UNIVERSITY OF CAPE COAST

ESTIMATING THE RECREATIONAL VALUE OF ECOTOURISM IN
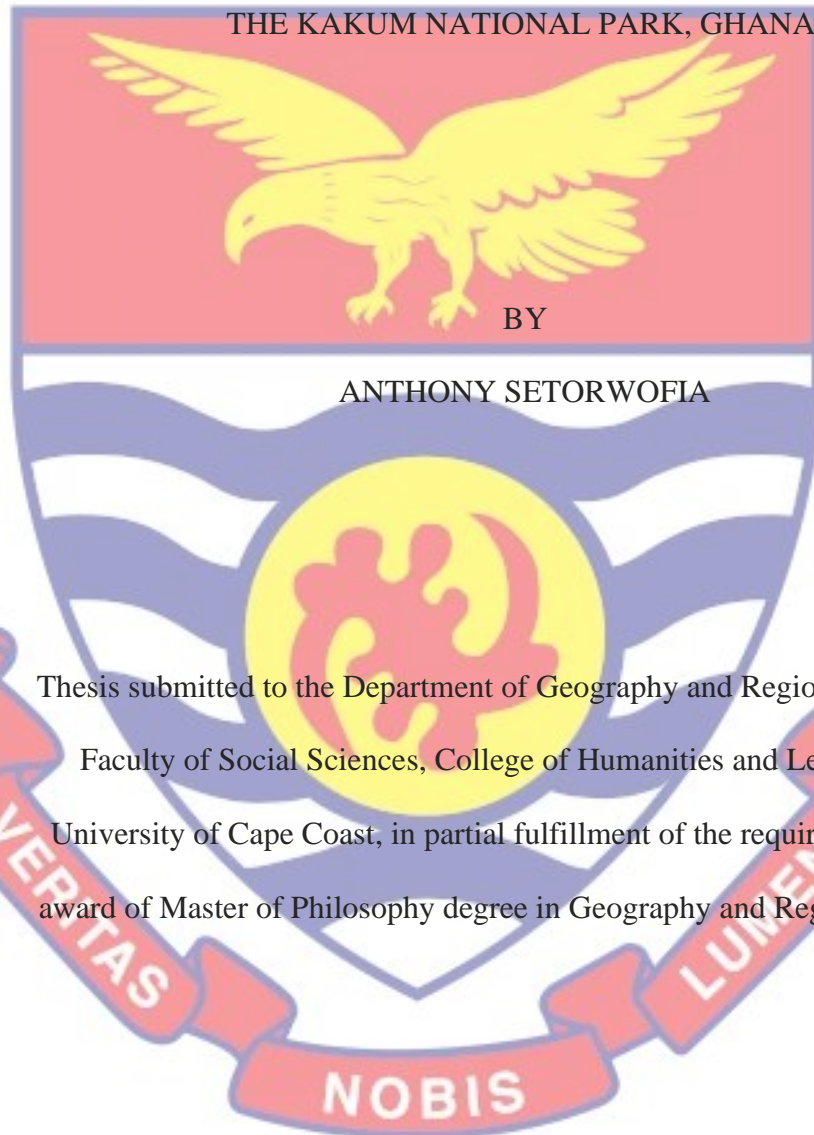
THE KAKUM NATIONAL PARK, GHANA.

ANTHONY SETORWOFIA

2020

UNIVERSITY OF CAPE COAST

ESTIMATING THE RECREATIONAL VALUE OF ECOTOURISM IN

THE KAKUM NATIONAL PARK, GHANA.

BY

ANTHONY SETORWOFIA

Thesis submitted to the Department of Geography and Regional Planning of

Faculty of Social Sciences, College of Humanities and Legal Studies,

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award of Master of Philosophy degree in Geography and Regional Planning

NOVEMBER, 2021

DECLARATION

Candidate's Declaration

I hereby declare that this thesis is the result of my own original research and that no part of it has been presented for another degree in this university or elsewhere.

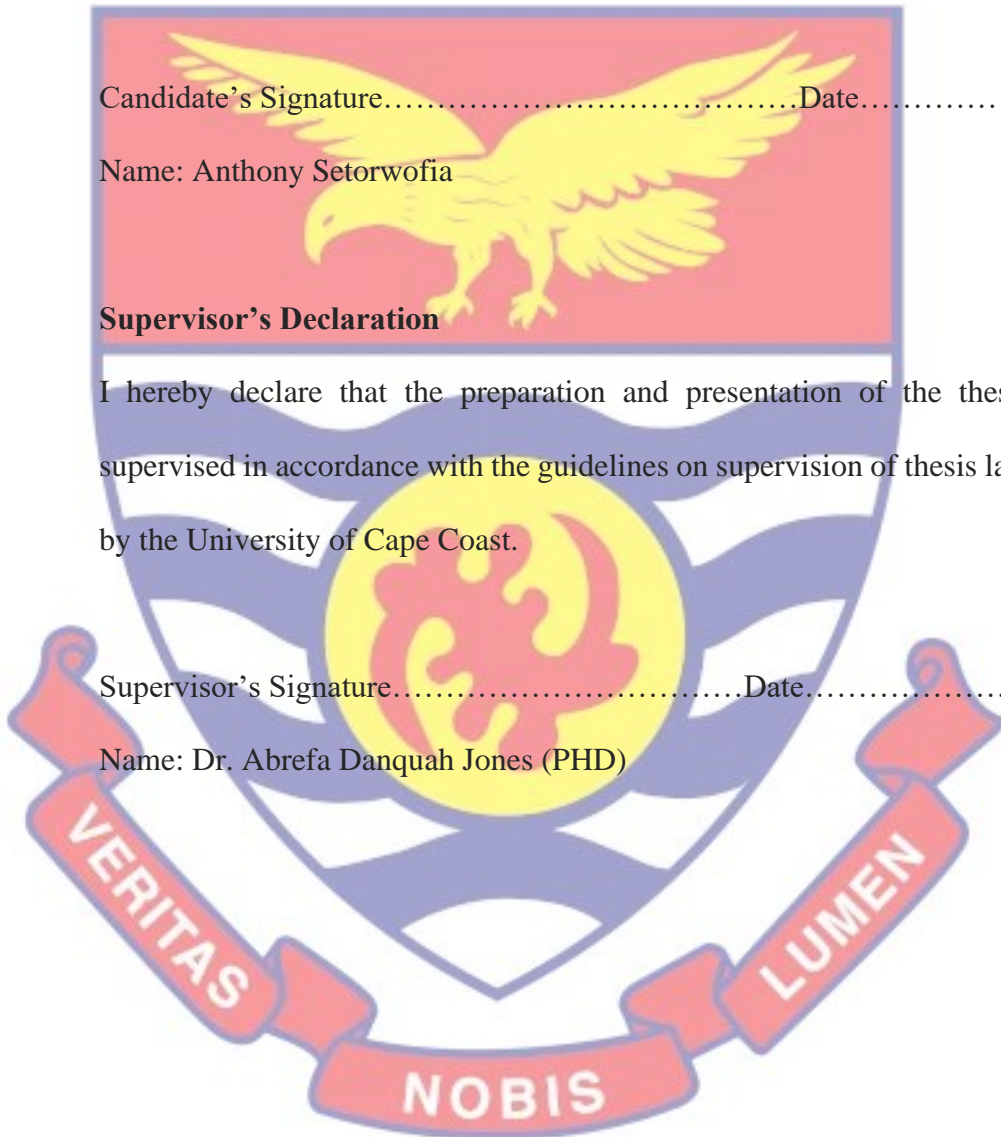Candidate's Signature…………………………………Date…………………

Name: Anthony Setorwofia

Supervisor's Declaration

I hereby declare that the preparation and presentation of the thesis were supervised in accordance with the guidelines on supervision of thesis laid down by the University of Cape Coast.

Supervisor's Signature…………………………….Date……………………

Name: Dr. Abrefa Danquah Jones (PHD)

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ABSTRACT

This thesis estimates a value of Kakum National Park's recreation. Economic analysis employed by this thesis can contribute to effective management of these conservation area (Kakum National Park) and is critical to influencing resource policy decisions. There is report on the degradation and destruction of some ecotourism site in Ghana. The study use Contingent Valuation method to estimate the value of this park. Statistics used in data analysis were percentage, mean, standard deviation, dominance analysis and logistic regression analysis. These respondents (Visitors) were systematically selected for the study. Results of the study shows that age ($P < 0.001$), gender ($P < 0.001$), income ($P < 0.05$), marital status ($P < 0.05$), educational level and locational ($P < 0.05$) are key socioeconomic variables significantly influence visitor's willingness to pay for the entrance fees. Moreover, improvement in social amenities such as walking tracks ($P < 0.05$), lavatory ($P < 0.001$), information signs ($P < 0.01$), accommodation ($P < 0.001$) and condition of the road ($P < 0.00$) will increase the recreational value of the park. The Kakum Park recreational value was estimated as GHS 221,050.60 (approximately US$ 38,046.57) and the Consumer Surplus as GHS 6865.00 (US$ 1181.58). The study recommends that there should be more advertisement of the park to attract more visitors, provide more facilities of the park and provide public education to the public on the importance of recreation and improve social amenities which include road network, packing space, lavatory and others. The study recommends that Park entrance fee of GH 2.00 be maintained, which should be utilized for park management.

