CRITICAL SUCCESS FACTORS INFLUENCING THE IMPLEMENTATION OF INFORMATION SYSTEMS: A CASE OF THE IMPLEMENTATION OF MICROS SIMPHONY-1 PROJECT AT VILLAROSA KEMPINSKI, NAIROBI.

BY

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A RESEARCH PROJECT REPORT SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF MASTER OF ARTS IN PROJECT PLANNING AND MANAGEMENT OF THE UNIVERSITY OF NAIROBI.

2016

DECLARATION

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

…… …….

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L50/78042/2015

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

…… …….

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DEDICATION

This research project report is dedicated to my lovely wife, Sali, and our two boys, Micah and Lucca, for encouragement and patience throughout my studies.

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I thank the lecturers of the University of Nairobi, School of Continuing and Distance Education, department of Extra Mural Studies for giving me the opportunity to further my studies and offer me nothing but the best.

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ABBREVIATIONS AND ACRONYMS

CSF	Critical Success Factors
ESD	Electronic Signature Device
ICT	Information and Communication Technology
IS	Information System
KMS	Knowledge Management System
MIS	Management Information System
PMS	Property Management System
POS	Point of Sale
SPSS	Statistical Program for Social Sciences

ABSTRACT

For the last twenty years, different kinds of information systems are developed for different purposes, depending on the need of the business. The role of implementation techniques of information systems has been established over time (Munns & Bjeirmi, 1996). There has been a great improvement in how the implementation of information systems are undertaken. The purpose of this study was to investigate the critical success factors influencing the implementation of information systems: a case of the implementation of micros symphony-1 project at Villarosa Kempinski, Nairobi. The objectives of this study were to investigate management support as a critical success factor on the implementation of information systems; to investigate systems design as a critical success factor on the implementation of information and to investigate training as a critical success factor on the implementation of projects. The study design was a descriptive survey whereby the target population was 95 and a sample size of 76 was observed. This sample size was derived by using the Krejcie & Morgan (1970) table. The study sought respondents from employees at Villarosa Kempinski and other correspondent who worked on the implementation of Micros Simphony-1 at Villarosa Kempinski. These respondents comprised of a Systems Manager, Spa and Recreation department, Information Technology department, Cost Control department, Finance department, Food and Beverage department, System auditors and Housekeeping department. The data for this study was collected using a questionnaire. The questionnaire contained closed ended questions as well as Likert scale questions. The completed questionnaires were edited for completeness and consistency, checked for errors and omissions. Quantitative data was analyzed using descriptive statistics where responses from questionnaire were tallied and analyzed using frequency distribution and percentages. Inferential statistics was done using Chi square analysis. Analyses was done using IBM Statistical Program for Social Sciences (SPSS) software version 20. Management support, system design and training were found to be significantly associated with implementation success of Micros Simphony-1 at Villarosa Kempinski ($p<0.05$). To ensure success of implementation of information systems, it is strongly recommended that top management must involve themselves as being an integral part of the system implementation process. System design should be everybody's affair since the involvement in the design process and training should be conducted more often to ensure continuity of knowledge proficiency.

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

Information given to stakeholders on time during the implementation of information systems will determine the success of failure of the implementation (Dinter, 2013). Failure during the implementation of ISs can be mitigated by understanding the Critical Success Factors (CSFs) (Fortune & White, 2006). A lot of systems that are used by companies usually become the responsibility of the IT department to implement due to the technology intricacies that come with such implementations, yet there are so many other factors that need to be considered so as to ensure little or no disconnect in the technical aspect that ensure success of implementation of systems and other critical factors (Yeoh & Koronios, 2010).

When it comes to ISs, organizations will either undertake a successful implementation or fail to do so (Poon & Wagner, 2001). This is made possible using CSFs. CSFs are factors that influence the successful implementation of an IS. These factors can range from three to six (Gates, 2010). Research has been done with the attempt to find the CSFs necessary for successful implementation of information systems (DeLone & McLean, 1992). It has been found that there are five ways of highlighting these factors. There is the competitive strategy of the organization using them, factors affecting the environment, temporal factors and the strategic factors usually impacted within the managerial level (Grunert, 1992). There are several factors that affect the IS industry such as demand of the IS, technology and history of the IS, environmental factors and temporal factors. Sometimes there exists sacred cow projects whereby an organization or a top official in the organization directly influences if a certain implementation will be carried out or not (Grunert, 1992).

In the hospitality industry and more specifically, the hotel industry, there are several ISs that are in use making technology-based ISs to be at a good place to offer better service. Hotels are now able to optimize these systems so to make better use of some its operations (Albert Kwansah

Ansah Victoria S. Blankson, 2012). Such like information system is Micros Symphony 1 developed by MICROS Systems Company. It is in use by more than 300,000 customers around

the world in the hospitality business and it currently has customers in over 140 countries. Simphony is a point of sale (POS), hospitality product for hotels and restaurants. It is designed to deliver transaction processes and results to customers. This system integrates functions such as property management systems and other third party systems.

Symphony can work as a standalone system but it can also with thousands with thousands of workstations spread over a large network. It can be hosted directly by its developers who are MICROS-Fidelio at the Frankfurt data center, or it can be self-hosted by a customer. The Enterprise Management Console (EMC) is used to manage the Micros system from within a single application. Simphony provides reporting capabilities by use of a web-based mymicros.net solution.

Villa Rosa Kempinski is a luxury hotel uniquely positioned five kilometers away from the Nairobi Central Business District. It is a ten-store building with 200 rooms. It has a total of five restaurants including the Cafe Villa Rosa, the Kempinski Lounge restaurant, Balcony Bar and the Cigar Lounge, the 88-Pan-Asian Restaurant, LUCCA Italian Restaurant and the Tambourin Deli restaurant of which all of them run on the Micros Symphony-1 point of sale information system thus making the IS to be the most used IS in this luxurious hotel.

Four years ago, Micros Symphony-1 IS was installed in all the restaurants at Villarosa Kempinski Nairobi with twenty-six point of sale workstations distributed in the restaurants all over the hotel. An on-site server lies at the server room which connects to the interface server that points at the electronic signature devices which ensure fiscalisation during transactions run on the point of sale systems. The implementation of this system took four months to successfully complete this project and another six months of monitoring to ensure stability. A lot of complexities arose during this implementation but they were handled as they came until completion.

1.2 Statement of the problem

During IS implementation process, project managers must be aware of the critical factors that would influence the success of the system implementation so that they may consider them (Alias, Zawawi, & Yusof, 2014). As such, ISs enables managers to be efficient in their daily operations. They also tend to become a highly critical facility of the organization and must therefore perform optimally (P.H. Van Aardt, 1997).

A lot of ISs fail after a few years of implementation. In 2004 Standish group report indicates that only 28 percent of ISs are implemented successfully therefore making a total of 72% of ISs in a failed state (Tesch, Kloppenborg, & Frolick, 2007). One of the challenges in the implementation of ISs is misunderstanding the CSFs and their impact. There is a relationship between CSFs and the implementation (Sammon & Adam, 2010). This research will review the critical success factors that affect the implementation of information systems and address the issues of uncertainty that come during implementation (Thomas & Mengel, 2008).

Top management support is a key factor critical for effective information systems implementation (Thong, Yap, & Raman, 1996). Obtaining management support is critical for IT project success. It is said that top managers who get an emotional attachment to a given project will acquire a stronger involvement to the project (Liu, Wang, & Chua, 2015). This is key and necessary during the strategic allocations of such projects.

International projects involving different cultures compared to domestic projects, face more challenge and are more likely to fail during implementation despite the existence of cross-cultural training (Kealey, Protheroe, MacDonald, & Vulpe, 2005). This means that although training is critical in equipping personnel, other CSFs are required for success of IS implementation.

Many hotels today aspire to be world class status. This implies that they must meet the customers' expectations in a way that equals a truly great and highly respected business worldwide. However, many hotel businesses have not attained the status of excellence they desire for quality of service. They fail in their attempts to consistently satisfy the needs and wants of cosmopolitan and culturally diverse customers in the global village of the 21st century.

