public
Local community	Suppliers
Regulators	Larger companies
Employees	Banks

Source: Hillary (2004: 565)

The discussion on the practices and initiatives developed by various organisations clearly reveal the benefits of successfully implementing EMPs. These benefits are deemed as drivers for the implementation of EMPs and Hilary (2004: 563) categorises these benefits as internal and external. Internal benefits are divided into three, namely, organisational benefits, financial benefits and people benefits. External benefits are divided into commercial benefits, environmental benefits and communication benefits. These internal and external benefits are illustrated in Tables 3.4 and 3.5, respectively.

Table 3.4 Internal benefits

Organisational benefits	Financial benefits	People benefits
EMP enhanced quality and investor in people and systems	Cost savings from material, energy and waste reductions and efficiencies	Increased employee motivation, awareness and qualifications
ISO 14001 possible to combine with quality systems (ISO 9000 series of standards)	Improved overall economic condition	Improved employee morale
Quality of management improved		Enhanced skills and improved knowledge in hotels
Improved quality of training		Creates a better company image among employees
Improved working conditions and safety		Provides a forum for dialogue between staff and management
Improved quality of environmental information		
Legal compliance is documented and can be demonstrated		
Encourage innovation		
Review and improve		

procedures		
Stimulate process, transport, raw materials and packaging changes		
Demonstrate environmental responsibility		
Provide a strategic overview of environmental performance		

Source: Hillary (2004: 564)

Table 3.5 External benefits

Commercial benefits	Environmental benefits	Communication benefits
Gain new customers/business and satisfy existing customers	Improved environmental performance	Create a positive public image
Gain a competitive/marketing advantage	Assured legal compliance	Develop better customer relationships
Receive discount on annual insurance premiums	Increased energy and material efficiencies	Develop better co-operation and relationships with regulators and administrative bodies
Stay in business	Increased recycling	Improve communication with stakeholders
Develop more environmental-friendly products	Reduced pollution	Set an example for other companies in a sector

Source: Hillary (2004: 564)

Erdogan and Baris (2007: 611) expand that the opportunity to reduce operating costs, institutional pressure and sustaining competitive advantage force organisations to embrace EMPs. Regarding cost reductions, it has been found that organizations focusing on EMPs discover opportunities for energy savings, waste reduction, recycling, efficient water usage and lower packaging and transportation costs (Ariffin, Khalid and Wahid, 2013: 110). Phan and Baird (2015: 48) assert that benefits such as reduction in material/process/production costs and reduction in compliance costs have incited various organisations to implement environmental practices. With regards to the institutional pressure, Dubey, Gunasekaran, and Ali (2015: 124) confirm that institutional pressure drives organisations to adopt EMPs. Phan and Baird (2015: 46) assert that institutional pressures are the predominant drivers for the adoption of the proactive EMPs. According to DiMaggio and Powell (1983: 150), the institutional theory perspective is mainly based on social and economic theoretical views.

The institutional theory explores how organisational structure and actions are shaped by institutional forces, such as the government, the professional bodies and society that surround organizations (Jamil, Mohamed, Muhammad and Ali, 2015: 620). This theory is shaped by three main dimensions, namely: coercive pressure, normative pressure and mimetic pressure (Dubey et al., 2015: 124). The first dimension, coercive pressures, stems from political influence and adherence to existing regulations (DiMaggio and Powell, 1983: 150). Coercive forces are legal mandates emanating from governments or corporate bodies (Mensah (2014: 230). Under coercive pressures, the government and regulatory bodies are likely to intervene and influence firms to adhere to existing regulations (Dubey et al., 2015: 124).

The second dimension, i.e., normative pressures, emanate primarily from professionalization - professionalization interpreted as the collective struggle of members of an occupation to define the conditions and methods of their work and to establish a cognitive base and legitimation for their occupational autonomy. Mensah (2014: 230) adds that normative forces are exerted by professional associations, industry associations, environmental organizations and academic institutions, among others, which seek to promote values and codes of conduct to ensure standardized behaviour from their members. Dubey et al. (2015: 124) allude that normative pressures emphasise the importance of voluntary adoption to mitigate coercive pressures.

The third and the last dimension, i.e., mimetic pressures, refers to the responses of a firm to proven techniques or practices of competing firms when faced with ambiguous and uncertain

situations (DiMaggio and Powell, 1983: 150; Dubey et al, 2015: 124). Mimetic forces are self-imposed: organizations emulate the practices of other organizations that have proven successful (Mensah, 2014: 240). Table 3.6 provides factors that widely affect the dimensions of institutional theory, as pointed out by Jamil et al. (2015: 623).

Table 3.6 Factors affecting the dimensions of institutional theory

Institutional theory dimensions	Factors influencing the Institutional theory dimensions
1. Coercive	❖ Pollution incidents law. ❖ Government pollutions standard. ❖ Government regulations. ❖ Company's shareholders. ❖ Newspaper and Television. ❖ Environmental laws. ❖ Local communities. ❖ Company's customers. ❖ Environmental groups. ❖ Company's head office. ❖ Financial institutions. ❖ Company's labour union.
2. Normative	❖ Motivation from staff training. ❖ Membership of an accounting body.
3. Mimetic	❖ Competitors. ❖ Other industrial organisations. ❖ Other leaders in the industry. ❖ Multinational organisations.

Source: Jamil et al. (2015: 623 – 624)

Siti-Nabiha et al. (2010: 14) point out that, based on the institutional theory, there are five drivers that push organizations to adopt EMPs: regulation/government, customer demand, level of competition, greenness at the organisational level and attitude towards change/level of risk

taking. These are depicted in a framework that appeared in Ariffin et al. (2013: 108). Refer to Figure 3.3.

Figure 3.3 EMP adoption framework
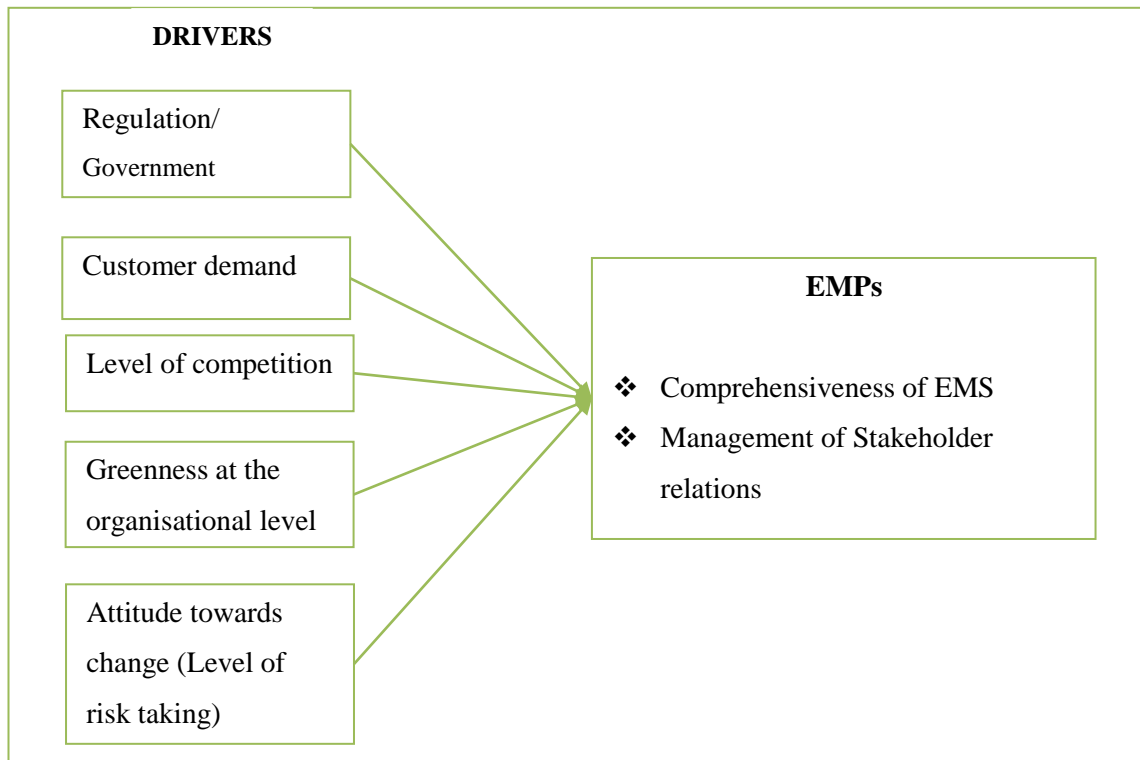
Source: Araffin et al. (2013: 108)

3.6.2 EMP barriers

The development and application of EMPs is still at an elementary stage in South Africa. Understanding the root-causes of the barriers to implementing them is very crucial as it would help overcome these barriers. Barriers can be defined obstacles that arise within the firm or outside the firm and prevent or impede EMPs' implementation or application (Chan, 2008: 189; Bohdanowicz et al., 2011: 801). In a study conducted by Setthasakko (2010: 321), the following barriers to implementing EMPs were reported: lack of building organisational learning; a narrow focus on economic performance; and absence of guidance on EMA

❖ **Lack of building organisational learning**

Organisational learning can be defined as a collective type of learning that occurs when an organisational unit or collective, or group of organisational members collectively, interpret and make sense of organisational data (Van Tonder and Roodt, 2008: 281). Senge (2006: 219) adds that organizational learning is the process of improving performance by means of creating, acquiring and transferring knowledge throughout an organization. Findings by Setthasakko (2010: 322) point out that lack of building organizational learning is one of the root causes of barriers to the development of EMPs. Knowledge and skills of employees are not sufficient for a successful implementation of EMPs in organisations. Setthasakko et al. (2010: 321) allude that accountant involvement tends to be higher in areas involving traditional accounting skills, such as financial performance reporting, budgetary planning and investment appraisal. As a result, management accounting for environmental issues is not as advanced as other monitoring and measuring processes of EMS and EMPs. The study, conducted by Setthasakko et al. (2010: 321), indicated that accountants are conservative and unable to adjust to new challenges. They are not proactive towards an environmental agenda. This confirms what was argued by Gunarathne and Lee (2015: 365) and Bouten and Hoozée (2013: 335) that implementing EMP exerts changes to the culture of the organisation. Therefore, those that are resistant to change would inevitably resist the implementation of new technologies that embrace the use of EMPs. Therefore, to develop EMPs, particularly the ones that integrate EMA tools, companies need to provide accountants with organizational learning mechanisms, including environmental training and team-working (Setthasakko et al., 2010: 322). The mechanisms would provide opportunities for significant interaction and intellectual exchange with other members of the organization and increase the understanding of the importance of environmental and social sustainability (Setthasakko et al., 2010: 322).

❖ **A narrow focus on economic performance**

The primary purpose of every business is to make profits. Therefore, businesses tend to look at how to minimise costs whilst maximising profits. Costs associated with implementing and maintaining EMS, for example, tend to be high (Chan, 2008: 190). This is a barrier for a business that is focusing on economic performance that is maximising profits and minimising costs (Setthasakko, 2010: 322). Companies tend to focus more on activities that have a positive impact on short-term profit and competitiveness in the marketplace. Cost concerns are also

important barriers to the development of EMA. Incurring costs are even more significant for small firms, who have generally less resources available. Consequently, the implementation of EMA is regarded as costly (Setthasakko, 2010: 323). The author adds that, to begin overcoming the narrow focus on economic performance, all employees need to understand the interconnection between economic growth and environmental sustainability. In addition, companies have to change their corporate culture from one that focuses on an economic-driven goal to one that integrates environmental concerns into business plans and practices (Chung and Parker, 2010: 49; Setthasakko, 2010: 323; Schaltegger, Viere, and Zvezdov, 2012: 1). Otherwise, the narrow focus on economic performance will be a shortcoming in the creation of EMA and environmentally-responsible organizations (Setthasakko, 2010: 323).

❖ **Absence of guidance on EMA**

This barrier is also prevalent in a study by Hillary (2004: 266) that lack of support and guidance hinder organisations from successfully implementing EMA or EMS. Mitchell (2006: 1579) explicitly highlights the following as necessary but lacking support and guidance needed for the successful implementation of EMP, that is, enforcement of environmental regulation. The law on environmental protection has not been strictly enforced, due to the fact that the government authorities are not fully aware of the importance of environmental protection, and legal documents on environmental protection are lacking, overlapping and not consistent and investment in environmental protection remains low; lack of support of external consultants and experts; and shortage of external funding.

It is noted that the barriers would likely be removed after the hotels have started implementing a formal EMP. This may be because of the continuous commitment of hotels in terms of resources' allocation and the experience of claimed benefits from the systems. Understanding the reasons behind this may require more in-depth investigation. However, this suggests that adopting and implementing a formal EMP is probably worthwhile because of many claimed benefits such as cost savings, reassurance of regulatory compliance, improvement of corporate image, operational efficiency, etc.

An earlier study conducted by Post and Altman (1994: 67) categorised barriers to implementing EMPs into two, namely industry, barriers and organisational and these correlate with the institutional theory discussed above. Industry barriers include technical information, capital

costs, configuration of current operations, competitive pressures and industry regulations. Organisational barriers include factors such as employee attitudes, poor communication, past practices and inadequate top management leadership. Bohdanowicz et al. (2011: 802) expanded on these by determining the description of each of the categories and provided a means of overcoming these barriers. These are illustrated in Table 3.7 as follows:

Table 3.7 Industry and organisational barriers to EMP application

Type	Description	Means of overcoming barrier
	Industry barriers	
Capital costs	Funds for major and minor environmental improvements, expected internal rate of return on all capital projects.	Market innovations, "green" products, special capital funds.
Community concern	Perception of risks associated with the business.	Risk communication, community advisory councils, and community initiatives.
Regulatory constraints	Regulations, standards, operating permits.	Voluntary action programmes.
Information	Difficulty of collecting appropriate data, measurement problems.	Industry alliances/cooperation, performance measurement.
Technical knowledge	Physical, chemical and biological uncertainty, inability to eliminate some risks or effects.	Joint research/development, Learning.
	Organisational barriers	
Attitudes of personnel	Disengaged, parochial interests, Environment not a high priority.	Information sharing, teams, awards, sharing of environmental "wins".
Top management	Detached, uncaring, lack of understanding of environmental/economic cost relationship, environment not a key value.	Articulation of environmental values, peer pressure/actions, involvement in high profile community activities.

Quality of communication	"Distance" between top management's espoused commitment and action throughout the organisation.	Communications treated as a critical business process, create "champions" at all levels.
Administrative heritage (past practice)	Standard operating procedures, assumptions about running the business.	Prospective outlook, strategic focus.

Source: Bohdanowicz et al. (2011: 802)

Hillary (2004: 565), on the other hand, classifies the barriers to implementing EMPs into internal and external barriers. Tarí et al. (2010: 517) assert that the hotels' decision to implement EMPs can be weighted in terms of environmental impacts on hotels' performance which, in turn, can be evaluated in terms of the hotels' internal EMPs that may impact on their competitive advantages. Hence, various hotels develop environmental strategies that combine internal aspects (quantifying environmental savings and costs) and external ones (utilising ecological arguments in marketing campaigns) (Tarí et al., 2010: 520). The internal barriers can be grouped into four categories, namely: resources, understanding and perception, implementation, and attitudes and company culture. Table 3.8 shows the categories of internal barriers with examples.

Table 3.8 Internal barriers to EMP implementation

Resources	Understanding and perception	Implementation	Attitudes and company culture
Lack of management and/or staff time for implementation and maintenance	Lack of awareness of benefits	Implementation is an interrupted and interruptible process	Inconsistent top management support for EMP implementation
Inadequate technical knowledge and skills	Lack of understanding of EMP environmental statement or value of reporting	Inability to see relevance of all stages	Management instability

Lack of training	Lack of knowledge of formalised systems	Internal auditor independence difficult to achieve	Low management status of person spearheading EMP implementation
Multifunctional staff easily distracted by other work	Uncertainty and concern over possible de-registration (from EMS - ISO) for minor breaches of legislation	Doubts about ongoing effectiveness of EMSs to deliver objectives	Resistance to change
Loss of environmental champion	Perception of bureaucracy	Difficulties with environmental aspects/effects evaluation and the determination of significance	Lack of internal marketing of EMP
Lack of specialist staff	Perception of high cost for implementation and maintenance	Uncertainty about how to maintain continual improvement	Negative view or experience with ISO standards
Transient workforce	Confusion between ISO 14001 and EMPs and how they relate		
Requirement for capital expenditure			

Source: Hillary (2004: 566)

Several studies maintain that human resources are the main barrier to EMPs as compared to financial resources (Han, H. Hsu, L.T.J. and Sheu, C. 2010; Chan and Hawkins, 2012: 408; Phan and Bair, 2015: 48). This is because employees, for example, are deemed to be the originators and receivers of an organisation's proactive environmental activities (Phan and

Baird, 2015: 48). Employees, as pointed out by Bohdanowicz et al. (2011: 801), are expected to perform extra roles when EMPs are implemented simply because these practices entail additional activities that need to be carried out in order to improve environmental performance. Chan, Hona, Chan, and Okumus (2014: 21) provide an example to this effect as follows: office staff may be asked to use double-sided printing or photocopying; room attendants may need to adjust guest room temperatures and sort rubbish for recyclable items such as plastic bottles; chefs may be instructed to turn on cooking equipment only as needed, and not to leave it on until the end of a shift, as a kitchen can consume approximately 15 per cent of a hotel's entire electricity and fossil fuel; laundry staff are required to run full loads when washing and cut condemned linens into smaller pieces for other uses; and staff in the purchasing department may need to spend extra time to look for environmentally-friendly products and equipment.

A study conducted by Chan and Hawkins (2012: 408) mentioned that the Chinese hotel sector utilises the top-down approach when implementing EMPs. This implies that, when the management decides to embrace EMPs, particularly without consultation, employees would unwillingly or willingly have to adhere to management orders and this could trigger resistance. Erdogan and Baris (2007: 605) put it that environmental concern and the willingness to act are strongly dependent on the hotel manager's attitude towards change and knowledge about the benefits of environmental practices. The human resources barrier can be overcome by incorporating human resources management (HRM) in environmental management. The role of HRM in environmental management is better depicted in Table 3.9.

Table 3.9 The role of HRM in environmental management

Role of HRM	Activities
Support to environmental management system	❖ Provide training. ❖ Guarantee effective communication. ❖ Motivate employees.
Develop organisational change	❖ Incorporate environmental dimension in the values of a company. ❖ Develop competencies for environmental management. ❖ Stimulate ethics for environmental issues.
Alignment of functional dimensions	❖ Recruit and select based on environmental criteria

	❖ Include environmental dimension in job description. ❖ Train for the environment. ❖ Evaluate performance and reward based on environmental strategy.

Source: Bohdanowicz et al. (2011: 803)

Similar to the internal barriers, external barriers can be grouped into four categories, that is: certifiers/verifiers, economics, institutional weakness and support and guidance (Hillary, 2004: 565) and these categories are a conglomerate of coercive, normative and mimetic factors that make up the institutional theory. Table 3.10 shows the external barriers according to their categories.

Table 3.10 External barriers to EMPs' implementation

Certifiers/verifiers	Economics	Institutional weakness	Support and guidance
High cost of certification/verificat-ion	Changing economic climate alters the priority given to an EMP	Lack of promotion of EMPs	Lack of experienced consultants of quality
Lack of experienced verifiers	Insufficient drivers and benefits	Lack of accessible financial support	Inconsistent approach of consultants to EMP implementation
Duplication of effort between verifiers/certifiers and internal auditors	Uncertainty about the value of an EMP in the market place	Lack of clear or strict legislative framework	External assistance, e.g., consultants needed to interpret ISO 14001 and provide assistance in environmental review and EMS implementation

Verifiers exceeding their role, e.g., influencing audit cycle length		Absence of a central source of information on environmental legislation	Lack of sector specific implementation tools and examples
Variations in verifiers' approach to EMAS validation		Absence of a single authoritative body to interpret EMPs	Absence or lack of trade association or business network support
Distortion in the verifier market		Inadequate institutional arrangement for EMPs	Lack of explanation of concepts and more guidance needed on environmental aspects and significance evaluation Poor quality information and conflicting guidance given

Source: Hillary (2004: 566)

A study conducted by Chan (2008: 195), on the other hand, found six dimensions of barriers that may hinder a hotel from adopting a formal EMP and those were ranked in a chronological order, from the greatest barrier to the least, as follows:

1. implementation and maintenance costs;
2. lack of professional advice;
3. lack of knowledge and skills;
4. lack of resources;
5. certifiers/verifiers; and
6. uncertainty of outcome.

These barriers indicate that hotels are normally hindered by both internal and external barriers.

Chan (2008: 195) maintains that internal barriers such as knowledge, skills, resources, and maintenance cost, etc., have the most significant role in impeding the progress when considering a formal EMP. This is particularly obvious for the lower class and smaller size hotels.

3.7 CONCLUSION

The researcher has provided an overview of the existing literature on environmental issues, in general, and affecting the hotel sector, in particular. The literature has revealed that the hotel industry is embarking on various initiatives whether for the sake of the environment, for economic reasons, to build a positive image or to adhere to environmental legislation. The literature has showed that there are benefits associated with partaking in environmental initiatives. It should be noted that there are factors that hinder organisations from implementing EMPs, for example, lack of building organisational learning, a narrow focus on economic performance, and absence of guidance on EMA. On the same token, factors enabling the implementation of EMPs were also discussed. These include following international industry trends and improved environmental performance, enhance company image, and reduce operational cost.

The next chapter focuses on the EMA application and the EMA tools in relation to their applicability to the hotel sector. Moreover, factors, whether internal or external, affecting the application of the EMA tools will be discussed.

CHAPTER FOUR

ENVIRONMENTAL MANAGEMENT ACCOUNTING

"There is a need that every organisation distinguishes its own countable services. These services are not only necessary for reporting its performance, but so as to use them as denominators for the environmental performance indicators of the EMA tools. This will help the better monitoring of inefficiencies in material inputs and unreasonable cost allocations. The organisations, can therefore, go on with using broader tools of EMA, or with recognizing extra indicators suitable in order to fully anticipate all the accountability issues deriving from their operation" (Papaspyropoulos et al., 2012:141).

4.1 INTRODUCTION

Ván (2012: 2) alludes that the current business challenges have driven the coherence between environment and accounting. Treating environmental problems can be reflected in the environmental, financial or accounting regulation of the company. As the business world endeavours to respond to increasing pressure from various stakeholders to reduce the impact of its activities on the physical environment, the need for new techniques to assist managers in meeting the challenge of environmental sustainability becomes apparent. One method suggested as being able to align corporate activities with the environmental agenda more closely is EMA (Christ and Burritt, 2013: 163). Moreover, these pressures have forced organisations to have environmental reporting (ER) practices in place which are seen as the vehicle for providing environmental data designed to satisfy the accountability relationships and to indicate corporate consciousness through a moral discourse on environmental issues (Sumiani et al., 2007: 896). According to Bouten and Hoozée (2013: 334), there is a relationship between ER and EMA, meaning that procedural changes in one may elicit procedural changes in the other.

This section looks at the emergence of EMA and its tools. An EMA model conducive for the hotel sector will be presented in this section. However, it is important to unpack the ER as it has an influence on the EMA practices. Therefore, this section begins with ER practices and discusses how they relate and contribute to the application of EMA tools.

4.2 ENVIRONMENTAL REPORTING IN THE HOTEL SECTOR

Hsieh (2012: 113) points out that researchers have indicated that sustainability reporting has become part of companies' daily affairs, where the question now is no longer whether to report or not but how to report. In terms of Assaf, Josiassen, and Cvelbar (2012: 597), ER has the potential to give the hotel sustainable competitive advantage because an increase in the firm's ER often contributes positively in environmental performance. ER is broadly defined as a means of providing information relating to the environmental implications of the firm's operations (Rao, Tilt, and Lester, 2012: 143). This information is often disclosed in corporate environmental reports, which Hsieh (2012: 109) describes as publicly available, freestanding documents that companies use to communicate environmental performance to their stakeholders. These reports often contain information regarding the company's policy, overall position with regard to the environment, progress towards specific targets established in previous reports, and new targets to improve performance.

Traditionally, these reports have been produced in hard copy annually and freely distributed to selected recipients or have been available on request. Assaf et al. (2012: 596) point out that ER is integrated to triple bottom line (TBL) reporting – a comprehensive approach to achieve sustainability as it integrates reporting on environmental, social and financial issues. Rao et al. (2012: 144) assert that there is a growing trend for organisations throughout the world to provide information that relate to their environmental activities. However, some countries do not have mandatory requirements for organisations to disclose their financial performance. In the study conducted by Hsieh (2012: 112), 50 hotel chains were sampled and these companies have 45 245 hotel units worldwide, and it was discovered that only 46 percent of the sampled hotels include environmentally-related information on their web sites. Of those, 69 percent were Europe-based hotel companies, 37 percent were North America-based hotel companies, and 33 percent were based in Asia. The European trend towards greater environmental reporting by hotel companies was based on the fact that governments in Western Europe and Japan were found to either mandate or encourage certain corporate environmental disclosures (Hsieh, 2012: 112). The study further revealed that hotel establishments seem slow to respond to the call to disclose environmental information (Hsieh, 2012: 112). The following five explanations emerged for this low response and are presented as follows:

- ❖ The hotel industry does not appear to be the focus of the public's concern regarding environmental issues;

- ❖ Companies are not required to participate in environmental reporting; it is a voluntary exercise. Due to the lack of compliance required, some hotel companies are not motivated to disclose their environmental information;

- ❖ There is no global environmental governance in the hotel industry, and there are no uniformly recognized sets of standards for hotel environmental reporting. Some hotels may not know how to report on environmental issues;

- ❖ Hotel web sites are used primarily as a marketing tool for selling services, online reservations, and web advertising, rather than disseminating information on their environmental activities; and

- ❖ Hotels are caught in a situation in which environmental standards are inconsistent and consumers' views are unclear. Therefore, some hotel groups may not have implemented any environmental practices; thus, they have nothing to disclose on their web sites.

Hotels, being relatively low polluters, ER is considered to be in the early stages (Janković and Krivačić, 2014: 114). However, for larger hotel groups with publicly-traded shares, there is greater pressure to report on environmental performance and those hotels with newer buildings (with newer cleaner technologies) are considered to have a higher environmental performance and therefore have a willingness to report on their environmental performance (Font, Walmsley, McCombes, and Häusler, 2012: 1546). Jones (2010: 131) asserts that organisations should be accountable for the environment because they are stewards of the environment. The author further mentions that organisations can be seen as being accountable to their shareholders for their stewardship of natural assets. Rao et al. (2012: 145) add that environmental reporting is crucial for organisations' long-term survival and organisations need to be sure that there are no 'skeletons in the closet' which may, subsequently, come to the light, damaging the reputation and viability of the organisation. Font et al. (2012: 1546) stress that ER should be mandatory. This argument is supported by Jones (2010: 134) who states that mandatory regulation is likely to be more effective than voluntary regulation. Jones (2010: 134) mentions that companies could provide the following statements in the annual report or stand-alone environmental reports:

- ❖ A statement of their corporate philosophy towards the environment. In particular, identifying any threats they recognise and, in particular, whether their business activities

potentially contribute to those threats;

❖ Whether the company recognises a duty to act and what, in broad terms, it intends to do;

❖ A statement of its attitude to sustainable development, what it believes the phrase means, and how it operationalises sustainable development. In particular, whether its pursuance of sustainable development will lead to any economic sacrifice for shareholders and other stakeholders;

❖ A statement on whether the company sees any need for a radical reorientation of the human relationship with the environment;

❖ A clear specification of its social, economic and environmental targets, how many have been met, how many partially met and to what degree;

❖ Compliance with a clear comprehensive set of time-series performance indicators either internally devised or external, such as the Global Environmental Initiative (GRI). These should embrace, inter alia, targets on water, waste, recycling, energy, pollution, biodiversity and, in particular, the current concerns with climate change comprehensive details of air emissions, particularly tonnes of carbon dioxide; and

❖ A verification statement that clearly specifies whether the opinion is a fair and balanced representation of the company's social and environmental activities.