Keywords: Ecotourism, recreational value, contingent valuation method

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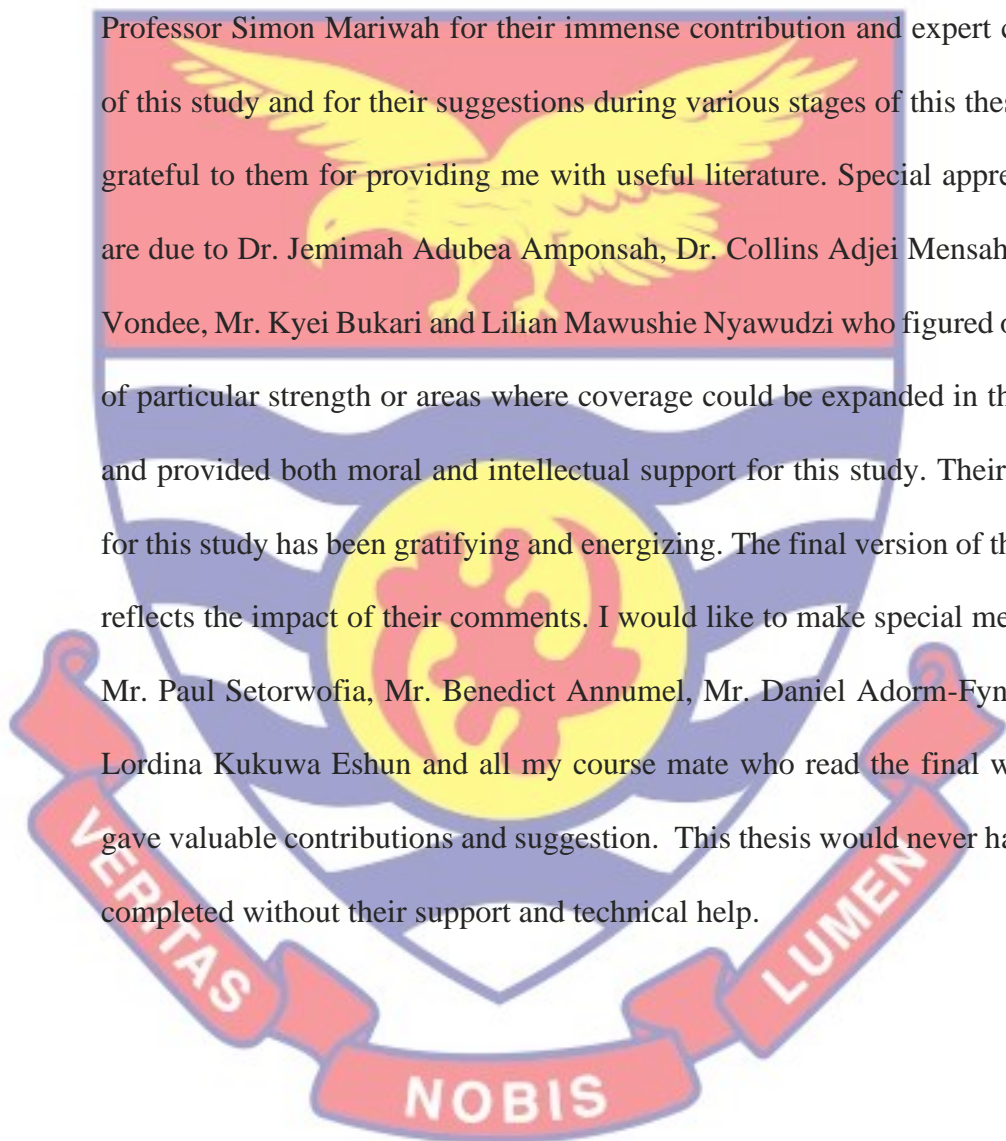
DEDICATION

To my late Grandfather Raphael Kwame Setorwofia and the entire Setorwofia

genealogy.

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ABBREVIATIONS

CVM- Contingent Valuation Method

TCM- Travel Cost Method

WTP- Willingness to Pay

KNP- Kakum National Park

NCRC -Nature Conservation Research Centre

ES- Ecosystem Services

LIST OF PLATE

CHAPTER ONE

INTRODUCTION

Background of the Study

The supply and demand for ecotourism has risen considerably in the last quarter of the century. At the same time, ecotourism a means of achieving sustainable development in destination areas, and as a mode of tourism development, it has become increasingly embraced and legitimized. The hypothesis that visitors themselves demand more responsible forms of tourism that are environmentally appropriate underpins this widespread support for ecotourism, but there is little to show that that the development and improvement of ecotourism have either been supple or demand driven, Sharpley, R. (2006).

Moreover, our ecosystem is not exempted from human impacts (Liu et al., 2001). Governments and conservation professionals have spent some billions of monies to build and preserve protected areas around the world, and citizen actually bear a lot of conservation costs (Balmford and Whitten, 2003; Naughton-Treves et al., 2005; Watson et al., 2014). Command-and - control forms of conservation often struggle due to contradictions between conservation and human livelihoods to achieve conservation goals (Adams et al., 2004; Watson et al., 2014). The effectiveness of protected areas becomes an open question when human livelihoods are not well-integrated into the design and management of protected areas (Leverington et al., 2010; Watson et al., 2014). For sightseeing, picnicking, bird watching, and cultural and religious environments, visitors embark on journeys to exotic locations. Convenience for such locations, however, this always on the loose, which not only results in risks

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to the environment, but also deprives the cash-free government of the revenue that these places bring.

The introduction of an effective Natural Resource Management (NRM) strategy will help to determine the benefits of recreational ecotourism. The leisure benefit gained used for the analysis of cost-benefit of a program choice to maintain a park or a natural resource on a sustainable basis. Various valuation studies in this regard were all performed, e.g., Grandstaff and Dixon's Lumpinee Park (1995) and Khao Yai National Park, Kaosa-ard, et al., (1995). Thailand had some study for estimating the value of national parks. To estimate the market for ecotourism in Margallah Hills, Islamabad and this is captured by Khan, H. (2004) who conducted a similar report. A latest policy of "High Benefit, Low Impact" ecotourism growth and development was adopted by Bhutan National Ecotourism Strategy.

Captions such as "The world's ecosystems are worth $33 trillion," "Bats are worth at least $3 billion a year,", "The state of Georgia's forests yields $37 billion in ecological benefits each year" are examples of monetary representation of the contributions of nature to our well-being. Our world has placed a greater demand on natural areas for diversity of products that include biodiversity, wildlife habitats and recreation opportunities. Estimating the value of the advantages associated with a destination based on the desires of visitors will help formulate an effective Natural Resource Management (NRM) strategy.

Many other developing countries like Ghana are demanding to strengthen the tourism industry, including tourism focused on nature. Some years back, Ghana government has proven a certain interest in the proper management of the structure of national parks by way of putting band on illegal

mining. Some Natural parks in Ghana is not in abundant but their management is quite good. This is because there are inadequate government Funding and free access to these areas for visitors Eagles, McCool & Haynes, (2002). The economic valuation of these environmental resources will provide useful knowledge for improved park management. According to FAO (2011), in the 1990s, about 15 million hectares of forest were lost in one year, mainly in the tropics.

In the last two decades, about 35 per cent of mangrove forests have also been lost (Valiela et al., 2001). A calculated 11% of the word's coral reefs have been destroyed, and a further 16% have been seriously destroyed (Wilkinson, 2000). Controlled habitats have also been increasingly impaired, such as agricultural property. In Ghana, forest resources are being depleted at an unprecedented rate by the International Union for Nature Conservation (2010). FAO (2005) recorded that between 1990 and 2000, Ghana's average annual forest deforestation rate was 1.7 percent and also exceeded the regional deforestation rate in Africa by 0.8 percent, 0.4 percent in South America and 0.1 percent in Asia.

Ecosystem services, which traced back to the mid-1960s and early 1970s, are a relatively recent development (De Groot et. al, 2010). Millennium Ecosystem Assessment (MA) (2005) describes ecosystem services as "the value that ecosystems provide to people. It is noted that, in describing ecosystem services, some writers use an ecological or economic viewpoint. (Jax, 2010). Visitors' sites worldwide are now known ecotourism centers, and they are very significant component to development (Deng et. al.,2003).

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Jax, (2010) realized that in describing ecosystem services, some writers use either an ecological or economic perspective. Ecotourism centers worldwide are now important component of international tourism, have become prominent ecotourism destinations (Deng et. al., 2003; Nyaupane et. al., 2004). Consequently, for many environmental institutions around the world, including those in Ghana, the provision of ecotourism and quality leisure has become a significant task (Shackley, 2001, Zeppel, 2006). Proponent of ecotourism contend that it has many environmental benefits that outweigh its possible negative effects by far. Ecotourism can boost development and generate direct funds for conservation, as well as provide jobs and entrepreneurship opportunities that justify the conservation of natural areas and the protection of assets that are dependent on the tourism industry (Goodwin, 1996; Honey, 2008). The Ghana Tourists Board has funded numerous community-based ecotourism projects since the mid-nineties, including the restoration of community forests and wildlife reserves, in collaboration with local NGOs such as the Nature Conservation Research Centre (NCRC) and the Ghana Wildlife Society (Zeppel,2006). Ecotourism is a philosophy of sustainable growth in tourism that aims to promote the conservation efforts of the neighborhood and to increase public participation in management, as well as to provide the local community with economic benefits (Surakusumah, 2012).

Ecotourism has become a trend and demand, making it important to attract more visitors (Hidayati, et al., 2003). Ecotourism is therefore accurate and efficient in maintaining the dignity and authenticity of the environment in the untouched area. Ecotourism in Ghana is a conservation project implemented by the Ghana Tourism Authority with support from the Nature Conservation

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Research Centre, Peace Corps, the USAID and other donors with the purpose of upgrading tourism facilities in the various communities and to promote tourism in the country in a more responsible manner. Its concern is to converse the environment, historical promote revenue for the people and same time for sustainable development. The World Society of Eco-tourism, according to them, ecotourism involves travel to natural areas that conserve the environment and sustain the well-being of the local people. It seeks to promote a more sustainable approach to tourism by encouraging conservation through community involvement. The essence is to enhance the ecological safety and protection of habitat for man and other species through improvement on biodiversity.

In line with the Millennium Development Goals, ecotourism in Ghana for sustainable tourism is expected in assisting in the protection of natural areas, alleviating poverty, empowering women, improving education and improving local community health and well-being. There are about forty-two (42) ecotourism sites identified in Ghana, Eshun (2007), which heavily attracts visitorss from all over the world. Some of these areas are the Boabeng Fiema Monkey Sanctuary, Bui National Park both in Brong Ahafo, Butterflies Sanctuary at Bobiri Forest, Aburi Botanical Gardens in the Eastern Region Shai Hills in Greater Accra, Nzulezu River, Nini Suhien National Park and Ankasa Resources Reserve in the Western Region, Crocodile Pond at Paga in Upper East Region, Kakum National Park in Central Region, Gambaga Scalp and Mole National Park in the Northern Region. Others are the Tafi Atome Monkey Sanctuary, Amedzofe Mountain Community, Afadzato Mountain community at Liati Wote, Wli Waterfalls, Keta Lagoon Complex Ramsar Site, and Kyabobo

National Park, all in the Volta Region. The Mole National Park in the north along with the savannah and the Kakum National Park along the coast are the main visitor's attraction centers. With nearly 725 species present, Ghana as a nation is the logical hub of birdwatchers. Difficulties of ecotourism in Ghana include the following, Infrastructure improvement is important to move ecotourism to appreciable standards at most visitors' sites. Visitor's guides and the administration in most communities need to get more professional than currently being the case. Even though services are offered in very friendly and hospitable manner operations in most places appear to be too informal and does not augur well for professionalism which is a hallmark for success in the industry world-wide. The Nature Conservation and Research Centre has over the years built a network of more than 30 community-based ecotourism destinations in Ghana, where emphasis is placed on tourism development and economic opportunities through environmental, historical and cultural conservation. The ownership, management and operation of these destinations reside solely in the hands of the communities Kosoe, & Osumanu, (2015).

Valuing is a tool used to measure the economic value of non-market environmental products and services. Tisdell, (1993) in Okojie and Orisajimi, (2011), supposed to have a price for environmental products and services to reflect the approach to them. Economic value is the monetary value measured from the actions of visitors to the forest and the media in fund-raising activities by the government and management. For the construction and maintenance of these parks, these funds were from visitors. Therefore, research into the economic benefit of Kakum National Park is very significant.

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Problem Statement

The United Nations has acknowledged the global value of ecotourism through the declaration of the year 2002 as the "World Year of Ecotourism." In many developing countries, including Ghana, the definition is still not properly understood and utilized for development. Although people can disagree on whether or not nature can be economically represented, the truth is that nature creates a variety of economically useful goods and services. The empirical literature review shows that most of the studies discuss the social, economic and environmental dimensions of ecotourism and its significance Tepelus (2008).