The selection of hotel that fits business or leisure requirements if of high priority and significance for tourists. The selection of the most appropriate hotel entails a rather complicated decision-making process. Working ISs that give a hotel the required niche can empower the hotel managers, the tourists, and the tourism industry to make decisions based on more effective indicators of high quality services for a higher rate of satisfaction (Sohrabi, Vanani, Tahmasebipur, & Fazli, 2012). CSFs during the implementation of such ISs will greatly help in this process.

1.3 Purpose of the study

This study aimed at investigating the critical success factors influencing the implementation of Information Systems; a case of the implementation of Micros Simphony-1 project at Villa Rosa Kempinski, Nairobi.

1.4 Objectives of the Study

The objective of this study was as follows:

i. To determine the influence of Management support on the implementation of Micros Symphony 1 Information System project at Villa Rosa Kempinski, Nairobi.
ii. To establish the influence of system design on the implementation of Micros Symphony 1 Information System project at Villa Rosa Kempinski, Nairobi.
iii. To determine the influence of training on the implementation of Micros Symphony 1 Information System project at Villa Rosa Kempinski, Nairobi.

1.5 Research Questions

The study aimed at responding to the following questions;

i. How does management support influence the implementation of Information Systems at Villa Rosa Kempinski?
ii. To what extent does the system design affect the implementation of Information Systems at Villa Rosa Kempinski?
iii. How training influences the implementation of Information Systems at Villa Rosa Kempinski?

1.6 Significance of study

The study was intended to investigate the critical success factors in the successful implementation of Information Systems. The study is significant to all the existing firms in the hotel industry in Kenya. The identification of the CSFs in the implementation of Information Systems by the leading hotel in Nairobi will give an insight to other aspiring hotels on what elements are important for their success. They will also understand how lack of consideration of critical success factors can result in failure in IS implementation and thus taking precautions in the process of implementation and management of IS projects. The study provides information to potential and current scholars of project management in the implementation of Information Systems as used by Villa Rosa Kempinski in Nairobi. This will expand their knowledge on how information systems are implemented in the hotel industry and identify areas of further study.

All hospitality organizations will particularly find the study very useful since hotels like any other organization in both private and public sectors must observe those skills invoked by project managers which are fundamental for effective project implementation. The modern hotels have indulged into major development project initiatives which are deemed necessary for sustainability purposes; the study is therefore useful since it has highlighted those issues which the hotels need to observe to keep abreast with the challenges of project implementation.

1.7 Delimitation of the study

The study was restricted to the scope of Villarosa Kempinski and the research focused on the implementation of Micros Symphony 1 IS that was undertaken at Villarosa Kempinski.

1.8 Limitations of the study

Time constraints limited this research in broadening its research scope. Some respondents were did not want to participate fearing that the information could be leaked whereas others regarded some information as confidential. This was addressed by assurance of confidentiality and anonymity.

1.9 Assumptions of the study

The researcher assumed that respondents gave correct and valid information during the study.

1.10 Definition of key terms used in the study

Critical Success Factors:	Factors important in the implementation of a project without which it is likely to fail such as management support, systems design and training.
Enterprise management console	Application from which Micros Symphony 1 database can be viewed and edited based on user requirements.
Information System:	A system or tool used to store, process and manage information from keyed in data
Information Systems Management:	Management of information systems to provide efficiency and effectiveness of strategic decision making
Interface server:	A server connecting two or more information systems using a set of data instructions
Micros Fidelio:	This is an IT firm in situated in Germany which develops and sells Micros Symphony point of sale systems
Micros Symphony 1:	This is a point of sale system used in hotels, cruise ships and restaurants for billing and stock analysis reports
MyMicros	An online reporting application that derive applications from the enterprise management console database
Opera Property Management System:	This a system that is used to interface with other third party systems like Micros Symphony 1
Project Management:	This is the science of applying knowledge on the use of limited resources of time, budget and scope to successfully implement project objectives
Point of Sale system:	This is a system that is used in running tender transactions in return of services offered in the hospitality industry
System Design:	The process of putting together all stakeholder requirements in coming up with an information system

1.11 Organization of the study

The study is organized in five chapters. Chapter one provides the background of the study, statement of the problem, purpose of the study, objectives of the study, research questions, significance of the study, limitations and delimitations, assumptions of the study, definition of terms used and the organization of the study. Chapter two offers a review of the relevant literature on influence of project management on the implementation of information systems, theoretical and conceptual framework. Chapter three covers research methodology that was applied to source, process and requisite data. Chapter four covers the data analysis, presentation and interpretation of the study findings. This is followed by chapter five which contains summary of findings, discussions, conclusions and recommendations for policy as well as for further research. References and appendices are at the end.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

Most organizations are completely dependent on information systems (Artandi, 1973). Yet, on the contrary, there has been little knowledge on what is required for a successful implementation of ISs (Arvidsson, Holmström, & Lyytinen, 2014). Different studies have identified several CSFs although the criteria on the most important factors necessary for success varies among researchers (Alias et al., 2014). In this chapter, we looked at how three critical success factors can affect the implementation of information systems. These factors are management support, system design and training. These three variables are directly impacted with the DeLone and McLean IS success model who define their own level of impact on success namely; the semantic level which addresses the top management support variable, the technical level which addresses the system design variable; the effectiveness or influence level that addresses the training variable (Hellstén & Markova, 2006).

2.2 Management Support as a critical success factor on the implementation of information systems

Forty percent of all corporate IT projects are never completed. These incomplete projects cost businesses and organizations millions of dollars mainly due to lack of management support (Tetzlaff & Holmström, 2010).

Management involvement is a factor leading to the successful implementation of information systems. The association between management support and implementation success does exist (Sharma & Yetton, 2003). Top management support has been referred to by Madanayake (2014) as the most important critical factor of success. However, although there is a lot of general agreement regarding the critical role that top management plays in the information systems (ISs) implementation process, there is not much that has given clarity of the top management support concept (Dong, Neufeld, & Higgins, 2009). Contrary to this, Sharma and Yetton, in 2003, gave out a hypothesis and found out that there is a relationship between management support and implementation success (Sharma & Yetton, 2011).

In his thesis research on “managerial roles in top management support for information technology and system projects”, Madanayake (2014) hypothesized that “top management carrying out interpersonal, informational, decisional and technical roles lead to top management support”. He also hypothesized that top management is key for the top performance for any technology or system project. He later confirmed that the null hypothesis was false that indeed the roles carried out by top management do help in supporting the performance of the technology or system projects.

Any information systems with good management support usually results in better design, use, and management of such systems, and have improved organizational performance. Research has been conducted showing the impact of top management support on information system performance (Choe, 2006; Igbaria et al., 2011; et al., 2006). For example, continuous involvement from top management has been shown to resolve problems when conflicts arise in uncertain environments (Pinto & Slevin, 2012).

For a top manager to make an effective decision, they must fully understand the situation. Top management should therefore be fully knowledgeable of the ISs that are required to support. In the recent past, there has been a growing interest in treating knowledge as a significant organizational resource with key focus on top management. IS researchers have begun promoting a class of information systems, referred to as knowledge management systems (KMS) which is purposely used for supporting transfer and application of knowledge in organizations by top managers (Alavi & Leidner, 2001).

It is therefore of paramount importance that the implementation of information systems should be supported by management based on the needs of the organization and at the same time make IT investments that reflect these needs (Tetzlaff & Holmström, 2010).

2.3 Systems Design as a critical success factor on the implementation of information systems

An information system design, whose purpose is for use in an organization, should directly reflect the needs of that organization. How the system is designed will be determined by these needs. The design phase of an information system is divided into user focus design and the human-centered focus (Gasson, 2003). The user focus design is very important at each stage of

the design process which focuses on the technology requirements while the human-centered design focuses on the end user of the system and their needs.

Every information system must undergo a development life cycle. Software Development Life Cycle is a process used by software industry to design, develop and test information systems before they are commissioned and released for use. This cycle has several stages which are critical during the system design of an IS.

