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VIRTUAL TOUR TOOL FOR ENHANCING DESTINATION MARKETING

BY

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DECLARATION

I declare that this research project report is my original work and has not been submitted for any

award in any other university.

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This research project report has been submitted in partial fulfillment of the requirement of the

degree of Master of Science in Computer Science with my approval as the University

Supervisor.

Signature: _____   Date: _____

        DR. ELISHA T. OPIYO OMULO

DEDICATION

I dedicate this project to my dear wife who has always supported me no matter what path I chose to take, whose support and reassurance through this process is a big reason why this project is completed, and to my little daughter who inspired me to provide a better life for her. I love you very much. You are a great blessing to me. Thank you for your love and support.

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ABSTRACT

Virtual tours are a great way of implementing destination marketing. Correctly used, they can increase revenue to a wide number of sectors including tourism, hospitality industry, learning, manufacturing, and security, among others. This potential has however remained unexploited. Our country Kenya continues to lose revenue due to sticking with old ways of marketing. This study therefore aims to research on the use of virtual tours to influence a tourist's decision-making on a destination. The researcher had three objectives, which were to develop a virtual tour interface tool, to deploy it and to measure the effect of using virtual tours on a tourist's decision-making when choosing a destination. The research developed a virtual tour interface tool for the purpose of enhancing the current interface provided by Krpano by adding on the interface interactive menus, hotspots such as different scenes, video, image and text; powerful plugins such as maps, an auto-tour feature, social media icons, audio, logo, booking buttons, among others. Further in the research, 360 panoramic photos were taken at Weston Hotel and the virtual tour was developed and put online. Users were presented with the virtual tours and plain photos/videos. An online survey was conducted and the results were carefully analysed by the researcher. The results of the research indicated the virtual tours had a greater influence on tourists compared to photos/videos largely due to their interractive nature. Finally, the study recommends further research on the use of virtual tours on fighting crime through crime scene investigation, learning through creation of tutorials and reducing the size of virtual tours.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF ABBREVIATIONS

360 – Three Hundred and Sixty

360VR – Three Sixty Virtual Reality

CRSs - Central Reservation Systems

GDSs - Global Distribution Systems

HTML – Hypext Mark-up Language

KWS - Kenya Wildlife Service

PEOU - Perceived ease-of-use

PU - Perceived Usefulness

RCT - Randomised Control Trials

SSM - Soft-Systems Methodology

TAM - Technology Acceptance Model

UI – User Interface

VI – Virtual Tour Interface

Vtour – Virtual Tour

CHAPTER ONE: BACKGROUND TO THE STUDY

Introduction

This chapter gives the background to the problem highlighting the opportunities in virtual tours, , statement of the problem, and purpose of the study. Research questions, research objectives, research outcomes, significance, assumption, limitations and definition of terms are provided in this chapter.

1.1 Background to the Problem

The world is fast becoming a global village. Everything is going digital. People have changed ways in which they make decisions. Technology is being used more and more everyday to make informed decisions. The virtual world plays a crucial role in this. Technology has gone a step further to make virtual technology "real" by showcasing places just the way they are.

Pine and Gilmore (1998) proposed the concept of an Experience Economy, suggesting that this evolution has influenced how business is conducted by focusing on customer experience. As Pine and Gilmore's (1998) article in the Harvard Business Review pointed out, "because consumers unquestionably desire experience, more and more businesses are responding by explicitly designing and promoting experience" (p.97).

The tourism industry as we all know has been a leading provider of experiences for customers. For example, the Walt Disney Corporation has created and staged epic events successfully at its operations. Similarly, the festival and event industry has staged experiences for their visitors for many years. Restaurants such as The Hard Rock Café and Chucky Cheese provide experiences

for their customer s as well as food and beverages. Responding to the shift toward an experience economy, and integrating technologies and new media, the tourism industry has developed a variety of new business tools and services that have facilitated global interraction between tourists and businesses (Buhalis and Law, 2008).

For example, the launch of the Central Reservation Systems (CRSs) and the Global Distribution Systems (GDSs) have dramatically changed and influenced how industry sectors such as transportation, accommodation, and marketing interact with their customers (Gretzel and Fesenmaier, 2009; Law, Qi and Buhalis, 2010). The travel industry has also used creative technological innovations and Internet technology to expand strategic relationships within the tourism value chain (Xiang, Wober and Fesenmaier, 2008; Gretzel and Fesenmaier, 2009).

As a result of the two technological changes that have impacted how sectors of the tourism industry operate and are managed and in order to enhance their competitive advantage in the global marketplace, tourism businesses need to develop innovative and effective ways in which tourists can experience the destination. Given the experiential nature of tourism products and services, Gretzel and Fesenmaier (2003) assert that destination marketers should use immersive virtual reality technology to integrate sensory experience into their communication strategies, utilizing experience-based internet marketing to support the tourist's information search and decision-making process.

As Cho, Wang and Fesenmaier (2003) indicate, "when tourists are seeking information about a travel destination what they want to know is not only about physical characteristics of the destination but also the experience of the destination" (p.4). Not only has the tourism supplier's

function been influenced by technology on the demand side but tourists themselves have also been impacted by advances in technology (Mills and Law, 2004).

Tourism consumers now search for travel information and book accommodations and transportation online (Morrison, Jing, O'Leary, Lipping, 2001). Gretzel and Fesenmaier (2009) argue "as individuals become more mobile and more reliant on network technology, they will increasingly demand systems that can support their lifestyle during trips and tourism systems have to become truly portable/wearable, wireless, global, integrated and smart indeed" (p.573).

Information technology provides customized information for travellers in various stages in the trip planning process. In the pre-trip planning stage of decision making, three tourists use the web to search for travel information that will assist them with decisions related to the possible destinations, transportation options and accommodations that they are considering as potential tourism suppliers for their trip. While tourists are on site experiencing the destination, they use social media and other non-print sources to keep informed. During the last phase of the travel experience, recollection, tourists use the web to post their travel stories and photographs, remember special moments and engage in word-of-mouth communication (Gretzel and Fesenmaier, 2009).

The use of internet technology, such as online travel communities, offers an opportunity for tourists to search for travel information, make connections with others, and make travel decisions more conveniently and cost-effectively (Arsal, Woosnam, Baldwin, and Backman, 2010). Arsal et al. (2010) have suggested that online travel communities have influenced tourists' travel

decision-making processes including such general travel related issues of accommodations and transportation.

Although tourism scholars have examined travel decisions in the context of web environments to determine whether the use of web communities is related to tourist intentions, this question has not yet been fully investigated by researchers who are primarily interested in virtual worlds. Virtual reality technology offers a variety of potential benefits for tourism marketers including creating informative and entertaining virtual settings, immersive and engaging virtual experiences, multi-media communication, and social interaction with others globally.

1.2 Problem Statement

Marketing is the heart of business. Many businesses, for example hotels want to showcase their premises and sell experience to their customers. Schools want to showcase their facilities and the great experience that they would like to share this experience to their potential tourists. Still photographs are a great way to do that, but have many limitations.

Limitations that come with still photos include: users are not able to move from one place to another by just looking at the screen without clicking one image after another; all images come in different files that have to be open individually; users are not able to walk and view an entire place; experience of a place cannot be passed on to users, for example a video showing the experience of a student; images are limited such that you cannot incorporate audio to them; users are unable to view an entire place (floor plan) that can be clicked where users can navigate from

one place to another; images have very limited interactivity in that you cannot incorporate interractive features like maps.

Tourism has suffered greatly, especially in Kenya due to low tourist turnout, amidst the never-ending acts of terrorism. Creative and innovative ways are needed to enhance tourism in Kenya. Tourists need to be enticed using low-cost technology that can reach large numbers of tourists, both locally and internationally.

1.3 Purpose of the Study

The purpose of this study is to establish if virtual tourism can be used to boost tourism in Kenya by developing an interractive software tool that will be used to develop panoramic three sixty virtual tours. The application developed will be tested by subjecting it to several tourists in order to measure its impact.

1.4 Proposed Solution

This project involves developing a simple but interactive application that allows tourists to interract with the application on an online portal using both desktop and mobile devices. Virtual tourism will be compared with normal videos and photos. Several tourists will have access to the portal and specific tourism/hotel sites will be used for the research. The impact of virtual tourism will be evaluated on the number of tourists that visited the online virtual tour or the tourist destination itself compared to other tourist destinations that just have photos or videos.
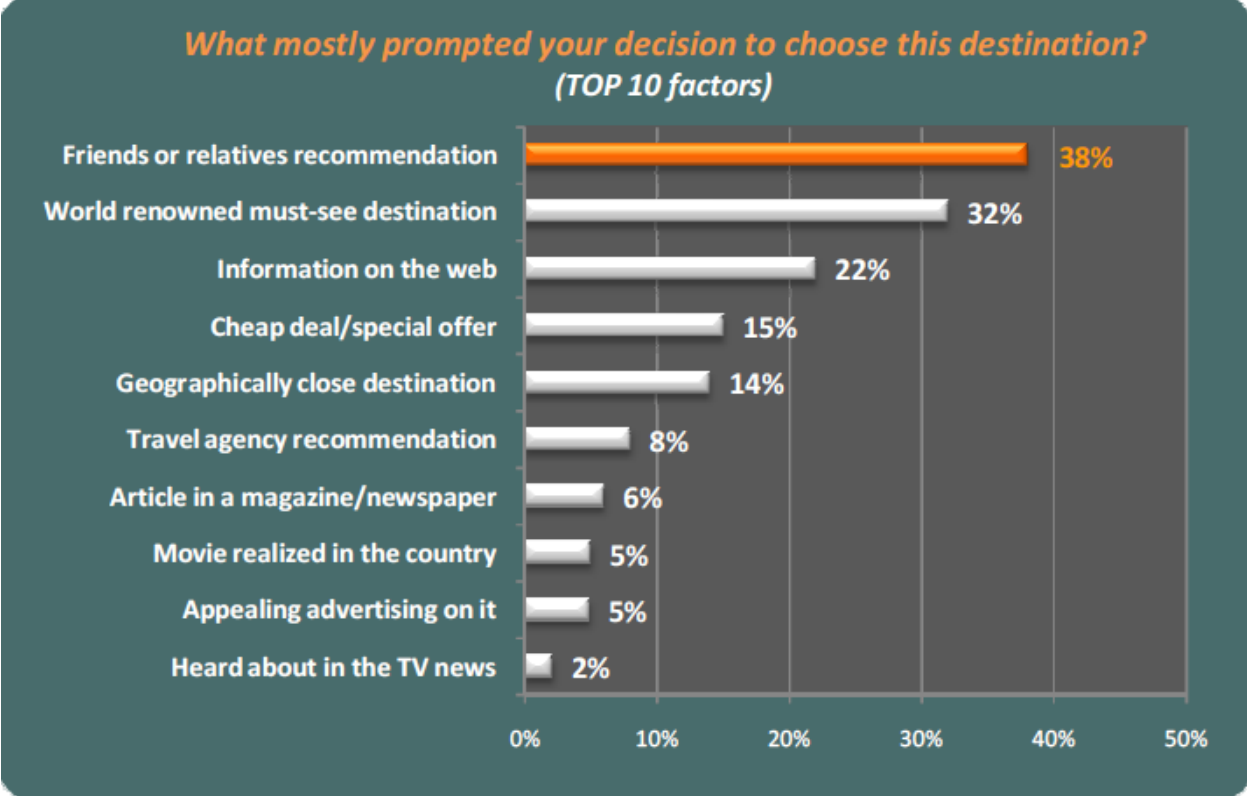
Figure 1.1: *How tourists make decisions when choosing a destination (Travelsat, 2011)*

1.5 Research Outcomes and their Significance to Key Audiences

This study will be useful to the following stakeholder groups: local and international tourists hotels, the general public, restaurants, camps, guest houses, serviced apartments, Kenya Wildlife Service (KWS), The Government of Kenya – Ministry of Tourism, County Governments, schools, universities, colleges, hospitals, real estate companies. The development of the software will make the tourists have an easy time and good visual information to make a decision about tourist destinations. To the software developers and the researchers, this study will form basis for advancement in this area and avenue for making economic advancement. It will also act, as

documentation for reference as it will yield new knowledge on what is known of virtual tourism while forming basis for other studies on the same area. To the Ministry of Tourism - Government of Kenya and Kenya Wildlife Service (KWS), the findings will aid in policy making, particularly on tourism. To real estate, the technology will help to develop a digital marketing platform for selling property online and promoting Kenya as an investment destination. To schools, universities and colleges, virtual tours will help to increase admissions.