There is substantial empirical work on economic valuation using the Contingent Valuation Method (CVM), but it focuses more on developing countries. In order to value Queen Elizabeth Park in Scotland, Hanley (1989) used the Contingent Valuation Method (CVM) and the Travel Cost Method (TCM). His findings indicated Willingness to Pay (WTP) was lower in Travel Cost Method (TCM) than what was obtained in the CVM.

Ankomh and Osei Adu (2014) were able to give an estimate of the recreational value of the Kakum National Park using a technique called the Travel Cost method, their recreational value of the KNP was estimated to be GH¢981,188 in 2013. Twerefou and Adjei Ababio in 2009 estimated the economic value of the Kakum national Park with the individual travel cost method and the value was extrapolated to be about US$ 2.10 billion. Their results also indicated that the annual per person value of the site is about 67.28 (US$ 46.40) which translates into an annual aggregate value of 8,481,653.20 (US$ 5,849,416) in 2009.

Tourism research has generally concentrated on issues related to the tourism industry's social and economic impacts. Ecotourism is certainly one of the most critical fields of tourism research today. The literature survey reveals that studies on the impact of ecotourism have been conducted. They propose some remedial measures to overcome the problems in this field. It is clear that no comprehensive studies on the evaluating the recreation benefit with the contingent valuation method in assessment of ecotourism projects in Kakum. Despite the rising number of eco-tourists and their global effects, there has been limited research in this area. In Kakum National Park, there are no studies associated with using Contingent Valuation Method estimating the recreational benefits of the park hence this present study has a lot of relevance, thus filling this methodological gap.

A reason for ecological evaluation and this study is that the economic value of nature is concealed from the outlook. Since ecosystem products and services appear to be shared public goods, we do not see their importance through the prism of consumer transactions as goods that are not purchased and sold. There are a few environmental assessment studies, but only a few have used an economic approach to measure benefits of ecotourism, studied by Chase et al. (1998) ecotourism demand and the differential pricing of entry to the National Park in Costa Rica. However, people do not purchase and sell ecosystem services, which can lead us to undervalue their value.

After all, just because there is no price for anything does not indicate that it's not worth any value. Some justification estimating recreational value and this study is to find the "missing prices," in order to see and understand the value of nature. Economic value is a strong link with the campaign for

ecotourism in environmental science. Many of this ecotourism in Ghana are potential source of minerals including Kakum national Park and hence there is the need to conduct a valuation study to estimate the benefit of this park so as to get the opportunity cost of maintaining the park vies ivies going after the minerals Appiah-Opoku, (2011).

There is important of entrance fees development to ecotourism and that been stressed by a growing body of literature, mainly in developed countries, but there is little literature on the quantification and value estimation of ecosystem services in Ghana. Valuation of ecosystem resources offers hard economic figures for environmental activists that may, in principle, be more powerful than abstract explanations of the importance of nature or non-economic conservation initiatives such as biodiversity scores.

Objectives of the Research

The main objective of the study is to measure the recreational value of the Kakum National Park.

Specific Objectives

1. To explore the factors that affect visitor's willingness to pay for entrance fees at the Kakum National Park.

2. To determine the consumer surplus and the value of the Kakum National Park.

3. To ascertain whether improvements in the social amenities of the Kakum National Park would lead to a higher recreational value for park visitation.

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Research Questions

1. What factors affect visitors' willingness to pay (WTP) for entrance fees of the Kakum National Park?

2. What is the consumer surplus and recreational value for Kakum National Park?

3. What are the factors that affect improvements in the social amenities of the Kakum National Park?

Significance of the Study

Monetary assessment of ecosystem services allows for a more detailed estimation of ecotourism and policy implications and it has become very useful in developed countries. In order to inform policy discussions and decisions, assessment approaches used in this study will help to account for gains and loss people will encounter as in social amenities changes in Kakum National Park. Ecosystem services (ES) are a contribution to the ecosystem's function and operation. Human well-being and thus calculating its worth (in conjunction with other inputs) would help curb the issue of environmental degradation, such as illegal mining, De Groot et. al, (2010).

Humanity relies heavily on well-functioning ecosystems and natural resources that are the base for the continuous flow of ES from nature to society. The study will promote the preservation of environmental assets and enhances the integrity and culture development of Ghana and will have a positive attitude and experience for visitors in the destination areas (both international and domestic). The study will also lead the local people and the government to the economic and other benefits. It would also promote tourism development to contribute to the preservation of our natural environment.

Limitation of the Study

It is necessary to recognize and learn from the study's limitations, as with all studies. It is known there is a measurement error in every survey-based process, including that adopted in this study.

However, provided that visitors were able to reply and completely anonymously to their reasons for visitors' packages, every effort was made to minimize any measurement errors to the greatest extent possible. Through a convenience sampling process, data were collected from visitor's attraction venues in the area of this country, it could be suggested that generalizability beyond this context and that this region could be problematic. The selection of data collection sites was however, based on the quest for patronage diversity, and this is demonstrated by the study's relatively diverse demographic nature. It may be useful in future research to perform in-depth interviews with prospective visitors on ecotourism and other natural experiences, as well as more conventional tourism experiences.

The high degree of ambiguity is the biggest barrier to the use of economic valuation of ecosystem resources in policy evaluation with regard to both physical data and estimates of economic value. In the sense of 'fitness for function' and proportionate use of funds for assessment and analysis purposes, robustness must be taken into account.

The complexities and methodological challenges underpin the obstacles to a broader application of evaluation of ecosystem service valuation. These are the main problems because there appears to be broadly positive evidence of the general reactions of the stakeholders involved in this project. The capacity for assessment to provide valuable feedback to policy making, debates,

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development and prioritization of alternatives, and so on, is recognized. There are some caveats, however, and the most significant of these is that the valuation must be 'solid'. Feedback indicates that the answer to 'off-the-shelf' values will be a welcome and maybe a required measure, at least for initial evaluation purposes.

Organization of the Study

This thesis is split into five chapters. The first Chapter handles the context of the study, the problem statement, the intent of the study, research issues, the importance of the study and the limitations. The second chapter is devoted to literature review, the third chapter outlines research methods, the study area and the map of the study areas. Chapter four denotes the result and the discussion and chapter five denote the summary, recommendation and conclusion of the study. In addition to the above, pages have been devoted to the presentation of the references and the Appendices at the tail end of the thesis, while the Dedication, Content, Acknowledgement and the Preface will occupy the front pages.
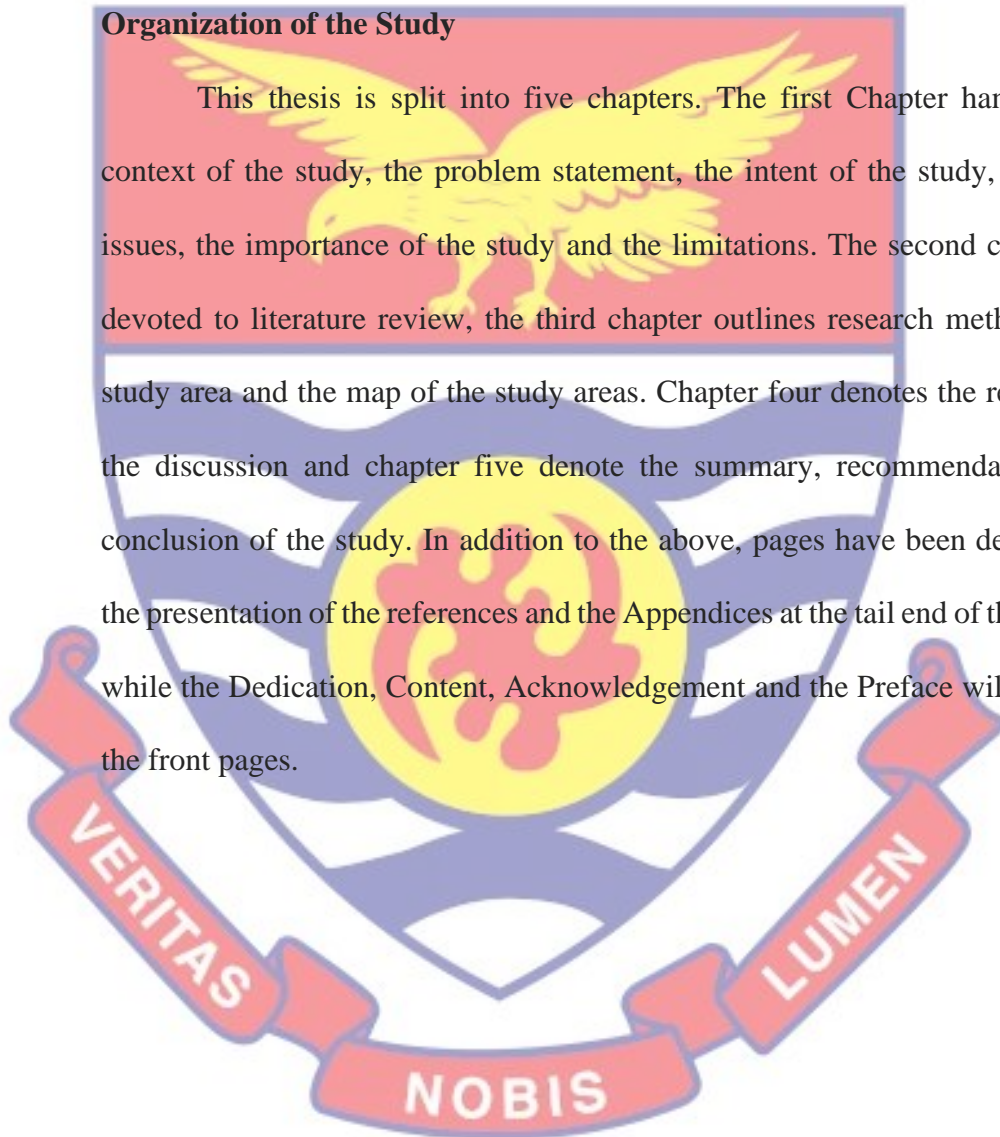
Chapter Summary

Introductory Chapter has provided useful information on the importance of estimating the recreational benefit of the Park and the methods that is been used to estimate value the benefits of these ecotourism centers. It also contains much introductory materials for the discussion to follow. Finally, many of these issues raised or discussed could be tied together to estimate the recreational benefits off the Park, estimates the optimal entrance fee and estimates the consumers surplus and derive the aggregate demand curve for these ecotourism centers. Many of the ideas presented here will be drawn upon for further discussions in the chapters that fellow.