The detailed analysis stage identifies the problems with the current system. AT this stage, the needs of the users are analyzed, the organization in which the system is to be implemented is checked and the settings of the system currently in use is studied. Studies done on the system in use may include, the system's input, output, storage and its control requirements (Cutts, 2013).

The design stage involves developing the user requirement specifications on both hardware and software with the intention of satisfying the needs of end users. Design will address both computerized and manual procedures in data capture, program design, output design, file design and security. The aim of the phase is to arrive at a detailed statement of how the system is to be made operational (Ndulu, 2004).

Implementation is the execution of project objectives and it follows the investigation, analysis, and design stages in the system design life cycle process. Implementation of system design should be addressed in the initial plan and throughout the IS development process. Without clear criteria for implementation, there is a likelihood of the projects failing to meet their objectives. Organizations must attribute priority to each of the component elements of the implementation, because some aspects of the system may be important in fulfilling corporate objectives than others. The implementation of system design concentrates on seeing how the system can be practically put into use. It goes beyond the physical environment thus management must carefully plan for the whole process.

There is no clarity on the association between information systems investment and financial performance of organizations. Contrary to this, companies have maintained a huge budgetary allocation on ISs. Still, dissatisfaction expressed by general managers in measuring the value of IS to their organizations is glaring. If managers have been rational in such investments, it is possible that research may not have captured the true benefits that companies derive from IS (Mitra et al., 2010).

Most benefits are difficult to predict and have proved elusive in many cases because they are future oriented and difficult to quantify. The benefits should not be aimed at cost cutting rather at the more intangible companywide benefits. The process by which the system design reduces operating costs is not well understood (Maier, 2007).

2.4 Training as a critical success factor on the implementation of projects

A study done showed how the employees of an Indian hotel behaved towards their guests. It sort to find out how these employees viewed training, training opportunities and the impact these trainings has on guest service. This training included the proficiency of the employees in using the point of sale systems to serve guests quickly and effectively. The result was that there is an association between how training is perceived, the benefits that come from it and the effect training has on the general quality of services offered. A sample of about 490 employees was used to investigate if there was a relationship in responses by employees working in three star and four star hotels in Uttarakhand, India. The result was that there was an association between training and the services offered by hotel employees (Dhar, 2015).

In China, research was done to investigate how employees viewed the general direction that their career was taking. There were three methods of acquiring qualitative data from these employees. This was done by use of case studies, interviews and focus groups. Results showed that employees in China hotels view their career growth in four ways including the use of assessment tools, access to career development information, participation in professional training, and eligibility to promotions. Out of these four,training was regarded as most important (Kong, Cheung, & Zhang, 2010).

Research was undertaken in South Korean hotels with the purpose of investigating the role of soft skills for and the willingness of hotel employees to improve them. It showed how these skills directly and indirectly affect their ability and knowledge of (or lack of it) to effectively work with information systems. Random sampling was done using a population constituting of South Korea hotel employees and data was analyzed. The analysis revealed that younger hotel employees regarded need for soft skills higher that their older counterparts. Results showed that trained personnel on the use of information systems were more likely to use them more efficiently (Kim, Erdem, Byun, & Jeong, 2011).

2.5 Theoretical Framework of the study

Information systems do not have a well outlined theoretical framework (Cheon, Grover, & Teng, 1995), this is in spite of a lot of research being undertaken to identify the CSFs that ensure the success of IS implementation (Delone & Mclean, 1992). Since this study is about the assessment of factors critical to the success of the implementation of ISs, the most coherent theoretical framework best suited for this study is the The DeLone and McLean Model of Information Systems Success. This model focuses on how effective an IS is and the value addition it has on small and medium-sized businesses (Hellstén & Markova, 2006).

2.5.1 The DeLone and McLean Model of Information Systems Success

Information quality refers to the effectiveness and accuracy of information information that the system can store and send for use by end users. It effect is felt by both the user of the system and the user's intentions to use the system. System quality indirectly affects how the system can the reception of the user to accepting that the system is effective in its delivery. Information Systems effectiveness are measured according to the quality of service that they can deliver. This further affects how the user intends to use the system and how satisfied they are while using the IS. There are three aspects of influence when it comes to systems. These are information, system, and service quality. System use influences a user's satisfaction with the information system. User satisfaction simply means that the end user can confidently say that they are comfortable in the use of the information system at hand.

DeLone and McLean Model considered the following characteristics that showed success of implementation of ISs. There were Information Quality, System Quality, Use, User Satisfaction, Individual Impact, and Organizational Impact (Hellstén & Markova, 2006). These six characteristics are coupled into three main levels namely the semantic level, the technical level and the effectiveness or influence level (Hellstén & Markova, 2006).

Regarding top management support, this is the equivalent of the semantic level in the DeLone and McLean model as it depends on the strategic word from a person in authority which will determine the direction that the set up (in this case organizational setup) will take.(Madanayake, 2014) Sematic level is therefore only for the decision makers of the organization (Sharma & Yetton, 2011).

Regarding system design, this is equivalent to the technical level of the DeLone and McLean model and all technical aspects are considered here. The easier and understandable a system is to the end user in terms of design, the faster it will be for the user to find it effective and useful. Some of the system qualities that are considered for the effective implementation of information systems are the ease of use of the system, ease of learning, convenience of access and data or system accuracy. Other system qualities to be considered are realization of user requirements and usefulness of the system features and functions (Hellstén & Markova, 2006).

Regarding training, this is the equivalent to the effectiveness and influence level as it impacts on how the information system influences on the end user and this is largely through training sessions held with the aim of ensuring that all end users are comfortable using the system.

2.6 The conceptual framework

This simply shows how independent variables associate with the dependent variables. The study focused on the following independent variables; Management support, system design and training whereas the dependent variable was the implementation of Micros Simphony 1 at Villarosa Kempinski.

The conceptual framework has three independent variables and one dependent variable. The independent variables identified for the study were: Management support, system design and training. The implementation of Micros Simphony 1 at Villarosa Kempinski which is the dependent variable was assessed on whether the project is completed within the set time and within the specified specification of the projects. The ability of the project to be termed as successful is also linked on the budgetary allocation (extraneous variable).