If indeed virtual tours can be used to enhance tourism, then the Government of Kenya can be use this technology to boost its dwindling fortunes in tourism. Currently, the Government receives about **KES 100 billion** in revenue from tourism. This technology can help to double these revenues. If correctly used, the technology will help create jobs and improve the general livelihoods of the local communities in these tourist destinations.

1.6 Research Objectives

1. To design interractive software program/application that can be used by tourists to enable them make informed decisions about the places they would like to visit.
2. To deploy the software program that will be inform of an interractive application to several tourists who will interact with the application.
3. To evaluate the effect of virtual tours in decision-making when scouting for a hotel or tourist destination.

1.7 Assumptions of the study

In order to carry out his study, the following assumptions hold: a good number of both local and international tourists have good Internet access when viewing the virtual tours online; the users that will interract with the online application will use either a desktop that already has Flash enabled or a smartphone that is capable of browsing the Internet; the usage of virtual tours has effect in the choice of a tourist destination.

1.8 Limitations of the Study

The research student will have to use his financial means to conduct the research. Since financial means is a great inhibitor, the research student will have to do a limited number of tourist destinations. Time is also a great limiting factor, as the research student has to make a delicate balance between office work and the research. Another limiting factor is that good peer-reviewed papers have to be paid for before they can be accessed.

1.9 Scope of the Study

While virtual tours can be used in several application areas, this study focuses on virtual tourism. The student will conduct a research by developing an interractive virtual tour based on one or more location (s) that will be subjected to a number of tourists and test its impact, compared to other technologies like videos and photos.

1.10 Definitions of Terms

ICT

Information and Communications Technology is the merging (convergence) of audio-visual and telephone networks with computer networks through a single cabling or link system. The main purpose of ICT in Education is to assist in the teaching and learning process as a media and methodology. ICT helps to familiarise tourists with the use and workings of computers, and related social and ethical issues.

Virtual tour

A virtual tour is a simulation of an existing location, usually composed of a sequence of videos or still images. It may also use other multimedia elements such as sound effects, music, narration, and text.

Panorama

A panorama is any wide-angle view or representation of a physical space, whether in painting, drawing, photography, film, seismic images or a three-dimensional model.

Image Stitching

Image stitching or photo stitching is the process of combining multiple photographic images with overlapping fields of view to produce a segmented panorama or high-resolution image. Commonly performed through a computer software, most approaches to image stitching require nearly exact overlaps between images and identical exposures to produce seamless results.

Hotspot

A hotspot can be described as an interactive, dynamic virtual pin on a map, which contains the ability to display an interactive panoramic picture, still image slide-show or video clip along with associated text, audio voice-over, print file(s), email, web links, publicity banner and more.

Virtual Tour Interface

An interface provides a framework for your viewers to use to view and navigate around your 360 virtual tours. As well as offering a practical navigation method, they can also add value by offering viewers extra features such as hotspots, audio or even video.

Mobile Interface

This is a mobile version of the desktop application of the virtual tour. The interface has limited features compared to the desktop version and is optimised for mobile viewing since mobile phones do not have powerful processors like desktops.

CHAPTER TWO: LITERATURE REVIEW

Introduction

The world has become a digital village. Decision-making making is getting easier due to availability of electronic information. Economic times are changing and scarcity of business can be felt due to the changing market trends and the introduction of terrorism.

Threats in the external environment and changes in the industry's markets and structures have challenged destination-marketing organizations to change in fundamental ways. The strategic responses to these developments are essentially decisions to proactively shape, adapt to, or passively struggle through a crisis. Envisioning the future of tourism and examining possible ways of reaching various future scenarios are essential exercises in this process of deciding which strategic approach to adopt. The technology acceptance model guides this research.

2.1 Technology Acceptance Model Theory

The Technology Acceptance Model (TAM) is an information systems theory that models how users come to accept and use a technology. The model suggests that when users are presented with a new technology, a number of factors influence their decision about how and when they will use it, notably:

Perceived usefulness (PU) - This was defined by Fred Davis as "the degree to which a person believes that using a particular system would enhance his or her job performance";

Perceived ease-of-use (PEOU) - Davis defined this as "the degree to which a person believes that using a particular system would be free from effort" (Davis 1989).

User acceptance of technology has been an important field of study for over two decades now. Although many models have been proposed to explain and predict the use of a system, the Technology Acceptance Model has been the only one, which has captured the most attention of the Information Systems community. Thus, it is essential for anyone willing to study user acceptance of technology to have an understanding of the Technology Acceptance Model. This literature review provides a historical overview of the Technology Acceptance Model (TAM) by summarizing the evolution of TAM, its key applications, extensions, limitations, and criticisms from a selective list of published articles on the model. Current observations indicate that although TAM is a highly cited model, researchers share mixed opinions regarding its theoretical assumptions, and practical effectiveness. It is concluded that research in TAM lacks sufficient rigor and relevance that would make it a well-established theory for the IS community.
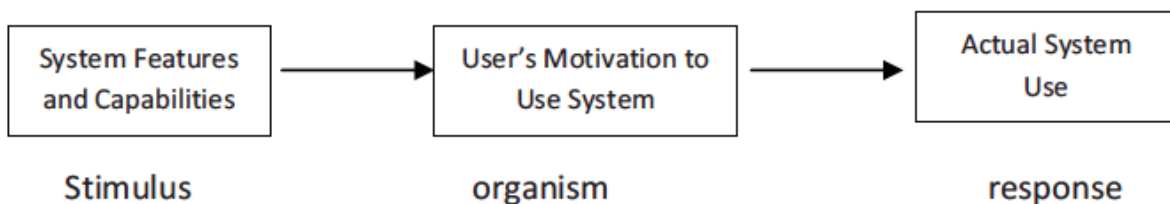
Figure 2.1: *Conceptual model for technology acceptance (Davis, 1985, p. 10).*

By relying on prior work by Fishbein and Ajzen (1975), who formulated the Theory of Reasoned Action, and other related research studies, Davis further refined his conceptual model to propose the Technology Acceptance Model as shown in Figure 2. 2 below.

12
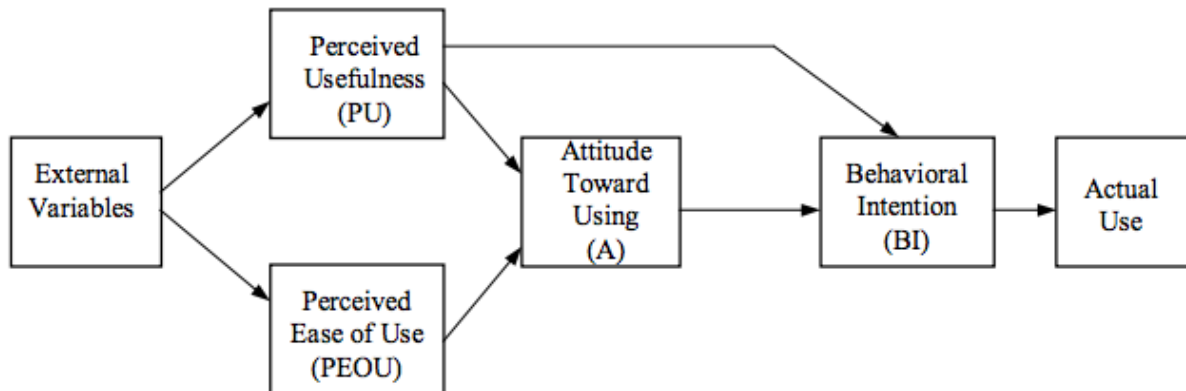
Figure 2.2: *Original TAM proposed by Fred Davis (Davis, 1986, p. 24).*

Several researchers have replicated Davis's original study (Davis 1989) to provide empirical evidence on the relationships that exist between usefulness, ease of use and system use (Adams, Nelson & Todd 1992; Davis 1989; Hendrickson, Massey & Cronan 1993; Segars & Grover 1993; Subramanian 1994; Szajna 1994). Much attention has focused on testing the robustness and validity of the questionnaire instrument used by Davis. Adams et al. (Adams 1992) replicated the work of Davis (Davis 1989) to demonstrate the validity and reliability of his instrument and his measurement scales. They also extended it to different settings and, using two different samples, they demonstrated the internal consistency and replication reliability of the two scales. Hendrickson et al. (Hendrickson, Massey & Cronan 1993) found high reliability and good test-retest reliability. Szajna (Szajna 1994) found that the instrument had predictive validity for intent to use, self-reported usage and attitude toward use. The sum of this research has confirmed the validity of the Davis instrument, and to support its use with different populations of users and different software choices.

Segars and Grover (Segars & Grover 1993) re-examined Adams *et al.*'s (Adams, Nelson & Todd 1992) replication of the Davis work. They were critical of the measurement model used, and postulated a different model based on three constructs: usefulness, effectiveness, and ease-of-use. These findings do not yet seem to have been replicated. However, some aspects of these findings were tested and supported by Workman (Workman 2007) by separating the dependent variable into information use versus technology use.

Mark Keil and his colleagues have developed (or, perhaps rendered more popularisable) Davis's model into what they call the Usefulness/EOU Grid, which is a 2×2 grid where each quadrant represents a different combination of the two attributes. In the context of software use, this provides a mechanism for discussing the current mix of usefulness and EOU for particular software packages, and for plotting a different course if a different mix is desired, such as the introduction of even more powerful software (Keil, Beranek & Konsynski 1995).

Venkatesh and Davis extended the original TAM model to explain perceived usefulness and usage intentions in terms of social influence (subjective norms, voluntariness, image) and cognitive instrumental processes (job relevance, output quality, result demonstrability, perceived ease of use). The extended model, referred to as TAM2, was tested in both voluntary and mandatory settings. The results strongly supported TAM2 (Venkatesh & Davis 2000).

In an attempt to integrate the main competing user acceptance models, Venkatesh et al. formulated the Unified Theory of Acceptance and Use of Technology (UTAUT). This model was found to outperform each of the individual models (Adjusted R square of 69 percent) (Venkatesh et al. 2003). UTAUT has been adopted by some recent studies in health care.

Independent of TAM, Scherer (Scherer 1986) developed the Matching Person & Technology Model in 1986 as part of her National Science Foundation-funded dissertation research. The

MPT Model is fully described in her 1993 text (Scherer 2005, 1st ed. 1993), "Living in the State of Stuck," now in its 4th edition. The MPT Model has accompanying assessment measures used in technology selection and decision-making, as well as outcomes research on differences among technology users, non-users, avoiders, and reluctant users.

2.2 Domestication Theory

Domestication theory is an approach in science and technology studies and media studies that describes the processes by which innovations, especially new technology is 'tamed' or appropriated by its users. First, technologies are integrated into everyday life and adapted to daily practices. Secondly, the user and its environment change and adapt accordingly. Thirdly, these adaptations feedback into innovation processes in industry, shaping the next generation of technologies and services.

The theory was initially developed to help understand the adoption and use of new media technologies by households (Silverstone et al. 1992), but has since been expanded in the innovation literature as a tool to understand technologies and innovations entering any consuming unit (workplace, country etc. e.g. Lie et al., Habib, Punie, Sørenson) that can be analysed economically, culturally and sociologically. The domestication approach considers both the practical and the symbolic aspects of the adoption and use of technologies, showing how these two elements- the meanings of things, and their materiality, are equally important understanding how technologies become part of everyday life. It is a foremost a social theory as it highlights the negotiations, challenges to power and control, rule making and breaking that accompany the introduction of technologies into any social setting.

The Domestication approach has roots in cultural studies of media use, but is informed by Science and technology studies, gender studies of household technology, sociology of everyday life, consumption studies and innovation studies, and has been most widely used in studying the mass adoption of computers, internet and mobile phones.