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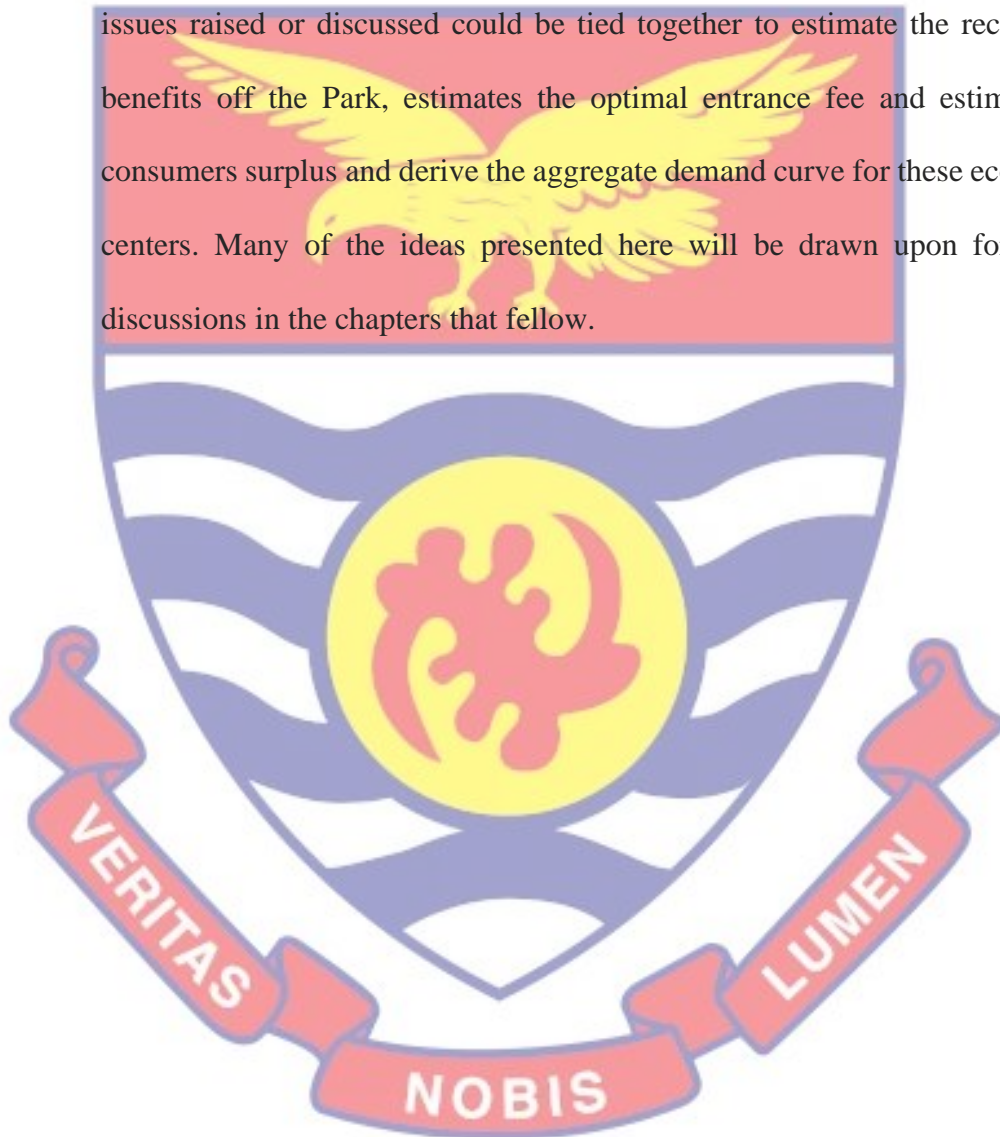
CHAPTER TWO

LITERATURE REVIEW

Introduction

This chapter begins by reviewing some empirical findings which are fundamental in conducting descriptive studies. Some developments of the study of ecotourism valuations were reviewed. Further, literature has been reviewed under the sub-headings: willingness to pay (WTP) for recreational services, Consumer surplus, Travel coat approach and recreational value (benefits), 9contingent evaluations, improvements in the social amenities of the parks and theoretical review. Both Theoretical and Empirical review was conducted under this chapter.

Natural Parks

Natural parks are used by locals, often having a detrimental importance. A significant problem to be taken into account in tourism management is the importance of these locations and the potential harm caused by tourism (Palmer & Riera, 2003). Recent tourism studies have implemented economic methods that do not have standardized markets from which it is possible to derive a selling price and therefore a reference market value (Tisdell, 2004) in order to acquire environmental products and harm valuations. Economic analysis solves these issues by using a number of valuation approaches (Folmer &Van Ierland, 1989).

Direct procedure gain, by a direct declaration of individuals, the value of an environmental product or a transition in its availability. For example, in the contingent valuation process that uses a dichotomous response to the problem of valuation, for instance, which uses a dichotomous answer to the

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valuation issue, interviewees were questioned whether they will pay a determined amount of product and for a change in the setting. If the benefit of this change was greater for him / her than the expense (or price) implied, the interviewee would say "Yes "and would say" No ". It is like a business that is imaginary or simulated (Herremans 1999). Indirect methods collect data from commodity markets that are connected to the commodity whose value is being calculated. The Millennium Ecosystem Assessment (MA), a major UN-sponsored project to investigate the effects of human activities on ecosystems and human well-being, has identified four main ecosystem service categories: supply, control, cultural and support services.

Provisioning Services: When people are asked to characterize a service offered by nature, most think of food. Fruit, vegetables, plants, fish, and livestock are accessible to us as direct products of ecosystem. Any type of profit to individuals that can be derived from nature is a provisioning service. Other types of supply facilities, along with food, wood, natural gas and oils, plants that can be processed into clothing and other products, and medicinal benefits.

Regulating Services: Many of the essential resources that make life possible for humans are provided by ecosystems. Plants clean the air and filter water, bacteria decompose waste, bees pollinate flowers, and tree roots hold soil in place to prevent erosion. All these processes work together to make settings safe, stable, usable, and resilient to change. A regulating service is the benefit generated by ecosystem processes that moderate natural phenomena. Pollination, decomposition and climate control are among the resources for regulation.

Cultural Services: We have been altered in turn by the natural world as we interact and change it. It has driven our cultural, intellectual and social development by being a constant force present in our lives. With ancient civilizations portraying animals, plants, and weather patterns on cave walls, the meaning of habitats to human imagination can be traced back to the beginning of civilization. A cultural service is a non-material benefit that contributes to people's growth and cultural development, including the role of ecosystems in local, national and global cultures; knowledge building and the propagation of ideas; innovation born of nature (music, art, architecture) experiences; and recreation.

Supporting Services: There are so many resources in the natural world, we often forget the most fundamental. Without the continuity of natural processes such as photosynthesis, nutrient cycling, soil and water cycle formation, ecosystems themselves could not be maintained. These processes allow the World, let alone entire ecosystems and humans, to maintain basic life forms.

Valuing Ecosystem Services

Typically, two different approaches are used to pricing non-market products such as ecosystem services: stated preference or revealed methods of preference. Revealed option strategies are based on the actual behavior of people, measuring the value of a good on the basis of the amount people spend on using that good. One downside of the methods of choice or indirect methods revealed is that they only capture values for use. This means that no non-use values, such as life values, are found in the calculation. This indicates an underestimate of the value. Depending on the theory, the stated preference methods, or direct methods, can capture these non-use values. Visitors are asked

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to state their willingness to pay (WTP) for a specific situation in which the choice methods listed identify a shift in welfare. Typical techniques are CV and choice experiment (CE).

A variety of problems are correlated with stated preference approaches, e.g., various aspects of ambiguity (more defined in Chapter 3) or circumstances in which visitors are informed to value something they do not currently use or are unfamiliar with (see, for example, Hanemann and Kriström 1995; Li and Mattsson 1995). When comprehensive pre-studies of the related ecosystem services have been carried out and questionnaires are carefully planned, CV can be an effective method for estimating ecosystem services in general (Barkmann et. al., 2008) and biodiversity in particular (Nunes & van den Bergh, 2001). There are a lot of problems to bear in mind, however.

Ecosystem Services and Policy

Turner & Daily (2008) describes the sense in which ecosystem services exist, benefit people and are human-influenced. Their structure begins by defining the problem, i.e., what the ecosystem provides and the circumstances in which it is located. The social, economic or politico-cultural climate may be this. Services of the ecosystem are modelled, mapped and valued. Finally, the effects on ecosystem resources of policy interventions and management decisions are evaluated. The UK NEA (Watson et al., 2011) is focused on a concept that links ecosystem services to products derived from ecosystems and the well-being associated with those goods, similar to that of Turner and Daily (2008). This well-being offers guidance, as well as management practices, to drivers of transition, such as demographic or technological changes. All these drivers of change impact the services of the environment that provide products,

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human well-being, etc. A better assessment would provide better conditions for enhancing decision-making and investment, creating prospects for wealth and job growth, and the future human well-being opportunities (Watson et al. 2011). A similar model is also suggested by De Groot et al. (2010) for use in spatial planning.

Economic Valuation Methods

The valuation strategies based on the data source were differentiated by Mitchell and Carson (1989), depending on whether the monetary value is derived from individuals' real business behavior or from their answers to hypothetical market scenario questions. As a result, you can group the valuation models into Revealed Preference and Reported Preference groups.

Revealed Preference Methods

In order to allocate a monetary value to the environmental good market goods that are directly linked to the environmental good being priced are defined by the disclosed preference methods and any price value and/or use changes or anomalies of such market goods are recorded. The Travel Expense, Hedonic Property Value, and Hedonic Wage Models are the most frequently revealed preference methods. Such approaches have the benefit of not being abstract, since they expose values that people currently pay for from the prices of similar market products. At the same time, the actual value of an environmental good tends to be underestimated because the full spectrum of use and non-use values produced by the good is not taken into account (Garrod and Willis 1999).

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Stated Preference Methods

In a hypothetical situation, the specified preference methods specifically ask people to attach an importance / preference / action to an improvement in the quality of an environmental good. Contingent Valuation Process, Contingent Rating and Contingent Behavior and Conjoint Analysis Choice Experiment are the methods defined in the literature as stated preference methods. Among these, value for non-market goods is the most commonly known type of contingent valuation (CVM). This approach directly asks individuals about the value they are willing to pay or accept as compensation for a hypothetical change in the quality or quantity of a commodity. Consequently, the estimated value would not come from actual purchases made by individuals but from responses to a hypothetical scenario. Since survey visitors are faced with a hypothetical market and willingness to pay (WTP) sum they do not have to pay, their WTP amount recorded often exaggerates the amount they are actually going to pay for a good (Tietenberg 2000). The calculation of the economic rents to be paid for conservation by beneficiaries helps one to understand the benefits that these recipients receive. As a consequence, we need to choose a valuation method that is most suitable for the valuation of benefits. As explained earlier, national parks and the ecological services they provide influence the well-being of communities. Usually, these parks also have a major non-use appeal for individuals who want to preserve them only for their lives. Consequently, to capture both use and non-use values and measure the accumulated benefits individuals derive from Orseg National Park, we need to work with the contingent valuation approach.

CVM has been commonly used to calculate the monetary values of environmental sites when gathering estimates of recorded willingness to pay (Scura, and van't Hof; 2000 Marjaine; 2000 Getzner 2009). Garrod and Willis (1999) argued that to value public goods such as the protection of wilderness and landscape, biodiversity, contingent valuation is necessary.