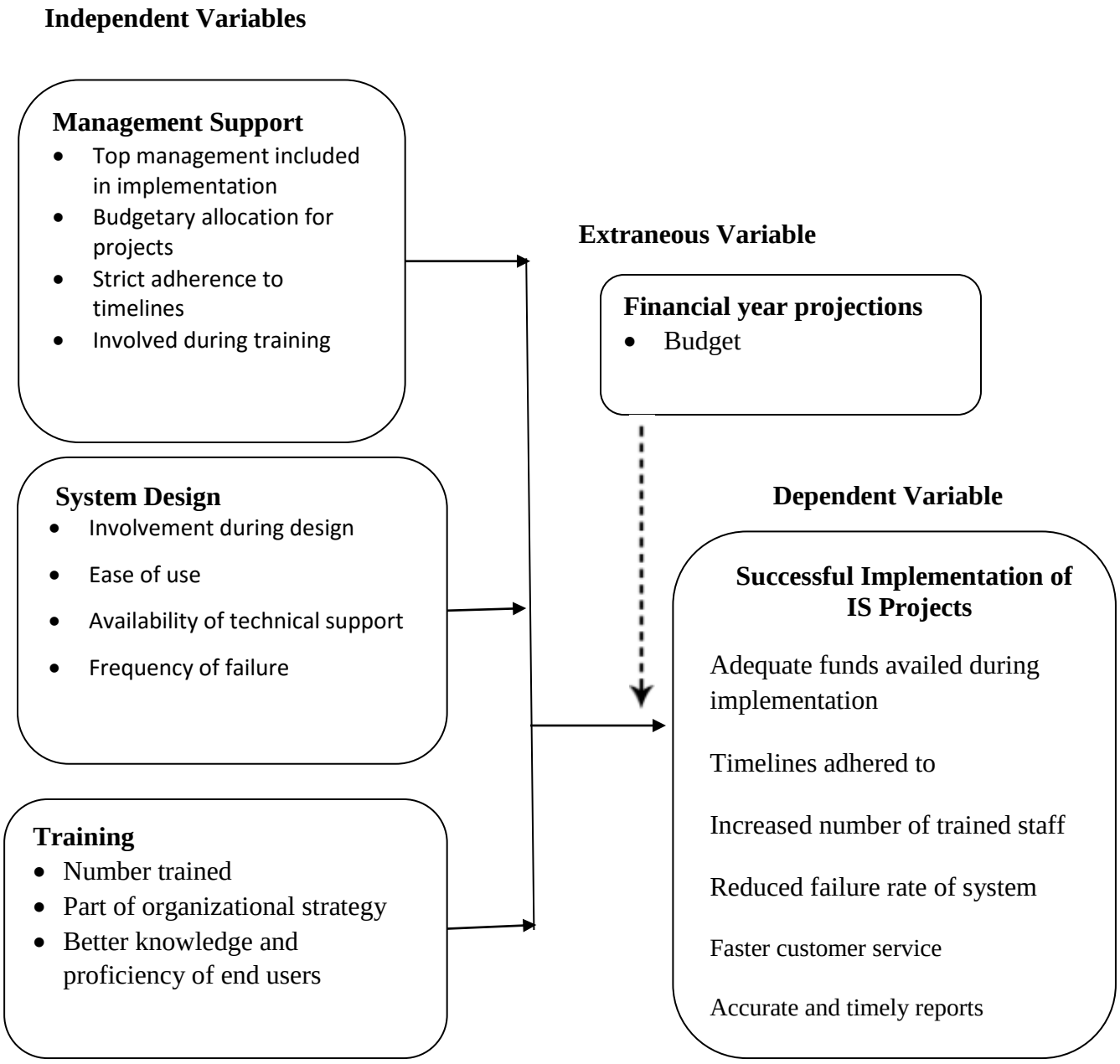

Figure 1 Conceptual framework of the influence of critical success factors on implementation of projects

2.7 Gaps in literature reviewed

The gaps in literature is as illustrated in Table 2.1

Table 2.1 Gaps in literature reviewed

VARIABLE	AUTHOR(S)	KEY FINDINGS	KNOWLEDGE GAP
Management Support	Dong, Neufeld, & Higgins, 2009	Literature focused on management support concept.	Management factors important for success such as budgetary allocation, taking part in training, strict adherence to timelines can be further researched on as additional information to the management support concept.
System Design	Mitra et al., 2010	The relationship between financial investment of ISs and their performance has been a factor that has continuously been challenged over time.	The relationship between IS investment and financial performance was considered as part of the indicators on the dependent variable
Training	Kim, Erdem, Byun, & Jeong, 2011)	Research was done on the need for soft skills for hotel employees. The research indicated that the findings were practical for hotel managers and trainers, because they can focus on external rewards instead of internal rewards to motivate employees to use information systems	The focus for this study was limited to hotel managers and trainers only. There are other stake holders that can be included hence the need for further research.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

Research methodology outlines the overall technique employed in undertaking the research for the study. This includes the research design, target population, sample size and sampling procedure, research instruments, pilot study validity of instruments, reliability of instruments, data collection procedure and data analysis used.

3.2 Research Design

This is a descriptive survey examining the critical success factors influencing the implementation of information systems: a case of the implementation of Micros Simphony-1 project at Villarosa Kempinski, Nairobi. Descriptive survey was found effective in recording information about peoples' qualitative information. The descriptive survey was used to establish association between variables at a given point in time without attempting to change their behavior or conditions. This method was preferred because it is aimed at casting light on actual critical success factors influencing the implementation of information systems. This was done through the process of data collection that enabled one to describe the situation more completely than would have been possible if this method was not employed (Jonassen, 2004). The most popular instruments used in a descriptive study like this one are interviews, questionnaires and observations. In our case, we invoked questionnaires as the instrument used for data collection (Harris, 1991).

3.3 Target Population

The population targeted for this study was 83 participants who were the users of Micros Symphony 1 implementation project. This comprised of the Systems Manager and the team derived from the Information Technology team, Cost Controllers, Finance, Food and Beverage, System auditors, Spa and recreation team as well as the housekeeping staff.

3.4 Sample size and Sampling Procedure

A sample is a representation of a set of data picked from given population whereas a sampling procedure on the other hand is the method used to select individuals who will constitute of the sample (Singh & Masuku, 2014).

3.4.1 Sample Size

A list of Micros Simphony 1 users in their respective departments was drawn and they totaled to 83. The sample was obtained by use of the formula by Krejcie & Morgan (Krejcie & Morgan, 1970) as shown below. Thus, a sample size of 76 respondents was picked using simple stratified random sampling techniques. This technique is deemed appropriate for use as it will allow for all participants to be represented without bias.

A table attached on appendix III shows the population and corresponding sample sizes.

$$S = \frac{X^2 NP\,(1-P)}{d^2\,(N-1) + X^2 P\,(1-P)}$$

Where:

S = Required Sample size

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

N = Population Size

P = Population proportion (expressed as decimal) (assumed to be 0.5 (50%)

d = Degree of accuracy (5%), expressed as a proportion (.05); It is margin of error

3.4.2 Sampling frame

The sampling frame of study participants is as shown in Table 3.1.

Table 3.1 Sampling frame

Department/Personnel	Target Population	Sample size
Systems Manager	1	1
Spa and Recreation	3	3
Information Technology	5	5
Cost Controller	2	2
Finance	10	10
Food and Beverage	54	47
System auditors	5	5
Housekeepers	3	3
Total	83	76

3.4.3 Sampling procedure

The study adopted stratified random sampling to ensure participants are which allowed for a proportional representation based on the size of the population. Simple random sampling was used in identifying employees to fill the questionnaires. This technique allowed the researcher to use cases that have the required information with respect to the objectives of the study (Mugenda, 2003).

3.5 Research Instruments

The data for this study was collected using a questionnaire. This is because questionnaires are affordable to administer and easily understood by the participants that the questionnaires are administered to. Questionnaires allow anonymity to respondents and therefore promote ethical considerations (Brislin, 1986). The questionnaire contained closed ended and Likert scale questions. Questionnaires were issued to the employees of the Villarosa Kempinski who were directly involved in the implementation of Micros Simphony-1.

3.5.1 Pilot testing

The pilot study involved 10% of the target population (about 8 participants) from Villarosa Kempinski in Nairobi was selected to test the reliability of the research instrument. Cronbach's Alpha technique was used to do the reliability test and check for the internal consistency of the questionnaires. Gliem and Gliem (2003) authoritatively stated that the Alpha value threshold at 0.7 was efficient thus forming the benchmark for the study.

3.6 Validity of Research Instruments

According to Amin (2005), "rresearch instrument is valid if it measures what it is supposed to measure and when the data collected through it accurately represents the respondents' opinion". Here, content validity was used and ascertained by seeking the opinion of professionals such as the supervisor and lecturers in the department.

3.7 Reliability of Research Instruments

To enhance reliability of instruments, a pilot study was done by administering questionnaires randomly to selected respondents at Villarosa Kempinski. The data collected from the pilot study was then analyzed using the test retest reliability. Out of the eight participants that this reliability test was undertaken, a score of 0.8 was found thus proving that the research instrument was reliable (Marx, Menezes, Horovitz, Jones, & Warren, 2003). This aided the researcher in clearing any ambiguities and ensuring that the questions posed measured what is intended.

3.8 Data Collection procedure

The researcher obtained an introduction letter from the University of Nairobi (Appendix II) for data collection. With this the researcher visited the study site for data collection. The data was collected using a self-administered questionnaire that was issued to the respondents by the researcher.

3.9 Data Analysis Techniques

The filled questionnaires were reviewed for to confirm that there was no inconsistencies of any kind. Descriptive statistics was used to analyze the quantitative data (particularly the frequency distribution tables) and inferential statics (particularly Chi square) was used to determine the association between variables. Analysis was done using IBM statistical program for social sciences (SPSS) The results were presented in tables for ease of interpretation.