As a strand of the Social shaping of technology approach to understanding how technology is created, Domestication theory highlights the role of users in innovation - the work done by individuals and communities in order to make a technology from the outside do practical work, and make sense within that community. This strand of work links to the role of end users, lead users etc. in long term innovation processes (Williams et al. 2004).

Domestication studies are generally done using qualitative methods, such as long interviews and ethnography to explore the emerging meanings of technologies, and the changing routines, and conflicts that would not normally be accessible to quantitative methods.

The Domestication approach uses a number of different concepts to distinguish various aspects of the process. For example: Appropriation is the process of bringing a technology into a household, or another local cultural context; Conversion is the remaking of the meanings, or values and norms associated with the technology and the transfer of these back to the 'outside' world.

The principal criticism of the domestication approach is its reliance of detailed case studies, and its rather descriptive approach which is difficult to turn into prescriptive lessons of the type

required by business and policy makers. However, this rich-descriptive approach is also its strength: it enables processes and the complex interplay of artefacts and cultural values to be explore in much more depth than individualistic, quantitative methods.

The Domestication approach, describing the integration of technologies into social relationships and structures using evidence obtained using qualitative methods, stands in sharp contrast to individualistic and quantitative approaches (such as Technology acceptance model) of North-American marketing and IS research, that draw on primarily psychological models.

2.3 Lazy User Model Theory

Lazy User Model of Solution Selection (LUM) is a model in information systems proposed by Tétard and Collan that tries to explain how an individual selects a solution to fulfill a need from a set of possible solution alternatives. LUM expects that a solution is selected from a set of available solutions based on the amount of effort the solutions require from the user – the user is supposed to select the solution that carries the least effort. The model is applicable to a number of different types of situations, but it can be said to be closely related to technology acceptance models.

The model draws from earlier works on how least effort affects human behaviour in information seeking and in scaling of language. Earlier research within the discipline of information systems especially within the topic of technology acceptance and technology adoption is closely related to the lazy user model.

2.4 Related Work

There have been several interfaces that are being used in the industry. Below are some of the interfaces used.

360 Virtual Reality (360VR)

The interface developed is good and has a number of navigational icons. However, the user experience has not been captured.

Krpano Interface

The interface here provides the basic navigations. A number of plugins are missing and the user experience is missing here.

360 Tours

The interface provided here is similar to those developed in the first two companies. It is basic and does not give the user experience, though it provides navigation means.

2.5 My contribution to this research

In all the above companies, user experience is conspicuously missing. Some of the features that are needed to enhance the technology include maps to show particular locations of the tourist destination; floor plan to show the particular places of the tourist destination with hotspots; audio and video to enhance user experience and emphasis destination marketing and hotspots that not only show panoramas but also text, video, or pictures.

2.5 Related Theories of Acceptance

While the socio-technical perspective has gained most currency in the literature, there are several related approaches to design that warrant mention. Though many of them share much of the

basic socio-technical emphasis on organizational fit and stakeholder influence on acceptance, they are frequently presented as distinct approaches in the literature.

Collective Resources Approach

Perceived shortcomings in the treatment of power relationships in socio technical theory have led to the emergence of what has been termed the Scandinavian (BAECKER ET AL) or Collective Resources Approach (EHN). This theoretical perspective is closely related, and indeed emerged partly from, developments in socio-technical theory when it was applied in Sweden and Norway by practitioners. It is distinguishable in its strong political perspective that seeks to actively engage trade unions as equal partners in the planning of work and the technology that will support it.

Soft-Systems Methodology

Soft-Systems Methodology (SSM) emerged, like socio-technical systems thinking, as a response to the supposedly "harder" technical perspective that seemed to be driving systems engineering in the 1960s and early 1970s (CHECKLAND). Emphasizing the need for multiple perspectives on the value and utility of any technical system, depending on it being viewed by users, managers of users, or technical developers for example, SSM seeks to encourage the development of a technology that is most suitable for any given context.

Activity theory

Activity theory is an approach to understanding human work and technology, which emphasizes the long-term well-being of workers or users (HACKER). Eschewing "one best way" task design for user-determined task procedures, action theorists seek to design work practices that are enriching and that lead to development of skills and knowledge (GRIEF). Assuming internal

regulatory processes on the part of the user and needs for flexibility, self-control, and self improvement, activity theorists argue that acceptance of technology is contingent on the extent to which it meets these goals in the context of the user's own work.

Human-centred Design.

Human-centred systems design is a more recent approach to design that emerged in the UK in the early 1980s (COOLEY). Sharing many of the basic assumptions of all the above-mentioned approaches, it goes further in explicitly denying the possibility of a scientific approach to systems design and encourages immersion on the part of the design team in the praxis and lives of the organization members any tool is designed to support (PAIN ET AL).

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

The purpose of this chapter is to present the philosophical assumptions underpinning this research, as well as to introduce the research strategy and the empirical techniques applied. The chapter defines the scope and limitations of the research design, and situates the research amongst existing research traditions in information systems.

The Software prototyping methodology will be used for the development of the application and guiding in research.

The Software Prototyping refers to building software application prototypes, which display the functionality of the product under development but may not actually hold the exact logic of the original software. Software prototyping is becoming very popular as a software development model, as it enables to understand customer requirements at an early stage of development. It helps get valuable feedback from the customer and helps software designers and developers understand about what exactly is expected from the product under development.

Incremental prototyping in particular will be used. It refers to building multiple functional prototypes of the various subsystems and then integrating all the available prototypes to form a complete system.

3.2 Research Design

Research design is a means to achieve research objectives through empirical evidence that is acquired economically. Research design includes an outline of what the researcher did from writing the research objectives and implication to the final analysis of data. There are various types of research design; among them observation, descriptive, exploratory and experimental (Chandran, 2004). A good research is characterized by flexibility, appropriateness, efficiency and being economical (Kothari, 2003).

Exploratory research design is also known as formulative research studies. It addresses the need that certain enquiries or research problems focus on questions that need answers in order to understand people, events and situations. The main emphasis of this design is to disclose new ideas and insights to the researcher (Chandran, 2004). It is mainly conducted in order to gain familiarity with the phenomenon or to achieve new insights, often in order to formulate more precise research problems or to develop hypothesis (Bhandarkar & Wilkinson, 2005).

Experimental design deals with the cause and effect problems. They are concerned with the testing of the casual hypothesis (Bhandarkar & Wilkinson, 2005). In the design subjects are randomly assigned to an experimental group, which receives the treatment, or to a control group, which does not receive any kind of treatment. If a researcher is using this design, then they have to be certain of the independent and the dependent variables and must guard against the effect of the extraneous variables (Kombo & Tromp, 2006).

Survey research design on the other hand provides quantitative descriptions of some part of the population and can be used in the studying a large number of cases including those that are geographically spread out. Surveys are relatively inexpensive to undertake and the researcher can collect large volumes of data within a very short period and the results can be inferred to the larger population from the sample taken (Mugenda, 2008). Case study seeks to describe a unit in detail, in context and holistically by looking at educational data and looking at the object to be studies as a whole (Kombo & Tromp, 2006). Personal interviews, questionnaires, and personal observations can be used to gather information in the case study.

In descriptive research design, the researcher reports the findings and describes the state of affairs as it exists (Kombo & Tromp, 2006). Descriptive studies are not only restricted to fact-findings but may often result to formulation of important principles of knowledge and solutions to significant problems. The researcher reports events just the way they are and this is done by describing things such as behaviour, attitude, characteristics and values. Descriptive research design collects information by interviewing or administering questionnaires to a sample of individuals. It can be used when collecting information about people's attitudes, opinions, habits or the variety education or social issues (Kombo & Tromp, 2006).

Descriptive research design was used for this study. Descriptive research design was used because the findings of the research can be generalized to a larger population. This research design is appropriate because the main aim of this study was to determine the effect of corporate governance on performance of selected state corporations. The descriptive research mapped out the event in order to describe what was happening behaviourally or where the researcher was

interested in describing a phenomenon. Moreover, descriptive research design has been used to carry out studies that are closely similar to this one (Mazzarol and Soutar, 2002).

3.3 Population to be studied

Kombo & Trump (2006) defines population as a group of individuals, objects or items from which samples are taken for measurement; it refers to the entire group of persons or elements that have at least one thing in common. The population for this study a group of **one hundred** tourists who are to be chosen randomly through Randomised Control Trials (RCTs).

3.4 Target Population

The target population for this study local and international tourists who would like to visit certain tourist destinations. The tourists will be randomly selected from all parts of the world. An online application (virtual tour of a destination) will be used as the testing tool for the target population to interract with.

3.5 Sample size

This is a subset of the whole population which is to be studied and whose characteristics can be generalized to the entire population. Generalization of research findings is key to selection of the sample size; the researcher will select a sample that will allow the generalization of the research findings to the entire population (Chandran, 2004). Chandran (2004) further suggests that the sample size of a study should be between 10% and 30% of the population. The sample size of this study will be all the thirty tourists from various parts of the world, at least local and international tourists.

3.5 Methodology Process

The figure below shows the general steps that a tourist will undertake to test the application.
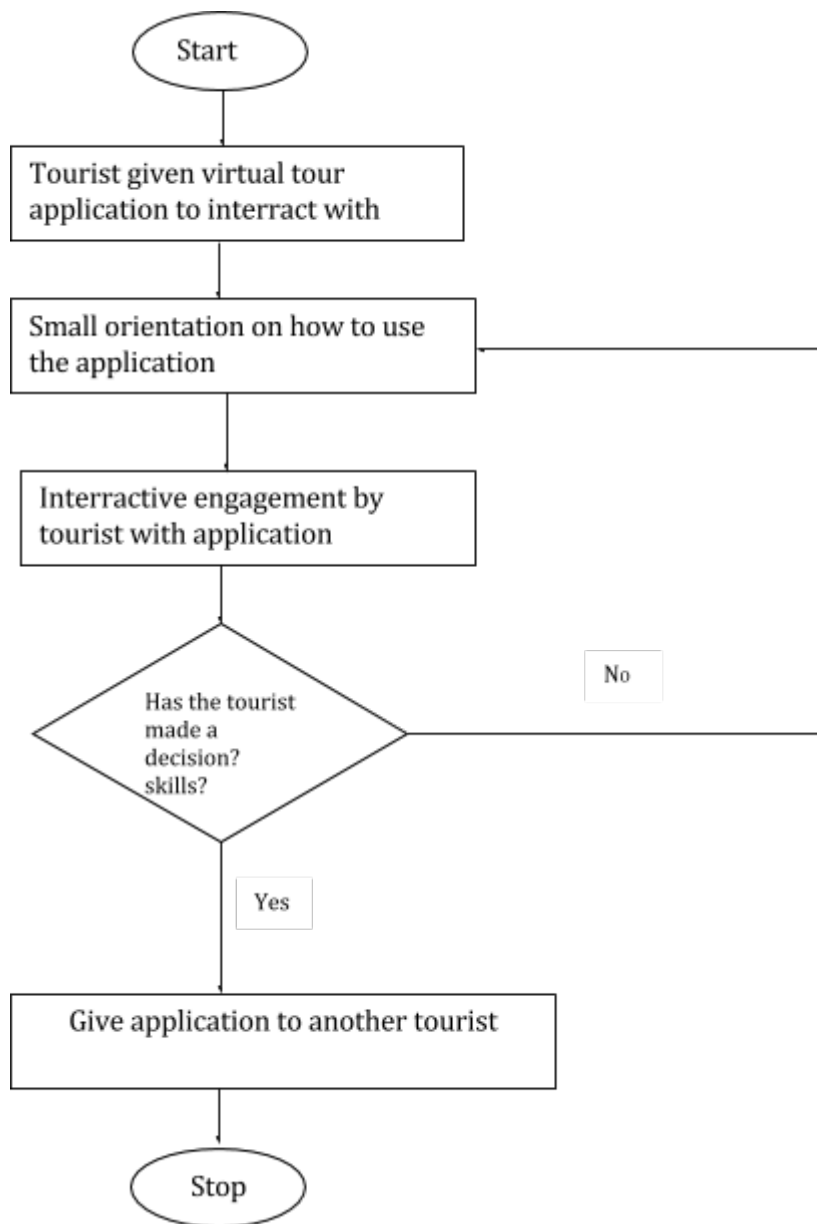
Figure 3.1: *Methodology detailing the process (Author, 2014)*