The Contingent Valuation Method: Theoretical foundations

Changes in environmental quality can impact the well-being of individuals through any of the following four channels: changes in the rates they pay for items purchased on the markets; changes in the prices they receive for their input factors; changes in the quantities of non-marketed goods; and changes in the risk faced by individuals (Freeman 2003). Therefore, to understand the foundations and the theoretical basis of the CVM, it is important to start with a brief overview of welfare initiatives related to improvements in environmental quality. John Hicks (1943) suggested monetary welfare policy instruments that can act as theoretical frameworks for the contingent benefit of environmental goods. Four measures to change consumer welfare resulting from a price change were laid down by Hicks (cited by Maimane 2000): variance compensation, variation equal, surplus compensation and surplus equivalent. As the compensating surplus and equivalent surplus changes (which allow the quantity consumed to be held constant) are irrelevant in terms of public goods supply, I am only focusing here on the compensating variance and equivalent variation.

Willingness to pay for Ecotourism (WTP)

Literature has emphasized the distinction between the willingness to pay (WTP) and what visitors expect to pay (reference price) (Chung, Kyle,

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Petrick, and Absher, 2011). The maximum amount that visitors plan to pay can be described as WTP (Chung et al., 2011). Willingness to pay is used in tourism literature to estimate the value of non-market goods (Reynisdottiret al., 2008) and different WTP precedents have been established. These include; certain socio-demographic and other variables, such as past payment history, duration of stay, visitor satisfaction, and attitudes towards the environment, were found to be major determinants of WTP (Bhandari and Heshmati, 2010). The revenue is among the socio-demographic variables that decide the WTP visitors that have been common in most of the CVM literature. A high number of reports on outdoor recreation, however, have shown that low-income earners are more resilient than high-income earners to price adjustments (Mamatet al., 2013; More and Stevens, 2000). In their research to examine visitors' willingness to pay for conservation in Sikkim India, Bhandari and Heshmati (2010) identified the visitors' income level as one of the important factors of the visitor's willingness to pay conservation. Thus, with the issue of willingness to pay, visitors rely primarily on their level of income, regardless of the intent (Reynisdottiret al., 2008). It can also be hypothesized that the amount of income of visitors has a positive effect on their contribution to the conservation of biodiversity. Another significant variable is age; the cultural practices of ecotourism spots appear to draw older people in particular. As such, as observed by Baralet al. (2008), age is most often positively linked to the WTP for conservation.

As educated individuals are typically more aware of environmental problems and participate in conservation activities, a higher level of education has been shown to be positively linked to WTP, so it is anticipated that a higher

level of education will imply a greater understanding of natural resources, resulting in a higher WTP (Brennan, Tapsuwan and Ingram, 2007). Although a few studies have documented the influence of gender differences on WTP, the findings are generally mixed and inconclusive (More and Stevens, 2000; Reynisdottiret al., 2008). However, Reynisdottir et al. (2008) explained that previous visits to a site have a negative effect on WTP, indicating that first-time visitors are more likely than regular visitors to pay a particular visitor.

Studies on Peoples' Willingness to Pay (WTP) for Ecotourism Resources

With regards to Willingness to Pay (WTP), Arrowet.al (1993) suggested the use of face-to-face interview instead of mail surveys for effective survey, while Carson (2000) suggested not to rule out mail or telephone survey as they are relatively cheaper although they have their drawbacks. The use of in-person interview in part has been emphasized for the fact that it helps to facilitate better understanding of the hypothetical situation by the visitors and also helps to minimize non-response. It also facilitates the use of visual materials like pictures or maps which is not possible in case of telephone surveys. When it comes to recreational services, researchers mostly approach the visitors in the site or in hotels or nearby areas of visit because it is difficult to get hold of them either through mail or telephone after they have left.

In the report of Hadker et al. (1997), they asked the visitors to state their monthly and annual WTP for protection and conservation of Borivli National Park (BNP), India, for the next 5 years instead of a one-time payment. This can help in reducing the hypothetical nature of the payment but, at the same time, may lead to strategic bias by the visitors resulting in understatement of WTP. The study also used trained interviewers and even though efforts have been

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taken to address different biases in the interview process, the presence of interviewer bias may still affect the study. The study revealed that people's attitude towards environment, the perceived values attributed to WTP, visitation rate and significant determinants of WTP are the ability to recognize the financial burden of environmental changes.

From park management perspective, the study provided encouraging results and showed high WTP of people for improvement, maintenance and preservation of BNP. Singha (2011) and Barman (2012) also used a similar payment vehicle for studying WTP of people for Kaziranga National Park (KNP) in Assam. However, the sample size taken were relatively small for reliable results in a CV study. Further, in the study by Barman (2012), the sample consisted almost entirely of non-visitors. Lee (1997) used CVM to estimate visitors WTP for higher entrance fee estimating the economic value of resources for nature-based tourism in Mt. Minju, South Korea. He suggested that nature-based tourism helps in sustaining the benefit of the environment and thus, the existence of nature-based tourism could be justified on the ground of the economic benefits as well as environmental preservation and lower leakages.

Entrance fee has been chosen in many studies as it is considered to be more realistic, familiar and appropriate for users of recreational services (Walpoleet al. 2001; Kim et al. 2007; Reynisdottiret al., 2008; Samdin, 2008) suggested that entrance fee as payment vehicle enhances the approximation to reality in the hypothetical scenario and the use of access' as the contingent factor makes it easier for visitors to interpret. They examined the visitors WTP for increase in entrance fee in Komodo National Park and observed considerable

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WTP by the visitors but they also indicated that there could be resultant decrease in visitation from entrance fee hike which could negatively affect the local economy. In such a case, moderate price increase with dual pricing and partial revenue retention could be more suitable, but government support would still be important as park revenues tend to be unpredictable. Reynisdottiret al. (2008) estimated visitors WTP in Gullfoss waterfall and Skaftafell National Park in Iceland and suggested that considerable amount could be generated through higher entrance fee in both the sites. The visitors showed higher WTP for Skaftafell which can be due to differences in site attributes like larger area, more recreational opportunities etc.

Hakim et al. (2011) also estimated the consumer surplus at Rawapening, Indonesia, and thus, recommended higher entrance fee for better management. However, they found that the perceptions regarding general visit attractions and preference for tourism attractions in Rawapening significantly affected the visitation rate.

Ecotourism: Basic Principles

Ecotourism is generally seen as a manifestation in the natural environment of alternative to conventional, mass) tourism and, indirectly, a particular form of sustainable tourism growth (Clarke, 2002; Diamantis & Ladkin, 1999). In this broad context, however, the term ecotourism is applied to such a variety of tourism goods, activities and experiences, slinked only by their occurrence in natural places that have become a meaningless term for some (Ryan, 1999). Others on the other hand, attempt to account for this diversity by suggesting various intensities of ecotourism; Acott et al. (1998), for example, refer to 'deep and shallow' ecotourism, while Orams (1995) differentiates

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between the passive and active involvement of visitors. Noticeably, some organizations have now redefined ecotourism as 'responsible tourism, emphasizing, given the broad context and common appropriation of the word, the status of visitors and their interaction with the term. A complete critique of the philosophy of ecotourism is outside the reach of this article (Fennell, 1999; Page & Dowling, 2002). Nevertheless, it is important to establish the generally accepted concepts of ecotourism as a basis for assessing the consumer behavior of eco tourists and, therefore, the viability of the idea of ecotourism itself; all visitors experiences are based on visitors' feedback as the final output of the mechanism of tourism creation (Smith, 1994).

Ecotourism is usually considered to be an ecologically friendly form of tourism that occurs in natural ecosystems, helping visitors to appreciate and learn about the world they visit and enhancing the socio-economic status of local communities. Therefore, Fennell (1999) sees ecotourism as a form of tourism that focuses primarily on nature's experience and learning and is ethically managed to be low-impact, non-consumptive and ethically managed. It is also considered a form of tourism that as noted in the introduction to this paper, challenges the traditional structure and inherent power relations of international tourism. That is, whereas the international mass tourism system is allegedly regulated by companies and organizations in the wealthier developed world, resulting in local development that is unsustainable or reflects a state of dependence. Therefore, in theory, three key pillars exist for the development of ecotourism (Wallace & Pierce, 1996).

Ecotourism Consumption

The notion of sustainable tourism development has long been understood to be questioned, in general, by the nature of tourism consumption. In other words, the adoption of a new social paradigm for sustainable living (Sharpley, 2000) is a fundamental prerequisite, whether through tourism or other socio-economic activities, for achieving sustainable development. As McKercher (1993) has famously noted, however, visitors are consumers, not anthropologists, and that tourism is primarily a means of entertainment. It is therefore not only unrealistic to anticipate or indeed, urge visitors to alter their behaviour, but also perhaps, a sign of what Butcher (2002) calls tourism' moralization.'

However, the sustainability of the growth of ecotourism depends directly on the assumption that visitors are not only consciously seeking alternative, environmentally appropriate modes of tourism, reflecting an alleged increase in environmental awareness, but are also mindful of the effects of tourism and are able to change their conduct. In a widely cited document, for example, Poon (1993) notes that the conventional mass visitors is superseded by the 'modern visitors. While the 'old' mass visitors were satisfied with a sun-sea-sand style of homogeneous, predictable holiday experience, the new visitors is more informed, autonomous and flexible, seeking quality experiences that educate, are separate, are environmentally friendly and fulfill special interests. New' visitors, according to Poon (1993), also knows how to act, how to 'rightly' consume tourism. This claim is supported to some extent by research showing that 64 percent of UK visitors assume that tourism causes some degree of

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environmental damage and that UK customers will usually be willing to pay more for an environmentally friendly tourism product (Diamantis, 1999).

In a related paper, Miller (2003) found that consumers are increasingly applying environmental criteria to their general consumption actions and that as noted below, they are trying to move these criteria to tourism consumption in particular, fulfilling one of the 'true' criteria frequently stated by eco tourists. Some Visitors query or have knowledge of the effects of tourism (Ryan, 1997) and expecting otherwise means that they are following a rational consumption mechanism based on knowledge that not only best fits their established needs, but also recognizes their contribution to local society and the environment. As Ryan (1997) states,' from a purely pragmatic point of view, it hardly seems a rational mode of operation,' although many observers point out that visitors themselves certainly do not understate themselves. It has also been noted of all those variables that may impact. 'Relatively few visitors prefer to make environmental-based decisions' (Swarbrooke & Horner, 1999). Therefore, the suspected existence of eco tourists remains the topic of intense debate; sparked by the truism that tourism, by definition, requires travel that itself is usually ecologically damaging (Høyer, 2000).That is, the 'stationary' focus of much ecotourism planning overlooks the fact that visitors have to travel to the destination; on the other hand, a holistic perspective allows 'sustainable mobility' to be adopted by the growth of ecotourism (Høyer, 2000) both to and inside the destination.

Who is the Eco tourists?

Who are the Eco tourists while trying to answer the question? First of all, it is important to understand how, in theory, a 'real' Eco tourists might be

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identified. That is, what are the characteristics of behavior that could differentiate ecotourism consumption from other types of visitor's behavior or, more specifically, distinguish Eco tourists from daily or mass visitors. There are two related points which are immediately important. First, it is reasonable to suggest that Eco tourists have direct impact on the climate taking into account development of tourism. It reported by Tao et al., (2004) that the actions of Eco tourists should preferably be mold by optimistic incentives to act a better way. In fact, this implies that the behaviour of Eco tourists should be measurable at all applicable stages of the mechanism of demand for tourism. There are, therefore, three contexts for responsible actions by Eco tourists:

Pre-trip: Being an 'informed Eco tourists ' Eco tourists should be informed prior to departure of the following issues: The travel industry and its dedication to green practice; group size, modes of transport; the tour company's work practices and other travel-related organizations; the hotel/accommodation ownership and environmental practices used during the trip; the economic benefits of the trip.