3.10 Ethical Considerations

The respondents were informed of the reason why the study was being undertaken and assured that the information given would be treated with respect and in confidence. We sought permission from all the participants before commencing with the questionnaire distribution. Confidential information was only accessed by the researcher. Names on participants were deliberately not included in the questionnaire.

3.11 Operationalization of variables

Table 3.2 details the objectives and the operational definition of the variables.

Table 3.2 Operationalization of variables

Objectives	**Variable**	**Indicators**	**Measurement**	**scale**	**Data collection methods**	**Type of data Analysis**
To determine the influence of Management support on the implementation of Micros Symphony 1 Information System project at Villa Rosa Kempinski, Nairobi.	Independent variable Management Support	Performance Trained Workforce Internal Controls	Frequency Percentage	Ordinal Nominal	Questionnaires	Quantitative
To establish the influence of system design on the implementation of Micros Symphony 1 Information System project at Villa Rosa Kempinski, Nairobi.	Independent variable System Design	Resources Operation Costs Time	Frequency Percentage	Ordinal Nominal	Questionnaires	Quantitative
To determine the influence of training on the implementation of Micros Symphony 1 Information System project at Villarosa Kempinski, Nairobi.	Independent variable Training	Assessments Stakeholders attendance	Frequency Percentage	Ordinal Nominal	Questionnaires	Quantitative
	Dependent variable					
	Implementation of information systems	Time Scope	Frequency Percentage	Ordinal Nominal	Questionnaires	Quantitative

CHAPTER FOUR

DATA ANALYSIS, PRESENTATIONS, AND INTERPRETATIONS

4.1 Introduction

This chapter presents the results per the objectives that were under study. It includes a descriptive and inferential analysis of the study participants and the study variables.

4.2 Questionnaire return rate

Questionnaires were randomly administered to the 76 participants. The questionnaire response rate indicated the rate of response as per the administration of the questionnaire per department as shown in Table 4.1.

Table 4.1 Questionnaire Response Rate

	Number Administered	**Number Responded**	**Percentage (%)**
Systems Manager	1	1	100
Spa and Recreation	3	2	67
Information Technology	5	5	100
Cost Controller	2	1	50
Finance	10	8	80
Food and Beverage	47	34	72
System Auditors	5	5	100
House keepers	3	1	33
TOTALS	**76**	**57**	**75**

This study had a sample size of 76 with 57 responses obtained which represents a 75% response rate. As Sivo, Saunders, Chang and Juang (2006) intimate, this was a good response rate for the study as any rate that is more than half (60%) is adequate for analysis as per Babbie (1990).

4.3 Demographic characteristics of the respondents

The study sought to determine the respondents' gender, age and level of education. This constituted their demographic characteristics.

4.3.1 Gender distribution of the respondents

Gender distribution among the 57 respondents is as shown in Table 4.2

Table 4.2 Distribution of respondents by gender

Characteristics	Frequency	Percentage
Gender		
Male	18	31.6
Female	39	68.4
Total	**57**	**100**

Majority of respondents were female 39 (68.4%). Males constituted 31.6% of the respondents. This shows good representation of both genders hence no gender discrimination.

4.3.2 Age distribution of the respondents

The age categories of the respondents were distributed as shown in Table 4.3

Table 4.3 Distribution of respondents by age

Age	Frequency	Percentage
Below 30	34	59.6
30 – 34	10	17.5
35 – 39	9	15.8
45 and above	4	7
Total	**57**	**100**

Majority of the respondents were below 30 years of age. About 17.5% of them were between 30-34 years, while only 7% of the respondents were above 45 years. This shows that the youth constitute the bulk of the staff using Micros Simphony-1 at Villarosa and only a minority are above the age of 45.

4.3.3 Level of education demographics of the respondents

Level of education of the respondents ranged from Secondary education to Masters' degree level as shown in Table 4.4

Table 4.4 Distribution of respondents by level of education

Level of Education	Frequency	Percentage
KCSE	11	19.3
Diploma	28	49.1
Undergraduate	15	26.3
Masters	3	5.3
PHD	0	0
Total	**57**	**100**

About 20% of respondents had a KCSE certification while almost half of the participants (49.1%) had a diploma as their level of education. 26.3% hold an undergraduate degree and only 5.3% have a master's degree. the study respondents were well educated with a majority having least a diploma degree or higher. This is important because to efficiently use a system one requires a good knowledge base. However, notably, none of the respondents hold a PHD.

4.4 Work experience with the Micros Symphony 1 at Villarosa Kempinski

The duration of time that the respondents have been using Micros Simphony 1 at Villarosa Kempinski is presented in Table 4.5

Table 4.5 Respondents' work experience with the Micros Symphony 1

Duration of time	Frequency	Percentage (%)
Less than 6 months	10	17.5
1 - 2 years	18	31.6
2 – 3 years	28	49.1
Over 3 years	1	1.8
Totals	**57**	**100**

About half of the respondents have worked with Micros Symphony-1 for 2 to 3 years and while more than 30% have at least one year experience. This shows that majority of the respondents have a good knowledge on the Micros Simphony 1 system. Of note, however, is that only a small

percentage (2%) of them have more than 3 years of experience with the Information System. This is possibly because the hotel is still new as it has been operational for four years only.

4.5 Departmental representation of respondents

The study sought to establish the departments the respondents worked in and is as presented in Table 4.6.

Table 4.6 Distribution of respondents by department

Department	Frequency
Systems Management	1
Spa and Recreation	2
Information Technology	5
Cost Control	1
Finance	7
Food and Beverage	38
System auditors	1
Housekeeping	2

The study had a good representation from all the Micros Simphony-1 user departments with majority of the respondents coming from the food and beverage department (38), followed by Finance department (7) and IT department (5).

4.6 Success of the implementation of Micros Simphony 1

The success of the implementation of Micros Simphony 1 was rated by the respondents and is presented in Table 4.7.

Table 4.7 Successful implementation of Micros Simphony 1

Successful implementation	Frequency	Percentage (%)
Strongly agree	21	36.8
Agree	19	35.1
Neither agree nor disagree	11	17.5
Disagree	5	8.8
Strongly Disagree	1	1.8
Totals	**57**	**100**

About 36% of the respondents strongly agreed that the implementation of Micros Symphony 1 at Villarosa Kempinski was a success while only 1.8% of the respondents strongly disagreed to this.

4.7 Management Support as a critical success factor on the implementation of information systems

Respondents were asked to give their views on management factors affecting the successful implementation of Micros Simphony 1 and the findings are illustrated in Table 4.8

Table 4.8 Respondents view on the influence of management support factors on implementation of Micros Simphony 1

Factors	Strongly Disagree		Disagree		Not sure		Agree		Strongly agree		Total	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Greater top management support for information systems results in better design	12	21.05	11	19.3	2	3.51	12	21.05	20	35.09	**57**	**100**
At least one member of top management should take part in the implementation process to ensure that scope is maintained	5	8.77	13	22.81	3	5.26	15	26.32	21	36.84	**57**	**100**
Level of seriousness during training sessions of Micros Symphony 1 is higher if a top manager is involved	24	42.11	5	8.77	1	1.75	10	17.54	17	29.82	**57**	**100**
Budgetary allocation for Information Systems is given top priority by management	31	54.39	11	19.3	0	0	6	10.53	9	15.79	**57**	**100**
Timelines for the implementation of Information Systems are strictly followed up by top management	22	38.6	6	10.53	10	17.54	9	15.79	10	17.54	**57**	**100**
I am generally satisfied with the level of management involvement and support in the implementation of Micros Symphony 1 at Villarosa Kempinski	9	15.79	11	19.3	7	12.28	10	17.54	20	35.09	**57**	**100**

This variable aimed to establish how management support influences the implementation of information systems. Over 35% of the respondents strongly agreed that top management support for information systems result in better design. 36.84% were of the strong opinion that at least one member of top management should take part in the implementation process to ensure that scope is maintained. Meanwhile, more than half of the respondents (54.39%) strongly disagreed with the statement that budgetary allocation for information systems are strictly followed up by

top management. 38.6% of the respondents strongly disagreed that timelines for the implementation of information systems are strictly followed up by top management. Out of all the respondents, 20 of them (35.09%) were generally satisfied with the level of management involvement and support in the implementation of Micros Symphony 1 at Villarosa Kempinski. Although the relationship between management and successful implementation of Information Systems is complex, top management's support critically affects the level of seriousness by which users take an information system with (Sharma & Yetton, 2003).