3.6 Conceptual Framework and System Architecture

Independent variable   Intervening variable   Dependent variable
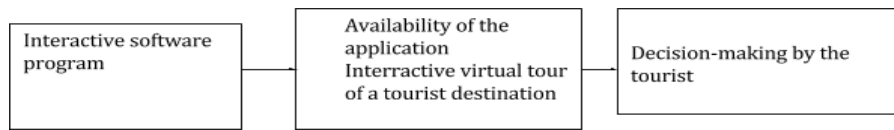
Figure 3.2: *Conceptual Framework (Author, 2014)*
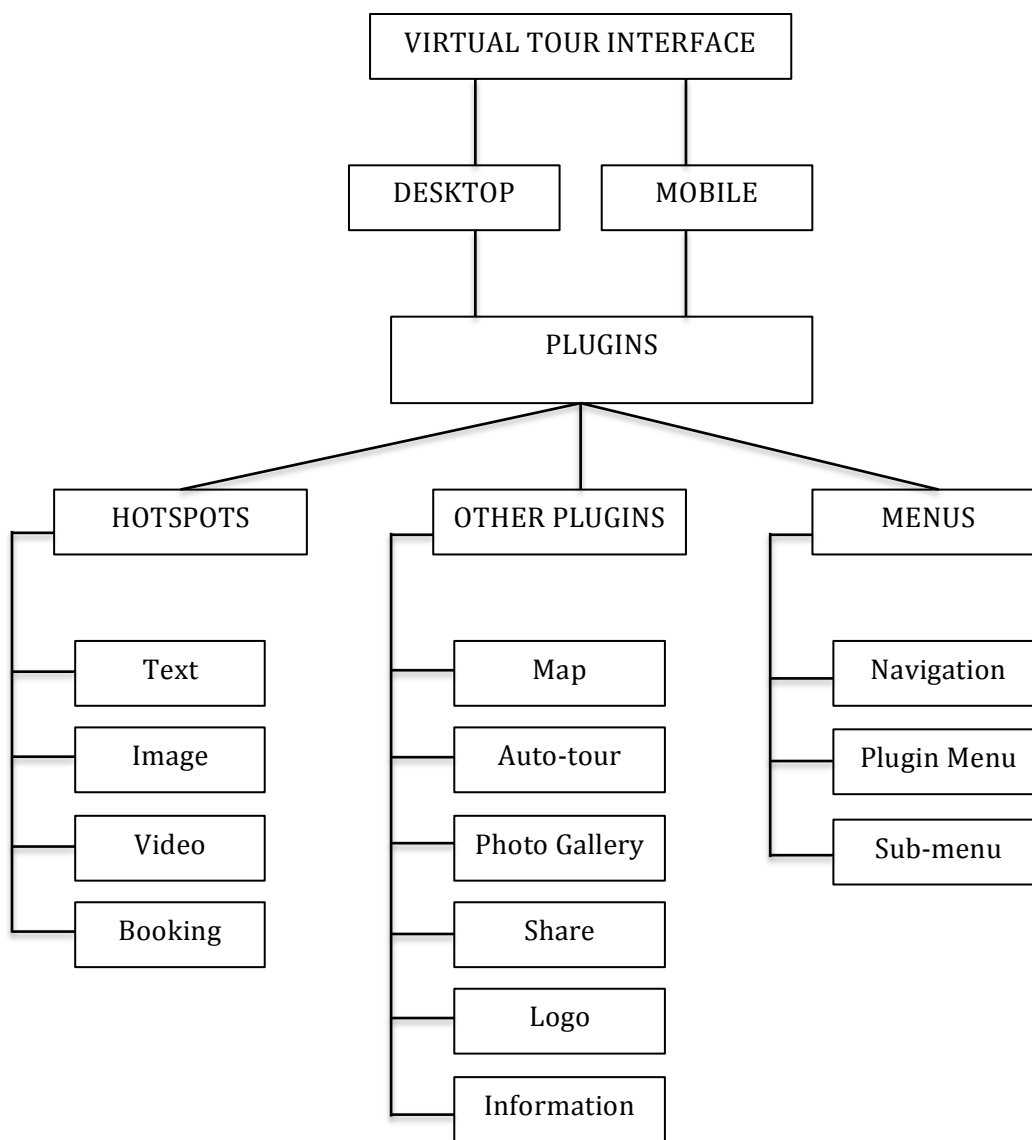
Figure 3.3: *System architecture (Author, 2014)*

3.6 Tools, procedures and methods for data collection and their justification

We shall use:

a. **Macromedia Flash CS5.5**

Adobe Flash Professional CS5.5 software is the industry-leading authoring environment for producing expressive interactive content. It creates immersive experiences that present consistently to audiences across desktops, smartphones, tablets, and televisions. The reasons for using Flash include:

i. Flash can be exported to HTML and can be played on any platform.

ii. Flash is very interactive and is an excellent tool for animations, which makes the application very attractive to the young minds as you can incorporate both video and sound.

iii. Flash is light and uses a small bandwidth.

iv. Because of the vector present in the Macromedia Flash, it can adjust the display size. Depending on the browser size Flash can adjust it. All your images and texts will not be affected anyway.

v. Even if the client browser does not have the font you used in designing an application, Flash can make it displayed in the browser. You do not have to convert fonts to images.

b. **Krpano Panorama Viewer**

The Krpano Viewer is a small and very flexible high-performance viewer for all kind of panoramic images and interactive virtual tours. The viewer is available as Flash and HTML5

application. The viewer is designed for the usage inside the Browser on Desktop (Windows, Mac, Linux) and on Mobiles/Tablets (iPhone, iPad, Android, among other smartphones).

c. Krpano Tools

In addition to the Krpano Viewer there are the Krpano Tools. These are small tools and droplets, which are helping to automatically prepare the panoramic images for viewing and making them ready-to-use. Making a pano or a tour is possible just by drag-and-drop. The tools include Make Pano (Normal); Make Pano (Multires); Make Pano (Single-SWF); make Pano (Flat); Make VTour (Normal); Make VTour (Multires); Make Object; Convert Sphere to Cube; Convert Cube to Sphere; Create your own custom droplets

d. Online website

i.   The software application/virtual tour will be uploaded online for tourists to interract with it.

ii. The online virtual tour will be available online, anytime for the designated tourists to interract with it, after which they will answer questionnaires online.

e. Interviews

The researcher will interview tourists on their experience while interacting with the software. Interviews are a great ways of getting immediate feedback. The research student will be able to get more information, which might include desired system features.

f. Questionnaires

A reflective questionnaire will be used to investigate tourists' opinions about the tool they used to make decisions. Only the experimental group of tourists will be given the questionnaire.

3.7 Randomised Control Trials (RCTs)

Introduction

"A controlled trial is a study in which participants are assigned to a study group. Study groups are also called study arms." (West et al, 2007)

In a randomized controlled trial, participants are assigned to experimental conditions at random (i.e., they have an equal probability of being assigned to any group).

Procedures are controlled to ensure that all participants in all study groups are treated the same except for the factor that is unique to their group. The unique factor is the type of intervention they receive.

The primary goal of conducting an RCT is to test whether an intervention works by comparing it to a control condition, usually either no intervention or an alternative intervention.

Secondary goals may include:

Identifying factors that influence the effects of the intervention (i.e., moderators); understanding the processes through which an intervention influences change (i.e., mediators or change mechanisms that bring about the intervention effect)

Why Conduct an RCT?

An RCT is conducted to test whether an intervention or treatment works. The key methodological components of an RCT are (1) use of a control condition to which the experimental intervention is compared; and (2) random assignment of participants to conditions.

Advantages of using an RCT design

These include:

Random assignment ensures that known and unknown person and environment characteristics that could affect the outcome of interest are evenly distributed across conditions; random assignment equalizes the influence of nonspecific processes not integral to the intervention whose impact is being tested. Nonspecific processes might include effects of participating in a study, being assessed, receiving attention, self-monitoring, positive expectations, etc; random assignment and the use of a control condition ensure that any extraneous variation not due to the intervention is either controlled experimentally or randomized. That allows the study's results to be causally attributed to differences between the intervention and control conditions.

Disadvantages of using an RCT design

There are various disadvantages in the use of the RCT, these includes; the use of RCT are time- and energy- intensive, in addition they are expensive and lastly, the use of RCT may not be feasible for all interventions or settings for example, some institutions have policies that prohibit random assignment.

The most common use for RCTs in the behavioral and social sciences is to examine whether an

intervention is effective in producing desired behavior change, symptom reduction, or improvement in quality of life.

Having consistent findings that the intervention surpasses control in a series of RCTs is often considered to establish the intervention as "evidence-based" (i.e., that it has sufficient data to support its use).

3.8 Features of the Application

The following are the proposed features of the application:

The software application will have interractive virtual tours; a well-designed interface with appropriate graphics, colour and sound that is tourist friendly will take the general design; there will be a help menu that will act as a guide to using the software and explaining how to interract with the virtual tour; there will be navigational icons and hotspots to help tourists navigate; incorporation of video and audio to enhance user experience; incorporation of maps and floor plans to enhance the application's usability.

3.9 Evaluating the Impact of the tool

As stated above, the research will involve a group of tourists who will be given an interractive virtual tour of a hotel or tourist destination and a number of photos of the same tourist destination or hotel. After a **session** of interracting with the virtual tour and the photos or video, the research student will evaluate the tourist using a questionnaire to answer the questions that will help to measure the impact of the tool qualitatively and quantitatively. At least thirty tourists will be tested.

Qualitative Analysis

The following questionnaire will be used to evaluate the use of the tool qualitatively by the tourists.

Table 3.1 *Questionnaire used for prototype evaluation*

	Agree	**Disagree**
The virtual tour was interractive and easy to use		
The use of audio and video greatly enhanced user experience		
The use of hotspots and navigations icons greatly increase ease of usability		
The virtual tour text provided enough information for decision-making		
The auto-tour feature did not reduce the interactivity of the tour		
The virtual tour made me like the destination more		
I find virtual tours way better than photos and videos		

Quantitative Analysis

Data gathered using the qualitative questionnaire will be cleaned, coded and entered into Predictive Analytical Software (PASW) formerly Statistical Package for Social Sciences (SPSS). This will enable he researcher to carry out statistical tests such as getting the mean, standard deviation, frequencies and percentage among others. The data will then be presented in figures and tables.

3.10 Data analysis methods and their justification

A literature review on some of the evaluation methods deployed from the pedagogical, usability and technological perspectives are provided below.

Pedagogical Methods

Typical methods used for evaluating outcomes include interviews, questionnaires and diary studies; all of which require learners to give their own retrospective accounts of their learning. Limitations of these methods include (a) there may be inaccuracies in tourists' recall and rationalization of information, and (b) some learners may not possess the meta-cognitive skills necessary to reflect on their own accounts of user experiences and be able to convey this information accurately (Vavoula et al., 2007).

Usability Methods

A usability inspection may consist of a number of data collection and analysis methods. Its aim is to (a) identify usability problems in order to incorporate suitable usability application functions into the design of the user interface, and (b) to specify and fulfill system requirements of potential users. A user-centred system design usually begins with an extensive analysis of potential users, tasks and environment, where potential users are involved in the process of system design from the beginning of system development and are consulted at each incremental stage of the development and evaluations. It is completed when the system usability criteria are satisfied (Petrelli & Not, 2005). 24

Technological Methods

An implementation (or a prototype) of the application is usually required for a technological evaluation. The evaluation process typically involves (a) an evaluator who plans and conducts the evaluation, and (b) a volunteer who tests the implemented application on a mobile device. Depending on the nature of the evaluation, the volunteer is asked to provide information about their usage of the application before, during and/or after the hands-on experience with the device. The technological evaluation of an application can take place in either the authentic context in

which it is intended to be used, known as a real evaluation, or in a virtual or replicated context (a simulated evaluation).