Several studies maintain that there are no consistent environmental reporting standards that have has been established in the hotel industry (Hsieh, 2012: 109; Rao et al., 2012: 144; Ni et al., 2012: 189). The next section discusses the popular reporting initiatives and standards and their implications on the EMA, with specific reference to the hotel sector. Latest studies acknowledge that the implementation of environmental financial and management accounting is voluntary. It is not defined by accounting standards. However, environmental reporting is compulsory in some countries like United Kingdom, France and Denmark (Janković and Krivačić, 2014: 104). For those organizations which conduct business in the European Union, reporting requirements are defined by the European Directive 2003/51EC of the European Parliament and the Council, which states that the annual report should include an analysis of environmental and social aspects necessary for an understanding of the company's development, performance or position (Janković and Krivačić, 2014: 104).

4.3 GLOBAL ENVIRONMENTAL REPORTING INITIATIVES AND STANDARDS

According to Hsieh (2012: 113), GRI, such as G3 standard sustainability reporting guidelines,

have been widely adopted by firms and, therefore, hotel companies can adopt these reporting standards. Willis (2003: 234) records that the GRI was developed in 1997 by the Coalition for Environmentally Responsible Economies (CERES) and recognised by the United Nations Environmental Programme (UNEP) after the following phenomena were noted to be hindrances:

❖ Companies were increasingly receiving multiple diverse, incompatible and time consuming requests for information about their environmental and social performance;

❖ Reporting by companies to stakeholders and analysts about these aspects of performance was varied in content, inconsistent, incomplete, lacked comparability between companies and reporting periods, and even irregular in frequency; and

❖ There were signs of increasing numbers of reporting guidelines and frameworks being introduced in various countries and sectors and from various sources.

Milne and Gray (2013: 18) and Willis (2003: 233) point out that GRI has since arguably became the most influential institution with the aim of developing a voluntary reporting framework that will elevate sustainability reporting practices to a level equivalent to that of financial reporting in rigour, comparability, auditability and general acceptance. Global Report Initiative (2015) echo that a sustainability report conveys disclosures on an organization's most critical impacts – be they positive or negative – on the environment, society and the economy. By using the Guidelines, reporting organisations can generate reliable, relevant and standardized information with which to assess opportunities and risks, and enable more informed decision-making – both within the business and among its stakeholders. As stipulated above, leading hotel companies are reported to be using a standard developed by GRI, previously referred to as G3, which has since been developed to G4 standard (Global Report Initiative, 2015). According to Hsieh (2012: 109), hotel companies used these standards as a framework for their environmental reporting. Table 4.1 shows the set of G4 standard guidelines that firms are expected to follow.

Table 4.1 GRI - G4 Guidelines for environmental reporting

Economic	Environmental
❖ Economic Performance	❖ Materials
❖ Market Presence	❖ Energy
❖ Indirect Economic Impacts	❖ Water

❖ Procurement Practices	❖ Biodiversity
	❖ Emissions
	❖ Effluents and Waste
	❖ Products and Services
	❖ Compliance
	❖ Transport
	❖ Overall
	❖ Supplier Environmental Assessment
	❖ Environmental Grievance Mechanisms

Source: Global Reporting Initiative (2015)

These guidelines provide sustainable performance indicators, as pointed out by Jones (2010: 133). Ni et al. (2012: 178) echo that this promotes a standardised reporting system that facilitates the comparison of results of various hotel operations and it fosters greater reporting conformity. Vigneau, Humphreys, and Moon (2014: 4) maintain that, by providing reporting guidelines, the GRI aims at promoting organisational transparency and accountability as well as stakeholder engagement. The GRI also provides application-level information, as corporations can self-assess their reports (or get a third party assurance), based on the number of GRI indicators disclosed in their reports. It is clear that the GRI is now providing more information about what to report (performance indicators), than how to report (protocol of reporting); placing importance on certain issues, such as materiality, stakeholder and social inclusiveness. As a result, companies are integrating these issues into their business practices (Vigneau et al., 2014: 5). Based on these guidelines, this study proposes the development of a conceptual environmental reporting framework for the hotel sector, as depicted in Figure 4.1. This conceptual framework focuses on the major environmental costs relevant to the hotel sector. This framework serves as a tool that would enable hotels to put in place environmental management accounting systems (EMAS) that would be integrated with the EMA tools to facilitate the tracking, tracing and allocation of environmental costs and report them to the stakeholders. The proposed EMA and reporting model for the hotel sector, which is depicted in Figure 4.3, is actually an extension of this proposed conceptual environmental reporting framework.

Figure 4.1 Proposed conceptual environmental reporting framework
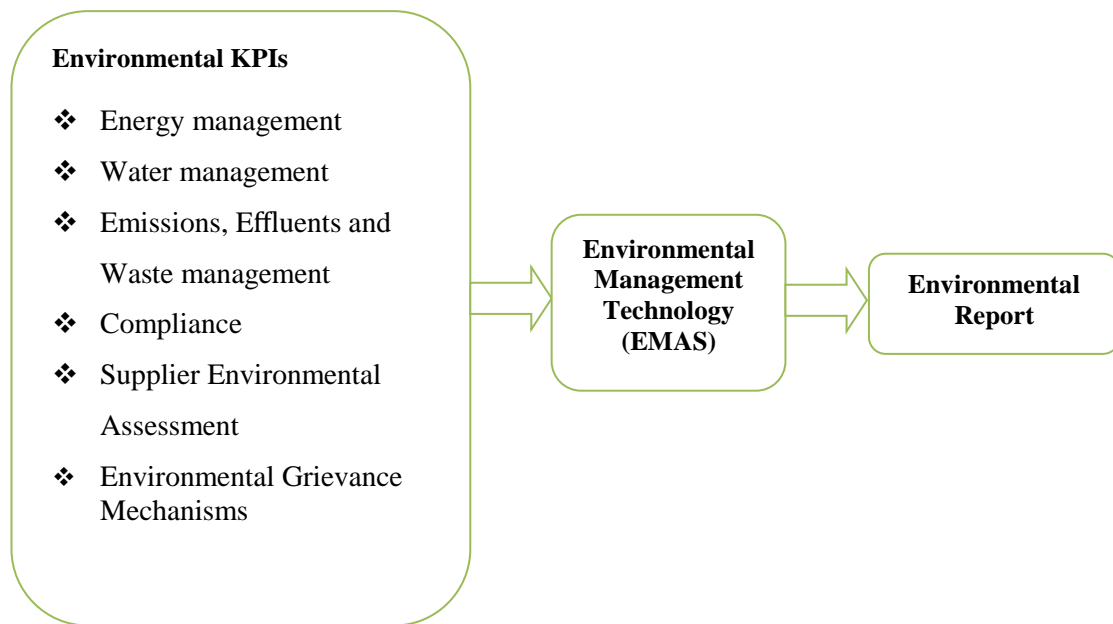
Source: Self-generated

The main contents of the reports, as adopted from Willis (2003: 235) and Global Reporting Initiative (2015), should entail:

❖ Manager's Statement:

This should contain the contents of the report;

❖ Hotel profile

This section provides the hotel's background and environment in which it operates;

❖ Executive Summary and KPIs

This relates to the concise, balanced and easily understood summary of key information that provides a broad synopsis of the hotel's environmental performance in the current (latest) period and, where possible, the two preceding period;

❖ Vision and Strategy

Providing the hotel's vision and how that integrates economic, social and environmental performance;

❖ Policies, Organization and Management Systems

Discussion of how these are designed to enable the organization to implement its vision and strategy and it should include the processes employed for stakeholder engagement; and

❖ Performance

This section is related to the disclosure of quantitative and qualitative information to enable stakeholders to understand and evaluate performance in the current year and possibly two preceding reporting periods.

4.4 THE EMERGENCE OF EMA

It has already been discussed that the economic activities of an organisation may result in certain costs being incurred. However, coupled with an effective EMP, this may result in benefits and cost savings. Several authors argue that traditional or conventional accounting methods do not offer the ideal framework capable of identifying necessary data as they generally focus upon the resources' cost employed and their accumulation without paying attention to activities (Jones, 2010: 129; Vasile and Man, 2012: 567). Consequently, Masanet-Llodra (2006: 395) concedes the significance of exploring more accurate and precise measures for the physical flows (of energy, water, waste, etc.) and their associated costs. The accounting system could thus be employed to seek out, identify and exploit financial savings in resources' usage, waste and energy emissions that would necessarily lead to reductions in the organisation's environmental impacts. Jones (2010: 129) points out the following six constraints that impede the suitability of conventional accounting for environmental accounting: capitalist orientation; business focus; reliance on neoclassical economics; numerical quantification; monetary dependence and technical accounting practices. These are discussed below:

❖ Capitalist orientation

Jones (2010: 129) argues that the conventional accounting is founded upon capitalism. The argument affirmed was that capitalism is an exploitative, antagonistic system rather than a collaborative system and, as a result, corporations aim to squeeze a surplus (profit) from their ongoing exchange activities. Therefore, the emphasis here is accounting for profits without necessarily accounting for sustainability.

❖ Business focus

The author asserts that conventional accounting also takes a very narrow business-orientated view. It sets out to capture and measure business transactions. It does not, in any way, seek to embrace the interactions between society and nature. Water and air are generally treated as free goods. Simply put, the relations businesses have with the environment are, at best, ignored and, at worst, seen as opportunities for commercial exploitation or generating profits (Jones, 2010: 130).

❖ Reliance on neoclassical economies

The argument Jones (2010, 130) extended here is that accounting relies on neoclassical economics for its intellectual source more than on any other single source. Neo-classical economics is intellectually and historically derived from its exclusivity, which is embedded in property rights and ownership concepts. Under neoclassical accounting, the social, organisational and political aspects of accounting are largely ignored.

❖ Numerical quantifications

Accounting is also usually based on numerical quantification. As such, numbers provide a common yardstick by which figures can be added, subtracted and generally manipulated. That the summation and multiplicative process often creates a meaningless aggregation of figures which has no common source or other commonality is often ignored. In carbon accounting, for example, accountants are struggling to make emission rights equivalent (Jones, 2010: 130).

❖ Monetary dependence

Numerical quantification is then, in turn, usually predicated upon monetary values and, thus, only those items which have a monetary value are recorded (Jones, 2010: 130). This, therefore, leaves out environmental issues and non-financial transactions.

❖ Technical accounting practices

The point stressed here is that that certain technical aspects of accounting (such as the entity concept and periodicity) actually mitigate against the environment. Accounting, as practised in the modern corporation, is notoriously short-term in orientation, while environmental problems, such as global warming, have very long-time spans. This mismatch in periodicity does not make an easy marriage between accounting and the environment (Jones, 2010: 130).

Literature adds that the role that has been played by the traditional management accounting system has been determined to be complex due to certain factors such as identification, classification, measurement and reporting of environmental and social information (Farouk et al., 2012: 38). Conventional management accounting systems and practices often do not provide sufficiently accurate information for environmental management and environment-related cost management (Gale 2006: 1230). As a result, many organisations significantly underestimate both the costs and benefits of sound environmental management (Jasch, 2003: 761). To fill in this gap, recently, the emerging field of EMA has been receiving increasing attention. Due to several limitations associated with the conventional management accounting, the United Nations Commission for Sustainable Development formed the Expert Working Group in 1998, whose responsibility included discussions and negotiations of environmentally-friendly practices (Jasch, 2003: 667). The participants in the Expert Working Group (EWG) are from national environmental agencies and ministries, international organisations, industry, accounting firms, academia, and United Nations agencies (Jasch, 2003: 667). The EWG published a report in 2001 titled 'Improving the Role of Government in the Promotion of Environmental Management Accounting (EMA)' (Farouk et al., 2012: 38). The report was published in order to describe certain principles and procedures related to EMA, focusing particularly on techniques to quantify environmental costs for the development of national EMA guidelines and framework. According to this report, both conventional cost accounting and non-environmental costs of the accounts are assumed to be hidden with respect to management (Jasch 2003: 667; Farouk et al., 2012: 38).

4.4.1 EMA defined

Scholarly work by Burrit and Saka (2006: 1263); Janković and Krivačić (2014: 110); and Jamil et al. (2015: 620) maintain that, over the years, several attempts have been made towards developing a comprehensive framework of EMA to reflect the following: EMA definition; description of internal and external users of environmental accounting information; and identification, tracking and allocation of monetary and non-monetary information relating to the environmental activities of an organisation. Burritt and Saka (2006: 1262) define EMA as the identification, collection, analysis and use of two types of information for internal decision making: i) physical information on the use, flows and destinies of energy, water and materials (including wastes); and ii) monetary information on environment-related costs, earnings and

savings. According to De Beer and Friend (2006: 549), EMA is an innovative sustainability initiative.

The International Federation of Accountants (IFAC), as quoted by Chang (2013: 133), defines EMA as the management of environmental and economic performance through the development and implementation of appropriate environment-related accounting systems and practices. While this may include reporting and auditing in some companies, EMA typically involves life-cycle costing, full-cost accounting, benefits assessment, and strategic planning for environmental management. According to Vasile and Man (2012: 570), the elements of the EMA, as integrated in the definition, makes EMA become a pivotal tool not only for the management of the environment but also for improved planning of processes, efficient allocation and control of costs, better pricing strategies and effective performance evaluation. The EMA definition encompasses three elements:

❖ The identification, allocation, and analysis of financial and physical information
This process may entail tracing and analysing the activities of the firm and then allocate costs on the 'cause and effect' basis. This process may assist in determining the precise financial and non-financial information that is likely to add value in determining accurate environmental costs incurred by the organisation.

❖ Environmental costs (internal and external)
There is general consensus in the body of knowledge that environmental costs are costs that emanate from the activities of the firm than, in turn, adversely affect organisations (Internal), society and individuals (External). They result from activities that affect quality of the environment, and can be expressed in monetary and non-monetary items (de Beer and Friend, 2006: 550; Papaspyropoulos, Blioumis, and Christodoulou, 2012: 132; Bouten and Hoozée, 2013: 334). Irrespective of the types of environmental costs, it is important to incorporate them into internal cost accounting to facilitate internal decision making (Janković and Krivačić, 2014: 117).

❖ Cost allocation
Scholars maintain that environmental costs should be allocated directly to the relevant cost drivers, that is, to the activity that causes the costs (de Beer and Friend, 2006: 551 and Chang,

2013: 143). The management is able to identify cost saving opportunities by identifying, analysing and allocating environmental costs (de Beer and Friend, 2006: 551).

Gunarathne and Lee (2015: 363) make an interesting observation that the definition of EMA stresses the importance of providing both financial and physical information and this potentially contributes in the establishment of two types of EMA systems: monetary EMA (MEMA) and physical EMA (PEMA). The authors went on to describe these EMA systems as follows: MEMA deals with environmental aspects of corporate activities expressed in monetary units, while PEMA focuses on a company's impact on the natural environment expressed in terms of physical units (Gunarathne and Lee, 2015: 363). Since this study investigates the EMA tools used by the hotels in KZN, a single EMA system which, incorporates monetary and physical information, is investigated. This is in line with several studies conducted in the same area, where EMA has been described as a single system that incorporates both monetary and physical information.

4.4.2 EMA application within the hotel sector

Vasile and Man (2012: 569) concede that EMA is employed mainly in order to emphasise environmental protection costs due to the fact that other indicators such as: energy, water and waste do not really show the value that society has to bear. Hence, EMA provides a pragmatic response to criticism that conventional management accounting has failed in its ability to provide explicit consideration of environmental issues with environmental costs frequently 'hidden' in general overhead accounts and potential environmental benefits often downplayed or ignored (Jasch, 2003: 761; Christ and Burritt, 2013: 163). This term is taken to mean managing environmental and financial performance through the development and implementation of appropriate accounting systems and practices (Christ and Burritt, 2013: 163). The implementation of EMA is capable to provide a series of benefits (either direct or indirect) such as: the decisional process is the beneficiary of an improved informational support: the separate registering of environmental costs (which are hidden by the classical accounting systems) is going to determine the improvement improving price policy; support during the process of data reporting: the identification of environment costs supports the economic entities in collecting data about the environmental impact which are required by internal/external reports; new opportunities are discovered: while the analysis of environmental costs can identify new opportunities, they may be employed for making savings through resources recycling or re-using them for other activities; and increase of competitive advantage: due to the incipient stage

of development of EMA, its use and a proper advertising may determine a competitive advantage of a certain economic entity (Vasile and Man, 2012: 568).

Jamil et al. (2015: 620) assert that EMA is not a separate system; it adds value to the conventional management accounting system and provides useful information to firms to manage and improve performance and bring about sustainable development. Jones (2010: 126) supports this premise by stating that, coupled to the various standardised procedures and practices for effective environmental management, for example, ISO 14000 and Integrated Environmental Management Systems (IEMS), the environmental management frameworks that exist at present can assist companies in managing, measuring and improving the environmental aspects of their operations. EMA concepts can be applied to the development of EMS consistent with predominant ISO 14000 standards (Janković and Krivačić, 2014: 117). This is also supported by de Oliviera et al. (2010: 1800) who discovered that environmental management costs and savings, based on ISO14001, appear to be high on several organisations that are often investigated because of investments in new equipment, physical adaptation of installations, systematic monitoring of air, water and environmental control, contracting of external auditors to meet environmental demands of public entities and ISO 14001 and training and contracting personnel.

Peršic´, Janković´, and Vlašic´ (2005: 450) add that EMA needs to be integrated with the hotel management systems in all areas of identification, collection, estimation, analysis, internal reporting and use of materials and energy flow information, and preparing of environmental cost and other information for decision making. EMA, being part of the hotel management system, can contribute in ensuring that financial managers are involved and responsible as part of the hotel management team (Peršic´ et al., 2005: 450). EMA for hotels should then define environmental costs depending on hotel level, and answer to the hotel management demand how it intends to use the information for decision making in different activities or business and this information should, therefore, be prepared in the area of reducing hotel operations and environmental costs (Peršic´ et al., 2005: 450). Gunarathne and Lee (2015: 367) concede that, to provide useful information for decision-makers, it is important to establish a management system to pursue EMA and environmental management strategy. Therefore, EMA can be viewed as a bridge that connects management accounting and environmental management (Gunarathne and Lee, 2015: 367).

Jasch (2003: 668) reveals key application fields for the use of EMA data as follows:

❖ Assessment of annual environmental costs/expenditures;

❖ Product pricing;

❖ Budgeting;

❖ Investment appraisal, calculating investment options;

❖ Calculating costs and savings of environmental projects;

❖ Design and implementation of EMS;

❖ Environmental performance evaluation, indicators and benchmarking;

❖ Setting quantified performance targets;

❖ Cleaner production and eco-design projects;

❖ External disclosure of environmental expenditures, investments and liabilities;

❖ External environmental or sustainability reporting; and

❖ Other reporting of environmental data to statistical agencies and local authorities.

According to Jasch (2003: 668), the publication by the EWG tabled out the terminology and techniques that were agreed upon by the group members. This was intended to establish a common understanding of the basic concepts of EMA and provide a set of principles and procedures to guide those interested in its application. The publication was intended to minimize the cost of introducing EMA systems by offering a set of principles and procedures for EMA (Jasch, 2003: 668). A comprehensive EMA was developed by Burritt, Hahn, and Schaltegger (2002: 42) which takes into consideration a broad set of tools of environmental information management which support different decision situations. The variety of EMA tools, as classified by the EMA framework, systematically integrates two major components of EMA: monetary environmental management accounting (MEMA) addressing environmental aspects of corporate activities expressed in monetary units, and physical environmental management accounting (PEMA) measuring and analysing a company's impact on the natural environment, expressed in physical units (Schaltegger, Viere, and Zvezdov, 2012: 2). The EMA set of tools will be discussed comprehensively in the next section. The EMA framework, as it was proposed by Burritt et al. (2002: 42), is presented in Figure 4.2 and it consists of 16 different types of decision situations.

EMA concept includes internal monetary and internal physical accounting to stress the importance of integrating environmental and financial issues. This implies that EMA can thus be described as a generic term that integrates MEMA and PEMA, as illustrated in Figure 4.2.

MEMA is an accounting system for the monetary impacts of environmentally-related activities. It supports strategic and operational planning, provides the main basis for decisions about how to achieve desired goals or targets, and acts as a control and accountability device (Schaltegger, Hahn, and Burritt, 2000: 15). PEMA, as well, functions as an internal decision tool for the management (Gunarathne and Lee, 2015: 363). "PEMA focuses on the organisation's environmental impact expressed in terms of physical units such as kilograms and litres" (Schaltegger et al., 2000: 15). The aforementioned authors also suggest that these tools can be used as follows:

❖ As an analytical tool designed to detect environmental strengths and weaknesses;

❖ As a decision-support technique concerned with highlighting relative environmental quality;

❖ As a measurement tool that is an integral part of other environmental measures such as eco-efficiency;

❖ As a tool for direct and indirect control of environmental consequences;

❖ As an accountability tool providing an unbiased and transparent base for internal and external communication; and

❖ As a tool with a complementary fit to the set of other tools being developed to help promote environmental sustainability.

Schaltegger et al. (2012: 3) maintain that the EMA framework serves for conceptual classification purposes but also provides a practical structure for the identification of the appropriate EMA tool for any given corporate decision setting. It can, therefore, serve as a basis for managers and staff to ascertain whether an EMA tool already in use is the most appropriate one for the intended decision-making purposes.

Figure 4.2 The existing comprehensive EMA framework

		Environmental Management Accounting (EMA)			
		Monetary Environmental Management Accounting (MEMA)		Physical Environmental Management Accounting (PEMA)	
		Short-term Focus	Long-term Focus	Short-term Focus	Long-term Focus
Past\Present Oriented	Routinely generated information	1. Environmental cost accounting (e.g., activity based costing)	2. Trend analysis of environmentally driven costs, revenue, etc.	9. Material and energy flow accounting.	10. Environmental (natural) capital impact accounting.
	Ad hoc information	3. Ex-post assessment of relevant environmental costing decisions	4. Post-investment assessment of individual projects (Life cycle costing and target costing)	11. Ex-post assessment of short term environmental impacts	12. Post-investment assessment of physical environmental investment appraisal (Life cycle inventories)
Future Oriented	Routinely generated information	5. Monetary environmental operational and capital budgeting.	6. Environmental long-term financial planning	13. Physical environmental budgeting	14. Long-term physical environmental planning
	Ad hoc information	7. Relevant environmental costing	8. Monetary environmental project investment appraisal	15. Relevant environmental impacts	16. Physical environmental appraisal

Source: Burrit et al. (2002: 42) and Schaltegger et al (2012: 2)

According to Burrit et al. (2002: 42) and Schaltegger et al. (2012: 3), the framework identifies different EMA tools for various decision situations, according to:

❖ the type of information – monetary or non-monetary (physical) information;

❖ the time frame – past or future (looking at whether the focus of the decision is oriented towards measuring past performance or making decisions for the future);

❖ the length of time frame – short-term or long term: whether the decision setting involves strategic information concerning several years or whether it is more operational, thus covering a shorter period such as months, weeks or days, and

❖ the routineness of information provision – regular or ad hoc: whether the required information is gathered regularly for a recurring purpose or only when required, e.g., to support a specific and non-recurring need.

Literature reveals that there is limited research pertaining to the application of EMA tools, particularly in the hotel sector. As a result, the implementation and application process of EMA remains unclear. Schaltegger et al. (2012: 2) point out that the aforementioned framework, like the multitude of proposed environmental accounting tools, does not explain the processes as to how corporate decision makers design their environmental information management and use processes. Gunarathne and Lee (2015: 368) support this argument by stating that the development stages of EMA have not been empirically investigated well enough. Thus, there is a need to identify and demonstrate how companies have continuously developed and systematically adopted environmental strategies with the support of EMA practices over the years, especially in the tourism sector. Qian, Burritt, and Chen (2015: 409) add that the main focus of EMA studies has been on highly polluting and energy intensive industries. Jamil et al. (2015: 620) add that the importance and benefits of EMA have been reported by empirical studies. However, the level of adoption and implementation of EMA practice is still weak in firms in many countries, especially in developing countries. Gunarathne and Lee (2015: 367), therefore, motion that at least the following 5 procedures be taken into consideration when implementing EMA:

a) Goal and policy formulation

It has been discussed that environmental management programmes, such as EMA, tie in with the global initiatives and various governmental policies and regulations. Moldan, Janouˇsková, and Hák (2012: 7) put it that these goals and objectives have to be reached within a certain

timeframe (e.g., improving the quality of life of the poor, reduction of industrial pollution, waste recycling). The first step for the adoption of the EMA framework by the organisation, as pointed out by Gunarathne and Lee (2015: 370), is to set goals and formulate policies that link to the corporate's environmental management strategies. Even though various studies concede that EMPs provide benefits to organisations and assist in ascertaining that these organisations meet their objectives, the bottom line is that the objectives and policies must be clearly articulated (Jamil et al., 2015: 620). Bréchet and Meunier (2014: 77) contend that there exists topical policy debate about the coordination of environmental and innovation policies. Therefore, it is important to understand the optimal policy mix of policy instruments that could yield the best outcome.

b) Information management (environmental performance information)

Gunarathne and Lee (2015: 367) point out that information management is the core activity of any environmental management system at the firm level because the information should be assessed by its relevance and usefulness for environmental management strategy. It is important to collect the relevant and useful information for the right decision to continuously improve the cycle of environmental management procedures. An integrated EMP, for example, the one that incorporates EMS with EMA, provides a formalized structure to conduct environmental management (Papaspyropoulos et al., 2012: 133). Importantly, this environmental management approach encourages identifying physical and monetary information (PEMA and MEMA) which may capture potential opportunities for cost savings and environmental impact reduction. Under this approach, formal environmental goals and policy give clear directions and steps for environmental management supported by environmental information management (Gunarathne and Lee, 2015: 375).

c) Decision support

EMA can thus be used as a decision support tool to provide the organisation's management with appropriate means of successfully executing various environmental management strategies (Gunarathne and Lee, 2015: 367). The successful implementation of EMA tools relies on the support of the organisation's immediate key stakeholders, i.e., employees (Moldan et al., 2012: 11; Janković and Krivačić, 2014: 105). Therefore, training the employees on the new

environmental management initiatives is pivotal (Janković and Krivačić, 2014: 105; Gunarathne and Lee, 2015: 372).

d) Steering and implementation

The successful management of environmental impacts and environmental costs depends on the implementation of the appropriate EMA practices. Gunarathne and Lee (2015: 372) suggest that an organisation should gradually implement EMA tools in a piecemeal approach. For example, the initial stage should be to perform energy and water accounting as the main focus of EMA. This exercise is past-oriented, ad hoc PEMA, and the savings can be calculated in physical units such as kilowatts and litres. Then from PEMA, the next stage would be to develop it further into MEMA practices.

e) Internal and external communication

The firm's EMPs must be communicated to its internal and external stakeholders. It has been discussed that, apart from cost savings emanating from the adoption of environmental management actions, hotels can improve their image (Chan and Hawkins, 2010: 641; Ham and Han; 2013: 733; Massoud et al., 2010: 204). Therefore, Gunarathne and Lee (2015: 372) assert that internal and external communication is an important exercise to earn a better customer image. Other benefits of communicating the firm's EMPs were discussed in section 4.3.