During the trip: Behave properly with respect to the local community; respect local customs and act as a guest; travel humbly; spend money on local businesses, stay long enough to learn about each visited place and community; Quality of the outcome; preventing trails, flora and fauna from being harmed; mitigating personal environmental impacts.

Post trip: To obtain more information and understanding of the places visited; to consider the outcomes of the trip and if necessary, to provide feedback to the tour company.

Since the publication of The Good Visitors: A Worldwide Guide for the Green Traveler (Wood & Home, 1991), various manuals and codes of conduct have sought to provide more realistic instructions about how to behave safely as a visitor. A number of these are generic, but an increasing number are focused on the unique needs of particular tourism environments. For example, the Project Conscious Foundation promotes environmentally friendly aquatic tourism and focuses on conserving the marine environment. Therefore, the tendency of many such codes of conduct to limit advice not only to on-trip behaviour but also to on-trip behaviour, suggesting perhaps the widespread association of ecotourism with nature-based tourism. The nature of tourism consumption in general, as will be argued shortly, suggests that it is unlikely that the responsible conduct demanded by the ecotourism codes of practice will be manifested in practice. However, a number of attempts have been made to investigate the consumption of interactions with regard to visitors' attitudes, desires and behaviour in ecotourism.

As a starting point, Eagles (1992) observes that ecotourism refers not to a product, but to a particular travel market made up of those who prefer a certain travel experience and destination in pristine natural environments that offers nature-oriented experiences. It means that supply is guided by the demand for ecotourism, that the rise in the availability of resources for ecotourism has inevitably led to an increasing number of Eco tourists wanting to experience those products. Because of personal environmental ideals and those who have resorted to 'eco-sell' (Wight, 1993) or are attracted to what is frequently exclusive, exotic and expensive ecotourism as a means of consumption, this does not promote a distinction between those visitors who

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engage in ecotourism (Mowforth & Munt, 1998). Hence a variety of studies have been carried out on Eco tourists most of which profile visitors in ecotourism settings or categories, while less frequently delving into the basic motivations of Eco tourists (as opposed to recognizing the benefits sought by ecotourism). The results of the study fall into two main areas:

Ecotourism Profiles:

In the background of different countries, some ecotourism reports, usefully summarized by Page and Dowling, (2002) emphasizes on features of Eco tourists, indicating that they appear to be older, better trained and with higher levels of disposable income than the 'normal' visitors. Eagles and Cascagnette (1995) for instance, found that Canadian eco tourists appeared to be between the ages of 45-64, trained at universities and in higher income brackets, Hvenegaard (1994) suggests similar characteristics and, predictably, Cleaver and Muller (2002) say that the generation of 'baby boomers' now represents the sector with the most potential for providers of ecotourism. Fennell, (1999) in his recent study in Taiwan found that eco tourists appear to be in a younger age group (Kersetter et al., 2004). Perhaps such categorizations also illustrate ecotourism's definitional parameters. For example, the distinction between adventure tourism (typically enjoyed by younger visitors) and ecotourism is somewhat blurred and the distinction between different eco tourists can also be similarly blurred. This is illustrated by Kusler (1990, cited in Fennell, 1999), who suggests three key eco tourist's groups, namely 'do-it-yourself' visitors (independent, compact, mobile),' eco tourists on tours' (up-

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market community tours) and 'school or science groups' (main focus on environmental education or research). Likewise, on the basis of their contribution to one ecotourism and time spent, Lindberg (1991, cited in Fennell, 1999) also groups nature visitors into four classifications.

Consumption of Eco tourism

Surveys in both the United States and the United Kingdom show that, while becoming comparatively less relevant compared to other concerns, people issue about environmental problems continued to increase throughout the 1990s. Also, this issue seems to have been translated into the shopping habits of people. During the latter half of the 1980s, green consumerism first emerged and quickly gained support (Zimmer et al., 1994). However, there remains an elusive definition of the cause, impacts and public reaction to global environmental problems (Smil, 1993). Increasingly, research has shown that it is not possible to equate green consumer activity with specific social classes, while the relation between general environmental consciousness (which may decrease in significance compared to other issues such as terrorism and security) and green consumerism in particular is tenuous.

As indicated in polls, not only is the universal commitment to green buying behaviour seldom observed in practice, but there is a lack of clarification about the nature of green consumerism or how it can be manifested (Peattie, 1999). Consumers cope with environmental concerns in complex and ambivalent ways (Macnaghten & Urry, 1998) and their consumer behavior is often inconsistent as a consequence. That is, with respect to various buying decisions, different principles or factors come into play.

Visitors Motivation

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A complex mechanism is the action of visitors and consumers; it is 'discretionary, episodic, future-oriented, socially motivated and dynamic shift' (Pearce, 1992). However, it is neither a one-off' experience nor the result of an easy, unidirectional purchasing sequence, as suggested by some. That is, tourism consumption takes place over a lifetime, over which, as they become more experienced travelers, visitors can progress or climb a career ladder. As a consequence, travel needs and desires can evolve and grow, but they can also be framed and influenced by changing social relationships, life-style triggers and limitations, and evolving values and attitudes.

The significance of values is briefly taken into account, but it is generally known that consumption of tourism starts with motivation; it is motivation that acts as the 'trigger that sets off all travel events (Parrinello, 1993). It is the motivational phase that pushes a person from a state of inertia into tourism-consumptive activity that transforms needs into goal-oriented consumer behaviour. Therefore, the incentive to consume tourism has a direct influence on the nature of the behavior of visitors and consumers. There is substantial variation in the treatment of visitor's motivation within the literature of tourism (Sharpley, 2003). Therefore, a variety of considerations are generally apparent. First, visitor's motivation is complex, dynamic and potentially affected by a range of people-specific psychological variables and extrinsic social forces. That is, a number of different stresses and influences can affect the needs and desires of visitors at any time. It can therefore be difficult, if not impossible, to identify specific or dominant determining factors, particularly given that visitors might not be willing or unable to articulate their real travel motives. Secondly, however, most commentators suggest implicitly or

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specifically that visitors are motivated predominantly by the desire to run, by 'going away from something or someone rather than going to something or someone' (Krippendorf, 1987: 29). The 'escape' definition, a view supported by Robie et al. (1993), which recognizes escape as one of the three most common motivating factors in tourism, is as van Rekom (1994) suggests, a central need that has been discovered time and time again in empirical research. The possible benefits of engaging in tourism inspire visitors. Such incentives may be intimate, interpersonal, psychological or physical, and they compensate for the shortcomings or stresses and strains of daily life, collectively defined as 'ego-enhancement.' Finally, and again as a result, the motives of visitors are obviously self-oriented:' now I determine what is good for me (Krippendorf, 1987). In other words, a kind of self-reward or self-indulgence is expressed by tourism.

In the sense of ecotourism, the effects of this are that visitors are extremely unlikely to be driven to 'act' in tourism, to follow responsible actions or to ensure that their visitors-consumer behavior is aimed at maximizing tourism benefits. Visitors are not only necessarily unaware of the repercussions and tensions associated with tourism in destination areas, but since tourism is an activity that is inherently ego-centric and escapist, visitors do not want to be burdened with the problems of the normal world (McKercher, 1993).

The Influence of Values on Tourism Consumption

A variety of commentators accept in the tourism decision-making process that psychographic variables are key determinants, such as values, attitudes and views (Luk et al., 1993). Indeed, the limited empirical research undertaken indicates that 'values can serve as travel behavior predictors in

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particular (Pizam & Calantone, 1987). Of course, this is necessary for the consumption of ecotourism; a meaning, as a 'single belief of a very particular kind (Rokeach, 1973). It regulates or guides the attitudes, actions and lifestyle of people and, thus, in order for visitors to be favorably inclined to responsible consumption of tourism, environmental values must be strongly held.

That is, people usually hold a number of values that in various situations can be more or less influential, whereas visitors have different values to similar items or behaviors. As Madrigal and Kahle (1994) observe in those situations where one or more conflicting values are triggered, a person relies on his/her value system to maintain self-esteem or consistency. The probability of value conflict is high in the tourism context, particularly between personal values such as enjoyment, independence or happiness, and social values that serve as guidelines for conduct that is socially acceptable.

Factors that Determine Recreational Demand

Socio - demographic factors such as age, sex, education, income, employment status, rural versus urban residence, and family size influence recreational demand. Intuitively, age would seem to be a major determinant of park visitation demand and is predicted to be inversely related. That is, as age grows, attendance declines. Sex may be another determinant. In terms of education, it can be said that people with higher education enjoy outdoor activities focused on nature more than people with less formal education. In summary, it was also found that household income had a good correlation with participation in many outdoor recreation activities. We assume that the higher the household income, the higher the number of park visits. Urban residents are

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more likely than individuals from rural areas to participate. Similarly, a better-quality park could attract an individual more often than a bad quality park.

The relationship between the cost of travel and visiting the park may be negative. In order to estimate the necessary travel costs, several studies have investigated the benefits of gasoline, oil, tires, repairs and maintenance of vehicles with regard to the issue of what costs should be included in the travel costs. The cost of gasoline, lodging and food costs is used by Seller, et al. (1985). Beal (1995) indicated in his work that most visitors regard the cost of fuel, food and lodging as important to their travel destination. McConnell (1992) argued with respect to the expense of on-site time that the opportunity cost of on-site time should be included in the price variable. McConnell, however, concluded that it is so difficult to account for on-site time that no systematic approach, either conceptually or empirically, has been established. Smith, et al., (2005) proposed that cost would be some proportion of the salary rate of each individual. Numerous attempts to value travel time have been made. However, it should be noted that, despite the fact that many studies have discussed the issue of valuing travel time, there still seems to be no consensus on a clear protocol (Nillesen, 2002). Cesario (1976) argued that a trade-off between time for travel and leisure activities rather than between time for work and travel seems more rational. He analyzed a number of commuting observational studies and found that the time value ranged between one quarter and half of the time. Like Freeman (1993), full wages were used in this study to value time. If the cost of time is underestimated, demand would be biased. The impacts on the market for recreation of both time costs and transportation costs need to be measured separately. However, because the two can be strongly correlated and

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it is too difficult to carry out a separate calculation, time costs were given a monetary value and applied to the transport costs.

Valuing Ecotourism in Developing Countries

In emerging regions, there is a rising body of literature focused on valuing ecotourism and wilderness regions (Day, 2000). In order to resolve these limitations, research estimating the use values of protected areas in developing countries have always excluded non-residents (Becker et al. (2005). Usage values have been evaluated by studies of the causal factors driving WTP for increases in entry fees and travel costs as well as improvements in park facilities (Moran, 1994; Shultz, et al., 2012). A number of environmental assessment studies exist, but only a few have used an economic approach to measure welfare. Chase, et al. (1998) analyzed the ecotourism market and the unfair price of admission to Costa Rica's national parks. The case study by Chase, et al., (1988) therefore offers a valuable contribution to understanding the role that economic analysis can play in the management of protected areas. Grandstaff and Dixon (1995) used the zonal TCM and the consumption value market surplus for Lumpinee Park was found to be 132 million baht. However, this value was found to be in the region of 130 million baht by the CVM. Kaosaard, et. al., (1995) used CVM to calculate the Khao Yai National Park use value and the CVM method to measure its non-use value. The findings showed that the value of Khao Yai National Park was certainly positive and of equal magnitude. After some adjustments, the WTP rises from 22 to 44 baht per person for each park visit, which suggests some positive marginal benefits from park improvements. The increase in WTP means that, compared to the marginal cost, park improvements would yield a net benefit for society.