3.11 Limitations of methodology and how they are overcome

Some of the limitations experienced here include the risk of insufficient requirement analysis owing to too much dependency on prototype; users may get confused in the prototypes and actual systems; practically, this methodology may increase the complexity of the system as scope of the system may expand beyond original plans; and developers may try to reuse the existing prototypes to build the actual system, even when its not technically feasible.

The limitations above can be overcome by conducting a thorough requirements analysis to get it right the first time; giving users only a refined application to avoid users from getting confused between the prototype and actual system; sticking to the scope of the project and research objectives; doing away with prototypes that are not technically feasible.

3.12 Project schedule

Table 3.2 Project *schedule for conducting the research*

Duration	Activity
April 2014 – May 2014	Project proposal, model research and design
May 2014 - July 2014	● Model development & testing, evaluation and data gathering ● Presentation of the model
July 2014 - August 2014	● User Interface development and testing it with the model. ● Report writing and model documentation.

Project Budget

Table 3.3 Project *cost for conducting the research*

Item	Cost (KES)
Laptop	Already bought
Nikon D7000	Already bought
Nikon 10mm Fisheye Lens	Already bought
Tripod	Already bought
Smartphone	Already bought
Krpano Licence	15,500
Flash CS5	Already bought
Macromedia Photoshop	Already bought
Panotour Pro	Already bought
Autopano Giga	Already bought
Travelling	20,000
Accommodation	20,000
Miscellaneous	4,500
Total	60,000

3.13 Summary of Chapter

This chapter outlines the methodology that was used in the study. The specifics described in the study were the type of research design used, the target population, and how the sample size will be arrived at. It also describes the sampling designs that were used for the study. The chapter also discusses the pre-testing instruments and the respondents who participate in the pre-testing

exercise, research analysis and the presentation of the research findings. In addition it discusses the procedures used for data collection and the data collection instruments used. It also gives an account of how the data collected was be analysed through descriptive statistics and the ethical considerations as the research was carried out. Finally, it outlines the tools that will be used, the budget, and the features of the application.

CHAPTER 4: RESULTS AND INTERPRETATION

4.1 Introduction

This chapter presents the data analysis, presentation and the interpretation of the research findings. The research aimed at finding out how the use of virtual tours influence a tourist's decision-making ability. The objectives of the research study includes to design an interractive software program (virtual tour) that tourists will interract with, to deploy the software program that will be inform of an interractive online application and to evaluate the effect of virtual tours on a tourist's decision-making ability when choosing a hotel or tourist destination.

The researcher targeted one hundred tourists. The researcher received back seventy filled questionnaires from the respondents representing a 70% response rate. According to Mugenda and Mugenda (2004), a response rate of more that 50% is ideal to represent the total population of the research study.

4.2 Sample Data

Below are the results collected from the sample data of the experiment. A response was obtained from seventy respondents that were randomly selected. The researcher targeted online tourists who had the capacity to influence choice of a destination and/or the means to finance the tourist destination or the hotel.

Weston Hotel was used to conduct an online survey whereby a virtual tour of the place and a series of photos were taken and the information given to online users to debate on which technology helped them the most to make a decision regarding to wanting to tour the hotel.

4.3 Krpano Virtual Tour Interface Tool

The researcher developed a virtual tour interface that was later subjected to tourists for evaluation. The tour comprised of the Krpano droplet whereby the virtual tour interface was developed on top of the interface. Figure 4.1 below shows a plain virtual tour interface that the research student was to enhance.
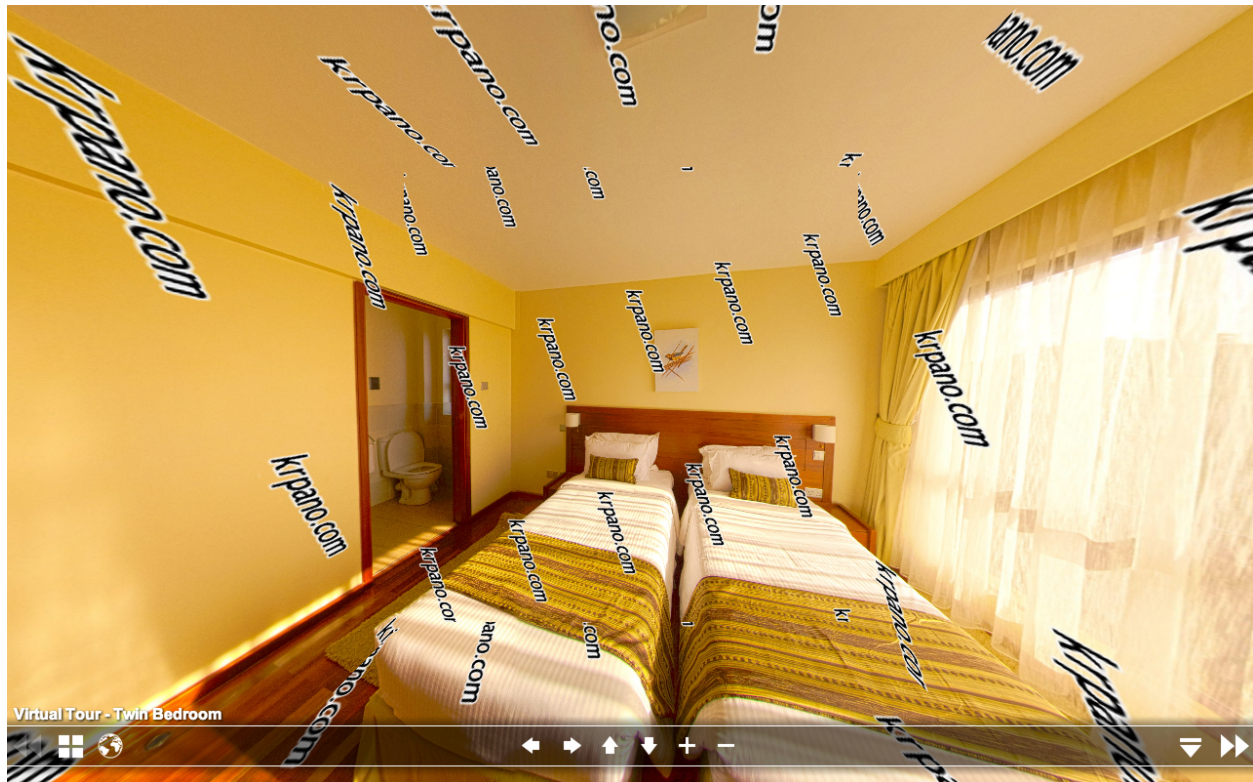
Figure 4.1: Krpano plain *virtual tour interface*

4.4 Enhanced Virtual Tour Interface

As the main application developed by the research student, figure 4.2 below shows an application that was developed by the interface. The tool has enhanced features such as a navigation bar with the virtual tour scenes, a mobile interface, image, text and video hotspots, a floor plan, a booking icon hotspot, text describing each scene, a photo gallery of still photos among other features.
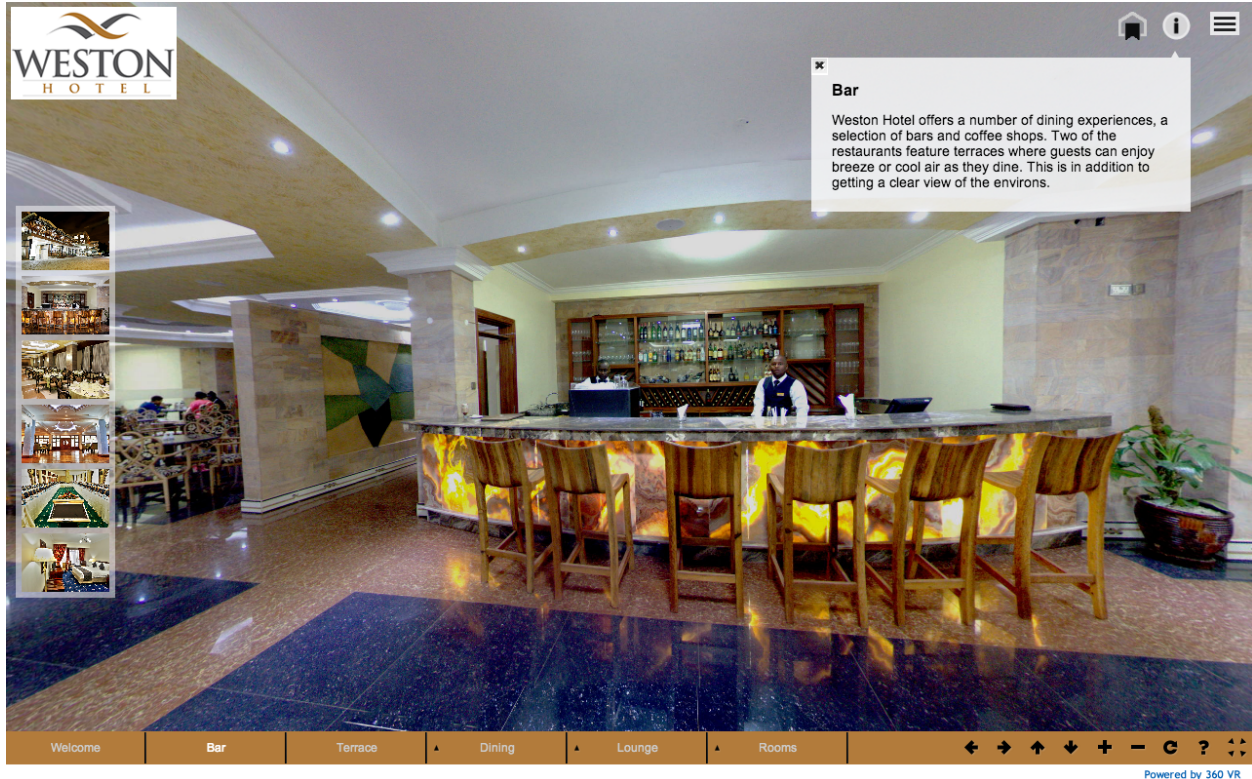
Figure 4.2: *The virtual tour interface tool developed by the research student*

4.5 Virtual tour interface tool

The researcher too developed a virtual tour interface. The tool included a template with the functions discussed above and a droplet, which converts equi-rectangular images as show in figure 4.3 that is converted into small cubes.

Figure 4.3: *An equi-rectangular image that is converted into small cubes by the virtual interface tool*

4.6 Findings of the research study

After a successful conduction of the research, below are the results that were obtained by the research student. The table 4.1 below shows the percentage of the questionnaire feedback obtained from the online audience.

Table 4.1: *Test scores for the experimental group*

	Frequency	Percentage
Online questionnaires	70	100.00

The table 4.2 below is a summary of the research that tested the quality of the tool and the use of virtual tours and its influence on a tourist's decision-making when choosing a destination.

Table 4.2: *Questionnaire raw results on the interactivity and ease of use of the virtual tour*

Questions	Agree %	Disagree%
1. The virtual tour was interactive and easy to use	70	30
2. The use of audio greatly enhanced user experience	60	40
3. The use of hotspots and navigations icons greatly increase ease of usability	80	20
4. The virtual tour text provided enough information for decision-making	65	35
5. The auto-tour feature did not reduce the interactivity of the	87	13

tour		
6. The virtual tour made me want to go to the destination more	90	10
7. I find virtual tours way better than photos and videos	92	8

4.7 Data Analysis

After the results were obtained, the research student conducted an elaborate analysis of the results. An advanced spreadsheet was used for the interpretation of the various results. The research student conducted both qualitative and quantitative analysis of the results. The findings of the research study were interpreted with the use of the frequency tables and graphs.

Qualitative Analysis

After the research student conducted a quantitative analysis, the qualitative analysis followed. The use of the quantitative analysis enhanced the interpretation of the voluminous information retrieved from different literature information and coming up with presentations.

Seven questions were carefully selected by the researcher to constitute the basis of the qualitative analysis for the purpose of analysing the tool developed and for general research of the project. Different anonymous tourists generated different responses. The responses given enhanced the understanding by the tourists in relation to the use of virtual tours. The results below in table 4.2 were obtained.