Table 4.2 shows several studies that have been conducted internationally in the past six years (2009 – 2015) on the application of EMA tools in the hotel sector, which is not the case in South Africa. The table endeavours to disclose the extent at which these tools have been used by the hotels and also assesses the knowledge and experiences these hotels have in as far as EMA tools are concerned.

Table 4.2 EMA tools used in the hotel sector

AUTHOR, YEAR OF PUBLICATION	Gunarathne, N. and Lee, K.H. 2015
TITLE AND COUNTRY	Environmental Management Accounting (EMA) for environmental management and organizational change: An eco-control approach. Sri Lanka.
SUMMARY	
The study investigated the development and implementation of EMA in the hotel sector in Sri Lanka, using the case study approach. The study discovered that the EMA is integrated with the hotel's management system with the aim of improving the hotel's environmental performance. The investigated hotel has been in operation for close to forty years and has always been active in environmental management activities. It has been reported that these activities were not adhered to until the official implementation of systematic EMS in 2007. The application of EMPs was a gradual process which started by focusing on water and energy and, later, waste was also incorporated. The process originated with the application of PEMA which then developed to MEMA. The study reported that two EMA tools were applied by the hotel, namely, environmental impact assessment and life cycle design. The application of EMA at the studied hotel is said to be successful owing to the commitment of employees at all levels and its application has been embedded in the hotel's culture. To facilitate continuous employee support, the hotel provides an extensive training every three months to all its employees (Gunarathne and Lee, 2015:375). To increase awareness of EMA tools, the hotel conducts preventive maintenance following a systematic schedule, reading and monitoring of water and energy meters daily, creating awareness about energy conservation among all staff, training employees on garbage separation at their sources of origin in all departments and carrying out a daily maintenance check.	

AUTHOR, YEAR OF PUBLICATION	Buyukipekci, S. 2014
TITLE AND COUNTRY	Green Accounting Applications in Accommodation Services as a Part of Sustainable Tourism. Turkey.
SUMMARY	
This research was conducted to indicate the current situation in as far as the accounting of	

environmental costs is concerned in the Turkish hotel sector. A qualitative study was conducted with 18 hotel managers representing 3-5 star hotels. The study reports that the following EMA tools were used by the investigated hotels: Life cycle assessment oriented (environmental assessment impact and life cycle design) and material flow cost accounting. Application of EMA tools in the Turkish hotel sector is at an elementary stage and there is generally limited awareness of the EMA tools in this sector.

AUTHOR, YEAR OF PUBLICATION	Janković, S. and Krivačić, D. 2014
TITLE AND COUNTRY	Environmental accounting as perspective for hotel sustainability: Literature review. Croatia.
SUMMARY	

The purpose of this study was to investigate the development of the EMA in the hotel sector based on the literature review. It was reported in this study that there is limited research in the area of EMA for hotels and the authors pointed out that this is an indication that EMA is poorly used within this sector. The study also shows that the application of EMA tools in the Croatian hotel sector is still poor. The only tool reported to have been used is the Life cycle assessment (environmental impact assessment).

AUTHOR, YEAR OF PUBLICATION	Castellania, V. and Sala, S. 2012
TITLE AND COUNTRY	Ecological Footprint and Life Cycle Assessment in the sustainability assessment of tourism activities. Italy.
SUMMARY	

This study was conducted to examine whether life cycle assessment is an appropriate tool to assess the impacts generated by the hotels on the environment. The study recorded that limited research has been undertaken in Italy to specifically evaluate hotels' environmental impacts arising from their operations. Life cycle assessment, as an EMA tool, was acknowledged as have been used in the hotel sector to assess the hotels' impact on the environment. However, the study concedes that the use of this tool raises a question regarding the definition of the system under evaluation (Castellania and Sala, 2012: 137). The extent at which this tool has been used is not documented except that the study maintains that the practice of environmental management is fairly new within the Italian hotel sector.

AUTHOR, YEAR OF PUBLICATION	Janković, S. Peršić, M. and Zanini-Gavranić,

	T. 2011.
TITLE AND COUNTRY	Framework for development of Environmental Management Accounting in Croatian hospitality industry. Croatia.

SUMMARY

This study investigated the role and relationship of EMA in hotel management systems and also discussed the potential for an EMA framework and ask how managers in the Croatian hospitality industry assess the improvement and protection of the hotel environment. This study alluded that protection and improvement programmes have a modest presence in the Croatian hospitality industry and the level of environmental accounting development is not well-developed, and high quality environmental accounting information for managerial decision-making process is, therefore, lacking (Janković et al., 2011: 133). There were no EMA tools confirmed to have been used. However, the following tools were recommended as relevant for the hotel sector: capital investment appraisal, materials flow cost accounting and other parts of environmental cost management and life cycle costing (LCC) with life cycle assessment (LCA).

AUTHOR, YEAR OF PUBLICATION	Priego, M.J.B., Najerab, J.J. and Font, X. 2011.
TITLE AND COUNTRY	Environmental management decision-making in certified hotels. Spain.

SUMMARY

This study investigated hotels in Spain, with a minimum environmental performance and management system. The purpose was to explain the ability of hotels to engage in environmental practices in a managed, structured way to allow performance improvements. Mixed methods were used when conducting this research with 10 hotels. This study maintains that Spanish hotels are amongst leaders in environmental performance in Europe, second to Germany. The degree of awareness, knowledge and skills, relating to the EMA tools, is fairly high in these hotels. The study does acknowledge that there are some establishments that are lagging behind in terms of adopting these systems. EMA has reported to have been used as a tool to improve internal and external reporting objectives. However, the tools of EMA were not clearly described except the mention of environmental cost accounting which has been reportedly used to estimate costs and investments and aid investment decisions undertaken by hotels for their environmental management.

AUTHOR, YEAR OF PUBLICATION	Chung, L. H. and Parker, L.D. 2010.
TITLE AND COUNTRY	Managing social and environmental action and accountability in the hospitality industry: A Singapore perspective. Singapore.

SUMMARY	

A literature review was conducted to examine the accountability of social and environmental phenomena within the Singaporean hotel sector. The empirical studies in the area of environmental management in the hotel sector in Singapore is still underdeveloped. One of the country's major environmental certification programmes, called the Energy Smart Building Labelling Programme, was inaugurated in 2007. This confirms the newness of EMA initiatives in the country. Having said that, the study appears to suggest that the following tools are being used in managing environmental costs: material flow cost accounting, life cycle assessment and environmental cost accounting. The extent at which these have been used is unknown.

AUTHOR, YEAR OF PUBLICATION	Pavlatos, O. and Paggios, I. 2009.
TITLE AND COUNTRY	A survey of factors influencing the cost system design in hotels. Greece.

SUMMARY	

The study was conducted with 100 leading hotels in Greece to determine the factors affecting the design of environmental cost accounting systems. The study reported that the level of cost system functionality is very low in the hotel sector in Greece. Those cost systems were reported not to have the ability to classify cost based on the hotels' actions; they also do not calculate variances between budgeted and actual outcomes and do not provide detailed cost information per cost object. They provide its users with cost reports on an annual basis and their cost data are not characterized by a great degree of accuracy. These systems provide cost information which is more useful for the published annual financial statements' preparation than for decision-making, budgeting, control and performance evaluation. The low level of cost system functionality might be attributed to the fact that hotels have not yet adjusted their cost systems to accommodate the increased information needs brought about by the environmental changes (Pavlatos and Paggios, 2009: 269). This study, having been done more than 5 years ago, might not be a true reflection of the current situation within this sector in Greece. However, there is little evidence in the literature that suggests any changes or

improvements. Therefore, this study did not assist in determining EMA tools used currently in this sector. However, suggestions were made for the adoption of environmental cost accounting and life cycle costing (life cycle assessment) as tools.

Source: Author's research

It is evident from the literature that the practice of EMA is still underdeveloped. The extent at which these tools have been used (successfully) is still unknown. Table 4.2 served as a description of the EMA tools that are used by the hotel sector. The next section will discuss the various EMA tools and describe how they add value in the entire EMA system.

4.5 EMA TOOLS

Figure 4.2 presented an EMA framework, which, according to Burritt et al. (2002: 42), has 16 different types of decision situations. Christ and Burritt (2013: 163) point out that EMA incorporates a number of techniques and tools designed to assist organisations in recognising and managing their environmental impacts. These tools include, but are not limited to: environmental cost accounting; full cost accounting; life-cycle costing; environmental capital investment appraisal; total quality environmental management; and material flow cost accounting. Some of the EMA tools are well suited for manufacturing organisations instead of service organisations (Bouten and Hoozée, 2013: 337; Fakoya and van der Poll, 2013: 138; Qian, Burritt, and Chen, 2015: 409). Each of the EMA, as reported to be suitable for the service sector, together with those discovered in Table 4.2 which have been reported to be suitable for the hotel sector, are discussed as follows:

4.5.1 Environmental Cost Accounting (ECA)

According to the EMA framework in Figure 4.2, ECA is based on past information which is generated routinely and is short-term oriented. Burritt and Saka (2006: 1264) state that ECA is a system that is used for the purpose of identifying and allocating costs to the material flows or other physical aspects of a firm's operations. ECA focuses on the cost side of the firm's activities in terms of both costs created and costs avoided, because environmental management activities at the hotel level can incur or avoid costs and create benefits (Janković et al., 2011: 124). Literature maintains that environmental cost accounting methods are capable of evaluating

direct and indirect inputs of energy, water and waste as well as emissions and related ecological impacts that results from organisational operations (Buonocore, Häyhä, Paletto and Franzese, 2014: 11). Pavlatos and Paggios (2009: 263) add that the particular features of an appropriate environmental cost accounting system will depend upon the specific circumstances within an organization. The effectiveness of design of an environmental cost system depends on its ability to adapt to changes in external circumstances and internal factors.

Pavlatos and Paggios (2009: 269) concede that hotels that put their emphasis on cost control or that are cost oriented need to have a functional ECA system to enable managers to access even qualitative cost accounting information for monitoring cost. According to Jasch (2003: 670), ECA is not an independent system that only assigns costs to environmental activities of an organisation; it is an integral part of other EMA tools such as MFCA and LCA. Peršic´ et al. (2005: 449) add that ECA can provide essential environmental information required when developing EMS. These systems coordinate data of environmental accounting in order to provide managers with information to better understand the impacts on their decisions. Information on environmental costs can influence on the improvement of environmental performance (Peršic´ et al., 2005: 449). The classification of various environmental costs is reported by Bouten and Hoozée (2013: 336), as an important initial step in identifying potential environmental costs and may also be utilised in allocating environmental costs to specific products or services, using the most popular and appropriate technique of ECA, called Activity Based Costing (ABC).

ABC can be described as a system used for tracing indirect costs to cost objects such as products, services, customers, business units, and related organisational elements, based on the activities that cause costs to be incurred and which drive those costs (Roos, 2011: 595). ABC helps organisations to describe their value-added activities and non-value-added activities, as this is the core of this system (Huynh, Gong and Nguyen, 2013:35). In order to accomplish its mission, ABC must accurately assign indirect cost to goods (products or services). By using multiple drivers to assign indirect costs, ABC has achieved its mission (Huynh et al., 2013:35).
The application of the ABC is two-fold. The first stage deals with the assigning of resource costs to various activities using resource drivers. In line with the suggestion by Tsai, Yang, Chang and Lee (2014: 609), the factors are ought to be chosen to approximate the consumption of resources used in the hotel management activities. Each type of resource traced to a hotel management activity becomes one cost element within an activity cost pool. Thus, an activity

cost pool provides the total costs associated with a particular activity. An activity centre is composed of related activities, usually clustered according to function or process. In the second stage, the costs in each activity cost pool are assigned to cost objects by an adequate activity driver used to measure the consumption of activities by the cost objects. For this purpose, decision makers can select suitable cost drivers that rely on measurement goals, costs of measurement and degree of correlation (Tsai et al., 2014: 609).

Egbunike and John (2015: 2) assert that ABC generally improves the internal company cost calculation by allocating costs typically found in overhead costs to the environmental management activities and products and services. ABC, as it applies to environmental costs, distinguishes between environment-related cost and environment-driven costs. Therefore, utilised as an ECA tool, ABC aids in reflecting environmental factors (costs) in their accounting processes through proper identification of environmental cost to products, processes and services (Egbunike and John, 2015: 2). Literature concedes that ABC is a key component in the entire EMA system because its applicability is manifest in other EMA tools such as material cost flow accounting and life cycle assessment (Huynh et al., 2013:35; Tsai et al., 2014: 609). These tools are discussed in the subsequent section.

4.5.2 Full Cost Accounting (FCA)

Jasinski, Meredith, and Kirwan (2015: 2) state that most EMA tools focus on measuring direct environmental costs such as the use of energy, materials and water, and waste generation as they are directly related to a number of environmental impacts caused by organisational operations. FCA is different from other EMA tools in that it has been developed to measure both an entity's direct costs and indirect costs and it also captures external costs, which are defined as the damages or negative effects of an entity's activities and decisions borne elsewhere in the system by parties not responsible for causing these effects in the first place (Jasinski et al., 2015: 2). Gaddis, Miles, Morse and Lewis (2007: 308) point out that it is difficult to find a clear definition of FCA, which other scholars refer to as social cost accounting or true cost accounting. However, FCA is described as an accounting technique that is capable of incorporating a complete range of costs, beyond what is recognized in books by following Generally Accepted Accounting Practices (Debnath and Bose, 2014: 88).

FCA allows organisations to recognise environmental costs as specific costs related to a process or service and not just as overhead costs that the traditional costing system would arbitrarily allocate to the facility. Herbohn (2005: 519) points out that FCA endeavours to close the gap in the current accounting practices by integrating current accounting and economic numbers to incorporate all potential/actual costs and benefits including environmental (and perhaps social) externalities. According to Tzannatos (2010: 2195), an externality arises when the social or economic activities of one group of persons have an impact on another group and when that impact is not fully accounted, or compensated for, by the first group. Therefore, the evaluation of externalities is important towards a cost internalisation policy and/or in a cost-benefit analysis where the costs to establish measures to reduce a certain environmental burden are compared with the benefits, i.e., the averted damages (Tzannatos, 2010: 2195).

Herbohn (2005: 520) alludes that the external costs are not always easily determinable and may vary according to the scope of investigation, and open to the interpretive bias of economic agents. Setting the frameworks to capture external costs have proved to be time-consuming, tedious, inconsistent, and fraught with methodological challenges. Even though FCA can be considered as an ideological shift toward "inclusive accounting", it is yet to develop into a practical accounting tool for industries (Jasinski et al., 2015: 3). The authors further mention that FCA is a topic that requires further research to ascertain that, as a tool, it incorporates all environmental aspects. Having noted that, Debnath and Bose (2014: 92) allude that, by including externalities, FCA is able to support the decision-making process by providing information on all costs of the selected value chain that is relevant to evaluate the 'true' cost of opportunities which, in turn, is an improvement as compared to the traditional accounting frameworks, where part of these costs would never even surface. Therefore, the integration of external environmental information into the organisation's cost accounting systems strengthens the importance of adopting EMA as an environmental management tool that aids in improving the organisation's environmental performance.

4.5.3 Life cycle costing (LCC) and Life cycle assessment (LCA)

Another important EMA tool is life cycle costing (LCC), which is intertwined with life cycle assessment (LCA). Chakravarty and Debnath (2014: 38) mention that LCC is a tool used to validate capital investments. Strazza, del Borghi, Costamagna, Gallo, Brignole and Girdinio (2015: 65) add that this tool is much suitable for the economic evaluation of design alternatives

that satisfy a required performance level but may have differing investment, operating, maintenance costs, and possibly different life spans. On the other hand, LCA is described by Zidoniene and Kruopiene (2015: 533) as an analytical tool that evaluates environmental effects of a product, process or activity throughout its life cycle or lifetime from the extraction of resources to production, consumption, recycling up to the final disposal. Strazza et al. (2015: 76) assert that it is essential to combine LCA with LCC because the former deals only with environmental sustainability. Therefore, marrying the two enables the organisation to compare economic performance against environmental performance. This is echoed by Thibodeau, Monette and Glaus (2014: 39) by reiterating that the combination of LCA and LCC in a common framework enables enhancing the relevance and the completeness of the decision-making process and showing the relation between additional cost and the environmental impact avoided over the entire system lifecycle.

LCA is widely used by organisations (not so much by hotels) because of its ability to evaluate the overall impact of a product or service under review and is truly holistic since it handles a range of different environmental impact categories (Filimonau et al., 2011: 1919). This tool has been described in Chapter 3 as an emerging EMS that is used in conjunction with EMS ISO standards. It has also been discussed that EMS systems are complemented by EMA tools. Hence, it is no surprise that LCA features in both systems. Chakravarty and Debnath (2014: 40) point out that while the cost for acquiring technological assets (the asset that will improve economic and environmental performances of an organisation), remains an important factor for decision making on technology acquisition, total cost visibility over the entire life cycle of a system has become a vital input towards decision-making during the early stages of system planning. It is not only acquisition cost, but costs of operating and maintaining the system that gives real cost visibility of the technology proposed to be acquired and thus, a life cycle approach is required while planning for any new system. Gallea, Vandenbroucke and de Temmerman (2015: 15) maintain that LCC, as an EMA tool, is useful and convenient. It reflects costs and savings during an asset's whole life cycle and is particularly powerful for valuing future-oriented design strategies (Gallea et al., 2015: 15).

4.5.4 Environmental Capital Investment Appraisal (ECIA)

This tool of EMA is important because it deals with long-term investment decisions. Drury (2012: 300) points out that capital investment decisions are those decisions that involve current

outlays in return for a stream of benefits in future years. Capital investment decisions represent the most important decisions that an organisation makes since they commit a substantial proportion of a firm's resources to actions that are likely to be irreversible. Akkoyun (2012: 328) defines capital investment appraisal as a kind of planning process that is used to determine whether an organisation's long-term investments, such as investments in new machinery, replacement machinery, new plants, new products, and research and development projects, are worth pursuing. Several techniques of capital investment appraisal are used to determine the best investment decision. Investment appraisal techniques can be defined as methods to determine the best of different alternative investment projects that are prepared for the investment in any special area by firms (Akkoyun, 2012: 328).

Since the advent of ecological studies, endeavours are made to incorporate traditional or conventional practices with environmental systems to address a firms' environmental impacts. The traditional capital investment appraisal, as a tool, does not add value in making decisions that are aimed at improving the organisation's environmental performance. For this reason, Maack and Davidsdottir (2015: 1339) write that the total cost for any capital project must take into consideration environmental, social and economic aspects and this is referred to as environmental capital investment appraisal (ECIA). According to Akkoyun (2012: 326), bad investment decisions have caused significant environmental damages and ECIA can also be used as a tool to provide a means to reduce the adverse economic impacts of ill-advised investments and to avoid the adverse environmental impacts and other damage they cause. Turnera and Guilding (2013: 263) point out that the capital investment appraisal decision-making process can be informed by both financial and non-financial considerations. However, capital investment appraisal, based on financial analytical tools, can only result in optimal investment decisions, provided the firm can estimate financial parameters accurately.

The application of ECIA can be done in conglomerate with other EMA tools such as LCC and LCA. Chakravarty and Debnath (2014: 39) put it that capital investment decisions will always be difficult to make. Therefore, a need exists to analyse the down-stream cost impact of any capital project due to its utilisation, maintenance and support across its planned life cycle. Garay and Font (2012: 330) maintain that environmental operational advantages may have short-terms and medium-term returns but would require organisational practices to become longer term in order to manifest improvements in efficiency, enhanced product quality, increased market share, reduced responsibilities, access to new markets, motivation and employee satisfaction,

improved relationships community, access to financial assistance and welfare benefits resulting from competition or legislation. It is in this light that Buonocore et al. (2014: 11) write that EMA tools, such as ECIA and the LCA/LCC, should be widely applied as multi-criteria assessment frameworks. Heidrich and Tiwary (2013: 5884) put it that the increasing focus on sustainable operations has compelled organisations to examine the environmental performance of their design, process, product or system. This implies that investment appraisal decisions are influenced by cost-benefits of an investment throughout its life cycle. Without implementing a clear LCA/LCC, there is a danger that organisations can end up making investment decisions that are biased and that do not promote environmental sustainability (Heidrich and Tiwary, 2013: 5894).

4.5.5 Total Quality Environmental Management (TQEM)

Environmental management accounting should be organized in such a way that it is able to prepare environmental information by respecting the principles of Total Quality Management (TQM) to improve organizational quality and accountability (Janković, 2011: 129). According to Tari et al. (2010: 501), TQM pursues customer satisfaction and process improvement in order to achieve cost reductions by means of defect and waste prevention. Tari et al. (2010: 501) add that TQM can influence performance within the hotel industry in two complementary ways. It can have internal impacts through processes, and external impacts through the market. Internal impacts on performance are related to the internal functioning of organisations (e.g., increase in productivity, improvement in efficiency and reduction in costs and waste). External impacts on performance have to do with the effects of quality on customer satisfaction and demand (e.g., increasing sales and market share, keeping tourism relationships, attracting new tourists, achieving higher tourist satisfaction levels and improving image). Aspects of hotel environmental management must be organized on integrated basis, so that environmental information will be included in the concept of TQM, leading to a new concept known as the TQEM.

Tarí and Molina-Azorín (2010: 690) allude that integrating quality management practices and environmental management practices into a single EMA system add to a number of benefits into an organisation, such as:
❖ an improvement in the efficiency and effectiveness of the organisation, avoiding the duplication of effort;

- ❖ a reduction of bureaucracy by eliminating duplication of policies, procedures and registers;
- ❖ the alignment of goals, processes and resources;
- ❖ a reduction in the costs of internal and external audits; and
- ❖ the availability of joint training and improved communication between all organisational levels.

Wiengarten and Pagell (2012: 407) assert that sustainability and quality take a proactive managerial stance that focuses on long-term goals and maintaining performance achievements. In practice, this is achieved by implementing practices that focus on zero defects, waste reduction, life cycle assessment and employee involvement and training (Wiengarten and Pagell, 2012: 407). A fundamental goal of TQEM is to get companies to recognise environmental costs and incorporate them into the capital budgeting process so that better decisions can be made (Curkovic and Sroufe, 2007: 561). By incorporating total cost assessment into each project, environmental proposals can successfully compete with non-environmental alternatives for valuable capital resources within the company (Curkovic and Sroufe, 2007: 561). One of the most important problems associated with the development and implementation of TQEM systems is that managers have difficulty assessing the impact of TQEM investments because of the lack of appropriate measures (Curkovic and Sroufe, 2007: 561). However, Wiengarten and Pagell (2012: 414) maintain that environmental investments interact with more traditional operational investments in a mutually beneficial way, suggesting that organisations get the highest benefit when they invest in quality and the environment. Therefore, as an EMA tool, TQEM, when appropriately collaborated with other EMA tools, can potentially allow hotel managers to improve the hotels' environmental and economic performance and, in turn, be used as a tool that help justify investment appraisals particularly aimed at acquiring new technologies and capital investment.

4.5.6 Material Flow Cost Accounting (MFCA)

Material Flow Cost Accounting (MFCA) is one of the EMA tools that has been developed to enable environmentally and economically efficient material usage (Schaltegger and Zvezdov, 2014: 2). MFCA is a tool that physically traces material flows into the process through to the final output of its positive and negative products. It involves detailed quantification of material and energy mass and the costs attached to them and it can be flexibly applied according to the company's own capabilities (Sulong, Sulaiman and Norhayati, 2014: 2). Schmidt, Gőtze and

Sygulla (2014: 2) echo that MFCA is a specialized accounting method aiming at the identification and monetary valuation of inefficiencies in material and energy use. Fakoya and van der Poll (2013: 136) add that MFCA can be used to capture and draw decision-makers attention to the full costs of waste because, as an EMA tool, MFCA provides detailed and in-depth waste cost information by analysing flow of materials and energy in a production process. Schaltegger and Zvezdov, (2014: 2) assert that that information gained from MFCA can act as a motivator for organisations and managers seeking opportunities to simultaneously generate financial benefits by improving material efficiency through simultaneously reducing material costs and adverse environmental impacts.

Schmidt, Hache, Herold and Götze (2013: 232) point out that the objective of Material Flow Cost Accounting is to motivate and support the efforts of organisations to enhance both environmental and financial performance through improved material and energy use by means of:

❖ improving the transparency of material flows and energy consumptions as well as related costs and environmental aspects;

❖ support of decisions within organisations in fields of process technology, production planning, quality management and supply chain management; and

❖ improving the coordination and communication regarding material as well as energy consumptions within the organisation.

According to Schmidt et al. (2013: 233), the application of MFCA comes in three steps

❖ flow structure modelling

For the modelling of material and energy flows system, boundaries have to be specified. Basically, the boundaries can span a single or several processes, the whole organisation or even entire supply chains. Furthermore, the specification of a time period is necessary (Schmidt et al., 2013: 233).

❖ quantification of flows

Based on the flow structure, material flows have to be quantified in physical units such as mass, length, volume or number of pieces (Schmidt et al., 2013: 234).

❖ evaluation (cost appraisals of the quantified flows)

The last step is the quantification of material flows in terms of monetary units in order to evaluate them (Schmidt et al., 2013: 234). In the context of the hotel sector, major items that would be identified and quantified for cost appraisal motivations would be energy, water and waste.

Schmidt et al. (2013: 234) contend that the application of this tool can be made possible by applying the Plan-Do-Check-Act (PDCA) cycle as shown in Figure 4.3. The PDCA cycle can also be applied by the hotel to facilitate the design and implementation of an EMP that integrates EMS and EMA (Priego et al., 2011: 364). The PDCA system is a method for continuous process improvement based on the concept that a process must be fully understood before it can be improved (Gidey, Jilcha, Beshah and Kitaw, 2014: 2). Curkovic and Sroufe (2007: 575) assert that many corporations have found it very beneficial to use a PDCA system for developing their commitment to TQEM. According to the literature, the PDCA components are described as follows (Curkovic and Sroufe, 2007: 575; Gidey et al. 2014: 2): *Plan*: Decision-makers identify a gap between the current situation and the desired situation; *Do*: Once a plan has been developed, a company needs to put it into practice. This plan is usually acted out on a smaller scale first to avoid large financial consequences; *Check*: After the plan has been placed into action, it then becomes necessary to see if the gap identified in the planning stage is actually closing; and *Act*: In this final stage, management examines and communicates the results of the project. They then decide whether all of the necessary information is present and whether it assisted them in their decision-making process. Sulong et al. (2014: 1) assert that MFCA has now become an international standard ISO 14051 which is indicative of the fact that this EMA tool can be integrated in EMS applications.