4.8 Systems Design as a critical success factor on the implementation of information systems

Cutts (2013) and Ndulu (2004) suggest that system design is critical for the success of the implementation of any information system. Participation during the life development life cycle of a system is a key determinant of accuracy in system design of an information system.

4.8.1 Respondents participation in the system design process

Respondents were asked to indicate the level of participation during the system design process in the implementation of Micros Symphony 1 and the finding is as shown in Table 4.9.

Table 4.9 Respondents participation in the system design process

Stage of participation	Frequency	Percentage (%)
Analysis stage	6	10.5
Design stage	14	24.6
Testing stage	41	71.9
Implementation stage	48	84.2
Non-participation	9	15.8

About 10% (6) of the respondents were involved in the analysis stage of system design. 24.6% (14 participants) were involved in the design stage. Testing stage was highly participated by about 72% (41 participants) of the respondents. The implementation stage (84%) had the highest number of participants. This shows a good participation level in system design.

4.8.2 The influence of system design participation

The study sought to find out the degree to which participation in the system design process influences successful implementation of Micros Simphony 1 and the respondents' views are shown in Table 4.10.

Table 4.10 Respondents' view on the influence of system design participation on successful implementation

System design factors	5	4	3	2	1	
	Very Low	Low	Moderately high	High	Very high	TOTALS
Analysis stage participation	0	2	1	3	51	**57**
	0%	**3.5%**	**1.8%**	**5.3%**	**89.5%**	**100%**
Design stage participation	0	1	5	11	40	**57**
	0%	**1.8%**	**8.8%**	**19.3%**	**70.2%**	**100%**
Testing stage participation	9	5	0	25	18	**57**
	15.8%	**8.8%**	**0%**	**43.9%**	**31.6%**	**100%**
Implementation stage participation	4	8	12	12	21	**57**
	7%	**14%**	**21.1%**	**21.1%**	**36.8%**	**100%**
Non-participation	31	24	2	0	0	**57**
	54.4%	**42.1%**	**3.5%**	**0%**	**0%**	**100%**

About 90% of the participants feel like the participation of users during the analysis stage has a very high influence in the successful implementation of Micros Symphony 1 in Villarosa Kempinski, whereas 70% of the respondents said that the participation of users during the design stage has a very high influence in the successful implementation of Micros Symphony 1 in Villarosa Kempinski. About 44% of the respondents said that the participation of users during the testing stage has a high influence in the successful implementation of Micros Symphony 1 in Villarosa Kempinski. Over 36% of the respondents said that the participation of users during the implementation stage has a very high influence in the successful implementation of Micros Symphony 1 in Villarosa Kempinski. More than half of the respondents (54.4%) showed that

non-participation of users has very low influence in the successful participation of users during the implementation of Micros Symphony 1 in Villarosa Kempinski.

4.8.3 Ease of Use of Micros Simphony 1 system

A well-designed system should be user friendly to ensure it efficiently serves its purpose. The respondents were asked to indicate how easy the Micros Simphony system is to use and the responses are as shown in Table 4.11.

Table 4.11 Ease of Use of Micros Simphony 1 system

Very easy	Easy	Not sure	Hard	Very hard	**TOTALS**
13	28	3	9	4	**57**
22.8%	49.1%	5.3%	15.8%	7%	**100%**

About half of the respondents (49.1%) hold the view that it is easy to use Micros Simphony 1. Over 22% of the respondents felt that Micros Symphony 1 was very easy to use whereas 7% of the respondents said that the system was very hard to use.

4.8.4 Frequency of failure of the Micros Simphony 1 system

The study sought to determine the frequency of failure of Micros Simphony 1 information system and is presented in Table 4.12

Table 4.12 Frequency of failure of Micros Symphony 1 system

Very often	Often	Not sure	Rarely	Never	**TOTALS**
6	11	3	33	4	**57**
10.5%	19.3%	5.3%	57.9%	7%	**100%**

About 58% of the respondents said that Micros Symphony 1 rarely fails whereas 7% of the respondents said that the system never fails. However, 10.5% of the respondents said that the system fails very often. This is critical in the efficiency of the system and where the failure frequency is high, the design of the system should be considered and any other factors affecting it.

4.8.5 Availability of technical support for Micros Symphony 1 system

The availability of technical support for Micros Symphony 1 information system as rated by the respondents is shown in Table 4.13.

Table 4.13 Availability of technical support for Micros Symphony 1 system when required

Strongly agree	Agree	Not sure	Disagree	Strongly disagree	**TOTALS**
13	17	7	11	9	**57**
22.8%	29.8%	12.3%	19.3%	15.8%	**100%**

About 23% of the respondents strongly agreed that technical support for Micros Simphony 1 is readily available whenever required. On the contrary, about 16% strongly disagreed on their availability. This is important because if a system has any problems, technical support should be readily available to sort out the issue to avoid long lapses of the system.

4.9 Training as a critical success factor on the implementation of projects

Dhar (2015) says that the level of the quality of services offered by employees in tourist hotels is greatly impacted by the kind of training they receive. According to Kong, Cheung, & Zhang (2010), the importance of soft skills for hotel employees and their willingness to improve their soft skills has s direct impact on how well an information system operates.

4.9.1 Level of involvement in the use of Micros Simphony 1

Respondents indicated their level of involvement in the use of Micros Simphony 1 as shown in Table 4.14

Table 4.14 Level of involvement in the use of Micros Simphony 1

Not involved	Least involved	Slightly involved	Involved	Completely involved	**TOTALS**
0	1	4	13	39	**57**
0%	1.8%	7%	22.8%	68.4%	**100%**

About 70% of the respondents were completely involved in the use of the system. Only a small proportion (1.8%) were least involved.

4.9.2 Training on the use of Micros Symphony 1

The study sought to determine the number of respondents who have been trained on the use of Micros Symphony 1 Information System in Villarosa Kempinski. This is presented in Table 4.15.

Table 4.15 Training on the use of Micros Symphony 1

Trained on the use of Micros Symphony 1	Frequency	Percentage (%)
Yes	51	89.5
No	6	10.5

Majority of the respondents (89.5%) have been trained in the use of Micros Simphony 1 while only a few (10.5%) have not, showing a small training gap in the use of this system.

4.9.3 Influence of training on successful implementation of Micros Simphony 1

The training factors and their level of influence on the implementation of Micros Symphony 1 in Villarosa Kempinski are presented in Table 4.16.

Table 4.16 Influence of training on Micros Simphony 1 implementation

System design factors	5 Very Low	4 Low	3 Mod high	2 High	1 Very high	TOTALS
Training would further enhance the users' level of knowledge and proficiency	0 **0%**	0 **0%**	3 **5.3%**	3 **5.3%**	51 **89.5%**	**57** 100%
Adequate training may assist the organization to build a positive attitude towards the system	2 **3.5%**	1 **1.8%**	5 **8.8%**	17 **29.8%**	32 **56.1%**	**57** 100%
Refresher trainings should be conducted every quarter to ensure consistency of knowledge by system users	5 **8.8%**	7 **12.3%**	1 **1.8%**	20 **35.1%**	24 **42.1%**	**57** 100%
A training plan should be part of organizational strategy	4 **7%**	8 **14%**	10 **17.5%**	12 **21.1%**	23 **40.4%**	**57** 100%

When asked if training would further enhance the users level of knowledge and proficiency, 89.5% (51 participants) of the respondents acknowledged that it would. On the other hand, 56.1% (32 participants) of the respondents said that adequate training may assist the organization to build a positive attitude towards the system. About 42% (24 participants) of the respondents feel that refresher trainings should be conducted every quarter to ensure consistency of knowledge by system users and 40.4% (23 participants) of the respondents said that training plan should be part of organizational strategy.