Table 4.2: *Questionnaire raw results on the interactivity and ease of use of the virtual tour*

Questions	Agree %	Disagree%
1. The virtual tour was interractive and easy to use	70	30
2. The use of audio greatly enhanced user experience	60	40

3. The use of hotspots and navigations icons greatly increased ease of usability	80	20
4. The virtual tour text provided enough information for decision-making	65	35
5. The auto-tour feature did not reduce the interactivity of the tour	87	13
6. The virtual tour made me want to go to the destination more	90	10
7. I find virtual tours way better than photos and videos	92	8

Interpretation of the Questionnaire Results

Further to the results obtained above, the researcher conducted an analysis of questionnaire and the results were analysed as per figure 4.1 below.
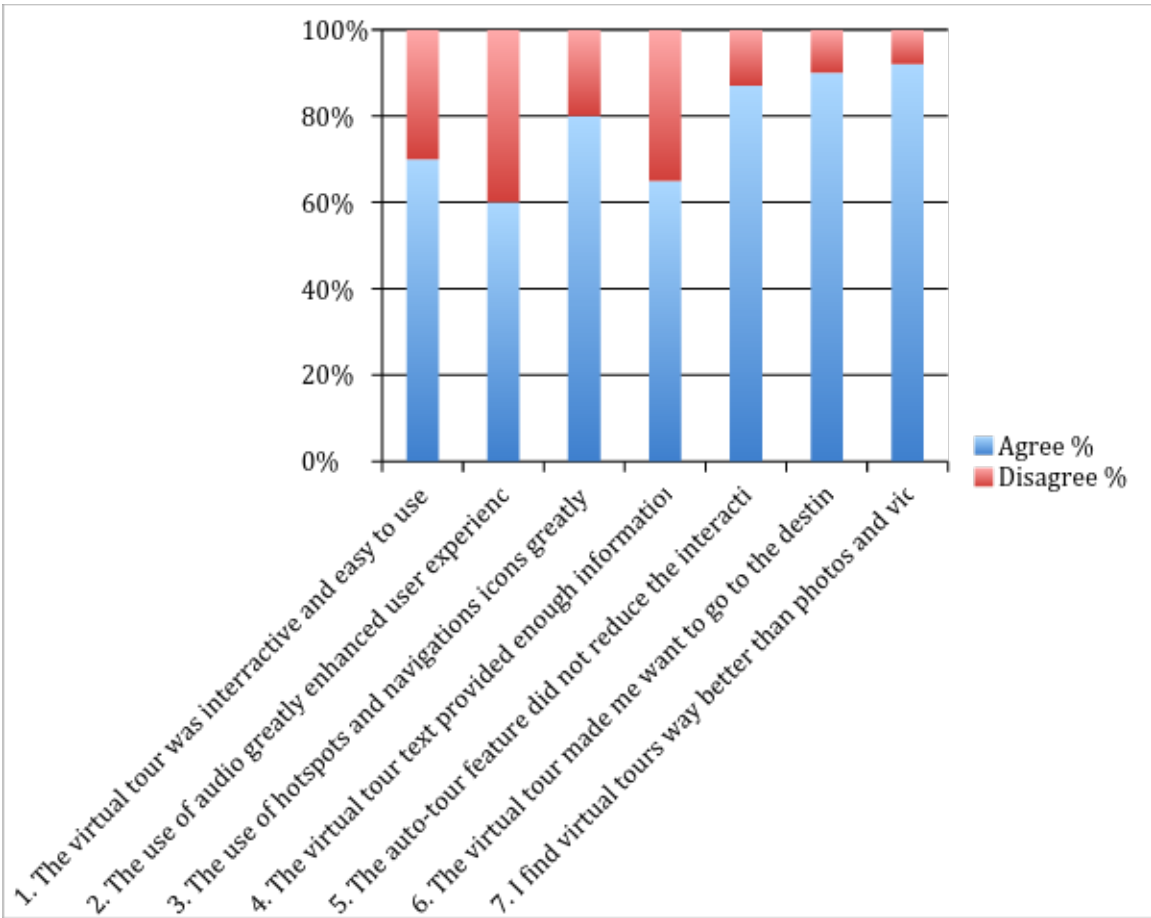
Figure 4.3: *Analysis of the questionnaire results*

Question one tested whether or the virtual tour was interactive and easy to use. 70% of the respondents indicated that the virtual tour was easy to use. This shows that the virtual tour does no need one to have any technical knowledge on how to operate it and it could be attributed to the auto feature whereby users sit and look at the virtual tour.

In question two, a number of tourists (60%) stated that the audio greatly enhanced user experience. Audios are a powerful tour that adds another dimension to a virtual tour to make it more usable and bring the ambience of a destination, in this case the hotel.

The purpose of question three in the questionnaire was to ensure that the virtual tour was easy to navigate and tour, of which 80% of agreed.

Question four was to get feedback regarding the usefulness of the virtual tour text. 65% stated that the text was helpful. This was so because despite the fact that the virtual tour is graphical, there is a need to describe each scene so that users could know where they are.

In the interactive application, question five focused about the usefulness of the auto-tour feature, to which an overwhelming 87% agreed that is was an important tool that enabled a smooth and automated viewing of the virtual tour without user intervention.

In question six, the focus was on the research and the effect of the virtual tour on the choice of the destination in focus. An overwhelming 90% stated that the virtual tour made the user to want to go to the destination.

A photograph is worth a thousand words, but a virtual tour is worth a thousand photos. A virtual tour as shown in question six above tells a story.

Question seven tested the user preference. A majority stated as per this research that they preferred virtual tours to photos. This demonstrates the power of virtual tours on user interaction and its impact on the choice of a destination.

Virtual tours verses photos

As per the evaluation on question seven above, the tool focuses on the user preference between virtual tours and photos. The table 4.3 below and figure 4.4 below show the results graphically. A majority prefer virtual tours as:

Interractive in nature. Users are able to interact with the application and navigate to their desired pages.

Virtual tours tell a story. The audio can literally talk about a tourist destination or hotel while the pictures tell a pictorial story in the whole application.

Virtual tours can incorporate several technologies to enhance user experience. Photos are limited in nature, but a virtual tours can show the entire place as the place is without hiding any details. This has proven to be useful when tourists are looking for "full information" about a place.

Table 4.3: *Test scores for the experimental group*

Question	Virtual tour	Photos
I find virtual tours way better than photos and videos	92%	8%

I find virtual tours way better than photos and videos

- Virtual tour
- Photos
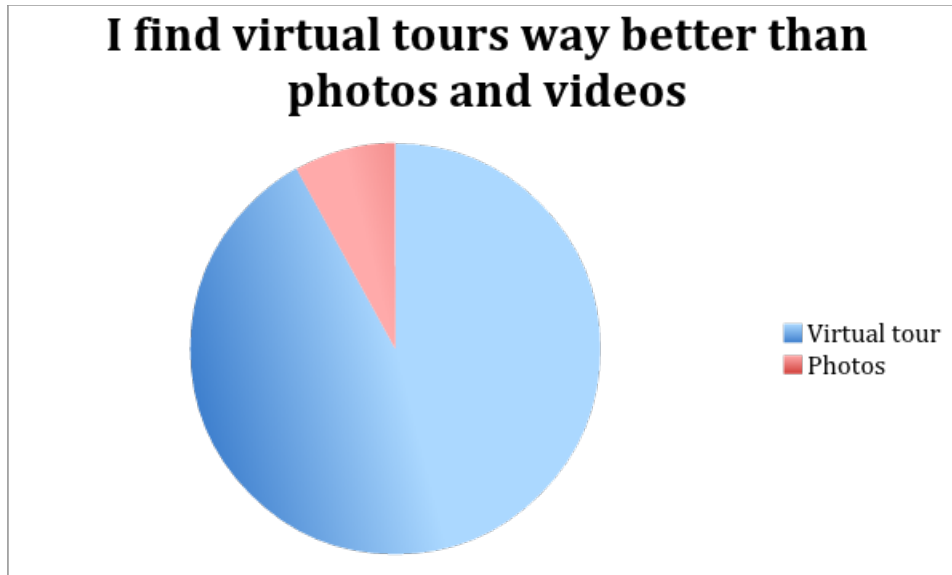
Figure 4.4: *A comparison of the use of virtual tours and photos in a tourist's decision-making*

CHAPTER 5: DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the introduction in relation to the understanding of the nature of the research study. The topic of the research study focused on the use virtual tours in comparison to photos and their effect on a tourist's decision-making. The chapter also presents the conclusions of the research study in relation to the major findings, which the researcher was in a position to come up with. Findings of the research study was in a position to respond to different research objectives and therefore the major findings of the research study were undertaken in relation to the objectives of the research study.

The chapter also presents various recommendations to be implemented by the concerned ministry in the process of streamlining the effectiveness of the use of virtual tours to enhance destination marketing. The recommendations were considered to suggest the technologies the tourism industry can use to increase revenue and improve brands of hotels and tourist destination sites.

5.2 Evaluation of Objectives and Research Questions

The following were the research objectives and their careful evaluation as conducted by the researcher:

Objective One

The first objective was to develop an interractive software program/application that could be used to develop virtual tours.

The researcher developed an interractive software application as shown in figure 5.1 below. The application has several features such as a good navigation bar, hotspots that include images, text, video and virtual tour scenes. Other features include maps and booking icons.
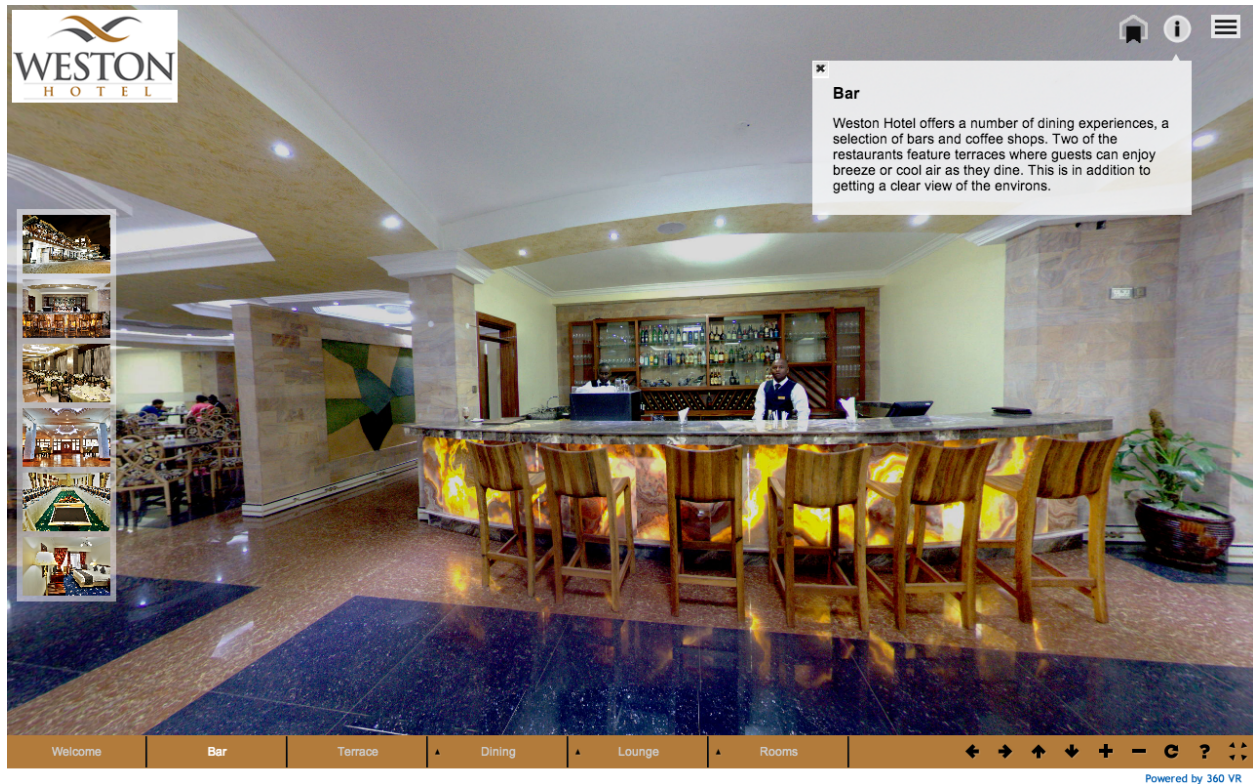
Figure 5.1: *The software application developed for research*

Objective Two

The second objective was to deploy the software program in form of an online application by which the virtual tour was put online and also a questionnaire that got feedback from users.