Figure 4.3 Plan-Do-Check-Act-Cycle for the implementation of MFCA as an EMA tool
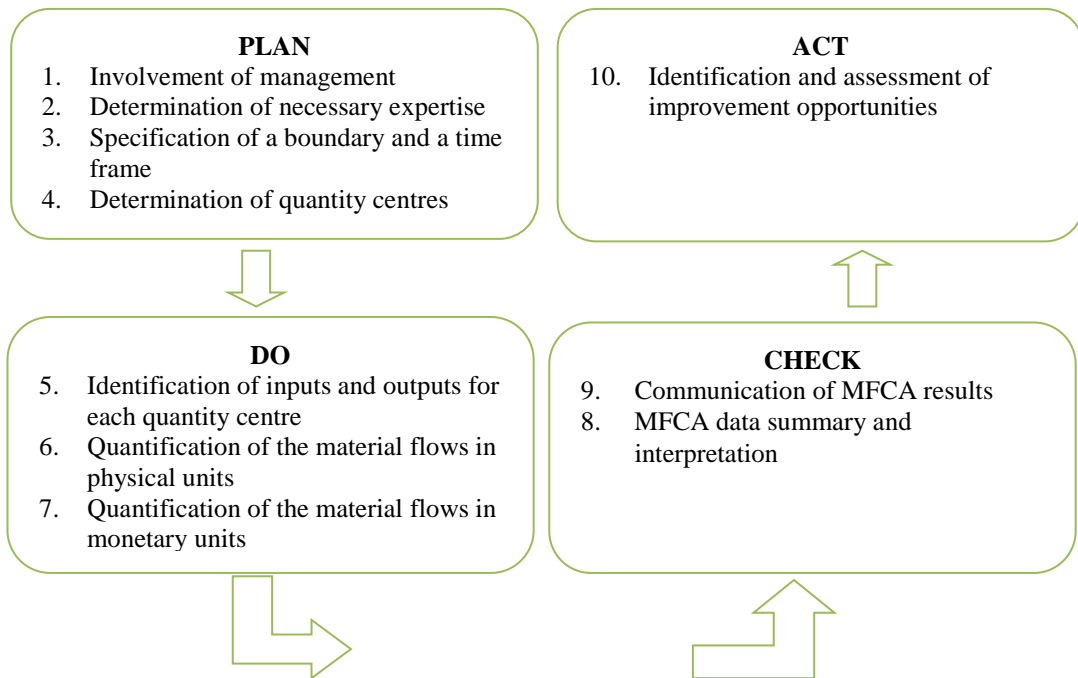
Source: Schmidt et al. (2013: 234)

4.6 PROPOSED EMA MODEL

Figure 4.4 shows a proposed EMA model for the adoption by the hotel sector. Having reviewed the literature about the use of EMA tools, this study suggests the adoption of the model, as depicted in Figure 4.4, which underpins the EMA and reporting. This model consists of six major parts and is based on prior literature (Jones, 2010: 125; de Beer and Friend, 2006: 552) and on the principles of the total cost assessment environmental management accounting (MEMA and PEMA). It is also the extension of the conception environmental reporting framework illustrated in Figure 4.1. The model consists of pathways, which the hotel sector must follow in a specific analysis of the environmental impacts on the hotels. These different pathways depend on the objective statement and scope of analysis, and the amount of data the user needs to acquire or record.

Figure 4.4 Proposed EMA and reporting model for the hotel sector

Objective statement and scope of analysis
- ❖ Company profile
- ❖ Product/Service profile
- ❖ Process description
- ❖ Basis of analysis
- ❖ Period of assessment

Industry environmental scanning
- ❖ External environmental threats
- ❖ Internal environmental threats

Corporate responsibility
- ❖ Society legitimates industry
- ❖ Industry has a duty to act

Cost inventory
- ❖ Energy consumption
- ❖ Water consumption
- ❖ Solid waste management
- ❖ Waste water management
- ❖ Other

Impact assessment

Key performance indicators
- ❖ Energy efficient use
- ❖ Water efficient use
- ❖ Waste management
- ❖ Efficient use of other resources
- ❖ Financial integrity

Benefits
Quantitative:
- ❖ Cost benefit analysis

Qualitative:
- ❖ Eco-systems
- ❖ Human health

Disclose and report impact

Environmental Accounting

Environmental Reporting

Source: Adopted from Jones (2010: 125 and De Beer and Friend (2006: 552)

This model is intended to serve as a tool used by the hotel sector to analyse the environment in which the hotel operates and assess the impact of the hotels' activities on the environment (using a combination of EMA tools) and suggest ways to avert or minimise such impacts for the good of the environment and to report on the environmental costs associated with the hotels' activities.

a) Objective statement and scope of analysis

The first step of the model is the compilation of an objective statement and scope of analysis that incorporates an analysis background. An analysis background entails a background of the hotels and provides some informative value to the product and process being considered. The scope of analysis determines the type of cost comparison and the time frame that is desired for the analysis.

b) Industry environmental scanning

This step includes factors which are external to the hotels e.g., environmental and social effects that occur to the general public and also internal factors affecting the environment, e.g., air emissions.

c) Corporate responsibility

Under the broad heading of corporate responsibility, two interlocking premises will be discussed:

i) Society legitimises industry

According to Jones (2010: 127), under this premise, commonly put forward by environmental accounting researchers, is that the authority of hotels may be seen as legitimised by society through minimally accepted moral standards (legally enshrined) and through collective societal moral responsibility

ii) Industry has a duty to act.

As per this premise, the organisation or individual (and that includes managers and accountants) cannot afford to be complacent when faced with potential environmental threats.

d) Cost inventory

Economic values will be calculated by recording/entering all relevant present and future environmental costs and revenues in cost inventory forms. These forms are categorised into the following environmental groups: energy consumption, waste, waste water, solid waste, and other costs that do not fit into any of the categories above.

e) Impact assessment

Following the cost allocation in the cost inventory, the impact can then be assessed to ascertain the sustainability indicators, e.g., energy efficient use and resource efficient use.

f) Disclose and report impact

The final report can be compiled according to company specific regulations, incorporating the reported value/s as given in the costs incurred by type form, the cost types by year form and the cost report form of the model.

4.7 DRIVERS ENABLING THE IMPLEMENTATION OF EMA IN HOTELS

It has been discussed that, in practice, the ISO 14000 family of standards has been developed, such as EMS ISO 14001, which is intended to help organisations both to manage better the impact of their activities on the environment and to demonstrate sound environmental management. These standards have further been developed to incorporate EMA tools such as ISO 14040 which seeks to give guidelines on the principles and conduct of LCA studies and ISO 14051 which aims at providing guidelines for general principles and framework of MFCA (Finkbeiner, 2013: 2). Therefore, most of the drivers and barriers for the implementation of these tools are similar to the ones discussed in Chapter 3. This section is an extension to the previously discussed drivers (and barriers), that are relevant to the implementation of EMA tools.

Bouten and Hoozée (2013: 334) point out that one of the drivers of EMA tools is the organisations' desire to improve its environmental reporting. Literature indicated that EMA tools have the ability to accurately identify, analyse and allocate environmental costs which, in turn, improve the organisation's environmental performance. This can boost organisations' confidence about the environmental performances they report about. Schmidt et al. (2014: 1) contend that the main driver for the application of EMA tools is the financial rewards that these

tools bring. However the reduction of resource use and of unintended emissions serves environmental objectives. Schmidt et al. (2014: 2) further state that MFCA, in particular, is commonly adopted because of its ability to identify potential fields for improving the economic and the environmental performance of the flow system.

Gunarathne and Lee (2015: 364) maintain that the pressure to implement EMPs comes from various stakeholders. The abovementioned authors reiterate what the literature has alluded to that some common benefits that could motivate organizations to pursue environmental sustainability are managing regulatory compliance and business case, responding to stakeholder influences and achieving competitive advantage. The review of literature showed that the implementation of EMA tools may provide cost-saving opportunities and additional revenue streams to organisations and this can motivate hotels to implement these tools. Therefore, hotels can implement EMA tools as a system that is aimed at monitoring the environmental costs, such as energy, water and waste, to improve both the economic and environmental performance (Fukey and Issac, 2014: 305). Understanding environmental costs is potentially a motivating factor for organisations to implement EMA tools to facilitate the decision-making processes for organisations (Gunarathne and Lee, 2015: 364).

Gunarathne and Lee (2015: 365) point out three key areas that drive organisations into adopting EMA tools:

❖ **Managing regulatory compliance**

Organisations develop environmental management programmes in response to external regulatory pressure and internal awareness of the risks associated with these pressures. This view supports the institutional theory, discussed in Chapter 3. Qian et al. (2015: 411) contend that institutional theory has been suggested as providing useful insights in understanding EMA adoption. Coercive pressures have been reported as the driving force for the implementation of EMA tools (Dubey et al., 2015: 124; Jamil et al., 2015: 620). The increasing regulatory enforcement and policy guidelines on environmental protection and reporting of environmental protection provide a direct incentive as well as pressure for business corporations to identify and collect EMA information (Qian et al., 2015: 411). It, therefore, appears that, for each institutional perspective coercive, normative and mimetic – there is a reason for companies to

adopt EMA tools and Qian et al (2015: 412) assert that institutional pressures can be drivers for the development and application of EMA tools.

❖ **Achieving competitive advantage**

Gunarathne and Lee (2015: 365) argue that organisations move beyond regulatory compliance to achieve competitive advantage by efficient resource utilization with the main focus on cost management. Qian et al. (2015: 408), therefore, assert that EMA would be a useful tool to help hotels improve the awareness of environmental impacts of their organisations and identify possible financially advantageous opportunities to reduce such impacts. However, Bouten and Hoozée (2013: 335) argue that adding an environmental perspective to management accounting may result in more than merely the creation of new tools aimed at gaining competitive advantage and improving financial performance; these tools may even change the culture of the organisation.

❖ **Completing environmental integration**

Integrating environmental considerations into the long-term sustainable strategy of the organisation causes the environmental issues to become a part of the day-to-day decision-making process of an organisation which eventually changes the organisational culture (Gunarathne and Lee, 2015: 365; Bouten and Hoozée, 2013: 335). This area suggests that the organisation's environmental strategy will encompass environment impact-integrated performance evaluation systems, revenue generating and marketing strategy based on environmentally-friendly services (Gunarathne and Lee, 2015: 365).

4.8   BARRIERS TO IMPLEMENTING EMA IN THE HOTEL SECTOR

This study has provided a wide range of benefits emanating from implementing EMA practices. However, several authors maintain that the practice of EMA is very limited, particularly in the hotel sector. Ván (2012: 2) argues that, as the environmental management accounting system "has only verifiable results in the long-run, companies question the necessity of such a new accounting reporting system. For companies to realize the advantages of a new reporting system, not only the environmental costs are to be taken into account, but also the environmental benefits as well. In a competitive environment, only actions and investment with

justified economical results can be initiated. Therefore, the environmental benefits are important, non-negligible elements. With such a new reporting system, not only benefits can be materialised, but also additional environmentally sensitive activities can be encouraged. Consistent with this argument, Christ and Burritt (2013: 171) add that EMA is an expensive and onerous undertaking. Organisations are unsure how to adapt such practices to their specific operations or are under the impression that such activities require a significant commitment of financial and human resources (Christ and Burritt, 2013: 171). Janković and Krivačić (2014: 104) also confirm that there is still a resistance to undertake formal environmental management programmes because their implementation often includes major changes in business processes and also certification costs.

In a study conducted by Lee (2011: 46), several barriers to the implementation of EMA tools emerged and they are discussed below.

❖ The gap between awareness of EMA tools and their adoption in practice

Lee (2011: 44) contends that there is little awareness and knowledge of the EMA tools in practice. Jamil et al. (2015: 620) attribute this barrier to lack of effective role of professional bodies and lack of stakeholders' pressure. Bouten and Hoozée (2013: 341) add that the regulatory pressures are not strong enough to force organisations to implement EMPs. Hence, there is still a gap between awareness of EMA tools and them being applied by organisations. Qian et al. (2015: 415) support this argument by stating that lack of consistent local government support, lack of confidence in regulatory power and lack of environmental awareness and skills among employees, pose as major barriers to the adoption of EMA tools.

❖ Uncertainty of how EMA tools can be used to improve economic and environmental performance

According to Janković et al. (2011: 134), organisations are using an informal approach to environmental accounting and reporting. Therefore, to witness an improvement in the application of EMA tools, the practice of environmental management must be converted into a formal system, which will be systematically implemented in organisations such as hotels. Gunarathne and Lee (2015: 368) argue that because the development and application of EMA tools is in the elementary stages, there is, therefore, a need to empirically assess whether organisations have, in fact, systematically developed and applied it in their organisations. It is

also imperative that the evidence be provided as to how these tools have been incorporated into the corporate strategies and how effective they are.

❖ Mismatch between existing cost accounting items and EMA guideline items

Sulong et al. (2014: 3) point out that there is a clear distinction between EMA tools and conventional management accounting practices and businesses tend to misunderstand these tools and get confused with their concepts and their functionality. For example, in a study conducted by Fakoya and van der Poll (2013: 138) on waste management, it was revealed that MFCA, an EMA tool, identifies all material losses as waste or non-product output, while the conventional standard costing system failed to account for losses beyond the established standard.

❖ Little or no incentives for managers to adopt and develop EMA tools in practice

Ervin et al. (2012: 398) also acknowledge that the implementation of EMA tools come with several challenges such as high upfront expenses, lack of availability of knowledgeable staff, high day-to-day costs, significant upfront time commitment, uncertain future benefits of environmental actions, risks of downtime or delivery interruptions during implementation, contributions to environmental performance not included in performance appraisals and employees not being rewarded for contributions to facility environmental performance. These factors represent either added costs in materials, equipment or staff, resource impediments, increased risks for operations, or incentive incompatible management policies. The study conducted by Massoud et al. (2010: 204) also found that lack of government support and incentives are the most significant barriers for the implementation of EMA practices. Therefore, Lee (2011: 41) contends that "a strong incentive for managers to invest in, develop, and operate an EMA system within a company will be a critical factor in order to realise successful EMA implementation and an accompanying competitive advantage".

4.9 CONCLUSION

This section discussed how EMA tools can support industry's environmental accountability and enhance both financial and environmental performances. It was demonstrated in this chapter that EMA tools can be successfully incorporated into other EMP practices such as the environmental management system and several ISOs. Several EMA tools were presented and discussed in this section and it was demonstrated how these tools can be utilised to their full

potential for the betterment of financial and ecological performances. These tools can provide meaningful results for policy decision making by the relevant stakeholders in the hotel industry. It was in this section that a prototype EMA model was presented based on the literature review. It is envisaged that this model would be a means of improving environmental accountability and reporting, specifically for the hotel sector. The implementation of EMA tools is inevitably affected by barriers that hinder their implementation whilst there are motivating factors that serve as drivers for their implementation. These drivers and barriers were discussed in this section.

The next chapter illustrates how this research was conducted by providing a detailed discussion on the research methodology and design.

CHAPTER FIVE

RESEARCH METHODOLOGY AND DESIGN

"Research design is the science and art of planning procedures for conducting studies so as to get the most valid findings. Determining your research design will give you a detailed plan which you will use to guide and focus your research" (Collis and Hussey, 2003: 113).

5.1 INTRODUCTION

This chapter discusses the research design and methodology in more detail, outlining the specific methods used to gather empirical information sufficient to critically evaluate the EMA tools used by the 3 – 5 star hotels in KwaZulu-Natal. This research adopted the use of a single case study with embedded units and the researcher unpacked the scientific reasons for choosing this method. Furthermore, the data collection mechanisms and the mode of data analysis will be explained in this section.

5.2 RESEARCH METHODOLOGY

In this section, the researcher will illustrate how the study is going to be investigated. Zikmund, Babin, Carr and Griffin (2013: 5) define research method as a "strategy of enquiry". According to Barbour (2014: 18), research methodology means the philosophy of the research process. This refers to the approach that underpins the research (Flick, 2014: 112). The author continues to reveal that the approach includes the assumptions and values that serve as the rationale for research and the standards or criteria the researcher uses for interpreting data and reaching conclusions. The study consists of literature review and empirical study. The literature review provided an in-depth review of hotel environmental issues within management accounting. The historical review laid a foundation that guided empirical study and provided an insight and understanding into the research problem.

Qualitative case study research method has been adopted in this study. Qualitative research methods have been described as 'an array of interpretative techniques which seek to describe, decode, translate and otherwise come to terms with the meaning, not frequency, of certain more

or less naturally occurring phenomena in the social world' (Creswell, 2015: 30). Baxter and Jack (2008: 544) state that "qualitative case study methodology provides tools for researchers to study complex phenomena within their contexts". According to Burritt and Saka (2006: 1266), a case study can provide rich descriptions, explorations and explanations of the phenomena being studied, and are of particular use where little prior study has been undertaken.

Yin (2009: 9) states that a case study design should be considered when: a) the focus of the study is to answer how and why questions; b) you cannot manipulate the behaviour of those involved in the study; c) you want to cover contextual conditions because you believe they are relevant to the phenomenon under study; or d) the boundaries are not clear between the phenomenon and context. Therefore, in this study, the case study is used because of the complex phenomena surrounding the hotel sector, particularly 3-5 star category hotels is not clearly understood (Rogerson and Sims, 2012: 404). The case of how EMA tools are applied by the 3-5 star hotel category is still in question. Therefore, knowledge and awareness of proper tools used to address EMA problems faced by the hotel sector cannot be noticed and decisions cannot be recommended without conducting research in this regard.

5.2.1 Determining the type of case study

In this study, the type of the case study that is used is exploratory case. This type of case study is used to explore those situations in which the intervention being evaluated has no clear, single set of outcomes (Yin, 2009: 47). Since the issue of EMA is new in the field of management accounting, specifically in the South African context, its practices and applications in the industry, such as hotels, are still new and still not clear as to how they are applied (Rogerson and Sims, 2012: 404). The use of case study as a research methodology to collect data is appropriate for this study because it is a means to provide rich drawings, descriptions, considerations and clarifications of the events being investigated. This approach is also consistent with similar studies performed in EMA, whether in developed economies and/or other sectors of the economy, for example, in the Japanese companies (Burritt and Saka, 2006: 1266); in the pulp and paper companies in Thailand (Setthasakko, 2010: 318); in local government in Australia (Qian, Burritt an Monroe, 2010: 100); and in universities in Taiwan (Chang, 2013: 135). The case study is relevant for this study because the investigator is attempting to establish rich awareness of the context of EMA tools used by the 3-5 star hotel sector and the processes being utilised. Saunders, Lewis, and Thornhill (2012: 179) write that

the case study strategy has also considerable ability to generate answers to the question 'why?' as well as 'what? and 'how?' questions. The case study strategy is, therefore, appropriate because this research has posed questions that this study seeks to answer.

A single case study was also chosen because this is a critical, unique and revelatory case and the researcher had access to the case previously inaccessible to empirical research as it was the case with Chan and Hawkins (2012: 408) in their study on the application of the EMS in the hotel context, a case of a hotel sector in China. Yin (2012: 48) also supports this rationale for a single case study. In the South African hotel context, EMA initiates are limited in scope (Rogerson and Sims, 2012: 393) and scholarship on environmental issues is undeveloped in South Africa (Rogerson, 2013: 221)

Another rationale for choosing a single case study is the representative or typical case, as Yin (2012:48) puts it. A representative or typical case is the one that provides insight into a broader phenomenon that is common within the same industry (Yin, 2012: 48). The selected case is that of a hotel management company, managing over 30 hotels and lodges and about 11 are in KwaZulu-Natal. The environmental management challenges faced by these establishments are universal. Therefore, a single case study with embedded untis is much suitable for this study as generalisations would be possible. Baxter and Jack (2008: 550) add that the ability to look at sub-units that are situated within a larger case is powerful when you consider that data can be analysed within the subunits separately (within case analysis), between the different subunits (between case analysis), or across all of the subunits (cross-case analysis). The ability to engage in such rich analysis only serves to better illuminate the case.

5.2.2 Reporting case study findings

This study adopted a linear-analytic structure because it is applicable to exploratory case studies. A linear-analytic structure was preferred because it is the standard approach in preparing and compiling research reports (Yin, 2009: 176). This approach starts with the formulation of problem statements and then the review of existing literature, which is followed by the research method, the findings and then the conclusion.

5.3 DATA COLLECTION

The main method of data collection in this study was in-depth interviews. Yin (2012: 114) suggests three main sources of data collection for qualitative research methods and these are in-depth, open-ended interviews, direct observation and written documents. Rubin and Rubin (2012, as quoted in Flick: 2014: 208) point out that in-depth interviews allow deep information and knowledge to be sought, with this information usually being related to personal matters, such as values and decisions, cultural knowledge or perspective. In-depth interviews minimise the chances to report on researchers' own perceptions; whereas direct observations and documentary evidence would require researchers to place far more of their perceptions into the interpretation of data sources. Chang (2007: 110) suggests that in-depth interviews be used in conjunction with data gathered through such avenues as informal interviewing and documentary records. Therefore, the primary data collection for this study came in the form of in-depth interviews using semi-structured questions.

Furthermore, additional documents were analysed. These included the hotels' Group Energy Profile Analysis programme (GEPA), Building Management System (BMS), financial statements, policies and the group websites together with their individual hotel websites.

5.4 TARGET POPULATION

According to the Tourism Grading Council of South Africa (TGCSA), the number of 3-5 star graded hotels in KwaZulu-Natal, stands at 103 (TGCSA, 2015). Figure 5.1 depicts the map of KwaZulu-Natal. The target population for this study were hotels in KwaZulu-Natal that are in a high quality range of accommodation classified as 3-5 star quality hotel establishments. Rogerson (2013: 61) states that the tourism space economy in South African is highly uneven and polarised. The major geographical poles of activity are concentrated in and around the three main metropolitan areas of the country and centre upon Cape Town, Durban and Johannesburg and the five most important centres for estimated tourism expenditure are Johannesburg (14 percent of national share), Cape Town (12 percent), Pretoria (8 percent), Durban (7 percent) and Ekurhuleni (6 percent) (Rogerson, 2013: 61). These findings reinforce the urban dominance of the South African tourism space economy and, therefore, the study investigates hotels situated in Durban since the study focuses on hotels based in KwaZulu-Natal and the literature reveals that Durban is endowed with 3-5 star establishments and the city is one of the dominant cities in South Africa's tourism space (Rogerson, 2013: 66).

Figure 5.1 The map of KwaZulu-Natal

Source: Book Now! SA (2015)

5.5 SAMPLING AND SAMPLING METHOD

The unit of analysis in this study is the hotel, even though interviewees were individuals. This is because the study relates to the EMA tools used by the hotels and not by individuals within that hotel. Purposive sampling was used in this study because, with purposive sampling, one needs to use one's judgement to select cases that will best enable the researcher to answer research questions and to meet objectives (Saunders, Lewis, and Thornhill, 2012: 287). This signifies that the researcher sees sampling as a series of strategic choices about with whom, where and how to do the research to facilitate in addressing the following questions being asked by the study:

- ❖ What are the EMA tools and techniques used by the hotel sector and how effective are they?
- ❖ How does the lack of EMA knowledge influence the activities and abilities of the 3-5 star hotels to cope with environmental reporting?
- ❖ What are the factors that encourage the use of EMA tools by the 3-5 star hotels?

According to Sekaran and Bougie (2013: 252), there are two major types of purposive sampling, namely, judgement sampling and quota sampling. Judgement sampling occurs when a researcher selects sample members to conform to some criterion. The hotel had to have an already developed EMS. Therefore, it had to have either a Green Leaf Eco Standard certification, Heritage Environmental certification or Fair Trade Tourism certification. This study adopted a judgement purposive sampling because the sample consisted of hotel employees who occupy certain positions of responsibility within the hotels. ABC Hotel Management Group formed part of this study along its 3 hotels (2 located at uMhlanga and 1 located at Durban North) which met the selection criteria.

Data collection took the form of semi structured/in-depth interviews and these participants provided relevant information because they are hands on in the area that was investigated, that is, they either report on the environmental impacts caused by the hotel sector or perform activities that contribute to the environmental costs made by the hotel sector. It is essential that participants possessed some knowledge in the area of management accounting and environmental management. Therefore, participants from the finance department, resources/general management division, cleaning department and maintenance department of the targeted hotel were required to participate. There was a minimum of 3 senior staff members

from the targeted hotels. This consisted of 3 general managers, 3 financial managers, 3 maintenance managers, and the Group engineer. A total of 10 individuals participated in this study. According to Saunders et al. (2012: 283), this sample size is sufficient and appropriate. Creswell (2015: 77) recommends a sample size of between 3 to 10 participants for phenomenology studies like this one. According to Mason (2010: 2), the sample size of between 3 to 10 participants has been used in doctoral studies. The interviews were conducted between May and June 2015 based on the availability of the informants.

5.6 ADMINISTRATION OF INSTRUMENT

It was predominantly self-administered with the aid of personal assistant interview questions as to give the clarity on some aspects which may not be understood by respondents.

5.7 INTERVIEW QUESTIONNAIRE DESIGN

The literature review guided the formulation of interview questions. The study, therefore, adopted questions used by Chang (2007: 99) and were designed especially for EMA studies. The interview questions were structured such that they address the research objectives and questions for this study and were categorised into the following themes:

❖ EMA practices within the hotel sector and the extent to which they are implemented. This is illustrated in Table 5.1 (See Appendix C);

❖ Awareness, knowledge and experience with regarding the use of EMA tools. This theme and interview questions are illustrated in Table 5.2 (See Appendix C); and

❖ Internal and external factors affecting the use of EMA tools. This theme is illustrated in Table 5.3 (See Appendix C), together with the interview questions.

5.8 DATA ANALYSIS

Thematic coding was used to categorise findings from the hotels being investigated. Thematic grouping of text paragraphs rather than a scoring process minimises potential for bias (Chang, 2007: 116; Sekaran and Bougie, 2013: 339). Given that the approach used was a single case study with embedded units, a cross-case synthesis was used to analyse data using complementary word tables. According to Yin (2009: 160), the analysis of the entire collection of word tables enables the study to draw cross-case conclusions and probe whether different groups of cases appear to share some similarities and deserve to be considered instances of the same type of general case. Baxter and Jack (2008: 550) assert that the ability to look at sub-units that are situated within a larger case is powerful when you consider that data can be analysed across all of the sub-units (cross-case analysis). The ability to engage in such rich analysis only serves to better illuminate the case (Zikmund et al., 2013: 162).

5.9 RELIABILITY, BIAS AND VALIDITY

This section justifies how the use of the case study approach has addressed reliability, bias, and validity issues. These are discussed below:

5.9.1 RELIABILITY

In qualitative research, reliability is concerned with whether the findings from the case study can be replicated if the case study is done by alternate researchers (Easterby-Smith at al., 2008, in Saunders et al., 2012: 381). Flick (2014: 481) asserts that if a research finding can be repeated, it is reliable. The same interview questions were asked to all the participants as this technique enhances the reliability of data being collected and the informants reviewed the transcripts for accuracy (Lapan, Quartaroli and Riemer, 2012: 183). Reliability was also increased by using multiple sources of data. Therefore, apart from collecting data through semi-structured interviews, data was also collected from the analysis of company documents such as financial reports, policy documents and also the hotels' websites. Tracy (2013:41) writes that an underlying principle in the collection of data in case research is that of triangulation, i.e., the use and combination of different methods to study the same phenomenon and it is considered worthwhile because a key concern for good research is its reliability and formal generalisability. Triangulation is a practice in which a researcher uses multiple types and sources of data, variant

methods of collection, as well as theoretical frames and multiple researchers (Tracy, 2013: 63). According to Lapan et al. (2012: 251), triangulation increases validity and trustworthiness of findings. Hence, it was necessary for this study to employ this strategy.

5.9.2 BIAS

It is said that case study researches are prone to preconceived notions that might motivate them to conduct the case study and this makes the study to be biased (Sekaran and Bougie, 2013: 150; Yin 2009: 72; Flyvbjerg, 2006: 234). To address the concern for bias in case study research, Yin (2009: 72) suggests that the researcher needs to be open to contrary findings. To reduce any likelihood of bias, this study adopted what has been a norm in many case study researches (Flyvbjerg, 2006: 235). Where any preconceived views, assumptions, and concepts were wrong, the researchers had to revise their hypotheses to align them to new findings. The researcher was tolerant to contrary findings. Bias was addressed mostly through data triangulation. Flick (2014: 187) maintains that triangulation enables the researcher to overcome the potential of bias of a single-method approach. Data was collected at different times, from different sources. Yin (2009: 72) also suggests that the researcher reports his or her preliminary findings, possibly while still in the data collection phase, to two or three critical colleagues. The colleagues should offer alternative explanations and suggestions for data collection. If the quest for contrary findings can produce documentable contradictions, the likelihood of bias will have been reduced. Therefore, to address bias, the researcher also reported preliminary findings to two environmental management academics to provide their critical evaluation. Their suggestions and inputs were incorporated to this study and this ensured that bias was minimised.