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The Concept of Consumer surplus (CS)

The notion of market surplus (CS) is a central tenet of the travel cost process. The importance of CS in the TCM lies in the fact that it really represents how much a visitor likes a ride or visit to a leisure place. The CS thus inevitably represents the value of recreational use attached to a recreational site. The consumer surplus is the contrast between, in ordinary economic terms, the actual price you pay for a good and the maximum price you would have been able to pay for it other than without it (Ndichia, 2007). "Alfred Marshall explains more about this by clarifying that the price a person has to pay for an item will never and seldom exceed what he is willing to pay rather than go without it so that the satisfaction he receives from his purchase usually exceeds what he gives up in paying off his price; and so, he extracts a surplus satisfaction from the purchase. The economic measure of this surplus satisfaction is the excess price that he would be willing to pay over what he currently pays, rather than going without the object. "It can be called a demand surplus" (Ndichia, 2007). Given the above definition of Ndichia and the brief explanation of Marshall, and in the sense of the TCM, it can then be intuitively indicated that the CS is the difference between the total travel costs or expenses incurred by a recreation facility

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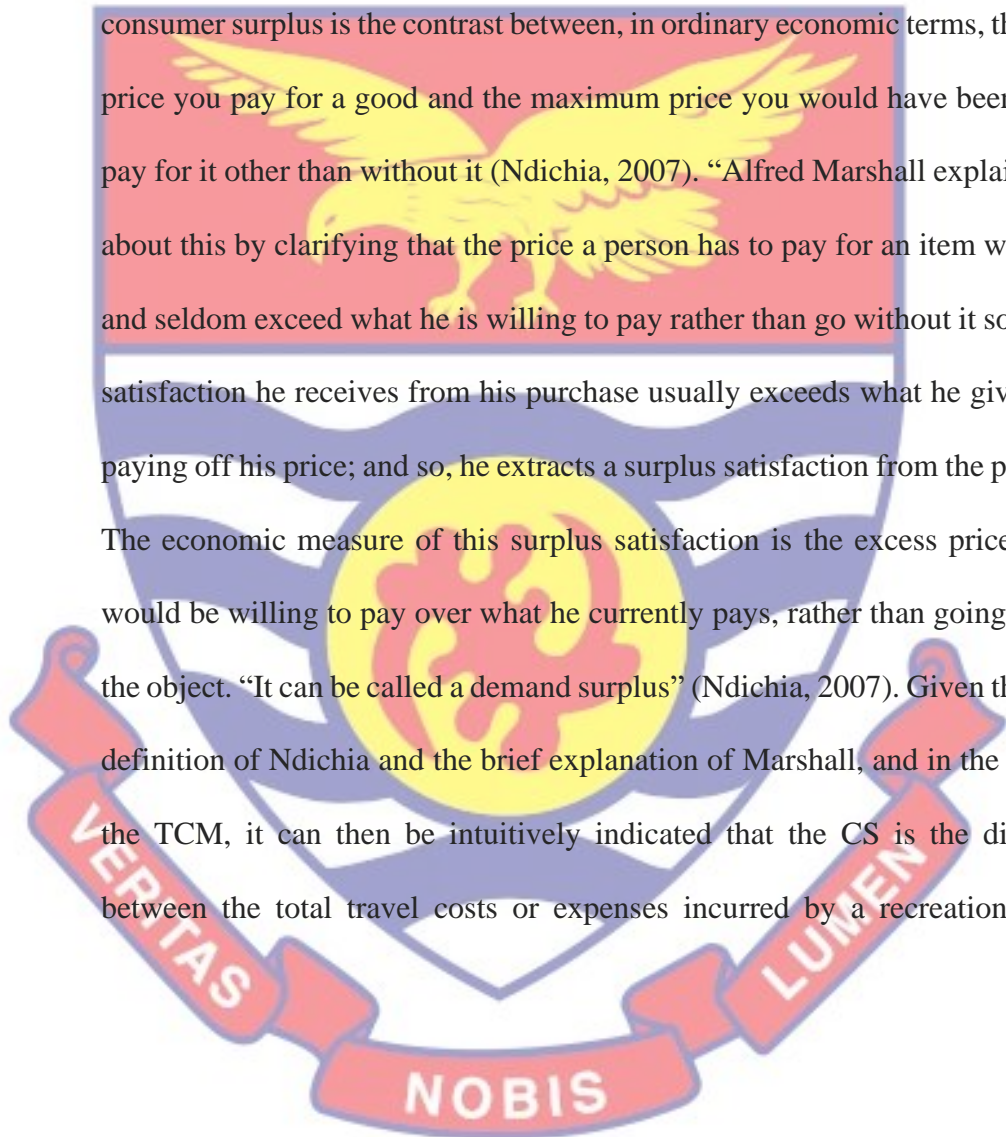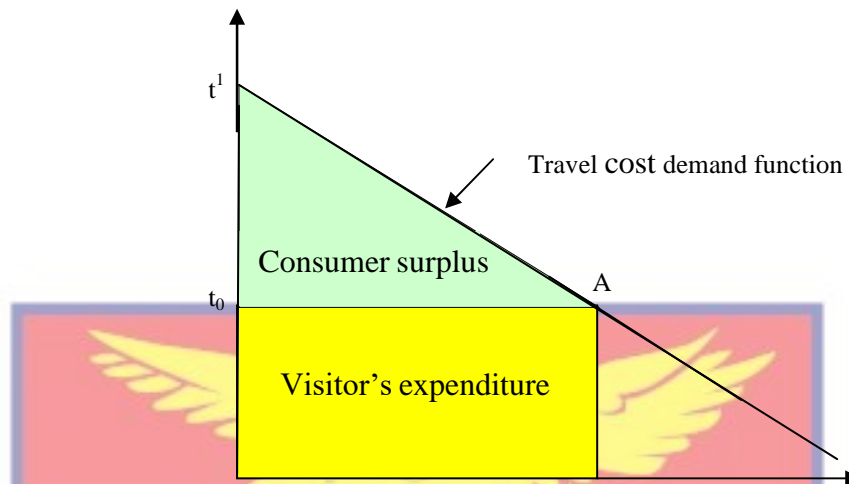
visitor.

Figure 1: Number of trips per visitor per year

Source: Adapted from Sohngen et al. (1999).

We know from the above figure that the area indicated by A, t0, and t1 is the surplus of the sector. This area can be easily calculated using simple measurements (i.e., integration). Also, the CS can be computed using the calculation tools if the travel cost demand function is specified parametrically in an appropriate functional form. Suppose we have the functional form of a demand feature for travel costs:

$Tij = f\left(Pi, Yi, Zj\right)$ (1)

Ti is the number of trips made during the last twelve months (past year) by person I to visitors' site, Pi is the total travel cost (price) for visitor I Yi is the amount of revenue of visitor I and Zj is the standard of the recreation site j. It is possible to derive CS from equation (1) by taking the demand function's integral value,

$$\text{i.e.,} \, Cs = \int_{P_1}^{P_2} f\left(p_{uY \cup z_j}\right)....(2)$$

This approach of estimating the above-mentioned CS estimate can only be used if the data is such that OLS regression or any other reasonable calculation

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procedures can be applied directly to obtain the function of demand for travel costs. However, the CS per trip is determined as follows in certain cases (such as the use of truncated or zero-inflated Poisson and negative binomial models) where the number of trips is an exponential function of the travel cost and other variables. Where β is the vector of the total travel cost (TTC) coefficient obtained when the maximum probability estimate is applied to the above TCM models. Note that the β sign should be negative because in a demand model it must be consistent with expectations (Bilgic and Florkowski, 2007). Therefore, this implies that the CS calculation per trip should always be positive.

The Role of Improvement of Social Amenities on Tourism

The infrastructure of tourism is seen as the physical elements built and erected to cater for visitors. A number of authors have theoretically identified the close relationship between visitor's growth and infrastructure (Adebayo, Iweka, 2014). The distinction between tourism infrastructure and superstructure is pointed out by some writers, arguing that superstructure relies on infrastructure. Ancillary and complementary services, facilities, systems, processes and resources are included in the tourism infrastructure needed for a visitor's destination to operate. This mainly involves highways, railways, airports, and the like, which make visitors accessible to a visitor's destination. In addition, infrastructure includes programs, facilities, and public services for health care. Building on infrastructure, superstructure requires construction facilities that exist mainly due to tourism. Their primary aim, in the form of hotels, campsites, restaurants, sports facilities, and the like, is accommodation and satisfying the needs and desires of visitors (Popesku, 2011). The tourism infrastructure is the basis of the growth of tourism, as well as the basis for the

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exploitation of the resources of the destination. The value of tourism infrastructure is expressed in the fact that it can lead to an improvement in the efficiency of the production and distribution of tourism services and, in some cases, to the efficiency of the production and distribution of tourism services Ritchie, Crouch, (2005). Different views on the number and form of elements reflecting tourism infrastructure are given in the literature. According to the Tourism & Transport Forum (Tourism & Transport Forum, 2012), tourism infrastructure is the transport, social and environmental infrastructure supply chain that collaborates to create an attractive tourism destination at the regional level.

The transport infrastructure in this chain provides visitors from the foreign and domestic markets with access to destinations and includes highways, airports and railways. Social infrastructure refers to lodging facilities in the form of visitor accommodation rooms and other physical support systems for different types of events and services that draw visitors. In addition to these three types of infrastructure, tourism infrastructure includes a shared infrastructure consisting of a network of regional, state and national tourism organizations on the market where a visitor's destination is located and engaged in the distribution of tourism products (Tourism & Transport Forum, 2012)

Theoretical Framework

In general, the total cost for each individual "i" to visit a given site "j" can be represented by the following function (Hanley and Spash, 1993),

$$C_{ij} = C\left(DC_{ij}, TC_{ij}, F_j\right) \text{ where } i = 1.2.3, \ldots\ldots n$$

Where, C_{ij} = Total cost for individual *"i"* to visit site

"j"; DC_{ij}= Distance costs for each individual depending on the distance the

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person has to travel and the cost per mile of travelling;

TC_{ij}= Time costs, which include the time spent in travelling to the site, the time spent inside the site and the value of the individual's time;

F_j= Entrance fee to the site. Moreover, the value of the recreational uses (V) for each zone can be calculated followed by the simple equation:

$$V = \{(T \times w) + (D \times v) + Ca\ \} \times VaW$$

here, T = Travel time (in hours);

w = Average wage rate (Tk/hour);

D = Distance (in km); v= Marginal vehicle operating costs;

Ca = Cost of admission to asset;

Va= Average number of visits per year for each zone

We follow Freeman (1993) to model the travel cost function and assume that the utility of the person depends on the total time spent on the site (Kakum Park, in this instance), the nature of the park, and the quantity of the numerals. With the length of the visit set for convenience, the number of visits will reflect the time on site. The person resolves the following problem of optimizing utility:

$$(1) \quad Max; U (X, r, q) \cdot P \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots \quad (1)$$

Subject to the twin constraints of monetary and time budgets:

$$M + p_w.t_w = X + c.r \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots(2)$$

Where X = the quantity of numeracies whose price is one,

r = number of visits to the Park,

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q = environmental quality at the site,

M = exogenous income,

p_w = wage rate,

c = monetary cost of a trip,

t^* = total discretionary time,

t_w = hours worked,

t_1 = round-trip travel time, and

t_2 = time spent on site.