The research student fulfilled this objective as show in figure 4.3 below by the results obtained from an online survey of seventy tourists.
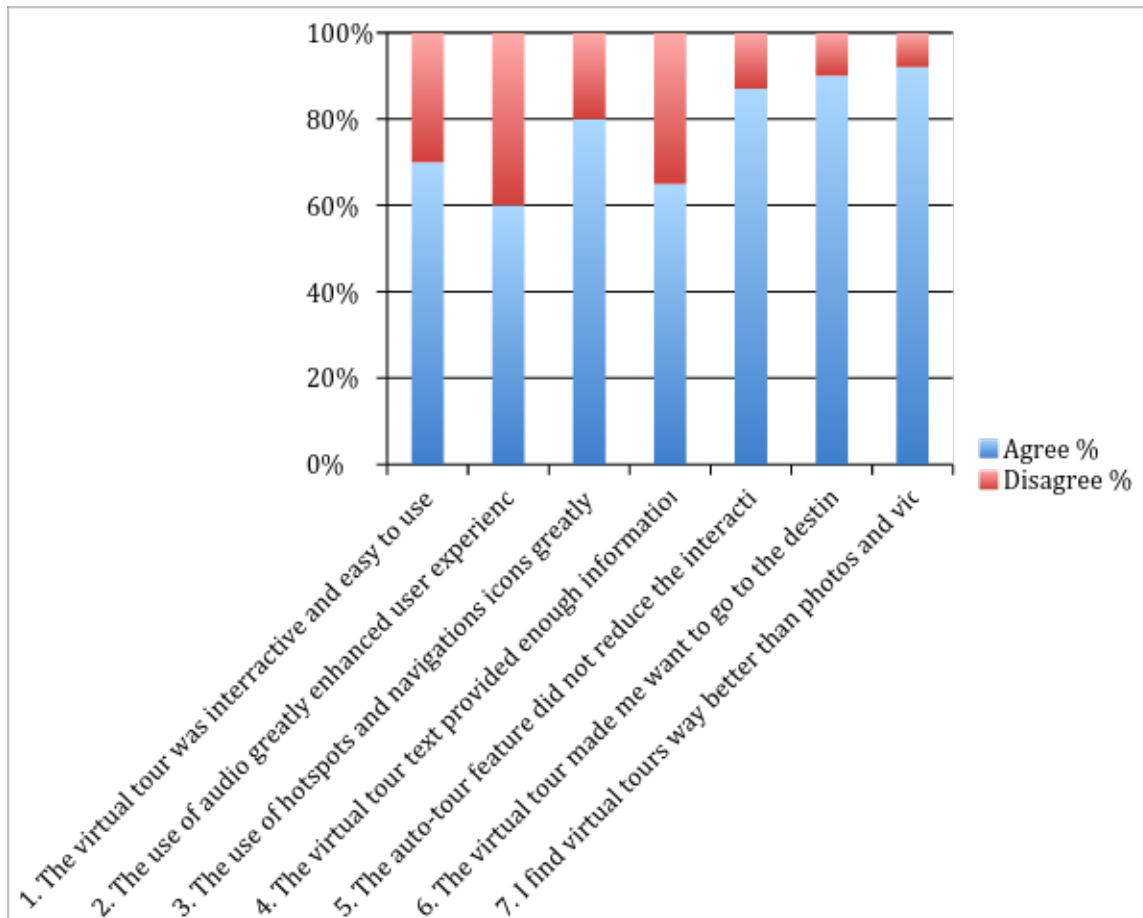
Figure 4.3: *Analysis of the questionnaire results*

Objective Three

The third objective was to measure the effect of virtual tours on a tourist's decision-making ability in choosing a tourist destination or hotel.

The researcher successfully fulfilled this objective as shown in the figures 4.3 above whereby an overwhelming 90% indicated that the virtual tour made the tourist want to visit the destination.

The effect was further measured question seven of the online survey whereby 92% of those asked stated that they preferred virtual tours to photos.
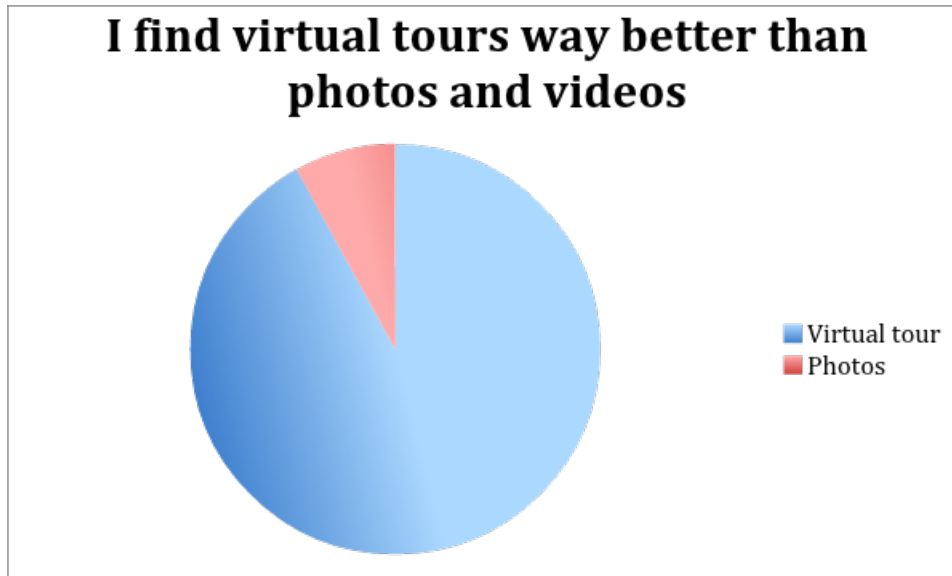
Figure 4.4: *A comparison of the use of virtual tours and photos in a tourist's decision-making*

5.3 Limitation of the study

The research student encountered several limitations, which greatly limited the research of the study. The following are some of the limitations encountered by the researcher:

Time Constraint

The researcher had limited time to conduct the research. It was time-consuming developing the virtual tour interface. A lot of coding needed to be done.

Later, the researcher had to take photos and process them. The application had to be put online and feedback had to be collected. Due to limited time, only seventy respondents were collected.

New technology

The virtual tour technology is new and brought a few challenges to most users who had only used it the first time. Navigating and what to do was a bit of a challenge.

Internet and virtual tour loading speed

This was a great impediment as it prevented users with very limited internet and patience. A virtual tour takes about 20 seconds longer to load due to its weight. Users who did not have enough patience missed out.

5.4 Contributions of the Research

The research "The use of virtual tours on a tourist's decision-making ability when choosing a destination" has made several contributions to the general body of knowledge in the following aspects:

Design of computer applications to enhance destination marketing

As the Government of Kenya plans to market Kenya as a tourist destination, virtual tours can be used to enhance destination marketing.

The use of eye-catching panoramic photographic can greatly be used to convince tourist to visit Kenya as a tourist destination.

Use of virtual tours can increase revenue to Government and sales to hotels

This research showed the importance of introducing virtual tours in marketing. The government can benefit from an increase of tourists and consequently revenue. Hotels and other hospitality industry players can increase their sales using this technology, thus even creating more jobs.

Use of virtual tours in various industries

A virtual tour is a wonderful technology that can use for various purposes. Schools and learning institutions can use them to increase admissions; county governments can use them to showcase development projects; hospitals can use them to show modern equipment; churches can show church venues for weddings; wedding companies can showcase wedding grounds, among other uses.

5.5 Conclusions of the Study

Based on the objectives and findings of the study, the study concludes:

Based on the first objective, an interractive software program/application that develops virtual tours was successfully developed.

Based on the second objective, the software application that was an interractive online application was uploaded online and an evaluation tool were successfully deployed.

Based on the third objective, there was a quick familiarisation of the virtual tour and its effect was demonstrated on the decision-making ability of tourists. The study therefore concludes that virtual tours can influence the decision-making ability of a tourist and that virtual tours are preferred to photos due to their interractive nature.

5.6 Recommendations for further research

Judging from the results and from the feedback the application received, the development of such application can be used to greatly enhance destination marketing. The researcher made the following recommendations:

Reduction of virtual tours size

The application should be enhanced such that the size of virtual tours can be reduced. This will greatly improve loading speeds and enhance user experience. Smaller virtual tours will reduce the cost of users viewing the virtual tour. This should be made without reducing the quality of the virtual tours.

Development of similar applications to enhance learning and create tutorials

Virtual tours can be combined with videos to making interesting learning applications. A case study is an application developed for the Kenya Revenue Authority (KRA) to show users how to make tutorials for users.

Crime scene investigations

Virtual tours can be used for crime scene investigations. Further research should be conducted here to make this technology work to fight crime.

APPENDICES

APPENDIX 1: Questionnaire for Qualitative Analysis

Questionnaire	Agree	Disagree
The virtual tour was interractive and easy to use		
The use of audio and video greatly enhanced user experience		
The use of hotspots and navigations icons greatly increase ease of usability		
The virtual tour text provided enough information for decision-making		
The auto-tour feature did not reduce the interactivity of the tour		
The virtual tour made me like the destination more		
I find virtual tours way better than photos and videos		