5.9.3 VALIDITY

Zikmund et al. (2013: 303) define validity as the accuracy of a measure or the extent to which the research findings accurately represent what is really happening in the situation. Research errors, inaccurate or misleading measurement can undermine validity (Flick, 2014: 483). Masanet-Llodr (2006: 396) and Yin (2009: 40) write that case study research should fulfil the same requirements as any other methodology in social sciences for being considered as a rigorous research method. To address validity, the study ascertained the fulfilment of these requirements:

❖ Construct validity

Construct validity is a measure of whether consistent operational measures for the concepts being studied are established (Chang 2007: 118). This study used related information collected from available sources such as company websites, financial reports and policies. The researcher read transcripts repeatedly to ensure accuracy and three general managers from the participating hotel also reviewed these transcripts.

❖ Internal validity

Since this research used a single case study approach with embedded units, data was analysed for each unit and then analysed across units to discover a pattern across units. This seeks to establish a causal relationship, whereby certain conditions are believed to lead to other conditions (Masanet-Llodr, 2006: 396).

❖ External validity

External validity is related to generalisation which, in turn, is concerned with the application of research results to cases beyond the one studied (Zikmund et al., 2013: 304). This study endeavoured to maintain a chain of evidence which Yin (2009: 122) recommends as a principle to be followed in order to increase reliability of the information. The principle is to allow the external observer, i.e., the reader of the case study, to follow the derivation of any evidence from initial research questions to ultimate case study conclusions.

5.10 ETHICAL CONSIDERATIONS

Barbour (2014: 79) states that to be ethical is to conform to acceptable professional practices. Ethics are norms and standards of behaviour that guide moral choices about our behaviour and our relationship with others (Sekaran and Bougie, 2013: 13). The following is a summary of some ethical principles that were upheld when conducting this study:

❖ Honesty

The researcher needed to strive for honesty in all scientific communications and honestly report data, results, methods and procedures, and publication status. Hence, there is no fabricating, falsifying, or misrepresenting data.

❖ Objectivity

The researcher had to strive to avoid bias in empirical design, data analysis, data interpretation, peer review, personnel decisions, expert testimony, and other aspects of research where objectivity is expected or required. The investigator endeavoured to avoid or minimize bias or self-deception and avoid disclosing personal or financial interests that may affect research.

❖ Integrity

The researcher kept to promises and agreements; acted with sincerity; strived for consistency of thought and action, tools, resources and was open to criticism and new ideas.

❖ Confidentiality and Anonymity

Participants were assured that all information obtained would be used for research purposes only and participants would not be identified by their names in any report of the completed study. Therefore, data was collected anonymously and names were not be linked with any information.

5.11 CONCLUSION

This chapter explained the research design and method that was used to conduct this research. It looked at how data was collected and analysed using a case study approach. The justifications were tabled out for choosing this method in conducting this study. The target population and sampling strategy were defined and the units of analysis were explained. The research strategy used endeavoured to enhance reliability and validity through using the case study approach and also address the potential of bias. The aforementioned were defined and explained in this section. Given the sensitive nature of this study, ethical consideration were discussed.

The next chapter will present findings and analyses emanating from data collected in accordance with the research methodology.

CHAPTER SIX

DATA ANALYSIS

6.1 INTRODUCTION

While the previous chapter focused on the research methodology and design for this study, this chapter presents an analysis of data collected. In-depth interviews with selected managers of three different hotels that are managed by ABC Hotel Management Group and the group engineer constitute the main results of this study and, therefore, the primary discussion in this section. To ensure triangulation, field notes from direct observation, documentation and hotel websites were also incorporated into the analysis of data to complement in-depth interviews. This exercise was performed to ensure reliability and validity of the findings and thus address bias. Cross-case synthesis was used and will be presented in this section by means of tables where each data presentation is followed by discussion. The results are analysed in accordance to the themes, sub-objectives, and questions set out for this research which are as follows:

Theme 1: EMA practices within the hotel sector and the extent to which they are implemented.

Sub-objective 1: To identify the environmental management accounting tools used for the reporting of environmental costs by the hotel sector in the 3-5 star category in KZN.

Sub-objective 2: To determine to what extent the tools of environmental management accounting are used to report environmental costs by the hotel sector in the 3-5 star category in KZN.

Research question: What are the EMA tools and techniques used by the hotel sector and how effective are they?

Theme 2: Awareness, knowledge and experience regarding the use of EMA tools.
Sub-objective 3: To examine the awareness, knowledge, and experience with regards to environmental management accounting tools by KZN's hotel sector in the 3-5 star category.

Research question: How does the lack of EMA knowledge, skills and experience influence the activities and abilities of the 3-5 star hotels to cope with environmental management and reporting?

Theme 3: Internal and external factors affecting the use of EMA tools

Research question: What are the factors that encourage the use of EMA tools by the 3-5 star hotels?

Sub-objective 4: To identify critical factors enabling and limiting the use of environmental management accounting by the hotel sector in the 3-5 star category in KZN.

6.2 GENERAL DESCRIPTION OF ABC HOTEL MANAGEMENT GROUP AND ITS EMBEDDED UNITS

ABC Hotel Management Group was incorporated in 1988 as a hospitality corporate offering specialised services in the tourism sector. Currently, the Group manages and markets over 30 quality tourism and leisure properties and has a strong network of sales and marketing specialists working out of Johannesburg, Durban, Cape Town, London and Germany. In 2002, the Group formed a specialised theme park management company with local empowerment and overseas partners to bid for and manage the largest Marine Theme Park in Africa valued at R750 million, which was being developed in Durban, South Africa. The Marine Theme Park currently manages the fifth largest aquarium in the world. It comprises a 1 200 seater dolphin stadium, 300 seater seal stadium and a re-creation of an old cargo ship with an underground themed Aquarium Gallery extending through 450 meters of spectacular fish and shark tanks. It also comprises a Water Park with 18 fun-filled water slides and a retail village comprising 89 specialty shops and restaurants.

In addition to these specialised management and marketing services, ABC Hotel Management Group maintains that it has become the leader of private tertiary training and education for the hospitality industry in South Africa. The Group's hotel school was established in 1994 and has grown to become the largest private hospitality training provider in South Africa. The school offers a range of industry related full-time and part-time courses. There are three campuses for full time study located in Cape Town, Durban and Sandton.

6.2.1 Environmental responsiveness of the Group

The Group's records report that it continues to make efforts to decrease their carbon footprint, as the Group's efforts have been recognised for their pursuance in being aware at all times of their energy consumption levels. In 2011, some of Group properties featured in the top of the Hotel Group category in the announcement of the leaders in The National Energy Barometer Survey 2011. The National Energy Barometer Survey encourages companies to become aware of their energy consumption levels, how their buildings are being operated, and to encourage improvements that will bring economic benefits whilst providing a platform for comparison and learning. Apart from The National Barometer Energy Survey, the Group is also involved in two environmental programme certifications, namely: Green Leaf Environmental Programme and Heritage Environmental Programme. The Group, over the years, embarked on a nationwide, comprehensive, energy efficient lighting programme, utilising the Eskom IDM funding models. The Group Engineer asserts that through this programme, the Group has the ability to monitor, gauge, compare and manage energy consumptions/demands throughout the respective properties by using a remote, online web interface.

Additional lighting projects as well as efficient hot water generation systems (solar and heat pump) are being implemented throughout the Group. Other successful projects have included the 2011 partnership with Eskom, Energywise/Magnet. This involved implementing a number of low-flow showerheads as well as flow restrictors on a number of mixers and taps within some of the Group's hotels. The overall benefit was the lowering in water consumption, and significantly reducing hot water consumption, ultimately yielding reduced energy consumptions.

6.2.2 General description of hotel A

Hotel A is a 3-star graded hotel that appeals to a range of travellers, from corporate to leisure, and family holidaymakers. For corporate travellers, the hotel in centrally located, equipped with free Wi-Fi, a laptop safe zone, and a range of fully-equipped venues for business meetings and conferences alike. Leisure holidaymakers will be sure to take advantage of the Gateway Theatre of Shopping, which offers an enormous range of stores selling local and international merchandise, a wide variety of high class restaurants, as well as two world-class cinemas. The hotel has 146 rooms in total, including 38 Superior rooms, 103 Standard rooms, 3 junior suites,

12 sets of inter-leading rooms, and 2 rooms exclusively catered to physically challenged guests. Hotel A is Green Leaf certified and environmental interests are of importance to the hotel, and it boasts a small carbon footprint indicating that greening is a necessary responsibility at Hotel A.

6.2.3 General description of hotel B

Hotel B is a 4-star 16 year old property based around north of Durban. This hotel is supremely located within a short distance to the City Centre and the iconic Moses Mabhida Stadium. The Hotel has always been at the centre of major City sporting and other events, and has time and time again remarkably catered its services to guests. It is endowed with 169 bedrooms and boasts quality comforts found in a 4-star hotel, such as satellite TV, a telephone, lounging area, and self-serve kitchenette, and each of the rooms has views over the beautiful city, glistening river, lush gardens or idyllic ocean. The hotel holds a Green Leaf Eco Standard certification as its commitment to environmental management.

6.2.4 General description of hotel C

This is a 4-star hotel located in the heart of Umhlanga New Town Centre and Green Leaf certified. It is set close to the La Lucia Ridge Office Estates, Gateway Theatre of Shopping, Umhlanga village and beachfront, an ideal location for both business and recreational travel. This hotel offers up 94 luxury apartments, which include 14 penthouses, 60 Junior Suites and 10 luxurious Studio Apartments. The hotel also boasts such amenities as 24-hour security, ample living spaces, fast wireless internet systems, private semi self-catered kitchens inclusive of bar fridges and microwaves, dining rooms, lounges and balconies overlooking the boulevard. For business guests, the hotel has three floors of A-grade office suites and top-notch conferencing facilities.

6.2.5 A brief summary about the informants

In-depth interviews were conducted with the Group Engineer who is responsible for the Group-wide environmental management projects and programmes particularly the development and installation of GEPA. He formed part of this study because of his vast knowledge and experience in the area of environmental management with specialisation in energy and water efficiency strategies and waste management. Moreover, each of three hotels that formed part of

the group, allowed three of the management team to participate in this study. These include the general manager, financial manager and the maintenance manager. For each hotel, group interviews were held with the hotel management team (hence each table has only four columns which represent responses from the Group engineer and the management team from hotel A, B, and C). All the aforementioned informants are actively involved in the day-to-day operations of each hotel and it was deemed that valuable information relevant to this study would be extracted from them.

The results are thus discussed in the following section according to the themes developed and research objectives.

6.3 DATA ANALYSIS PER RESEARCH THEMES AND RESEARCH OBJECTIVES

This section will discuss findings as per the research objectives and themes that emerged to address these objectives.

6.3.1 Theme 1: EMA practices within the hotel sector and the extent to which they are implemented

This theme was developed to cater for sub-objectives 1 and 2 based on interview questions 1 – 17. These questions were designed to identify the EMA tools used for the reporting of environmental costs by the hotel and to determine the extent to which these tools are used.

Table 6.1: Main environmental challenges

Question 1	What are the hotel's main environmental challenges?		
Hotel A	Hotel B	Hotel C	Group Engineer
Energy consumption, Lighting Infrastructure	Energy efficiency	Energy consumption, water consumption and waste management	Regulation, Data accuracy, Understanding of data and Capital Budgeting

Table 6.1 shows that all the hotels agree that energy consumption is the main environmental

challenge, whilst the group engineer challenges data accuracy and the understanding of data. Hotel C points out that their environmental challenges were not only energy consumption and efficiency. Hotel C is also concerned about water consumption and waste management, which involves the separation of water into wet and dry waste. This is in line with what the literature suggests that energy consumption, water consumption and waste management are the main environmental challenges for the hotel. However, the group engineer finds regulation, capital budgeting and the ability to understand data as environmental challenges faced by the hotel group. Kasim (2009: 681) asserts that the threat of new environmental regulations poses an environmental challenge for the hotel sector. However, Ariffin et al. (2013: 108) argue that regulations are drivers of EMPs by hotels. On the other hand, Erdogan and Baris (2007: 612) maintain that even though the hotel sector demonstrates interests in managing their impacts on the environment, there is, however, a lack of the necessary skills required to understand environmental management-related data and the management tends to be reluctant to invest in programmes that will minimise the hotel's impact on the environment.

Table 6.2: Initiatives already done

Question 2	What has the hotel already done about the challenges? (Please mention recent projects.)		
Hotel A	Hotel B	Hotel C	Group Engineer
Installation of Building Management System (BMS) to monitor and control energy usage. Shut down some of the lights.	Installation of LED lights. Building of a boiler room with 8 pumps. Analysis of tariffs to evaluate energy consumption in units and convert it into monetary value. Installation of BMS.	Reduction of geyser temperatures. Adjustment of water flow in the toilets and showers. Installation of LED lights. No BMS installed.	Engage in energy efficiency projects and water management. Installing Group Energy Profile Analysis (GEPA).

In Table 6.2, the informants from the group and its embedded units, were positive about what has been done already to address their environmental challenges even though different interventions have been implemented to cater for their environmental challenges. The group

engineer asserted that the group has engaged in energy efficiency projects by installing a Group Energy Profile Analysis in all 3 hotels. Hotel A and B installed a Building Management System to monitor and control energy consumption. This intervention is yet to be implemented by hotel C. The aforementioned initiatives relate mainly to the reduction of energy consumption. Rogerson and Sims (2012: 402) allude that the introduction of new technologies is the most common initiative by hotels because they result in apparent financial gains. The projects implemented by the investigated hotel are similar to that of Hilton Worldwide hotels, as reported by Bohdanowicz et al. (2011: 806). The abovementioned authors reveal that Hilton Worldwide hotels implemented energy-efficient light bulbs and readjusted the settings of boilers and air-conditioning units. This initiative saw Hilton in Europe reducing energy consumption by 6.7% (exceeding the 5% target set for the first year) (Bohdanowicz et al., 2011: 806). According to Mensah and Blankson (2013: 1214), hotels put energy consumption at the heart of the categories of environmental performance indicators.

Table 6.3: Projects done on a strategic basis

Question 3	Do you think those projects mentioned are undertaken on a strategic basis? If yes, what makes you think so? If not, why not?		
Hotel A	Hotel B	Hotel C	Group Engineer
It is a strategic decision. The hotel's strategy includes cost reduction and management.	Yes. It is a strategic decision by the group. The independent owners of the hotel find it difficult to buy into it because it requires upfront investments.	It is part of the strategic vision of the hotel. It is not imposed by external factors.	It is part of the group's strategic plan to save costs.

Respondents, as depicted in Table 6.3, all agreed to the question revealing that the projects undertaken to address environmental challenges were part of the hotel's strategic plan. According to the group engineer, the group is embarking on a cost saving strategy. It appears that this strategy is cascaded down to the hotels managed by the group because all the hotels under study maintain that their engagement on the environmental management initiatives are mainly for cost saving. It is worth mentioning that hotel B's management add that the owners of

the hotel find it challenging to implement some of the environmental management initiatives because it is costly to do so even though it will yield favourable outcomes in the future. Ervin et al. (2012: 391) put it that a profit-maximization approach assumes that firms will undertake environmental management strategies to the extent that such strategies contribute to the financial well-being of the firm. The utility maximization approach adds the influence of a manager's values toward environmental stewardship to cost and revenue impacts in the choice of environmental strategy. Garay and Font (2012: 332) concede that organisations mostly engage in environmental programmes being motivated by economic reasons such as competitiveness, cost-reduction and corporate image. This is in conformity with the responses provident by the informants.

Table 6.4: Environmental policy

Question 4	Does the hotel have an environmental policy?		
Hotel A	Hotel B	Hotel C	Group Engineer
Yes. Prepared in line with Green Leaf Eco Standard.	Yes. Prepared in line with Green Leaf Eco Standard.	Yes. Prepared in line with Green Leaf Eco Standard.	Yes. Prepared in line with Green Leaf Eco Standard.

Respondents were asked if the hotel has an environmental policy and all agreed to this question (Table 6.4). The uniformity to this question was as a result of the fact that these hotels subscribe to the Green Leaf Eco Standard. According to Chan and Hawkins (2012: 409), an environmental policy is the foundation upon which an organisation should base all of its decision-making regarding its environmental management and it shows the organisation's commitment to the management of the environment. Therefore, the unanimous response to the question was motivated by the fact that the chosen case had to have an already developed environmental management system. De Oliveira et al. (2010: 1798) assert that an EMS is part of the organizational management system used to design, implement and manage environmental policy.

Table 6.5: Procedure to assess environmental performance

Question 5	Does the hotel have a procedure to assess the hotel's environmental performance? If yes, please describe.		
Hotel A	Hotel B	Hotel C	Group Engineer
Yes. Environmental performance is assessed and reported monthly using BMS. It is audited by Green Leaf.	Yes. In line with Green Leaf Eco Standard.	Yes. It is reported monthly, in line with Green Leaf Eco Standard.	Yes. It is assessed and reported using GEPA.

All participants agreed to the question as per Table 6.5. The environmental performance is assessed across the board using Green Leaf Eco Standard. Hotel A is assisted by its BMS system to assess its environmental performance. All these hotels report their environmental performances to the group engineer who then collates all the information using GEPA. While environmental management represents the application of measures for environmental protection, environmental performance aims to measure the extent to which the organisation achieves its environmental objectives (Oreja-Rodríguez and Armas-Cruz, 2012: 64). Therefore, analysing the procedures followed by ABC Hotel Management Group to assess their environmental performance could assist in determining the extent at which the EMA tools are used by this organisation.

Table 6.6: Environmental reporting and major environmental costs

Question 6	Does the hotel have any form of environmental reporting? If yes, what is reported? Is it including the major environmental costs? At what level are the major environmental costs reported (if any)?		
Hotel A	Hotel B	Hotel C	Group Engineer
Yes. Energy and water consumption are reported monthly using the internal system (BMS). It is reported hotel wide.	Yes. Energy, water and waste are reported subject to Green Leaf Eco Standard. These are reported monthly across all divisions with the hotel.	Yes. Energy, waste and water. Reported internally across the board.	Yes. Reported monthly to the regional manager. It is included in the General managers' pack. Water, energy and occupancy (which includes conferencing, bed nights sold and room nights sold). The reporting is done across all departments.

In Table 6.6, the hotel management was positive towards the question. However, there appears to be an inconsistency in the way environmental reporting is done. Having said that, energy, water and waste are the major costs reported by hotels B and C, whilst A focuses on energy and water consumption and these were also mentioned by the group engineers who also added occupancy-related information. The literature reveals that the establishment and practice of environmental management and environmental reporting is commonly voluntary and not regulated by law and some information is often missing or omitted in the reports (Janković and Krivačić, 2014: 113). This could be the contributing factor to the lack of standardised information reported by the hotels under study.

Table 6.7: Tracing of environmental costs

Question 7	Does the hotel trace any of the major environmental costs (either physical or monetary)? If yes, what are they and how are they categorised?		
Hotel A	Hotel B	Hotel C	Group Engineer
Both physical and monetary. These are recorded separately. Water and lights.	'Consumption more than monetary' Recorded separately. Energy, water and waste.	Physical information Recorded separately. Water, energy and waste.	Yes, GEPA is used to trace the major environmental costs. Both monetary and physical information is recorded. Water, energy and occupancy information.

According to Table 6.7, respondents were in agreement to the question and to recording the major environmental costs separately. However, there was no consensus on the way the major environmental costs are traced. The group engineer reported that environmental costs are traced using both financial and physical information. This is similar to what hotel A is doing. On the contrary, hotels B and C trace the major environmental costs using physical information more than monetary information. Water and energy are the major costs widely traced by the group even though hotels B and C also trace waste-related costs (physical). As indicated in the above discussion, environmental reporting can be considered as the necessity to demonstrate the hotels' environmental responsibility. However, the most significant problem is that disclosed environmental information is not fully comparable, which makes it a challenge to rank hotels depending on their environmental responsibility. The reason for this problem is the lack of information about how data is measured. Even when hotels use the same indicators, they do not always use the same reporting units (Janković and Krivačić, 2014: 105).

Table 6.8: The basis for the allocation of major environmental costs

Question 8	On what basis are the major environmental costs traced and recorded? Or are they considered more generally (such as hotel wide)? What is the purpose of tracing and recording?		
Hotel A	Hotel B	Hotel C	Group Engineer
Occupancy per room night/bed night sold. 'Show savings year on year' and for benchmarking purposes.	Occupancy (room night/bed night). Monitoring and control.	Bed night factor. Monitoring and reporting.	Traced live (minute by minute) Cost-saving, performance monitoring and benchmarking.

Table 6.8 shows that informants were all in agreement with the questions asked by reporting that occupancy (bed night or room night) is the basis for tracing the major environmental costs. The group engineer's emphasis of tracing and recording the environmental costs is cost saving, performance and monitoring. These assertions are partly supported by the management of the embedded units. According to Mensah and Blankson (2013: 1217), there is a strong correlation between energy and water consumption and occupancy rate. Jasch (2003: 669) argues that, often, environmental costs are not traced systematically and attributed to the responsible processes and products, but simply summed up in general overheads. However, Farouk et al. (2012: 39) maintain that environmental costs can be traced in an effective and systematic manner if an organisation has an environment management system in place.

Table 6.9: Internal reporting of environmental performance

Question 9	Does the hotel issue any internal report on environmental performance? If yes, at what level is the environmental performance assessed?		
Hotel A	Hotel B	Hotel C	Group Engineer
Yes. Departmentally.	No. Done by Green Leaf.	Yes. Reported hotel-wide.	Yes. Between properties to head office.

Comments in Table 6.9 were generally positive towards the questions. However, there was

some consideration that hotel B was not much sure about it. Mensah (2014: 238) maintains that, internally, hotels should have the personnel with the knowledge and skills for undertaking environmental management, processes and systems that encourage improved environmental performance and the environmental performance should be reported.

Table 6.10: Motivations for issuing environmental report

Question 10	What are the motivations for issuing such a report? If the hotel does not issue any internal report, why not (e.g. not mandatory, not a normal practice in hotels, or not cost effective)		
Hotel A	Hotel B	Hotel C	Group Engineer
'All costs are aligned'. 'Everyone needs to be involved'.	Done by Green Leaf	Awareness, monitoring and controlling. 'Meeting Green Leaf standards'.	Cost-saving, performance monitoring, and benchmarking.

In Table 6.10, the general response to the question asked suggests that it is the normal practice for the group to issue such reports, being motivated by monitoring, control and benchmarking. However, hotel B maintained that is was mandatory in terms of Green Leaf Eco Standard. Pavaloaia (2015: 507) asserts that the objective of the internal reports is to improve environment management and these are periodically carried out, being destined, mainly, for the employees, either to those directly involved in environment management or to other employees in order to motivate them to act in the purpose of environment protection.

Table 6.11: Accounting for the major environmental costs

Question 11	How does the hotel account for the major environmental costs? Are they separately identified, or assigned to an overhead account? Please explain.		
Hotel A	Hotel B	Hotel C	Group Engineer
Separately recorded. One consumption bill for energy and water.	Recorded and identified separately.	Recorded and identified separately.	Water and energy recorded in a single account. Sewage recorded separately.

As per Table 6.11, the hotel management is in agreement that the hotels investigate, identify and record their major environmental costs separately. However, it emerged that water and energy costs are grouped in a single pool whilst waste management costs are recorded separately. By identifying, assessing and allocating environmental costs, EMA allows management to identify opportunities for cost savings and to actually calculate cost savings of performed projects and investment (Jasch, 2003: 669). The author further asserts that splitting up the corporate flows into cost centres, or even down to specific production equipment, allows for more detailed investigation of technical improvement options, but also for tracing the sources of costs.

Table 6.12: Allocation bases make sense

Question 12	Do you think the allocation bases used make sense in terms of controlling environmental costs?		
Hotel A	Hotel B	Hotel C	Group Engineer
Yes but difficult to implement. Always high water usage.	'Not on this property'. It is difficult to trace and allocate costs according to cause and effect.	Yes. It requires knowledgeable and skilled people to do it.	Yes. Costs have been reduced ever since 'these systems' have been implemented.

Table 6.12 reveals that informants were positive towards the question with the exception of hotel B. The group engineer justifies the current allocation bases as making sense because costs have been reduced by applying them. However, the general consensus is that it is difficult to control environmental costs as these bases require skilled and knowledgeable personnel to deal with them. Given the challenges faced in collecting and allocating environmental costs, finding the reasonable allocation basis poses a major challenge (Chang, 2013: 142).

Table 6.13: Major environmental costs and capital projects

Question 13	Please indicate if any of the major environmental costs are considered for inclusion in the financial analysis of a proposed capital project. If yes, how?		
Hotel A	Hotel B	Hotel C	Group Engineer
Machinery and equipment are acquired in line with the Green Leaf Eco Standards.	Yes. The hotel buys and installs energy and water efficiency machines.	Yes. The hotel applies cost vs. benefit analysis in proposed capital projects.	In every project, relevant costs for that project are considered in line with Green Leaf Eco Standards.

According to the data in Table 6.13, the hotel management collectively assert that investing in capital projects is in accordance with the Green Leaf Eco Standard and the major environmental costs generally considered are energy and water efficiency-related costs and a cost verses benefit analysis is performed before committing financial resources to any capital items. Kasim (2009: 691) asserts that hoteliers are discouraged to commit their investments in environmental management programmes if the returns are insignificant to help the hotel improves its financial situation.

Table 6.14: Single budget pool

Question 14	Are the major environmental costs included in one single budget pool and allocated to responsibility centres as a lump sum? If not, please describe.		
Hotel A	Hotel B	Hotel C	Group Engineer
Water and energy are included in a single budget pool. Waste is recorded separately.	They are separated.	They are separated.	Water and wastage is recorded in a single budget pool. Energy is recorded separately.

The general response by informants to the question asked in Table 6.14 is that there is a separate budget pool for each of the major environmental costs. However, there is no consistency in the manner that these costs are allocated. For example, hotels B and C have a separate budget pool

for each of the major environmental costs whilst hotel A adds together water and energy in a single budget pool contrary to the group engineer's response that water and waste are grouped in a single budget pool.

Table 6.15: Key Performance Indicators

Question 15	At what level is the hotel's environmental performance assessed? What are the key performance indices used, if any?		
Hotel A	Hotel B	Hotel C	Group Engineer
Green Leaf does the environmental performance according to its standards and is done departmentally.	All departments collect data and eventually reported across departments in line with Green Leaf Eco standards.	The environmental performance is done hotel-wide in line with Green Leaf Eco Standards.	Hotel-wide. The information is collected from GEPA and compared to the Green Leaf Eco Standard. 'It is difficult to compare different properties and benchmarking.

There is a congruent positive response to the question asked in Table 6.15. The hotels' environmental performance is assessed across all departments according to the embraced Green Leaf Eco Standard. The group engineer, who is responsible for collating data from various properties, reveals that it is difficult to compare data collected from various hotels managed by the group in order to evaluate and benchmark environmental performance. According to Janković and Krivačić (2014: 106), to increase quality of an environmental report, it is necessary to define environmental performance indicators such as water consumption indicators, energy consumption indicators, quantity of waste disposal, and quantity of harmful emissions. Efficiency KPIs is an integral part of the budgeting process (Bouten and Hoozée, 2013: 342).

Table 6.16: Environmental cost information requested from the manager

Question 16	In the hotel, is there anyone who has ever requested any environmental cost information from you?		
Hotel A	Hotel B	Hotel C	Group Engineer
Yes. Only Green. Leaf consultants.	Yes.	Yes. The suppliers and Green Leaf consultants.	Yes.