4.10 Factors associated with implementation success of Micros Simphony-1 at Villarosa Kempinski

Chi-square test was used to determine the significance of association between management support, system design and training factors and the success of the implementation of Micros Simphony 1. The test measured whether the null hypothesis that there is no association between respondents' responses on the critical success factors and the implementation success was true.

4.10.1 Influence of management support on the success of implementation of Micros Symphony 1

Chi-square test was used to determine the association between top management support and the success of implementation of Micros Simphony 1 as shown in Table 4.17

Table 4.17 Association between top management support and the success of implementation of Micros Simphony 1

Management factors	Pearson Square	Chi df	p-value
Greater top management support for information systems results in better design	24.71	16	<0.001
At least one member of top management should take part in the implementation process to ensure that scope is maintained	26.38	16	0.010
Level of seriousness during training sessions of Micros Symphony 1 is higher if a top manager is involved	5.23	16	0.543
Budgetary allocation for Information Systems is given top priority by management	18.58	16	<0.001
Timelines for the implementation of Information Systems are strictly followed up by top management	38.36	16	0.063
I am generally satisfied with the level of management involvement and support in the implementation.	32.98	16	0.006

Table 4.17 shows that all the management factors except "level of seriousness during training sessions" and "Timelines for the implementation of Information Systems are strictly followed up by top management" were significantly associated with implementation success ($p< 0.05$).

4.10.2 Influence of system design participation on the success of implementation of Micros Symphony 1

Chi-square test was used to determine the significance of association between system design participation and the success of implementation of Micros Simphony 1. This is presented in Table 4.18

Table 4.18 Association between system design factors and the success of implementation of Micros Simphony 1

	Pearson Square	Chi df	p-value
Analysis stage participation	43.15	16	0.043
Design stage participation	26.76	16	0.030
Testing stage participation	33.47	16	0.038
Implementation stage participation	29.03	16	<0.001
Non-participation	12.71	16	0.065
Ease of use of system	30.23	16	0.023

All the p-values for system design process were less than 0.05 indicating that there was a significant association between system design process and the implementation success.

4.10.3 Influence of training on the success of implementation of Micros Symphony 1

Chi-square test was used to determine the significance of association between training and the success of implementation of Micros Simphony 1 as shown in Table 4.19.

Table 4.19 Association between training and the success of implementation of Micros Simphony 1

Training factors	Pearson Square	Chi df	p-value
Have you been trained or not	31.23	16	0.001
Training would further enhance the users' level of knowledge and proficiency	40.56	16	0.042
Adequate training may assist the organization to build positive feelings towards the system	19.45	16	0.051
Refresher training should be conducted every quarter to ensure consistency of knowledge system users	26.98	16	0.033
A training plan should be part of the organizational strategy	28.22	16	<0.001

As shown in Table 4.19 there was a statistically significant association between all the aspects of training and the implementation success ($p<0.05$).

CHAPTER FIVE

SUMMARY OF FINDINGS, DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

The overall purpose of this study was to investigate critical success factors influencing the implementation of information systems. The study was guided by three objectives including to investigate management support as a critical success factor on the implementation of information systems; to investigate systems design as a critical success factor on the implementation of information and to investigate training as a critical success factor on the implementation of projects.

5.2 Summary of findings

The objectives of this study were to determine the influence of Management support on the implementation, to establish the influence of system design and to determine the influence of training on the implementation of information systems. The key findings are summarized below.

5.2.1 Management Support.

The study revealed that top management support for information systems result in better design and that at least one member of top management should take part in the implementation process to ensure that scope is maintained. However, there is the need for budgetary allocation for information systems to be strictly followed up by top management since this was found to be missing. Timeliness of project implementation and level of seriousness during training as a function of management did not significantly influenced implementation success.

5.2.2 System design

Majority of the respondents participated in the system design process. Almost all the participants felt like the participation of users during the analysis stage has a very high influence in successful implementation of information systems. Similar views were aired for the design, testing and implementation stages. It was also notable that half of the respondents indicated that if users do not participate in the system design process then the implementation is likely to fail.

5.2.3 Training

Results showed that all the aspects of training indeed have influence on the success of the implementation of information systems ($p<0.05$). Majority of the respondents agreed that training would further enhance the users' level of knowledge and proficiency. They also agreed that adequate training may assist the organization to build a positive attitude towards the system and that refresher trainings should be conducted every quarter to ensure consistency of knowledge by system users. Results further showed that training plan should be part of organizational strategy.

5.3 Discussion of the study

Management support was measured by several factors as follows; greater top management support for information systems results in better design; at least one member of top management should take part in the implementation process to ensure that scope is maintained; level of seriousness during training sessions of Micros Symphony 1 is higher if a top manager is involved; budgetary allocation for Information Systems is given top priority by management; timelines for the implementation of Information Systems are strictly followed up by top management; satisfaction with the level of management involvement and support in the implementation of Micros Symphony 1 at Villarosa Kempinski.

All the management support factors had a significant effect except "level of seriousness during training sessions" and "timelines for the implementation of Information Systems are strictly followed up by top management". This was consistent with the findings of Kanyungi et al (2012), who reported the existence of a significant relationship between management support and the successful implementation of an Information System. Sharma & Yetton (2003) shared in the same view saying that there is a complex relationship and a strong interdependence between management support and implementation.

Influence of system design was measured using participation in the analysis stage, design stage, testing stage and implementation stage as well as non-participation and ease of use of system. All the p-values for system design process were less than 0.05 indicating that there was significant association between system design process and the implementation success. This was consistent with the findings of Gichimu et al. (2004) whose finding was that system users must participate in the design process as a factor of success during implementation.

Training was measured by finding out if the respondents were trained or not, if training would further enhance the users' level of knowledge and proficiency, if adequate training would assist the organization to build positive feelings towards the system, if refresher training should be conducted every quarter to ensure consistency of knowledge system users and if a training plan should be part of the organizational strategy. There was a statistically significant association between all the aspects of training and the implementation success ($p<0.05$). This was consistent with the findings of Gakuru et al (2006) who reported that employees who are trained have better attitude towards the system. In addition, training increases ease of use and reduces user resistance, which, in turn, enhances the success of a system (Bradley, 2008). It is imperative therefore that training should be undertaken before and after implementation of a system to ensure efficiency throughout its use.

The major limitation in this study of investigating critical success factors influencing the implementation of information systems is that it only focused on Villarosa Kempinski. The findings may therefore not be generalized to other hotels. This study should be replicated in other hotels.

5.4 Conclusion of the study

The purpose of this study was to investigate the critical success factors influencing the implementation of information systems. The study found three key dominating factors. Top management support was found to be a key factor in the successful implementation of information system. Their involvement led to planned implementation to be taken seriously by stakeholders. System design calls for participation of all stakeholders since they contribute in ensuring efficiency and identification of all user requirements during implementation. Training as a critical factor ensures users become more proficient in the use of the system. This facilitates for accuracy of use and optimization of all system functions.

5.5 Recommendations of the study

From the findings and conclusion of the study, the following were the recommendations for policy action and for further studies.

5.5.1 Recommendation for policy action

The findings of this study have several important policy implications.

1. Top management must involve themselves as being an integral part of system implementation as this is considered as a critical factor in determining its success.
2. System design should be everybody's affair since the involvement in the design process plays a major role in the success of the implementation.
3. Training should be conducted more often to ensure continuity of knowledge proficiency.

5.5.2 Suggestions for further studies

Micros Simphony 1 system is now being phased out due to the introduction of Micros Simphony 2 which is currently under testing. This will bring need for further research which can be can be carried out to establish if the critical success factors will be the same or if more will be identified. More research should also be done on other critical success factors that were outside the scope of this study. Moreover, this study should be replicated in other hotels that have implemented Micros Simphony 1 to determine the critical success factors.