APPENDIX 2: Sample Code

```
<krpano version="1.16.8">
<include url="menu.xml" />
<action name="executeConfig">
if(data[config].logoGraphic === null, removeplugin(logo),
            if(data[config].logoGraphic ==  , removeplugin(logo),
            txtadd(logourl,'files/',get(data[config].logoGraphic));
            set(plugin[logo].url,get(logourl));
        );
);
if(data[config].social == disabled,
        removeplugin(SocialBkg);
        removeplugin(fbSocial);
        removeplugin(twSocial);
        removeplugin(share-item-text);
        removeplugin(menu-share-32);
);
if(data[config].welcomeOnStart == true,delayedcall(2,openHelp());
);
if(data[config].autotour,
        set(events.onloadcomplete,changeView() );
        set(events.onmousedown,pauseAutotour() );
        if(data[config].autotourOnstart,,pauseAutotour() );

        ,
        set(interrupted,true);
        removeplugin(autotourBtn);
);
set(events.onpreviewcomplete, current();  );

if(data[config].bottomLogoLink !== null,
        set(hotspot[bottomlogo].onclick, openurl( get(data[config].bottomLogoLink) ) );
        if(data[config].bottomLogoLink == false,
                set(hotspot[bottomlogo].onclick,);
                set(hotspot[bottomlogo].handcursor,false);
        );
);

plugSet();
set(autois,on);
</action>

<action name="dayNight">
        if(plugin[night].load == this,
                set(plugin[night].crop, 0|35|35|35);
                set(plugin[night].text, "You're in the Night View");
```

```
                    set(plugin[day].onclick, loadscene(get(load),null,MERGE);
if(interrupted,,pauseAutotour()););

                ,
                set(plugin[day].crop, 35|35|35|35);
                set(plugin[day].text, "You're in the Day View");
                set(plugin[night].onclick,
loadscene(get(plugin[night].load),null,MERGE);if(interrupted,,pauseAutotour()); );
        );
        if(data[current].desplegado == true,
                set(plugin[day].y, 172);
                set(plugin[night].y, 172);
        );

</action>

<action name="plugSet">
        if(data[config].info == true,

        ,
        removeplugin(menu-infoicon);
        removeplugin(infoBkg);
        removeplugin(infobox);
        removeplugin(closeInfo);
        tween(plugin[booking_button].x, 65);
        );

        if(data[config].book_now == true,
        set(plugin[booking_button].visible, true),
        set(plugin[booking_button].visible, false)
        );

        if(data[config].floorplan == true,

        ,
        removeplugin(menu-floorplanicon);
        removeplugin(floorplan-item-text);
        );

        if(data[config].photos == true,

        ,
        removeplugin(menu-photoseticon);
        removeplugin(photos-item-text);
        );

        if(data[config].photos == false,
                tween(plugin[menu-floorplanicon].x, 20);
                tween(plugin[floorplan-item-text].x, 4);
                tween(plugin[menu-container].height, 210);
```

```
        if(data[config].floorplan == false,
                tween(plugin[menu-container].height, 150);
                );
);

if(data[config].audio == true,
,
removeplugin(menu-musicicon);
removeplugin(audio-item-text);
);

if(data[config].audio == false,
        tween(plugin[menu-photoseticon].x, 150);
        tween(plugin[menu-photoseticon].y, 80);
        tween(plugin[photos-item-text].x, 139);
        tween(plugin[photos-item-text].y, 108);
        tween(plugin[menu-floorplanicon].x, 20);
        tween(plugin[floorplan-item-text].x, 4);
                if(data[config].photos == false,
                        tween(plugin[menu-container].height, 150);
                        tween(plugin[menu-floorplanicon].x, 150);
                        tween(plugin[menu-floorplanicon].y, 80);
                        tween(plugin[floorplan-item-text].x, 135);
                        tween(plugin[floorplan-item-text].y, 108);
                                if(data[config].floorplan == false,
                                        tween(plugin[menu-container].height, 150);
                                );
                );
);

if(data[config].video == true,
,
removeplugin(menu-videoicon);
removeplugin(video-item-text);
);

if(data[config].video == false,
        tween(plugin[menu-musicicon].x, 85);
        tween(plugin[menu-musicicon].y, 80);
        tween(plugin[audio-item-text].x, 72);
        tween(plugin[audio-item-text].y, 108);
        tween(plugin[menu-photoseticon].x, 150);
        tween(plugin[menu-photoseticon].y, 80);
        tween(plugin[photos-item-text].x, 139);
        tween(plugin[photos-item-text].y, 108);
        tween(plugin[menu-floorplanicon].x, 20);
```

```
        tween(plugin[floorplan-item-text].x, 4);
                if(data[config].audio == false,
                        tween(plugin[menu-photoseticon].x, 85);
                        tween(plugin[menu-photoseticon].y, 80);
                        tween(plugin[photos-item-text].x, 72);
                        tween(plugin[photos-item-text].y, 108);
                        tween(plugin[menu-floorplanicon].x, 150);
                        tween(plugin[menu-floorplanicon].y, 80);
                        tween(plugin[floorplan-item-text].x, 135);
                        tween(plugin[floorplan-item-text].y, 108);
                        tween(plugin[menu-container].height, 150);
                        if(data[config].photos == false,
                                tween(plugin[menu-floorplanicon].x, 85);
                                tween(plugin[menu-floorplanicon].y, 80);
                                tween(plugin[floorplan-item-text].x, 72);
                                tween(plugin[floorplan-item-text].y, 108);
                                tween(plugin[menu-container].height, 150);
                                        if(data[config].floorplan == false,
                                                tween(plugin[menu-container].height, 150);
                                        );
                        );
                );
);

if(data[config].map == true,
set(layer[map].zoom, get(data[config].mapzoom));
set(layer[map].maptype,get(data[config].maptype));
,
removeplugin(mapbtn);
removeplugin(map);
removeplugin(mapClose);
removeplugin(mapZoomIn);
removeplugin(mapZoomOut);
removeplugin(mapNormal);
removeplugin(mapHybrid);
removeplugin(mapSat);
removeplugin(maptype);
removeplugin(menu-mapicon);
removeplugin(map-item-text);
);

if(data[config].map == false,
        tween(plugin[menu-videoicon].x, 20);
        tween(plugin[menu-videoicon].y, 80);
        tween(plugin[video-item-text].x, 3);
        tween(plugin[video-item-text].y, 108);
```

```
tween(plugin[menu-musicicon].x, 85);
tween(plugin[menu-musicicon].y, 80);
tween(plugin[audio-item-text].x, 72);
tween(plugin[audio-item-text].y, 108);
tween(plugin[menu-photoseticon].x, 150);
tween(plugin[menu-photoseticon].y, 80);
tween(plugin[photos-item-text].x, 139);
tween(plugin[photos-item-text].y, 108);
tween(plugin[menu-floorplanicon].x, 20);
tween(plugin[floorplan-item-text].x, 4);
        if(data[config].video == false,
                tween(plugin[menu-musicicon].x, 20);
                tween(plugin[menu-musicicon].y, 80);
                tween(plugin[audio-item-text].x, 3);
                tween(plugin[audio-item-text].y, 108);
                tween(plugin[menu-photoseticon].x, 85);
                tween(plugin[menu-photoseticon].y, 80);
                tween(plugin[photos-item-text].x, 72);
                tween(plugin[photos-item-text].y, 108);
                tween(plugin[menu-floorplanicon].x, 150);
                tween(plugin[menu-floorplanicon].y, 80);
                tween(plugin[floorplan-item-text].x, 135);
                tween(plugin[floorplan-item-text].y, 108);
                tween(plugin[menu-container].height, 150);
                        if(data[config].audio == false,
                                tween(plugin[menu-photoseticon].x, 20);
                                tween(plugin[menu-photoseticon].y, 80);
                                tween(plugin[photos-item-text].x, 3);
                                tween(plugin[photos-item-text].y, 108);
                                tween(plugin[menu-floorplanicon].x, 85);
                                tween(plugin[menu-floorplanicon].y, 80);
                                tween(plugin[floorplan-item-text].x, 72);
                                tween(plugin[floorplan-item-text].y, 108);
                                tween(plugin[menu-container].height, 150);
                                        if(data[config].photos == false,
                                                tween(plugin[menu-floorplanicon].x,
20);
                                                tween(plugin[menu-floorplanicon].y,
80);
                                                tween(plugin[floorplan-item-text].x,
3);
                                                tween(plugin[floorplan-item-text].y,
108);
                                                tween(plugin[menu-
container].height, 150);
```

```
                                                                        if(data[config].floorplan ==
false,
                                                                            tween(plugin[menu-
container].height, 80);
                                                        );
                                                );
                                        );
                        );
        );

        if(data[config].snapshot == true,
        ,
        removeplugin(ecard);
        removeplugin(menu-snapshoticon);
        removeplugin(snapshot-item-text);
        removeplugin(ecardClose);
        removeplugin(frame);
        );

        if(data[config].share == true,
        ,
        removeplugin(share-item-text);
        removeplugin(menu-share-32);
        );

</action>



<!-- Actions to control the menu items -->
<action name="">

</action>
<!-- End actions to control the menu items -->



<include url="swfaddress/swfaddress.xml" />
<!---->
<include url="ecard/ecard.xml" />

<contextmenu>
<item  name="three60VR"  caption="360 Virtual Reality"
onclick="openurl(http://www.360virtualreality.co.ke,_blank); " />
</contextmenu>
```

```
<events
onenterfullscreen="set(plugin[full].visible,false); set(plugin[exitFull].visible,true);
set(plugin[fullbkg].crop,37|0|37|42);"
onexitfullscreen ="set(plugin[exitFull].visible,false); set(plugin[full].visible,true);
set(plugin[fullbkg].crop,0|0|37|42);"
onpreviewcomplete="buildMenu();executeConfig();current(); "
onresize="resizeMenu()"
/>


<action name="resizeMenu">
        sub(menumaxwidth,stagewidth,310);
        if(plugin[scrollmenu].width GT menumaxwidth,
                sub(plugin[maskmenu].width,stagewidth,408);
                sub(plugin[btnShadow].width,stagewidth,408);
                set(plugin[maskmenu].x,34);
                set(plugin[btnShadow].visible,true);
                set(plugin[btSep].visible,true);
                set(plugin[menuleft].visible,true);
                set(plugin[menuright].visible,true);
                add(plugin[menuright].x,get(plugin[maskmenu].width),34);

                ,
                sub(plugin[maskmenu].width,stagewidth,310);
                set(plugin[btnShadow].visible,false);
                set(plugin[menuleft].visible,false);
                set(plugin[menuright].visible,false);
                set(plugin[maskmenu].x,0);
                set(plugin[btSep].visible,false);
        );
</action>
<data name="current" activo="" activo_top="" desplegado="false" info="true" />
<plugin name="loader" url="graphics/progress.swf" keep="true" align="center" edge="center"
preload="true" devices="flash" zorder="999" handcursor="false" />


<!-- TOP PANEL -->
<plugin name="btm"
                url="graphics/graphic-02.png"
                width="100%"
                align="bottom"
                keep="true"
                handcursor="false"
                zorder="100"
                />

<plugin name="logo"
```

```
                align="topleft"
                keep="true"
                x="5" y="5"
                handcursor="false"
                zorder="0"
                onclick="openurl(get(data[config].logoLink));"
                />

<hotspot name="bottomlogo"
                url="graphics/bottomlogo.png" atv="90" keep="true" zorder="0"
distorted="true"/>

<layer name="map"
        url="map/bingmaps.swf"
        alturl="map/bingmaps.js"
        align="center" width="800" height="500" x="0" y="0"
        keep="true"
        key="An4-9WoANqtASVorNezSjENest2VC0zoAzvMhEpdTjb3uY-
k6u6bMkPxYpDsolsF"
        bgcolor="0xFFFFFF" bgalpha="0.8"
        onmapready="skin_addmapspots"
        onmaptypechanged=""
        onmapmoved=""
        onmapzoomed=""
        visible="false"
        zorder="90">
                <radar visible="true" dragable="true" size="50" zoomwithmap="false"
headingoffset="90" alpha="0.5" fillcolor="0xFFFFFF" fillalpha="1.0" linecolor="0xFFFFFF"
linealpha="0.0" linewidth="0.0" glow="true" glowcolor="0xFFFFFF" glowwidth="4"
glowstrength="4" />
        </layer>

        <plugin name="mapClose"
                keep="true"
                url="graphics/close.png"
                align="topright"
                edge="topright"
                x="10" y="10"
                crop="0|0|34|33"
                onovercrop="0|33|34|33"
                ondowncrop="0|66|34|33"
                onclick="closemap();"
                visible="true"
                parent="map"
                />
```

```
<plugin name="mapZoomIn"
        keep="true"
        url="graphics/mapbtns.jpg"
        align="topleft"
        x="10" y="10"
        crop="0|0|33|33"
        onovercrop="0|33|33|33"
        ondowncrop="0|66|33|33"
        onclick="inc(layer[map].zoom)"
        parent="map"
        />

<plugin name="mapZoomOut"
        keep="true"
        url="graphics/mapbtns.jpg"
        align="topleft"
        x="10" y="54"
        crop="33|0|33|33"
        onovercrop="33|33|33|33"
        ondowncrop="33|66|33|33"
        onclick="dec(layer[map].zoom)"
        parent="map"
        />

<plugin name="mapNormal"
        keep="true"
        url="graphics/mapbtns.jpg"
        align="bottomleft"
        x="10" y="74"
        crop="66|0|78|22"
        onovercrop="144|0|78|22"
        ondowncrop="222|0|78|22"
        onclick="set(layer[map].maptype,normal)"
        parent="map"
        />

<plugin name="mapSat"
        keep="true"
        url="graphics/mapbtns.jpg"
        align="bottomleft"
        x="10" y="42"
        crop="66|22|78|22"
        onovercrop="144|22|78|22"
        ondowncrop="222|22|78|22"
        onclick="set(layer[map].maptype,satellite)"
        parent="map"
```

```
        />

<plugin name="mapHybrid"
        keep="true"
        url="graphics/mapbtns.jpg"
        align="bottomleft"
        x="10" y="10"
        crop="66|44|78|22"
        onovercrop="144|44|78|22"
        ondowncrop="222|44|78|22"
        onclick="set(layer[map].maptype,hybrid)"
        parent="map"
        />

<action name="showMap">
        if(interrupted,,pauseAutotour());
        if(data[current].activo_top == ecard, ecardhide());
        if(data[current].activo == help, closeHelp());
        if(data[current].activo_top == info, closeinfo());

        set(layer[map].visible, true);

        set(plugin[menu-mapicon].onclick,closemap() );
        set(plugin[map-item-text].onclick,closemap() );

        set(data[current].activo_top,map);
</action>
<action name="closemap">
        set(layer[map].visible, false);

        set(plugin[menu-mapicon].onclick,showMap());
        set(plugin[map-item-text].onclick,showMap() );
</action>
```

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