As per Table 6.16, all respondents agreed to the question asked citing that mainly Green Leaf consultants and the group's suppliers do request environmental cost information from the hotel management from time to time.

Table 6.17: Type of information that should be provided

Question 17	What type of environmental cost information, physical and/or monetary, should be provided? Why do you think so? What are your views on internal use of such information in the future?		
Hotel A	Hotel B	Hotel C	Group Engineer
Monetary information. For performance monitoring and meeting 'the bottom line'.	Both physical and monetary information to measure consumption. Important to control and reduce costs.	Physical information. There is confidentiality around monetary information. It is important for internal use.	Both should be provided. They are unrelated and have to be considered separately. It should be used internally in the future.

There were mixed opinions about the questions asked in Table 6.17. The group engineer believes that both financial and physical environmental cost information should be provided and this is supported by hotel B. However, hotel A's management believes that only monetary information should be provided in order to monitor the hotel's performance. On the contrary, hotel C's management argue that monetary information is confidential. Hence, physical information should be provided. All respondents were in agreement that it is important for the hotel to use environmental cost information internally in the future.

6.3.1.1 Conclusions to theme 1 and sub-objectives 1 and 2

Under this theme, it can be concluded that the implementation of EMA in the hotel sector in KZN is still at an elementary stage. However, it emerges from the findings that the main EMA tool used by the hotel sector in KZN is the combination of ECA and MFCA. The studied hotel revealed that it uses BMS and GEPA technologies to provide an environmental account in both physical and financial units. The study discovered that the hotel management traces the major environmental costs physically using occupancy rates. The emphasis here is on the physical accounting. Monetary values are then attached to the physical units to determine environmental costs to determine the effectiveness of the hotel's initiatives. This constitutes the use of an integrated ECA and MFCA systems or tools.

The respondents indicated that the implemented technology is used on a day-to-day basis to record and monitor the major environmental costs. An environmental performance report is issued internally across all departments for various reasons, including performance monitoring, benchmarking and to create awareness amongst stakeholders. The main concerns raised by the informants were: 1) the difficulty in allocating relevant environmental costs as this requires skilled people to perform and to understand; and 2) the accuracy of data, implying that there could be inaccuracies.

6.3.2 Theme 2: awareness, knowledge and experience regarding the use of EMA tools

This theme emerged in the endeavour to address sub-objective 3 and questions 18 – 32 were used for this objective.

Table 6.18: Awareness of regional or international agreements

Question 18	Are you aware of any environment-related regional or international agreements, or declarations, singed by the hotel? If yes, what are they and do you think the hotel is able to ensure the compliance and meet the requirement?		
Hotel A	Hotel B	Hotel C	Group Engineer
No	No	No	No

According to Table 6.18, the hotel management was negative towards the awareness of any

environmental-related or international agreements or declarations signed by the hotel.

Table 6.19: The importance of controlling major environmental costs

Question 19	Do you think it should be an important issue for hotels to control their major environmental costs? Is it an important issue for the hotel now?		
Hotel A	Hotel B	Hotel C	Group Engineer
Yes. Yes.	Yes. Yes.	Yes. Yes.	Yes. Yes.

Table 6.19 shows that informants agreed, collectively, that it should be an important issue for the hotels to control their major environmental costs and it is an important issue even currently. Papaspyropoulos et al. (2012: 133) maintain that, by controlling the major environmental costs, the organisation is provided with more cost savings and, subsequently, with more available economic resources since, usually, these resources are very scarce.

Table 6.20: People held accountable for major environmental costs

Question 20	Who is currently held accountable for the major environmental costs incurred? How are they held accountable?		
Hotel A	Hotel B	Hotel C	Group Engineer
General manager. Performance based KPI's.	General manager and maintenance manager. Must meet Green Leaf Eco Standards.	General manager. Must maintain Green Leaf Eco Standards.	General manager. No stringent mechanisms yet.

The general managers of investigated hotels responded that they are held accountable for the major environmental costs incurred, as per Table 6.20. The group engineer agreed to this assertion even though hotel B's management also mentioned that the maintenance manager is also held accountable. There are no stringent mechanisms to hold them accountable. However, according to the group engineer, those that are held accountable maintained that they have to meet key performance indicators as set out by Green Leaf Eco Standard. Farouk et al. (2012: 21) write that environmental-accountability techniques are complex and require the internal

accountants to work in tandem with the environmental engineers in a bid to discover the methodologies involved in environmental accountability and the statistical techniques available to measure and report environmental performance. Leonard and Dlamini (2014: 5) assert that the head office should have a clear communication system with the general managers of its chain hotels to ensure that there is accountability between the general managers and the head office.

Table 6.21: Request of environmental information by the manager

Question 21	Have you ever requested any environmental cost information from accounting, or environmental management related administrative divisions? If yes, what is the purpose of requesting such information? If not, why not?		
Hotel A	Hotel B	Hotel C	Group Engineer
Yes. Comparison, analyses and benchmarking.	Yes. Budgetary reasons.	Yes. Monitoring and reporting.	Yes. Benchmarking and monitoring.

According to Table 6.21, the hotel management agreed that they have requested the environmental cost information from the accounting or environmental management related administrative divisions. The purpose(s) of requesting this information ranges from benchmarking, monitoring comparative analysis, budgetary and reporting.

Table 6.22: Accountability of people at the hotel

Question 22	In terms of managing environmental costs, to whom or for what do you feel the hotel is accountable to/for?		
Hotel A	Hotel B	Hotel C	Group Engineer
The hotel is accountable to the management/owners.	Owners but more to the guests (international visitors in particular).	To the Owners.	To the group CEO.

Table 6.22 shows that the informants responded that, in terms of managing environmental costs,

the hotel is accountable to the individual owners of the hotel whilst the group engineer responded to the question that the hotel is accountable to the group CEO who then reports to the property owners. It emerged that hotel B is also accountable to the international visitors. Jones (2010: 131) argues that organisations should be accountable for the environment both because they are stewards of the environment and because of enlightened self-interest. The argument continues to propose that the disclosure and reporting of organisational environmental impact is required to fulfil both the community and stewardship-based accountability. Papaspyropoulos et al. (2012: 133) support this argument by contending that hierarchical accountability (accountability only to investors) is narrowly functional, short-term in orientation and favours accountability to those stakeholders who control access to key resources for both resource use and immediate impacts. They suggest that more holistic accountability approaches should be adopted by organisations.

Table 6.23: People that should be held accountable for reducing environmental costs

Question 23	Who do you think should be held accountable for reducing environmental costs? Is it individuals, administrative divisions, or general managers? Are they held accountable now? If yes, how? If not, why not?		
Hotel A	Hotel B	Hotel C	Group Engineer
General manager. Yes. Maintaining Green Leaf Eco Standard.	Everyone. Yes. Adhering to Green Leaf Eco Standards.	General manager. Yes. Responsible for managing costs.	General managers and CEO. No stringent mechanisms in place.

Informants responded to the questions asked in Table 6.23 by stating that the general managers should be held accountable for reducing environmental costs. However, the CEO and everyone working in the hotel emerged as those that should be held accountable for reducing environmental costs. Data reveal that Green Leaf Eco Standard is used to set objectives that the general managers would be accountable for in reducing environmental costs even though there are no stringent systems in place to monitor this reduction.

Table 6.24: Personally liable for environmental costs

Question 24	Are you personally held accountable for any of the major environmental costs? If not, do you think you should be held accountable?		
Hotel A	Hotel B	Hotel C	Group Engineer
Yes (G.M.)	Yes (G.M.)	Yes (G.M.)	Yes

According to Table 6.25, the hotel management (hotel managers and group engineers) agreed that they are personally held accountable for any of the major environmental costs incurred by the hotel.

Table 6.25: The hotels' benefit to bring environmental costs to the attention of decision makers

Question 25	Do you think it would/wouldn't benefit the hotel to bring the major environmental costs to the attention of the decision makers, both general managers and administrative divisions? What makes you think so?		
Hotel A	Hotel B	Hotel C	Group Engineer
Yes. It is applied to get everyone involved.	Yes. To create awareness.	Yes. For everyone to participate.	Yes. To show 'performers and under performers'.

Table 6.25 shows that respondents are in agreement to the question asked revealing that bringing the major environmental costs to the attention of the decision makers would benefit the hotels. The reasons are that it shows performers and those that are under performing and it creates awareness which, in turn, encourages everyone to participate.

Table 6.26: What triggers the hotel to consider environmental costs?

Question 26	What would trigger the hotel to consider the major environmental costs when making management decisions?		
Hotel A	Hotel B	Hotel C	Group Engineer
Cost Reductions. Meeting Green Leaf Eco Standards. Recyclability of materials bought. Acquisition of eco-friendly equipment.	Reduction of environmental impact by the hotel and reduction of costs.	Cost reduction and sustainability.	Costs.

Cost reduction was the main trigger for the hotel to consider the major environmental costs when making decisions according to the respondents in Table 6.26. Meeting Green Leaf Eco Standards and sustainability were also considered. Kasim (2007: 681) maintains that a top-down process, which is initiated by a directive from CEOs and top managers, serves as the main motivation for the implementation of an EMS system, and this process aims at accounting for the environmental costs. This is so because top-down directives are often accompanied by allocations of financial and human resources needed for businesses to work towards greater responsibility. Capital is a determining factor as the initial stage of implementing an environmental plan can entail a substantial capital outlay.

Table 6.27: Stakeholders and the environment

Question 27	Do you think stakeholders of the hotel care about what the hotel has done, or will do, to manage its major environmental costs, for example, the wider community, guests, departments within the hotel, media, pressure groups, or the government? If yes, who are they?		
Hotel A	Hotel B	Hotel C	Group Engineer
Yes. Owners, guests, land lord, employees, and suppliers	Yes. Owners and guests.	Yes. Owners and employees.	Yes. Everyone.

Table 6.27 shows that the hotel management was positive that the stakeholders of the hotel care about what the hotel has done or will do to manage its environmental costs. Owners, employees and guests are said to be the main stakeholders of the hotel. However, the land-lord and suppliers were also said to be the hotel's stakeholders. Normally since the organization's decisions also affect the well-being of its stakeholders, stakeholders are affected by the achievement of the organization as well (Ariffin et al., 2013: 107).

Table 6.28: Stakeholders care for the environment

Question 28	Do the stakeholders who care about what the hotel has done, or will do, have the power to force the hotel to change its current management or accounting practices to manage environmental costs? What makes you think so?		
Hotel A	Hotel B	Hotel C	Group Engineer
Yes. Because the owners have the right to hire and fire.	Yes. They are the owners at the end of the day.	Yes. They are the owners.	Yes. The owners can change the management company anytime if they are under performing.

The general finding, as per Table 6.28, is that the stakeholders have the power to force the hotel to change its current management or accounting practices to manage environmental costs. This is because the owners, as stakeholders, can change the management anytime if it is under-performing.

Table 6.29: Management Accounting and Environmental costs

Question 29	Do you, within your role in the hotel, think management accounting is of importance in managing the major environmental costs? Please explain your answer, either if yes or no, based on the three management accounting functions, namely, capital budgeting, cost allocation and performance measurement.		
Hotel A	Hotel B	Hotel C	Group Engineer
Yes. It can facilitate cost allocation and performance measurement.	Yes. Cost allocation and performance measurement.	Yes. Cost allocation.	Yes. All categories are important and end-up driving gross profits.

As reflected in Table 6.29, all informants were positive that, in their respective roles, management accounting is of importance in managing the major environmental costs largely because it facilitates cost allocation and improves performance measurement.

Table 6.30: The separate identification and allocation of the major environmental costs

Question 30	What is your opinion on the separate identification and allocation of the major environmental costs? Is it possible for the hotel to do so? Why?		
Hotel A	Hotel B	Hotel C	Group Engineer
It is important. Compare like for like. Yes, it is currently used.	Important. It is used currently. To monitor each.	Important. Yes. For monitoring and tracking purposes.	It is critical but very difficult to implement and very costly. It is possible if the budget allows.

Table 6.30 shows that the informants find the separate identification and allocation of the main environmental costs important because it facilitates the monitoring and comparisons of each of these costs. This process is currently in use. However, it is difficult and costly to implement because it requires skilled and experienced people to implement it properly and that would

contribute towards additional labour costs for the hotels.

Table 6.31: Key managers held accountable

Question 31	What is your opinion on key managers being held accountable for the major environmental costs incurred? Is it possible for the hotel to do so? Why?		
Hotel A	Hotel B	Hotel C	Group Engineer
Important. Yes, in the future.	Important. Yes, already held accountable.	Important. Yes. Already held accountable.	They should be held accountable. Yes, with great difficulty, provided proof is available.

The hotel management responded, in Table 6.31, that it is important that key managers should be held accountable for the major environmental costs incurred. The general consensus was that it is possible for the hotels to hold key managers accountable for the major environmental costs incurred because it is the practice already in use within the group. However, the group engineer added that it is difficult to hold key managers accountable. According to Janković et al. (2011: 129), accountability requires managerial knowledge of environmental costs and the methodological approach of cost management, so the best way in process of preparing relevant information for decision-making can be selected.

Table 6.32: Key managers and KPIs

Question 32	What is your opinion on key managers being given environmental KPIs against which their performance is assessed? Is it possible for the hotel to do so? Why?		
Hotel A	Hotel B	Hotel C	Group Engineer
Important. Yes. Already in use.	Important and already in use.	Important Yes. To keep track.	Good idea but difficult to determine KPIs for managers and difficult to enforce.

Table 6.32 shows that the hotel management was positive towards the question asked and maintain that key managers are already given KPIs against which their performance are assessed to keep track. However it is difficult to enforce fairly.

6.3.2.1 Conclusions to theme 2 and sub-objective 3

It can be concluded from data collected from informants that there is a fair amount of awareness, knowledge and experience of the EMA tools used by the hotel sector in KZN. Informants responded that they are accountable to the stakeholders for the major environmental costs incurred by the hotel and they are required to issue an environmental performance report to assess the hotel's environmental management performance. Managers are given KPIs against which their performance is assessed. The main concern, however, is that they are not clearly articulated and not strictly enforced. This is due to the fact that the management of environmental costs requires the knowledge and ability to first identify the major environmental costs incurred by the hotel and then trace and allocate them to costs centres. This has been demonstrated by the investigated hotel with reservations.

6.3.3 Theme 3: internal and external factors affecting the use of EMA tools and sub-objective 4

This section discusses findings from for the abovementioned theme which was developed for sub-objective 4. Questions 33 – 41 were used for this theme.

Table 6.33: Incentives

Question 33	Do you think the hotel has provided enough incentives to motivate general managers or administrative divisions to control, or reduce environmental costs?		
Hotel A	Hotel B	Hotel C	Group Engineer
There are no monetary incentives.	Not necessarily expected but part of the culture.	Yes, not monetary but part of the culture.	Not incentives but directives.

Table 6.33 reveals that, according to informants, the hotel has the culture to motivate

management to control and reduce environmental costs. Therefore, the overall response suggests that there are no financial rewards provided as incentives but directives embedded in the corporate culture. Chan and Hawkins (2010: 649) reveal that incentives to encourage hotel administrators to manage environmental costs can come in the form of a strong management support, an active green committee and continual and in-depth environmental training.

Table 6.34: EMA as a tool for incentives

Question 34	How do you see the potential use of EMA practices in providing such incentives?		
Hotel A	Hotel B	Hotel C	Group Engineer
Owners must comment on this and must be understood by managers.	It is very important.	Yes, to provide KPIs.	'Key, provided there are fair KPIs in place'.

Table 6.34 illustrates that the hotel management was positive towards the potential use of EMA practices in providing incentives to motivate general managers or administrative divisions. However, there is a concern that the EMA practices must be understood by managers and KPIs must be in place. According to Boutena and Hoozée (2013: 344), EMA practices have the potential to foster or encourage organisational greening. Therefore, EMA practices, as well as the subsequent organisational change, depend on the strength of the environmental disturbances, top management commitment and the presence of an environmental champion.

Table 6.35: Environmental cost information and awareness

Question 35	Do you think the hotel should provide major environmental cost information as a means to increase environmental awareness and encourage behaviour change? If not, why not? If so, whom do you think should be provided with this information (consider in your answer both general managers and administrative divisions)? What do you think would be the major barriers (either technical or political) to the provision of such information to heads of departments or internal managers?		
Hotel A	Hotel B	Hotel C	Group Engineer
Yes. On the webpage and broader booking platforms.	Yes. To everyone and improve the Green Leaf Eco Standard scoring which currently stands at 75%.	Yes (internally). Staff and guests.	Yes. Everyone
No barriers.	No barriers.	No barriers.	Technically it would be a challenge. Confidentiality and completion.

Informants were in agreement towards the question. However, confidentiality was the main concern for the provision of information relating to major environmental costs for the hotel. Therefore, Table 6.35 shows that even though the informants responded that the information should be provided to everyone, the emphasis was that it should be provided internally. The general managers along with the maintenance managers and financial managers responded that there are no barriers to the provision of such information, contrary to the view of the group engineer who cited technical barriers, competition and confidentiality. Pavaloaia (2015: 504) maintains that the objective of providing environmental reports is to contribute to the constant dialogue between stakeholders. Therefore, the reports have little value by themselves unless they manage to provide information to stakeholders or to support a dialogue that is able to influence the decisions and behaviour of both the companies publishing the report and its users. The publication of information on various environmental issues can either be compulsory by

authorities or done voluntarily by some companies. According to Sumiani, Haslinda, and Lehman (2007: 900), the extent of environmental information reporting is rather low in developing countries.

Table 6.36: Barriers for environmental reporting

Question 36	Are there barriers (either technical or political) in the provision of such environmental reporting? If yes, please explain.		
Hotel A	Hotel B	Hotel C	Group Engineer
No barriers.	No barriers.	No barriers.	It would require technical skills.

Table 6.36 shows that the hotel management is congruent with the question in responding that there are no barriers to the provision of environmental reporting. However, there is some consideration that technical skills are a potential barrier. Internally, hotels should have the requisite resources; personnel with the knowledge and skills for undertaking environmental management, processes and systems that engender improved environmental performance (Mensah, 2014: 238). Lack of in-house knowledge and skills is considered by Massoud et al. (2010: 207) as a major barrier for the provision of environmental reporting.

Table 6.37: Impediments for internal reporting

Question 37	Are there any impediments, either technical and/or political, to provide an internal report on environmental performance to related parties?		
Hotel A	Hotel B	Hotel C	Group Engineer
Yes. Confidentiality if provided externally.	No.	No.	Yes. Technical skills

The hotel management's responses were divided towards the question in Table 5.37. The main concerns were confidentiality and the availability of technical skills.

Table 6.38: Awareness of regulations

Question 38	Are you aware of any compulsory regulations, or requirements, on hotels to control, or reduce, their major environmental costs? If yes, what are they? If no, do you think the government will impose compulsory regulations on hotels to control, or reduce, their major environmental costs?		
Hotel A	Hotel B	Hotel C	Group Engineer
No. They should.	Yes. International standards.	Yes/ (No). Green Leaf Eco Standards and upholding the hospitality regulations. (It may happen).	No. In the future, Yes. The carbon tax.

According to Table 6.38, respondents were divided in their responses to the questions. There is, however, an awareness of the Green Leaf Eco Standards and international standards that need to be adhered to. The informants responded that the government should or might impose compulsory regulations on hotels, carbon tax being one of them. Leonard and Dlamini (2014: 4) state that the Carbon Tax Policy, the Renewable Energy Policy and the Waste Policy have detailed measures on how government seeks to promote environmental sustainability with emphasised targets and goals to reach. However, there are limited, or no control measures in place.

Table 6.39: Internal pressures

Question 39	Are any internal pressures forcing the hotel to account for any of its impacts on the environment? Who imposes the pressure? How does the hotel react to the pressure and what are the actions taken?		
Hotel A	Hotel B	Hotel C	Group Engineer
Yes. Directors Green Leaf Eco Standard gives directives.	No.	No.	Yes. The group engineer and regional director. More work but it gets done.

Table 6.39 shows that the management of hotels B and C in unison towards the questions asked. They responded that there is no internal pressure. However, hotel A and the group engineer agreed that there is internal pressure by citing the group engineers and directors as internal pressures forcing the hotel to account for the hotel's impact on the environment. The management responded that more work is expected from the general managers and Green Leaf Eco Standard provides the directive on how to react to the pressures.

Table 6.40: Issuing of the internal report on environmental performance

Question 40	Does the hotel issue any internal report on environmental performance? If yes, at what level is the environmental performance assessed and what is the purpose of issuing this report? If not, why not (e.g. not mandatory, not a normal practice in hotels, or not cost effective)? Are there any impediments, either technical or political, to provide an internal report on environmental performance?		
Hotel A	Hotel B	Hotel C	Group Engineer
Yes. Across the board.	Yes. Across the board.	Yes. Hotel-wide.	No. Lack of understanding and no reason and incentives to drive it down.
None.	None.	None	No technical skills.

Contrary to the group engineer's response to the questions asked in Table 6.40, the management of hotels A, B and C agreed that their respective hotels issue internal reports on environmental performance across all departments and there are no impediments to provide such reports. On the other hand, the group engineer disagreed that the hotels issue internal reports on environmental performance citing that there is no reason to do so and there is lack of understanding and incentives and also there are no technical skills to issue such a report.

Table 6.41: External pressures

Question 41	Are any external pressures forcing the hotel to account for any of its impacts on the environment? Who imposes the pressure? How does the hotel react to the pressure and what are the actions taken?		
Hotel A	Hotel B	Hotel C	Group Engineer
None but international visitors somehow. No action.	Yes. International organisations. No action.	Occasionally by the government. No action.	Yes. Tourists Initiatives and projects as set out in previous questions.

The management was positive towards the questions asked in Table 6.41 and the general response was that there are no actions taken to respond to external pressures other than projects and initiatives already done by the hotel. International visitors were said to be the main external pressures forcing the hotel to account for its impact on the environment.

6.3.3.1 Conclusions to theme 3 and sub-objective 4

In terms of objective 4, as set out under theme, it was found that the corporate culture, as exerted by the Group Executive Management, is the main factor enabling the hotel to use EMA tools. Even though there are no financial incentives given to the hotel managers, maintenance managers and financial managers, respondents see EMA as a tool that can be used to determine KPIs that can be used to improve organisational environmental management performance. On the other hand, limited in-house skills and knowledge pose as the main limiting factors for the use of EMA tools by the hotel.

6.4 KEY FINDINGS

The purpose of this section was to highlight the key findings of this study which are presented as follows:

❖ There is a commitment by the hotel to management towards environmental management;

- ❖ Certification, various initiatives and technologies have been implemented to better manage environmental costs and improve environmental performance;
- ❖ There is the existence of EMA tools within the hotel, particularly the ECA and MFCA;
- ❖ Respondents reflected a reasonable amount of awareness of the use of EMA tools. However, there was limited knowledge, skills and experience;
- ❖ The study found that there is difficulty in allocating relevant environmental costs as this requires skilled people to perform and to understand the process of identifying and allocating these costs;
- ❖ The possibility of data inaccuracy was a concern raised by the informants. This implies that there are possibilities of inaccuracies in allocation of the major environmental costs;
- ❖ The study discovered certain external and internal factors enabling the implementation of EMA tools; and
- ❖ There was the existence of limiting factors, internal and external, such as the shortage of skills and knowledge.

6.5 CONCLUSION

This chapter focused on the interpretation of the results. This was achieved by using the cross-case synthesis using tables. The results were analysed in accordance with the themes and sub-objectives. Data collected was presented in a table and followed discussion, supported by the review of the literature. The following chapter will focus on the discussion and interpretation of the results of this study.

CHAPTER SEVEN

DISCUSSION AND INTERPRETATION OF THE RESULTS

7.1 INTRODUCTION

The study's findings, which were presented in the previous chapter, emanated from the research interviews that were held with the group engineer of ABC Hotel Management Group and the hotel management teams from three hotels managed by the group, which comprised of the hotel manager, financial manager and maintenance manager. In this chapter, the focus will be the discussion of the main findings of this research in terms of the themes and objectives of this study. The findings of the study will be discussed in the context of the literature review. This is to ascertain that the research questions, as set out by the study, are addressed.

The main aim of this study was to examine and describe the practice of the EMA tools by the hotel sector in the 3-5 star categories in KZN; and to suggest a prototype model for the implementation of EMA tools by the hotel sector.

7.2 DISCUSSION OF FINDINGS IN TERMS OF THEMES AND RESEARCH OBJECTIVES OF THIS STUDY

This section discusses the findings of this study in line with the themes that emerged when this study was conducted and in terms of the objectives of this study.

7.2.1 EMA practices within the hotel sector and the extent to which they are implemented

This theme was developed in order to meet the following two research objectives there were set out to address the main objectives of this research:

Sub-objective 1:   To identify the EMA tools used for the reporting of environmental costs by the hotel sector in the 3-5 star category in KZN; and

Sub-objective 2:   To determine to what extent the tools of EMA are used to report

environmental costs by the hotel sector in the 5 star category in KZN.

This theme was also intended to answer the question asked, particularly for the two above-mentioned objectives. The research question was 'what are the EMA tools and techniques used by the hotel sector and how effective are they'? Findings under theme 1 can be discussed according to sub-themes as follows:

7.2.1.1 The commitment towards environmental management

The results of this study confirm the literature findings that hotels are starting to get involved in operations that address their impacts on the environment (Rahman et al., 2015: 1). Mensah and Blankson (2013: 1213) concede that hotels are largely acknowledging their environmental impacts and, as such, are assuming their environmental responsibilities. These authors add that the hotel sector is beginning to engage in various environmental management activities even though not all hotels are at the same level in terms of their environmental engagement. Hotels' participation in environmentally-friendly operations shows how committed they are towards environmental management. Hsiao et al. (2014: 200) confirm that hotels that commonly implement environmental management technologies and participate in the certification programmes, actually prove how committed they are to effective management of limited resources and also committed to sustainable tourism.

The hotel group investigated acknowledged, in Table 6.1, that its operations have an adverse impact on the environment. The main environmental challenges that the group is facing include water consumption, energy consumption and waste management. It was mentioned in the review of literature that the main areas of environmental concern within the hotel sector include but are not limited to energy and water conservation, recycling waste and waste management (Mensah, 2006: 415; Chan and Hawkins, 2012: 405; Chan et al., 2014: 20). Apart from acknowledging the environmental challenges, the group has engaged in various environmental programmes and developed and implemented technologies that are currently used to efficiently manage the non-durable resources. This also demonstrates the group's commitment towards the management of environmental issues so as to improve both environmental and economic performance. Bouten and Hoozée (2013: 335) assert that the implementation of environmental management programmes results in organisational changes that, in turn, translate to an improvement in environmental and financial performance. Certification programmes,

environmental management initiatives and technologies developed for environmental management and the associated costs are discussed in the next section.

7.2.1.2 Certification programmes, technologies and other initiatives implemented

The study found that the hotels under study are certified in terms of Green Leaf Eco Standards whilst the entire group is also involved in the Heritage Environmental Programme, which is another certification programme. The group engineer, however, revealed that, out of eleven properties managed by the group in KZN, only three are certified in terms of Green Leaf Eco Standards and all of the certified hotels were part of the study. This confirms what several authors maintain, that the practice of environmental management is still very low in the hotel sector (Rahman et al., 2015: 1; Leonard and Dlamini, 2014: 6; Rogerson and Sims, 2012: 399). However the existence of the certification programmes within the group are what Fukey and Issac (2014: 297) allude to as indications of an environmentally responsible and sustainable hotel. Moreover, these certification initiatives confirm the existence of EMP within the group. Sucheran (2013: 121) points out that organisations subscribe to the certification programmes in order to ascertain that their management system and practices entail the development of environmental policies and procedures. That is why, when informants when asked if their respective hotels have an environmental policy, they uniformly answered 'yes' and conceded that the policy was prepared in line with the Green Leaf Eco Standard.