5.6 Contribution to the body of knowledge

The findings of this study have contributed in identifying critical factors for successful implementation of information systems in the hospitality industry. It provides information to potential and current scholars of project management in the implementation of Information Systems as used by Villa Rosa Kempinski in Nairobi. This will expand their knowledge on how information systems are implemented in the hotel industry and identify areas of further study.

All hospitality organizations will particularly find the study very useful since hotels like any other organization in both private and public sectors must observe those skills invoked by project managers which are fundamental for effective project implementation.

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APPENDIX I: RESEARCH QUESTIONNAIRE

The information provided will only be for this study. Read carefully and give appropriate answers by ticking or filling the blank spaces. The information will be treated as confidential.

SECTION A: GENERAL INFORMATION

1. What is your Gender (Tick appropriately)?

Male ( ) Female ( )

2. By use of a tick ( ), please indicate the age category that applies for you.

a) Below 30 years ( )
b) 30 – 34 years ( )
c) 35 – 39 years ( )
d) 40 – 44 years ( )
e) 45years and above ( )

3. What is your highest level of education?

- KCSE [ ]
- Diploma [ ]
- Undergraduate [ ]
- Masters [ ]
- PHD [ ]

4. For how long have you been working with the Micros Symphony-1 at Villa Rosa Kempinski

Less than 1 year ( ) 1 to 2 years ( ) 2 to 3 years ( )

Over 3 years ( )

5. Which department do you work for?

Project Manager ( ) Spa ( ) Food and Beverage ( ) Cost Control ( ) Housekeeping ( ) Systems Audit ( ) IT ( ) Finance ( )

6. The implementation of Micros Symphony 1 at Villarosa Kempinski was successful.

[1] Strongly agree [2] Agree [3] Neither agree nor disagree [4] Disagree [5] Strongly disagree

PART B: MANAGEMENT SUPPORT AS A CRITICAL SUCCESS FACTOR ON THE IMPLEMENTATION OF INFORMATION SYSTEMS

Do you agree with the below influences of management support as being a critical success factor in the implementation of Micros Simphony 1 at Villarosa Kempinski.

Using a scale 1-5, Please tick (✓) all as appropriate.

1. Strongly disagree **2.** Disagree **3**. Not sure **4.** Agree **5**. Strongly agree

Factors	**Strongly Disagree**	**Disagree**	**Not sure**	**Agree**	**Strongly agree**
Greater top management support for information systems results in better design					
At least one member of top management should take part in the implementation process to ensure that scope is maintained					
Level of seriousness during training sessions of Micros Symphony 1 is higher if a top manager is involved					
Budgetary allocation for Information Systems is given top priority by management					
Timelines for the implementation of Information Systems are strictly followed up by top management					
I am generally satisfied with the level of management involvement and support in the implementation of Micros Symphony 1 at Villarosa Kempinski					

SECTION C: SYSTEMS DESIGN AS A CRITICAL SUCCESS FACTOR ON THE IMPLEMENTATION OF INFORMATION SYSTEMS

7. a) Did you participate in the system design process of the implementation of micros Symphony-1 IS at Villarosa Kempinski

Yes [ ] No [ ]

b) If yes, at what stage was your participation required?

[1] Analysis stage [2] Design Stage [3] Testing Stage [4] Implementation Stage [5] I did not participate

8. To what extent has the following system design critical success factors influenced the implementation of micros Symphony-1 in Villarosa Kempinski? Using a scale 1-5, Please tick (✓) all as appropriate.

1. Very low extent. **2.** Low extent **3**. Moderately high extent **4.** .High extent.

5. Very high extent

Factors	Very Low	Low	Moderately high	High	Very high
Participation of users during the analysis stage					
Participation of users during the design stage					
Participation of users during the testing stage					
Participation of users during the implementation stage					
Non-participation of users					

9. On a scale of 1 to 5, how easy is it for you to effectively use Micros Symphony 1 Information System
[1] Very Easy [2] Easy [3] Not sure [4] Hard [5] Very Hard

10. How often does Micros Symphony 1 fail?

[1] Very often [2] Often [3] I do not know [4] Rarely [5] Never

11. Technical support for Micros Symphony is readily available whenever I need it

[1] Strongly agree [2] Agree [3] Not sure [4] Disagree [5] Strongly disagree

SECTION C: TRAINING AS A CRITICAL SUCCESS FACTOR ON THE IMPLEMENTATION OF PROJECTS

12. How actively involved are you in the use of Micros Symphony 1 at Villarosa Kempinski

[1] Not involved [2] Least involved [3] Slightly involved [4] Very involved [5] Completely involved

13. Have you been trained on the use of micros symphony-1 project at Villarosa Kempinski?

Yes [ ] No [ ]

15. What is the extent to which the following training critical success factors influence the implementation of micros symphony-1 at Villarosa Kempinski? Using a scale 1-5, Please tick (✓) all as appropriate.

1. Very low extent. **2.** Low extent **3**. Moderately high extent **4.** .High extent.

5. Very high extent

Factors Under Consideration	**5**	**4**	**3**	**2**	**1**
Training would further enhance the users' level of knowledge and proficiency					
Adequate training may assist the organization to build positive feelings towards the system					
Refresher training should be conducted every quarter to ensure consistency of knowledge system users					
A training plan should be part of the organizational strategy					

Thank you for participating

APPENDIX II: RESEARCH AUTHORIZATION LETTER

UNIVERSITY OF NAIROBI
COLLEGE OF EDUCATION AND EXTERNAL STUDIES
SCHOOL OF CONTINUING AND DISTANCE EDUCATION
DEPARTMENT OF EXTRA-MURAL STUDIES
NAIROBI EXTRA-MURAL CENTRE

Your Ref:

Our Ref:

Telephone: 318262 Ext. 120

Main Campus
Gandhi Wing, Ground Floor
P.O. Box 30197
N A I R O B I

4th November 2016

REF: UON/CEES//NEMC/24/366

TO WHOM IT MAY CONCERN

RE: LAWRENCE AGUFA: L50/78042/2015

This is to confirm that the above named is a student at the University of Nairobi, College of Education and External Studies, School of Continuing and Distance Education, Department of Extra- Mural Studies pursuing Master of Arts in Project Planning and Management.

He is proceeding for research entitled **"Critical success factors influencing the implementation of information systems"**: A case of the implementation of micros symphony -1 project at villa Rosa Kempinski, Nairobi

Any assistance given to him will be appreciated.

CAREN AWILLY
CENTRE ORGANIZER
NAIROBI EXTRA MURAL CENTRE

UNIVERSITY OF NAIROBI CEES
P.O. Box 30197
04 NOV 2016
NAIROBI
NAIROBI EXTRA MURAL CENTRE

APPENDIX III: KREJCIE & MORGAN TABLE

Table for Determining Sample Size of a Known Population

N	S	N	S	N	S	N	S	N	S
10	10	100	80	280	162	800	260	2800	338
15	14	110	86	290	165	850	265	3000	341
20	19	120	92	300	169	900	269	3500	346
25	24	130	97	320	175	950	274	4000	351
30	28	140	103	340	181	1000	278	4500	354
35	32	150	108	360	186	1100	285	5000	357
40	36	160	113	380	191	1200	291	6000	361
45	40	170	118	400	196	1300	297	7000	364
50	44	180	123	420	201	1400	302	8000	367
55	48	190	127	440	205	1500	306	9000	368
60	52	200	132	460	210	1600	310	10000	370
65	56	210	136	480	214	1700	313	15000	375
70	59	220	140	500	217	1800	317	20000	377
75	63	230	144	550	226	1900	320	30000	379
80	66	240	148	600	234	2000	322	40000	380
85	70	250	152	650	242	2200	327	50000	381
90	73	260	155	700	248	2400	331	75000	382
95	76	270	159	750	254	2600	335	1000000	384

Note: N is Population Size; S is Sample Size *Source: Krejcie & Morgan, 1970*