Apart from the certification programmes, the group has partaken in other initiatives depicted in Table 6.2, mostly geared towards water and energy efficiencies such as the implementation of the Building Management System (BMS) – which is mainly used for the monitoring and control of air-conditioning and lighting usage; installation of boiler room pumps that are energy and water efficient; installation of LED lights and low flow shower-heads; reduction of geyser temperatures and water flows in the toilets and showers; and installation of the Group Energy Profile Analysis (GEPA). Janković and Krivačić (2014: 106) reveal that it is common practice for organisations to first analyse and define their environmental indicators such as water consumption indicators, energy consumption indicators, quantity of waste disposal, etc., and then implement appropriate technologies to improve the quality of environmental management and increase the quality of reporting. As it was mentioned before, there is an increasing trend by organisations of developing and implementing new technologies because it results in quick and clear financial benefits (Rogerson and Sims, 2012: 402). On the other hand, Graci (2012: 35)

argues that the development and implementation of new technologies continue to be a challenge because, often, they require skills and huge investments. Garay and Font (2012: 333) concede that the perception that the installation of new technologies and the implementation of EMS result in high costs, impede on the implementation of such technologies and environmental management programmes. Such a perception can potentially be the contributing factor for the low implementation rate of the environmental programmes at ABC Hotel Management Group, given that 3 out of 11 hotels managed by the group have received environmental management attention in terms of certification and technology installation.

7.2.1.3 The existence of EMA tools within the hotel sector

Sulong et al. (2014: 2) point out that the commitment of an organisation's top management towards environmental management accompanied by the application of appropriate EMS are an indication that EMA tools are in existence. This can be attributed to the fact that EMA tools are an integral part of any EMP as was discussed in previous chapters. In a study conducted by Bouten and Hoozée (2013: 345), it emerged that there is a clear interaction between EMP and EMA tools. Fakoya and van der Poll (2013: 137) write that organisations integrate EMA tools with their existing EMPs in order to access information about how resources are utilised and thus facilitate informed decision making processes. The application of a BMS and GEPA by ABC Hotel Management Group shows that the hotel management is interested in knowing exactly how the hotels' resources are consumed. In Table 6.7, the group engineer revealed that the organisation uses GEPA to trace the major environmental costs by analysing physical quantities the hotels consume and the associated costs incurred. This practice was confirmed by informants from other hotels who conceded that both BMS and GEPA are used for the analyses and recording of both financial and physical information.

The study found two EMA tools in use by the case under study, namely, ECA and MFCA. The organisation uses past information, as per Table 6.8, to trace and allocate its environmental costs. The objective of this exercise is to identify and allocate costs to the material flows and other physical aspects of the hotels' operation, and this is defined by Janković et al. (2011: 124) as ECA. Informants revealed in Table 6.8 that the main objectives for implementing cost tracing technologies were to monitor, control and save costs. Janković et al. (2011: 124) put it that ECA focuses on the allocation of costs to activities with the objective of determining costs created and costs avoided by the operations of an organisation because environmental management

activities at the hotel level can incur or avoid costs and create benefits. The use of ECA is intertwined with MFCA. Schmidt et al. (2013: 232) assert that MFCA brings material and energy flows into the spotlight of cost analysis similar to the material and energy flow-oriented approaches of ECA.

Environmental management interventions and technologies used by the group are mainly focused on monitoring and controlling water and energy flows and costs. The BMS is described by Paulo, Branco, and de Brito (2014: 388) as the brain of the building responsible for monitoring and controlling mechanical and electrical equipment. According to the group engineer, the BMS data is uploaded to the GEPA where water flows are also recorded. Tariff analysis is another ECA/MFCA mechanism that the hotel management group utilised with the intention of evaluating energy consumption by the hotels. There is limited evidence suggesting the use of these tools towards the management and accounting for waste. The hotel group started in 2011 with its practices of environmental management. Therefore, their experience with these tools is limited to three years. They are yet to be implemented group-wide, which suggests that the application of these tools is still at an elementary stage in as far as the group is concerned. The benefits of implementing these EMA tools have been reported by the group that was investigated by this study, particularly reduction of costs, compliance to regulations, and improved corporate image. However, the effective use of these tools is still questionable owing to lack of technical know-how and experience. In Table 6.35, the group engineer alluded to the fact that, technically, the group is not much endowed with skills that would add value to the efficient use of EMA tools. This view was, however, challenged with the rest of informants. Sulong et al. (2014: 8) maintain that the use of EMA tools can be a simple process provided that organisations acquire knowledge, skills and experience for their effective use.

7.2.2 Awareness, knowledge and experience regarding the use of EMA tools

It was alluded to in the section above that the hotel group is aware of the environmental challenges that are caused by the operations of its hotels. As reported above, the hotel group is still in the beginning stages in terms of the application of EMA tools. In Table 6.19, it is discovered that the hotel management finds it important that the hotels control their environmental costs. Table 6.20 shows that general managers are mostly held accountable for the major environmental costs incurred by their respective hotels. It is not clear how they are held accountable and the group engineer confirms that there are no stringent mechanisms in

place to ensure that general managers are held accountable. Having said that, since the application of EMA tools, monthly reports are prepared (see Table 6.5) and the information regarding environmental performance is reported across all departments within hotels (see Table 6.6). According to Jasch, Ayres and Bernaudat (2010: 96), EMA tools also serve as the basis for environmental reporting. Therefore, the use of EMA tools has become an integral part of the daily operations of the hotels. The study, based on the findings, maintains that knowledge, skills and experience regarding the use of EMA tools in the hotel sector is still lacking.

The theme under discussion was developed in order to meet sub-objective 3 and the research question which sought to establish how the lack of EMA knowledge, skills and experience influence the activities and abilities of the 3-5 star hotels to cope with environmental management and reporting. Schmidt et al. (2014: 1) indicate that EMA tools play a very important role in identifying and valuing monetary inefficiencies in water and energy use. Schaltegger and Zvezdov (2014: 4) add that the effective use of EMA tools does not only improve economic and ecological performances but it also enhances decision-making processes. In turn, such enhancement translates to an organisation that produces environmentally clean services (Shrake et al., 2013: 263). Therefore, the lack of knowledge, skills and experience in terms of the application of EMA tools deprives hotels the opportunity to improve their environmental performance and their ability to enhance environmental reporting. According to de Grosbois (2012: 896), there is a low environmental reporting rate within the hotel sector and there is a concern of the quality and usability of the information reported. It is, thus, necessary that the hotel sector invests time and resources on improving skills and knowledge regarding the efficient use of EMA tools.

Table 6.1 shows that the group is faced with the challenge of accuracy and understanding of data. Literature reveals that there is a growing concern that inaccurate environmental management information has been used in the decision-making processes owing to costs being inappropriately calculated (Fakoya and van der Poll, 2013: 136). In a study conducted by Setthasakko (2010: 322), it was found that the reason why some environmental costs are inaccurately calculated or erroneously omitted in specific accounts was due to the fact that accountants are not included in the discussion around the environmental issues affecting their organisations. Qian et al. (2015: 422) contend that the development and implementation of EMA tools requires an active participation of accountants because it requires new and multidisciplinary skills, knowledge and awareness. However, the accountants would still need

to be trained on these skills. Gunarathne and Lee (2015: 365) allude that it is important that organisations have an understanding of how to implement the EMA system and its strategy in order to witness the desired structural changes that would add value in environmental management. Lack of understanding of EMA tools and shortage of skills and knowledge can be attributed to data inaccuracy found to be the challenge in the hotels investigated and also the understanding of data.

Table 6.12 shows that the hotel group is finding it challenging to allocate costs based on the allocation bases as determined by the technologies in use. The general consensus was that these bases make sense and have resulted in cost-reductions. However, the findings confirm what the literature has pointed out that the practice of EMA requires skills and knowledge. Vasile and Man (2012: 570) maintain that the proper application of EMA tools does not only add value in terms of environmental management but also for other routine managerial activities, such as: the planning of processes and products; the allocation and control of costs; capital budgeting; supply process; price policies; and performance evaluation. This assertion is supported by Setthasakko (2010: 325) who states that EMA is becoming more important for product and process design, cost control and allocation, product pricing and performance evaluation. By definition, EMA tools facilitate the identification and allocation of major environmental costs for their effective management. However, in Table 6.30, the group engineer acceded to the fact that this process is currently a challenge within the group because of lack of knowledge, skills and understanding (see Table 6.35 – Table 6.37 and Table 6.40). This lack of knowledge, skills and understanding may serve as an impediment for the effective implementation of EMA tools. The limiting factors that impede the application of EMA tools are discussed in the next section.

7.2.3 Internal and external factors affecting the use of EMA tools

This theme was developed in order to identify critical factors enabling and limiting the use of EMA tools by the hotel sector in the 3-5 star category in KZN. Therefore, this section is divided into sub-themes that emerged in order to support the main theme. These themes are discussed below.

7.2.3.1 Internal factors enabling the use of EMA tools

This section considers internal factors that serve as motivating factors for the implementation of EMA tools in as far as the ABC Hotel Management Group is concerned. The identified factors are as follows:

❖ **Cost-reduction**

The strategic focus of ABC Hotel Management Group is to reduce costs, as shown in Table 6.3. Several studies reveal that organisations partake on EMPs so that they reduce costs. Garay and Font (2012: 335) point out that economic reasons, particularly cost-reduction, are amongst the chief reasons why organisations engage on environmentally sustainable operations. Heidrich and Tiwary (2013: 5886) concede that the costs associated with environmental management, specifically those associated with the consumption of natural resources (water and energy) and the disposal of wastes, have pushed organisations to improve the environmental performance of their processes. The investigated case proved to be no different as findings showed that the organisation is much more concerned about the reduction of costs, mainly in the area of water, energy and waste.

❖ **Top management's commitment to environmental management**

The records of the Group reveal the top management's commitment to sustainable operations. This is demonstrated by the certification statuses that have been achieved by some of their properties and by the investment in various programmes intended to improve the environmental performance of the Group. This view is supported by Chan and Hawkins (2012: 411) who write that top management's commitment to environmental management acts as internal motivations for the implementation of EMA tools. Table 6.31 shows that managers within the Group are willing to be held accountable for major environmental costs incurred. This, again, shows how committed the management is towards environmental management. Chan et al. (2014: 22) assert that, in the hotel industry, the team spirit of individual departments and employee commitment to environmental programmes improve when the heads are environmentally knowledgeable. The Group and its embedded units issue monthly environmental reports internally across all divisions to promote environmental awareness and to instil a culture of an environmentally responsible community. In Table 6.10, the general manager of hotel A made it categorically clear that the internal reports are disseminated across all divisions because "everyone needs to be involved". As a result, informants asserted that the organisational culture has encouraged

them to reduce and control environmental costs (see Table 6.33). Gunarathne and Lee (2015: 374) confirm that an organisational culture embedded in management processes and support, received from employees at all levels, motivate for the successful implementation of EMA tools.

7.2.3.2 External factors enabling the use of EMA tools

Several external factors that enable the use of EMA tools were discovered from this study and are discussed below.

❖ **Compliance to regulations**

The Group has subscribed to Green Leaf Eco Standards and, therefore, its operations are monitored and assessed in order to ascertain compliance. This certification programme is voluntary in nature. However, there are regulatory requirements that the Group has to uphold. Comoglio and Botta (2012: 93) point out that a critical point about certification programmes is that that the organisation's performance is assessed annually in order to ensure full compliance so that the respective organisation maintains the certification. Phan and Baird (2015: 47) assert that regulatory compliance has been the driver for the implementation of EMA tools because organisations believe that such compliance assists organisations in achieving their own environmental management objectives.

❖ **Pressures from international visitors**

Table 6.41 shows that international visitors exert pressure to the Group to account for its environmental impacts. Tarí et al. (2010: 502) concede that hotels apply environmental management initiatives with the hope that such initiatives improve their guests' perception of environmental quality of the hotel. Han et al. (2010: 325) state that there is a growing number of customers who seek environmentally-friendly hotels and, thus, being an environmentally friendly hotel serves as a basis for good marketing strategy and it differentiates the hotel and makes it competitive. Ham and Han (2012: 733) add that, to achieve competitiveness, hotels have shifted their focus to environmental issues so as to be perceived as being more eco-friendly. Rogerson and Sims (2012: 402) concede that much of the pressures towards applying environmental management by hotels emanate from statements or increasingly from

international guests who consider themselves as green travellers and opt to stay in green or environmentally-aware hotel establishments. Rahman et al. (2015: 24), however, warn the hotels that trying to build a corporate reputation by using common practices that do not establish the hotels' credibility regarding environmental stewardship, might actually cost them valuable repeat customers.

7.2.3.3 Internal factors limiting the use of EMA tools

The internal factors that serve as impediments or limitations for the adoption of EMA tools are identified and discussed below.

❖ **Lack of skills, knowledge, experience and specialist staff**

These barriers were discussed in section 7.2.2. Literature has maintained that the use of EMA tools is still new in the hotel sector. It was discussed that the present management accounting systems fall short when it comes to the identification and allocation of environmental costs which is the reason why EMA emerged. Janković et al. (2011: 134) assert that, for the implementation of EMA tools to be successful, it is essential that there be a high level of knowledge within the accounting department. Fukey and Issac (2014: 302) support this premise by stating that many hotels do not have a sound and complete knowledge and expertise on environmental management which serves as a barrier for the successful implementation of EMA tools. Janković et al. (2011: 129), therefore, maintain that the effective implementation of EMA tools requires managerial knowledge of environmental costs and the methodological approach of cost management, so that the best way in preparing the relevant information for decision-making can be selected. This study has demonstrated that the hotels under study lack specialist staff that can facilitate the successful implementation of EMA tools.

❖ **Lack of control and stringent accountability measures**

In as much as the informants alluded that they are held accountable for the environmental performance of their respective hotels, Table 6.23 shows that there are no clear mechanisms in place that ensure accountability. Table 6.31 confirms this limiting factor, by revealing that some informants acceded that they are being held accountable while others were not sure. The Group engineer, who is the custodian of the environmental management systems, maintained that it is

currently a challenge to hold accountable key managers of the hotels managed by the Group. Regassa et al. (2011: 180) allude that lack of well-defined line of authority and inadequate organisational capacity challenge the effective application of any EMS. Leonard and Dlamini (2015: 2) support this view by adding that the lack of control measures relating to organisational environmental management adversely affect the effective application of greening initiatives. There is over reliance to Green Leaf Eco Standards for most of the environmental management-related issues such as guidelines and control measures that must be applied by the ABC Hotel Management Group. For example, Table 6.15 shows that, mainly, Green Leaf usually sets KPI for the Group and its embedded units. This could be attributed to the fact that the organisation still has limited experience and lacks knowledge, skills and awareness relating to the effective management of environmental issues.

❖ **Absence of appraisal systems**

Hoodendoon et al. (2015: 135) point out that the lack of directives and tangible incentives hinder the implementation of EMPs. Table 6.33 shows that the Group does not have monetary incentives aimed at rewarding employees for achieving KPIs set for them. Bratt et al. (2011: 1637) state that, having the criteria for setting and meeting organisational control measures, in so far as environmental issues are concerned, facilitate an environment in which incentives for achieving KPIs are clear defined. Employees would be encouraged to effectively use EMA tools provided that the organisation introduces incentives linking environmental performance with personal promotion, meaning that environmental management should also be a consideration when awarding promotion (Qian et al., 2015: 419).

❖ **Narrow focus on economic performance**

Several authors note that economic performance takes precedence when it comes to decision making by organisations. For example, Massoud et al. (2010: 200) state that organisations are less likely to participate in environmental management activities unless there would be immediate financial gains. Mensah (2014: 230) also points out that economic performance is what usually motivates companies to undertake sustainability programmes. This is also the case with the ABC Hotel Management Group, as depicted in Table 6.26. The organisation is much more concerned about costs minimisation with the aim of maximising profits. Setthasakko (2010: 323) argues that this attitude hinders the effective implementation of EMA systems

because the implementation on its own systems is costly. Priego et al. (2011: 364) allude to the fact that the effective use of EMA systems calls for systematic implementation and monitoring, which has a substantial impact on organisational structure and human resources and this may mean an increase in costs. To begin overcoming the narrow focus on economic performance, all employees need to understand the interconnection between economic growth and environmental sustainability. In addition, companies have to change their corporate culture from one that focuses on an economic-driven goal to one that integrates environmental concerns into business plans and practices (Chung and Parker, 2010: 49; Setthasakko, 2010: 323; Schaltegger et al., 2012: 1).

❖ **Inconsistent application of environmental management technologies within the Group**

Table 6.15, indicates that the Group engineer alluded that the Group is challenged when it comes to assessing its environmental performance because it is difficult to compare different properties managed by the Group. This can be attributed to the fact that the studied hotels do not have the same technological systems implemented across them. Hotel C is a perfect example to this fact given that it does not have a BMS installed, as it is shown in Table 6.2. These inconsistences and some other properties within the group being under-resourced may add to the limiting factors hindering the use of EMA tools (Tarí et al., 2010: 504).

❖ **Lack of proper communication of information within the Group**

Adding to the inconsistences regarding the application of environmental management technologies within the Group, is the lack of proper communication of information between the Group management and the hotels they manage. Table 6.37, for instance, shows that the informants were divided about the existence of impediments for internal reporting. Qian et al. (2015: 422) allude that in most generally top management has a better understanding of the organisations' environmental statuses while the meaning of environmental management at lower levels of management in the companies, the understanding is very limited. The aforementioned authors add that it is the responsibility of top managers to gather environmental information and also to share the information.

7.2.3.4 External factors limiting the use of EMA tools

The study found the following to be the limiting factors for the effective use of EMA tools:

❖ **Lack of sector specific implementation guidelines and examples**

There is no research that has been done, particularly in South Africa, that reveals the EMA tools used in the hotel sector and the extent these tools have been used. This adds to the limiting factor that hinders their application because there are no real life examples that hoteliers can refer to. According to Ni et al. (2012: 177), sector specific examples can serve as guidance for categorising, organising, and presenting financial information and promotes a standardised reporting system that facilitates the comparison of results of various hotel operations. Setthasakko (2010: 317) points out that the absence of guidance on EMA can make it difficult for companies to effectively collect, identify, analyse and evaluate environment-related data. Informants revealed (Table 6.18) that they are not aware of any regional or international affiliations that the hotel has signed. This may be considered a barrier in that such partnerships can provide an international perspective in as far as the application of EMA tools is concerned, especially given that the developed economies are well ahead in terms of applying these tools (Janković and Krivačić, 2014: 104).

❖ **Lack of promotion of use of EMA tools**

Several initiatives developed within the hotel sector fall short in promoting the EMA tools and how they ought to be utilised by hotels. Previous chapters discussed various local and international programmes but very little was said about them being integrated to the EMA systems. This factor inhibits the application of EMA tools even if such an initiative is implemented by the hotels because there are no clear guidelines as to how the programmes can be integrated with EMA tools and gain the desired outcomes.

❖ **Lack of government support**

The application of EMPs is mainly voluntary as discussed in the preceding chapters. Government support is limited in terms of enticing organisations to participate in EMPs. Farouk et al. (2012: 36) mention that governments' role should be improved pertinent to the promotion

of EMA. Hoogendoorn at al. (2015: 134) concede that the implementation EMS requires infrastructural changes and, hence, government and private support is needed. Lack of consistent government support, therefore, poses a limiting factor for the adoption of EMA tools (Qian et al., 2015, 425). This factor is evident in this case because even the respondents conceded that there is no clear government pressure exerted on the Group for the implementation of environmental management programmes (see Table 6.41). Leonard and Dlamini (2014: 2) maintain that the South African government is not playing an effective role in assisting the hotel sector to establish an eco-friendly framework to guide the implementation of environmental management initiatives.

❖ **Lack of promotion and enforcement of government regulation**

South Africa is endowed with environmental laws and policies, as depicted in Table 2.7. However, the enforcement and control measures of these laws is still lacking (Rogerson and Sims, 2012: 402; Leonard and Dlamini, 2014: 2). According to Table 6.38, informants demonstrated that the awareness of government regulations is lacking in the hotel sector. This barrier is consistent with findings by other researchers in other countries, such as the study conducted by Mensah and Blankson (2013: 1227) in the Ghanaian hotel sector; Hsia et al. (2014: 206) in the Taiwanese hotel sector; and Buyukipekci (2014: 192) in the Turkish hotel sector. This is contrary to the findings emanating from studies in the developed countries where there appears to be the existence of government-supported environmental management initiatives in the hotel, namely, the United States of America (Liu and Sanhaji, 2010: 67); Spain (Priego et al., 2011: 375); and Canada (de Grosbois, 2012: 897).

7.3 CONCLUSION

The focus of this chapter was the discussion and interpretation of the results. This was achieved by discussing key findings according to the main themes that were developed. The discussion of findings was supported by the review of the existing literature in this area. To better unpack the results, sub-themes emerged and findings were discussed accordingly in line with the sub-themes developed. The purpose was to establish the EMA tools currently used by the investigated hotels and to discuss the extent that these tools were used. This chapter also discussed the factors enabling and limiting the use of the EMA tools by these hotels. The next chapter focuses on the conclusions and recommendations of this study.

CHAPTER EIGHT

CONCLUSIONS AND RECOMMENDATIONS OF THE STUDY

8.1 INTRODUCTION

Literature indicates that the hotel sector is facing escalating pressure to play a significant role in addressing environmental issues, given the global environmental challenges threatening the future of humankind. The sector's activities lead to the consumption of a considerable amount of non-renewable resources such as energy and water. Research establishes that there is a growing interest amongst scholars to investigate several EMPs aimed at addressing environmental concerns. However, limited research has been done within the hotel sector (Hawkins and Chan, 2012: 405). To date, the use of EMA tools remains debated in South Africa, given that EMA practice is still at an infancy stage in the emerging economies (Farouk et al., 2012: 390. Conventional management accounting systems fall short of adequate or appropriate data to be used in the administration of the environment and also for the management of costs related to the management of that environment. To close this gap, appropriate EMA tools, conducive for the South African hotel sector, need to be established to assist the hotel sector to improve the environmental management.

The main aim of this study was to examine and describe the practice of the EMA tools by the hotel sector in the 3-5 star hotel categories in KwaZulu-Natal; and to suggest a prototype model for the implementation of EMA by these hotels. Therefore, the focus of this chapter is on the summary of the findings of this study, conclusions about objectives, implications, limitations, recommendations based on the results of the study, recommendations for further research, summary of the study and conclusions of the chapter.

8.2 SUMMARY OF KEY FINDINGS

This section summarises the key findings of this study in relation to the study's sub-objectives which were developed in order to address the main objective of this study, as highlighted in Chapter one. The purpose is to address the research questions in the light of these findings in order to pave a way for the recommendations and ultimately accomplish the purpose of this

research.

8.2.1 Sub-objective one: To identify the EMA tools used for the reporting of environmental costs by the hotel sector in the 3-5 star category in KZN

The purpose of this sub-objective was to address the research question that sought to identify the EMA tools and techniques used by the hotel sector to account for its major environmental costs such as water, energy and waste management. Therefore, the study found that the investigated Group acknowledges that its operations adversely impact the environment. The Group has started to engage on EMPs and developed technologies that are concentrated on improving the Group's environmental and economic performance, such as improving water consumption efficiencies, energy consumption efficiencies and efficient waste management. To demonstrate its commitment, the Group has commenced with the certification of its hotels in terms of the Green Leaf Eco Standard and the Group is also involved with the Heritage Environmental Programme which is intended to rate the Group's environmental and sustainability practices in line with the globally recognised and professional standards.

The study found that ECA and MFCA are the main EMA tools utilised by the investigated hotels within the Group. The hotels' understudy focus on the allocation of environmental costs to activities with the aim of determining costs created and costs avoided by the hotels' operations and this is a description of ECA. The hotels in this study also developed technologies such as BMS and GEPA, not only to allocate environmental costs to activities but also to trace and record flows of energy and water. This is the characteristic of MFCA. Therefore, under this sub-objective, it is concluded that ECA and MFCA are the main EMA tools used by the investigated hotels.

8.2.2 Sub-objective two: To determine to what extent the tools of EMA are used to report environmental costs by the hotel sector in the 3-5 star category in KZN

The research question asked to address this sub-objective was part of the previous question asked in sub-objective one but the emphasis here is "How effective have the EMA tools been used by the hotel sector in the 3-5 star hotel category in KZN'? Only three out of eleven hotels managed by the Group in KZN have been certified according to the Green Leaf Eco Standard. It appears that the Group is still on the experimental mode, since the Group started with the

certification initiative in 2012. The Group has limited experience and knowledge of EMA tools. In as much as reductions in environmental costs have been reported in the area of energy and water consumption, less has been reported in the area of waste management. Therefore, it can be concluded under this sub-objective that the practice of EMA is still very poor within the Group and the use of these tools is not up to the level that exploits their full potential.

8.2.3 Sub-objective three: To determine the awareness, knowledge and experience with regards to EMA tools by the KZN's hotel sector in the 3-5 star category

In as much as the investigated hotels are aware of the environmental challenges, their utilisation of EMA tools is still very poor. The implemented technologies are meant to be a catalyst for an improved environmental and economic performance of the Group, but the concern about the accuracy of data provided by these systems and lack of understanding of these systems imply that the awareness, knowledge, skills and experience, regarding the EMA tools in the hotel sector, are still lacking. The study found that the Group is finding it challenging to allocate costs based on the allocation bases determined by the implemented technologies. The literature has indicated that the appropriate use of EMA tools addresses such allocation challenges. This, therefore, is the affirmation that the hotels lack necessary awareness, knowledge and experience required to effectively utilise EMA tools for the improvement of their environmental performance.

8.2.4 Sub-objective four: To identify critical factors enabling and limiting the use of EMA tools by the hotel sector in the 3-5 star category in KZN

The question that the study asked in order to help address this sub-objective was "what are the factors that encourage or limit the use of EMA tools by the 3-5 star hotels"? The study found that there are internal and external factors enabling and/or limiting the use of EMA tools within the hotel sector. These are summarised as follows:

8.2.4.1 Internal factors enabling the use of EMA tools

The study identified two main internal factors perceived as motivating the use of EMA tools by the hotel sector, namely, cost-reduction and commitment from top management.

❖ **Cost-reduction**

It was discovered that the strategic focus of investigated cases was to reduce costs, as shown in Table 6.3. The informants also concede that that this strategic objective has been achieved (see Table 6.11) and this encourages the hotel sector to implement EMA tools.

❖ **Top-management's commitment to environmental management**

It is evident from the study that the top management, from the cases investigated, is committed towards environmental management and sustainability. This has led to the cultivation of a culture of an environmentally responsible Group and its embedded unit, hence, the development of EMPs.

8.2.4.2 External factors enabling the use of EMA tools

The following external factors were discovered as enabling the hotel sector to implement and use EMA tools:

❖ **Compliance to regulations**

Subscribing to certification programmes such as Green Leaf Eco Standard and Heritage Environmental Programme enable the hotel sector to implement and use EMA tools. This is due to the fact that, through such certification initiatives, the hotels' performance is continuously assessed to ensure full compliance and to ensure that the hotel is achieving its own environmental management objectives.

❖ **Pressures from international visitors**

Informants pointed out that some of the reasons why they participate in environmental management activities was the pressure received from international visitors who seek eco-friendly hotels. Therefore, as its marketing strategy, the hotels have implemented and used EMA tools in their eco-friendly activities to build a corporate image that attracts green travellers who desire to stay in eco-friendly establishments.

8.2.4.3 Internal factors limiting the use of EMA tools

It was discovered by this study that there exists several internal factors that limit the use of EMA tools by the hotel sector. These are:

❖ **Lack of skills, knowledge, experience and specialist staff**

The main barriers established in the cases investigated were the shortage of skilled personnel who are able to use EMA tools appropriately and efficiently. This study acknowledges that these barriers are attributed to the fact that the area of EMA is still new in this sector, particularly in the developing economies such as South Africa. The successful application of the EMA tools depends on the availability of knowledgeable and specialist staff. This was absent in the cases investigated.

❖ **Lack of control and stringent accountability measures**

This research found that there are no clear mechanisms put in place to ensure that general managers, maintenance managers and financial managers are held accountable for the major environmental costs incurred by their respective hotels. The lack of control and absence of accountability measures inhibit the use of EMA tools.

❖ **Absence of appraisal system**

The informants admitted that there are no monetary incentives aimed at rewarding employees who achieve KPIs set for them. This limiting factor is exacerbated by the fact that there is lack of sufficient expertise required to set clear KPIs and align them with the efficient use of EMA tools so that these KPIs are achieved by employees.

❖ **Narrow focus on economic performance**

Like most organisations, the cases investigated are much more concerned about cost minimisation so as to improve profits. The implementation of EMA systems does not guarantee improvements in economic performance. This uncertainty serves as a limiting factor towards the application of EMA tools because the effective use of such tools requires substantial investments in technologies and human resources. This alone increases costs.

❖ **Inconsistent application of environmental management technologies within the Group**

There appears to be inconsistences in terms of the installation of environmental management technologies within the properties managed by the same Group. This contributes to the incomparability of data used to assess, monitor and benchmark the performance between these hotels. Therefore, if the performance of the hotels which are not installed with technologies, such as BMS and GEPA, is better than those with these systems, then it would not make sense to invest in such technologies in those properties. However, it will limit the application of EMA

tools. This is because it was evident in the literature that EMA tools produce desired results when integrated into technologies and systems aimed at improving organisational processes with the intention of managing the environment better.

❖ **Lack of proper communication of information within the Group**

The lack of knowledge and the inconsistences in the application of environmental management technologies within the Group can be attributed to the lack of proper communication within the Group. The analysis of data demonstrated there were serious communication challenges within Group and these challenges would inevitably affect the application of EMA tools.

8.2.4.4 External factors limiting the use of EMA tools

This section summarises external factors found in this study to be limiting the use of EMA tools within the hotel sector.

❖ **Lack of sector specific implementation guidelines and examples**

Limited research has been done that reveals the use of EMA tools within the hotel sector. This is a limiting factor because there are no real life examples that the hotel sector can refer to for the implementation of these tools.

❖ **Lack of promotion of use of EMA tools**

The existing environmental initiatives fall short in promoting EMA tools and providing convincing evidence that should encourage hotels to use these tools. Even if the environmental management initiatives such as the certification programmes are starting to increase within this sector, there is no clear indication as to how EMA tools can be integrated with these programmes.

❖ **Lack of government support**

The implementation of environmental practices is voluntary and the government support is absent. It was discussed in the preceding chapters that the government's role in promoting the use of environmental management accounting is very limited and the country is challenged since the government is not playing an effective role is assisting the hotel sector to establish an eco-friendly framework that will guide the implementation of EMPs.

❖ **Lack of promotion and enforcement of government regulation**

In as much as the country is endowed with environmental laws and policies, these are not actually enforced. The findings of investigated cases reveal that most of the environmental regulations that exist within the country are not known and, therefore, limit the use of EMPs that will, in turn, require the use of EMA tools.

8.2.5 Sub-objective five: to propose the adoption of an EMA model to improve the implementation of EMA tools for the reporting of environmental costs by hotels in KZN in the 3-5 star categories

This study proposes the adoption of an EMA model illustrated in Figure 4.3. The model consists of pathways, which the hotel sector must follow in a specific analysis of the environmental impacts on the hotel. These different pathways depend on the objective statement and scope of analysis, and the amount of data the user needs to acquire or record. Therefore, this model is intended to serve as a tool used by the hotel sector to analyse the environment in which the hotel operates and assess the impact of the hotels' activities on the environment (using a combination of EMA tools) and suggest ways to avert or minimise such impacts for the good of the environment and to report on the environmental costs associated with the hotels' activities.

8.3 CONCLUSIONS ABOUT RESEARCH HYPOTHESES

The study formulated three hypotheses as per the themes that were developed in order to meet the research objectives. The following conclusions on these hypotheses were reached after doing a cross-case syntheses that was used in chapter six:

H1:   It was hypothesised that EMA practices within the hotel lector and the extent to which they are implemented is not clear in the 3-5 star category in KZN

H1 has shown that EMA tools used by the hotel sector in the 3-5 star category in KZN were not widely known due to the shortage skills as presented in Table 6.35. Even though Table 6.7 and Table 6.8 reveal that certain EMA tools were in use in the hotel group under study, the study found that these EMA tools are yet to be implemented group-wide. H1 has also shown that it was not clear as to what extent are EMA tools used by the hotel sector in the 3-5 star category in

KZN since the informants raised concerns regarding the difficulty in allocating relevant environmental costs and providing accurate data, as this required skilled people. This hypothesis was accepted.

H2:   *It was hypothesised that there was lack of awareness, knowledge, and experience with regards to the use of EMA tools by the hotel sector in the 3-5 star category in KZN.*

H2 has shown that there was lack of awareness, knowledge, and experience with regards to the use EMA tools by the hotel sector in the 3-5 star category in KZN as presented in Table 6.37 and Table 6.40. Therefore, this hypothesis was accepted.

H3:   *I was hypothesised that there were critical factors enabling and limiting the use of EMA tools by the hotel sector in the 3-5 star category in KZN.*

H3 has shown that there are critical factors enabling and limiting the use of EMA tools by the hotel sector in the 3-5 star category in KZN. These factors were categorised as internal and external factors that either enabling or limited the use of EMA tools within the hotel sector. Therefore, this hypothesis was accepted.

8.4 IMPLICATIONS

EMA tools used by the hotel industry remain unknown in South African. This is due to the fact that limited investigation has been done in this area. It can be maintained that, for better management of the environmental costs, the hotel sector needs to have a clear understanding of the relevant EMA theories and strategies that can be utilised to assist the sector in improving its environmental performance. Based on the proposed conceptual environmental reporting framework presented in Figure 4.1 and the proposed EMA and reporting model for the hotel sector shown in Figure 4.2, the following implications for the use of EMA tools within the hotel sector were provided:

❖ It is revealed from the investigated cases that there is concern pertaining to data inaccuracies and the understanding of data which can be attributed to a number of factors such as lack of skills, knowledge, and experience. This has resulted in the inconsistent application of EMA tools. Therefore, this study suggests the application of an EMA model which provides pathways which the hotels must follow in a specific analysis of the environmental impacts on the hotel. It was mentioned in this study that there are no industry

specific guidelines and real life examples that might facilitate the use of EMA tools. Therefore, this model underpins EMA and reporting. It is intended to serve as a tool to be used by the hotel sector to analyse the environment in which the hotel operates by applying various EMA tools.

- ❖ The study revealed that there is a possibility of unfair KPIs in place which might be the contributing factor towards lack of control and accountability measures within the investigated cases. The proposed conceptual environmental reporting framework would, therefore, serve as a guide that might provide sustainable performance indicators and promote a standardised reporting system that facilitates the comparison of various hotel operations. This may be used to identify performers with the bid to award them accordingly in line with the corporate's appraisal system and also identify non-performers and take appropriate action against them.

- ❖ It was mentioned in this study that there is lack of government pressure exerted on hotels to implement EMPs. Literature indicated that government is a powerful stakeholder that can drive the application of EMA practices within the hotel sector. Therefore, this study would suggest that the government should impose pressure on hotels to be accountable for their environmental performance. This could be achieved by requesting universities to provide an environmental account as a supplement to the financial account currently required for ensuring accountability.

Moreover, this study contributes to the identification and critical evaluation of the EMA tools used by hotels based on the experiences applied by the ABC Hotel Management Group. The contribution of this research is to add new concept and theories in EMA practices for the hotel sector. Theories about the EMA tools used by the hotel sector have not been published in the literature previously. The new concept and theories in EMA systems should focus on the organisational and management processes within the hotel sector so as to improve this craft within this sector. This implies that the hotel sector needs to implement EMA tools. The integration of environmental management initiatives within the hotel sector, such as the certification programmes, with the EMA tools, constitute the theoretical contribution of this study. The success of the management of the major environmental costs in the hotel sector depends on the adoption of an innovative approach as compared to the conventional management accounting systems. This, unfortunately, calls for knowledgeable and skilled

personnel who can be able to handle these systems for the effective identification and allocation of environmental costs. The study found that key employees within the hotel sector lack awareness, skills and sufficient experience for the application of the EMA tools for the improved environmental and economic performance of this sector. This study, therefore, contributes to the literature on the identification of internal and external factors impeding the implementation of EMA tools with specific reference to the South African hotel sector.

8.5 RECOMMENDATIONS

This section provides recommendations based on the findings of this study. These recommendations are for the investigated cases, government and for future research in the area of EMA in the hotel sector.

8.5.1 Recommendations for ABC Hotel Management Group

It is evident from the findings that the group has implemented the EMS to reduce its environmental costs and improve the Group's economic and environmental performance. The study found that the Group's strategic focus is on cost-reduction instead of a genuine environmental management strategy. It was discovered that the application of EMPs comes with limiting factors that impede the effective application of EMA tools. The study investigated only three of the eleven hotels managed by the group, which is indicative of the fact that the hotel is at an infancy stage in terms of implementing these systems.

❖ **Sourcing of specialist staff**

It is recommended that the group appoints a group specialist environmental manager who will work along with the group engineer. This team should endeavour to facilitate effective tracing and tracking environmental costs incurred by the hotels and establish the activities performed that results in these costs being incurred. It is envisaged that the appointment of the specialist staff member would add value in the use of the EMA tools for the improved economic and environmental performance by the group.

❖ **Training and workshops**

The group is encouraged to conduct workshops for its hotel management and all the decision makers to create awareness about systems that are currently in use aimed at reducing and managing environmental costs. These workshops and training sessions are envisaged to optimise the use of the technologies and tools currently implemented with the aim of improving the Group's performance.

❖ **Stringent accountability measures**

The findings of this study revealed that the hotel management and the Group engineer are held accountable for major environmental costs incurred. However, there are no clear stringent accountability measures in place. This shortcoming inhibits the effective application of EMA tools and technologies implemented for the management of the environmental impacts by the hotels. It is recommended that strict accountability measures be enacted to curtail and avert the aforementioned weakness.

❖ **Introduction of an appraisal system**

Literature review showed that incentives encourage the employees to embrace the EMPs. Therefore, the study recommends that clearly defined environmental KPIs be established by the Group and the systems to reward employees that meet those KPIs be introduced. The effective use of EMA systems can serve as a tool for the establishment of environmental KPIs. Therefore, a collaboration between the key role players, including the Group's human resources division, may pave a way forward in as far as the introduction of the appraisal system is concerned.

❖ **Uniform application of technologies across all properties**

Uniformity and consistency are also recommended in the application of the EMA tools across all hotels in order to maintain order and facilitate the comparability of data and to improve monitoring and controlling. This will also facilitate the implementation of these tools in other facilities that are currently not resourced with these tools because similar systems will be implemented across all hotels managed by the Group.

❖ **Partnership with relevant agencies**

The collaboration with management accounting professional bodies and academic institutions is also recommended. Professional bodies may provide expert advice on the technical issues around the practice of EMA. Academics may conduct empirical research that will facilitate the development of EMA systems that better improve the Group's ecological and economic performance and thus increase the Group's competitive edge.

8.5.2 Recommendations for government support

Several studies maintain that the South African government's involvement in promoting and supporting environmental management in the hotel sector is minimal.

❖ **Awareness campaigns**

This study recommends that the government actively engage in the promotion of the environmental regulations and establish mechanisms that will ensure compliance. Some of the informants (Table 6.38) responded that they were not aware of any compulsory regulations or requirements forcing the hotels to control or reduce their environmental costs. This lack of awareness signifies the absence of government's involvement in promoting such regulations.

❖ **Compliance enforcement**

Chapter two discussed the wealth of environmental management regulations within the country. However, literature reveals that the enforcement of such regulations is still inadequate. It was found that respondents were not aware of any pressures from the government to implement EMPs. This is deemed a barrier for the implementation of EMA tools and was discussed in Chapter seven. The study, therefore, recommends stringent compliance mechanisms that will ensure that hotels adhere to the regulations enacted.

❖ **Incentives**

It is also recommended that the government provide incentives that will encourage more hotels to participate in EMPs to improve the country's economic and environmental performance.

These incentives should be such that hotels that comply with the country's environmental regulations and reduce their environmental impacts be rewarded for their efforts. One such reward should be the provision of tax relief for certain environmental impact reductions.

8.6 LIMITATIONS OF THE STUDY

The study identified the following limitations:

- ❖ This qualitative type of research is subject to criticism because of limitations such as researcher-related problems and fundamental design limitations. The study used in-depth interviews as the primary method of data collection and this is also subject to the same criticisms. During the coding process, interpretations and judgements by the researcher were required to categorise the interview data. Subjectivity was, therefore, unavoidable, which could lead to possible bias in the results. To reduce the level of this subjectivity, efforts were undertaken to ensure consistency while conducting interviews, and the analytical procedures of this study.

- ❖ Apart from bias relating to the researcher, informants are likely to contribute bias into the results. The accuracy and truthfulness of their opinions, comments, or perceptions collected during the interviews can never be fully tested. The picture emerged from the interview data is only a snapshot in time, and it does not necessarily reflect accurate accounts of particular realities. Although attempts were made to overcome this limitation by asking open-ended questions of key managers with different management roles at three different hotels within the Group, together with the Group engineer, it is unlikely to overcome the limitation completely. However, the inherent subjectivity and participant-related bias must be weighed against the richness of data captured and collected in the in-depth interviews. For this research, this method of primary data collection was deemed appropriate for the research topic, and it is believed that the benefits outweighed the possible bias.

- ❖ This study was also limited to hotels within the province of KwaZulu-Natal using a single case study with embedded units approach and only 10 informants participated in this study. Generalisation should be exercised with care in terms of the findings being applicable to all hotels in South Africa. It may add value to use multiple case studies with a larger sample

size in order to increase rigour of the analysis and to compliment this study.

8.7 RECOMMENDATIONS FOR FUTURE RESEARCH

This study recommends the following for future research:

❖ A longitudinal case study approach can be used to identify and evaluate EMA tools used by the hotel sector. This type of study would provide a much richer and more detailed evaluation of the EMA tools used by the hotel sector. This approach can assist in determining the extent at which these tools are used and how effective are they in reducing and controlling environmental costs and to establish how the environmental costs are reported. Such a study can utilise multiple data collection methods, including interviews, observations, documents and, questionnaires, where appropriate. This type of study would provide a richer and more detailed explanation of the formation and implementation processes of EMA tools.

❖ This study investigated the use of EMA tools by 3-5 star hotels in KZN. A similar study could be undertaken in other star-rated hotels and it may incorporate other provinces. Such a study may provide further insight into the differences and similarities between hotels regarding the use of EMA tools in various categories and in various provinces.

❖ It may be critical that multiple case studies be conducted to evaluate the use of EMA tools by hotels in order to complement this study and to increase rigour of the analysis. This may mean that other provinces be taken into consideration as well.

❖ This study suggested the adoption of an EMA model by the hotel sector. Future research is encourage to critically evaluate the applicability and the effectiveness of this model and suggest any possible improvements.

❖ This study used a qualitative approach. A quantitative method is recommended to test the relationship between various variables that affect the use of EMA tools within the hotel sector.

❖ The use of EMA tools by the hotel sector is subject to some limiting factors such as lack of government support and lack of expertise within the hotel sector. Therefore, future research could be conducted to evaluate if the collaboration between the government, hotel sector and other relevant stakeholders could actually reduce the limiting factors inhibiting the use of EMA tools within this sector.

❖ Literature indicates that the EMA adoption rate is still very low in the hotel sector, particularly in South Africa. Therefore, empirical research is still required to establish the contributing factors and solutions to this phenomenon to complement this study.

8.8 CONCLUSION

The use of EMA tools, as revealed by literature, is at an infancy stage in the hotel sector in South Africa. However, given the commitment exhibited by the management of the ABC Hotel Management Group, it is possible that such an attitude elsewhere would encourage the successful application of these tools and eventually be widely implemented within this sector. With experience, the effective use of these tools is certain to yield the desired outcomes. Government and industry partnership may also steer the ship in the right direction in as far as the application of EMA tools with the aim of reducing environmental costs and improving economic and environmental performance of the sector and, in turn, improve the economic and environmental performance of South Africa. Any contribution by the hotel sector, to reduce their environmental impacts as a result of its operations, will go a long way in creating sustainable tourism. The future generation is counting on it.

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APPENDIX A

INVITATION LETTER TO PARTICIPANTS

A critical evaluation of environmental management accounting (EMA) tools used by 3-5 star hotels in KwaZulu-Natal.

My name is Celani John Nyide, and I am a Doctor of Business Administration (DBA) student at the University of KwaZulu-Natal (UKZN), student number 214584931. I am conducting research on environmental management accounting under the supervision of Dr Lekhanya. I invite your organisation to consider taking part in this research. This study will meet the requirements of the Research Ethics Committee of the UKZN.

Aims of the Research

The main research aims are to:

Examine and describe the practice of the environmental management accounting tools by the hotel sector in the 3-5 star categories in KwaZulu-Natal (KZN); and to suggest the adoption of a prototype model for the implementation of environmental management accounting by these hotels.

Significance of the Research Project

The research is significant in three ways:

1. It will bridge the gap that exists in South Africa as far as environmental and sustainability reporting is concerned in the hotel sector and will reveal new knowledge.

2. It will make the provision of meaningful results for policy decision making by the relevant stakeholders in the hotel industry.

3. It will endeavor to establish the factors that drive and/or hinder the implementation of tools that would control and manage environmental costs and their root causes.

Benefits of the Research to the Hotel sector

1. Dissemination of results to hotels, Department of Tourism, Department of Environmental Affairs, and the broader public.

2. Provision of meaningful results for policy making by the relevant stakeholders in the hotel sector.

Research Plan and Method

In-depth interviews will be used as the main method of data collection. Participants from the finance department, resources/general management division, cleaning department and maintenance department from your hotel will be required to participate. The researcher will personally conduct interviews with participants and it is expected to take not more than 30 minutes per participant. All information collected will be treated in strictest confidence and neither the hotel nor individual participant will be identifiable in any reports that are written. Participants may withdraw from the study at any time without penalty. The role of the hotel is voluntary and the hotel management may decide to withdraw the hotel's participation at any time without penalty.

Hotel Involvement

Once I have received your consent to approach employees to participate in the study, I will

- arrange a time with your hotel for data collection to take place
- obtain informed consent from participants

Further information

Attached for your information is the copy of Participant Information Statement and Consent Form.

Invitation to Participate

If you would like your hotel to participate in this research, please complete and return the attached form.

Thank you for taking the time to read this information.

Celani John Nyide

Researcher

APPENDIX B

PARTICIPANT CONSENT LETTER

Environmental management accounting (EMA) tools used 3-5 star hotels in KwaZulu-Natal and the reporting of environmental costs.

Participant Information Statement and Consent Form

I give consent for you to approach employees in the finance department, resources/general management division, cleaning department and maintenance department to participate in the investigation of EMA tools used by 3-5 star hotels in KZN and the reporting of environmental costs.

I have read the Project Information Statement explaining the purpose of the research project and understand that:

- The role of the hotel is voluntary

- I may decide to withdraw the hotel's participation at any time without penalty

- Employees will be invited to participate and that permission will be sought from them and also from their managers.

- Only employees who consent and whose managers consent will participate in the project

- All information obtained will be treated in strictest confidence.

- The participants' names will not be used and individual participants will not be identifiable in any written reports about the study.

- The hotel will not be identifiable in any written reports about the study.

- Participants may withdraw from the study at any time without penalty.

- A report of the findings will be made available to the hotel.

- I may seek further information on the project from Celani John Nyide on 082 611 7632 0r 033 845 8882.

_____   _____

Group Engineer/General Manager   Signature

_____

        Date

APPENDIX C

SEMI-STRUCTURED INTERVIEW QUESTIONS Table 5.1 Theme and interview questions for achieving sub-objectives one and two

Theme	Interview questions for achieving sub-objectives one and two	
EMA practices within the hotel sector and the extent to which they are implemented.	**Questions for participants with environmental management responsibility and/ or management accounting function**	
	Question	**Response**
	1. What are the hotel's main environmental challenges?	
	2. What has the hotel already done about the challenges? (Please mention recent projects.)	
	3. Do you think those projects mentioned are undertaken on a strategic basis? If yes, what makes you think so? If not, why not?	
	4. Does the hotel have an environmental policy?	
	5. Does the hotel have a procedure to assess the hotel's environmental performance? If yes, please describe.	
	6. Does the hotel have any form of environmental reporting? If yes, what is reported? Is it including the major environmental costs? At what level are the major environmental costs reported (if any)?	
	7. Does the hotel trace any of the major environmental costs (either physical or monetary)? If yes, what are they and how are they categorised?	
	8. On what basis are the major environmental costs traced and recorded? Or are they considered more generally (such as hotel wide)? What is the purpose of tracing and recording?	
	9. Does the hotel issue any internal report on environmental performance? If yes, at what level is the environmental performance assessed?	

	10. What are the motivations for issuing such a report? If the hotel does not issue any internal report, why not (e.g. not mandatory, not a normal practice in hotels, or not cost effective)	
	11. How does the hotel account for the major environmental costs? Are they separately identified, or assigned to an overhead account? Please explain.	
	12. Do you think the allocation bases used make sense in terms of controlling environmental costs?	
	13. Please indicate if any of the major environmental costs are considered for inclusion in the financial analysis of a proposed capital project. If yes, how?	
	14. Are the major environmental costs included in one single budget pool and allocated to responsibility centres as a lump sum? If not, please describe.	
	15. At what level is the hotel's environmental performance assessed? What are the key performance indices used, if any?	
	16. In the hotel, is there anyone who has ever requested any environmental cost information from you?	
	17. What type of environmental cost information, physical and/or monetary, should be provided? Why do you think so? What are your views on internal use of such information in the future?	

Table 5.2 Theme and interview questions for achieving sub-objective three

Theme	Interview questions for achieving sub-objective three	
	Questions for all participants	
	Question	**Response**
Awareness, knowledge and experience	18. Are you aware of any environment-related regional or international agreements, or declarations, singed by the hotel? If yes, what are they and do you think the hotel is able to ensure the compliance and meet the requirement?	

19. Do you think it should be an important issue for hotels to control their major environmental costs? Is it an important issue for the hotel now?	
12. Who is currently held accountable for the major environmental costs incurred? How are they held accountable?	
21. Have you ever requested any environmental cost information from accounting, or environmental management related administrative divisions? If yes, what is the purpose of requesting such information? If not, why not?	
22. In terms of managing environmental costs, to whom or for what do you feel the hotel is accountable to/for?	
23. Who do you think should be held accountable for reducing environmental costs, individuals, administrative divisions, or general managers? Are they held accountable now? If yes, how? If not, why not?	
24. Are you personally held accountable for any of the major environmental costs? If not, do you think you should be held accountable?	
25. Do you think it would/wouldn't benefit the hotel to bring the major environmental costs to the attention of the decision makers, both general managers and administrative divisions? What makes you think so?	
26. What would trigger the hotel to consider the major environmental costs when making management decisions?	
27. Do you think stakeholders of the hotel care about what the hotel has done, or will do, to manage its major environmental costs, for example the wider community, guests, departments within the hotel, media, pressure groups, or the government? If yes, who are they?	

	28. Do the stakeholders who care about what the hotel has done, or will do, have the power to force the hotel to change its current management or accounting practices to manage environmental costs? What makes you think so?	
	29. Do you, within your role in the hotel, think management accounting is of importance in managing the major environmental costs? Please explain your answer, either if yes or no, based on the three management accounting functions, namely capital budgeting, cost allocation and performance measurement.	
	30. What is your opinion on the separate identification and allocation of the major environmental costs? Is it possible for the hotel to do so? Why?	
	31. What is your opinion on key managers being held accountable for the major environmental costs incurred? Is it possible for the hotel to do so? Why?	
	32. What is your opinion on key managers being given environmental KPIs against which their performance is assessed? Is it possible for the hotel to do so? Why?	

Table 5.3 Theme and interview questions for achieving sub-objectives four and five

Theme	Interview questions for achieving sub-objectives four and five	
	Questions for all participants	
	Question	**Response**
Internal and external factors affecting the use	33. Do you think the hotel has provided enough incentives to motivate general managers or administrative divisions to control, or reduce environmental costs?	
	34. How do you see the potential use of EMA practices in providing such incentives?	

35. Do you think the hotel should provide major environmental cost information as a means to increase environmental awareness and encourage behaviour change? If not, why not? If so, whom do you think should be provided with this information (consider in your answer both general managers and administrative divisions)? What do you think would be the major barriers (either technical or political) to the provision of such information to heads of departments or internal managers?	
36. Are there barriers (either technical or political) in the provision of such environmental reporting? If yes, please explain.	
37. Are there any impediments, either technical and/or political, to provide an internal report on environmental performance to related parties?	
38. Are you aware of any compulsory regulations, or requirements, on hotels to control, or reduce, their major environmental costs? If yes, what are they? If no, do you think the government will impose compulsory regulations on hotels to control, or reduce, their major environmental costs?	
39. Are any internal pressures forcing the hotel to account for any of its impacts on the environment? Who imposes the pressure? How does the hotel react to the pressure and what are the actions taken?	
40. Does the hotel issue any internal report on environmental performance? If yes, at what level is the environmental performance assessed and what is the purpose of issuing this report? If not, why not (e.g. not mandatory, not a normal practice in hotels, or not cost effective)? Are there any impediments, either technical or political, to provide an internal report on environmental performance?	
41. Are any external pressures forcing the hotel to account for any of its impacts on the environment? Who imposes the pressure? How does the hotel react to the pressure and what are the actions taken?"	

APPENDIX D

ETHICAL CLEARANCE

UNIVERSITY OF
KWAZULU-NATAL

INYUVESI
YAKWAZULU-NATALI

14 March 2016

Mr Celani John Nyide 214584931
Graduate School of Business and Leadership
Westville Campus

Dear Mr Nyide

Protocol reference number: HSS/0251/015D
New project title: A critical evaluation of the environmental management accounting (EMA) tools used by the 3-5 star hotels in KwaZulu-Natal

Approval notification – Amendment Application

This letter serves to notify you that your application for an amendment dated 8 March 2016 has now been granted Full Approval.

- Change in Title

Any alterations to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form, Title of the Project, Location of the Study must be reviewed and approved through an amendment /modification prior to its implementation. In case you have further queries, please quote the above reference number. PLEASE NOTE: Research data should be securely stored in the discipline/department for a period of 5 years

The ethical clearance certificate is only valid for a period of 3 years from the date of issue. Thereafter Recertification must be applied for on an annual basis.

Best wishes for the successful completion of your research protocol.

Yours faithfully

Dr Shenuka Singh (Chair)
HumanitiesSocial Sciences Research Ethics

/pm

Supervisor: Dr I M Lekhanya
Academic Leader Research: Dr M Hoque
School Administrator: Ms Zarina Bullyraj