R and q are presumed to be (weak) complements of the utility function, meaning that the number of visits would improve development of the site. The time spent in the leisure activity has an opportunity cost. We also assume that the individual is free to choose the amount of time spent at work and that the job does not convey utility (or disutility) directly. The opportunity cost of time is, thus, the wage rate. Finally, we also believe that there are two components to the monetary cost of a trip to the site: the admission fee f, which may be zero, and the monetary travel cost. This travel cost is pd .d, where pd is the travel cost per kilometer and d is the distance to and return from the location. Substituting equation (3) into (2) yields:

$$M + p_w.t = X + pr.r \dots\dots\dots\dots\dots\dots\dots\dots\dots 4$$

Where p_r is the full price of a visit, which is the sum of entry fee (*f*, which could be zero), p_d is the per/km cost of travel and d is the distance in km as shown in equation 5.

$$\text{Pr} = c + Pw(t_1 + t2)$$

$$f + p_d.d + p_w(t_1 + t_2) \dots\dots\dots\dots\dots\dots\dots\dots\dots 5$$

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The full price of a visit consists, as Equation (5) makes clear, of four components: the admission fee, the monetary cost of traveling to the site, the cost of traveling to the site, and the cost of spending time on the site. The two-time costs are valued at the wage rate under the basis that individuals are free to choose the amount of hours worked at a specified wage rate. Maximizing equation (1) subject to the limitation of equation (4) will yield the demand functions of the person for visits:

$$r = r\left(P_{r,}M,q\right)\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots 6$$

Data on visitation rates, travel costs and differences in entry fees (if any) can be used to estimate the cost-visitation coefficient in the travel feature. Due to the linearity of equation (5), the coefficient on pr can be used as a function of the entry fee to derive the individual's demand for visits to a location. We further presume that there are available replacement sites. In such instances, it is clearly important to model the interactions and the substitution effects between sites. This calls for a multi-site model of some kind. As systems of demand equations, multi-site models are calculated. A demand equation of the following form is defined for any site j (j = 1 ... j ... m):

$$r_{ji} = r_j\left(P_{rji},\left(P_{rki},M_{i,}q_i\right)\right)\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots 7$$

$$\left(i=\left(i=1\dots i\dots,s\right),\left(k=1\dots,k,\dots,m\right),andk_j\right.$$

Where r_{ji} is the number of visits individual i makes to the jth site, prji is the full price of a visit by i to $j,$ **and** p_{rki} is the set of substitute prices for visits to other sites. This type of model can be estimated from data on individual observations (see, for example, Freeman 1993 and McConnell, 1985).

In Ordered Probit model, there is an undetectable. Latent variable yi∗, which represents the utility available to individual i when he makes a choice.

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$$y \times i = xi\beta + \mathrm{E}i \, (1)$$

Vxi is variable related with choice making by individual

i; β is an unknown parameter we need to estimate; E is an error term of normal

distribution and, for the purpose of standardization during model estimation, its

mean need set to zero and variance to be 1. We cannot detect $yi*$ and can only

detect individual i choice yj which is discrete ordered value. Similarly, in this

paper, people's WTP can be low, moderate or high.

Herein we take an Ordered Probit model with 3 choices as example. According

to the model, public decision-making follows the next rules:

$$yi = 1 \rightarrow if \infty \leq Y \times i \leq lyi = 2 \Leftrightarrow ifCl \leq y \times i \leq C2 \, yi = 3 \Leftrightarrow ifc2 \leq y \times i \leq +\infty \, (2)(3)(4)$$

Cj and C_2 are cut-off points. If we have a random sample including all 3 choices,

we may estimate these cut-off points. Fig. 2 is a conventional diagram for an

Ordered Probit with 3 choices.

To adopt Ordered Probit model, we need to start with discretizing max WTP.

According to max WTP, we divide it into low, moderate and high

levels: y=l if $y* \leq 5$ max WTP is low, and it accounts to 14% of the

sample; y=2 if $5 < y* \leq 45$ max   WTP   is   moderate,   38%   of   the

sample; y=3 if $y* > 45$ max WTP is high, 48% of the sample. Ordered Probit

model is one of normal discrete choice models (Green, 2 000).

Corresponding to Order Probit model on max WTP, Binary Probit model (short

for Probit model) is adopted to analyze the influencing factors of payment mode.

Compared with Ordered Probit model, Probit model only has two choices,

which makes it simpler. Similar with Ordered Probit model, Probit model has

an undetectable latent variable zi, which represents the available utility.

$$zi = xiy + ei \, (5)$$

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View Source xi is variable related with choice-making of individual i; γ is an unknown parameter we need to estimate; E is an error term of normal distribution and, for the purpose of standardization during model estimation, its mean need set to zero and variance to be 1. We cannot detect z∗i and can only detect individual i choice zi which can be indicated by 0 or 1. If $Z \times j \geq 0 z, =1$ individual i will choose 1, otherwise the choice will be 0. Details of Probit model can also see Green (2000). In this thesis, zi=1 represents the way people select tax of ecological compensation.

This research aims to study the tourism situation in general, examine factor which affected to the willingness pay for ecotourism management using a contingent valuation method (CVM). Individuals CVM are asked what amount of money they would be willing to pay for public good, their response may depend on their perception of fairness. They also observed that perceived fairness significantly predicted WPT, and that equity-based fairness led to higher WTP that equality-base, to maintain and conserved to the environment in their culture and communities, obstacles and opportunity in order to manage visitor's destinations. In-depth interview, also approach to the stakeholders toward the sustainable development by using the cooperation of local people, visitors and every part of stakeholders to create sense of awareness and focusing on the planning system and good management.

Conceptual Framework

Assessment of CVM studies that have measured the benefits of products have attempted to understand the value of maintaining practices of grazing and preserving the environment. Visitors are asked to consider a hypothetical situation in a conventional contingent valuation approach where a

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future business exit is assessed for the benefits of a public program. "The hypothetical situation in this study is" ecotourism at Kakum Park "and the service is" willingness to pay for visitors' attraction" Various CVM survey formats are available, such as open-ended, payment cards, bid games, and dichotomous set. For the purposes of this research mow. The dichotomous option asks visitors a clear yes or no question as to whether they will pay a particular amount hence the study adapt the CVM.
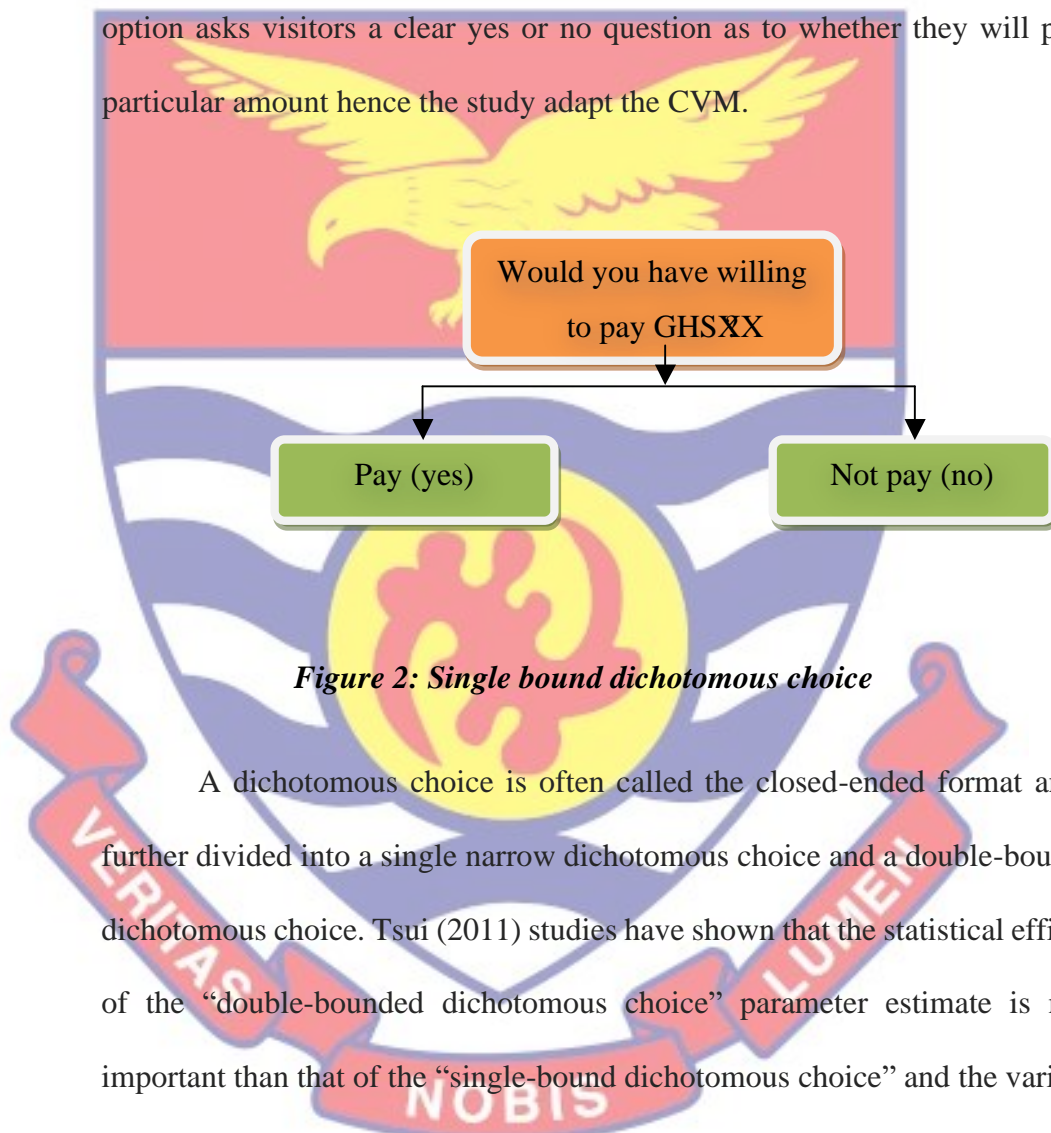
Figure 2: Single bound dichotomous choice

A dichotomous choice is often called the closed-ended format and is further divided into a single narrow dichotomous choice and a double-bounded dichotomous choice. Tsui (2011) studies have shown that the statistical efficacy of the "double-bounded dichotomous choice" parameter estimate is more important than that of the "single-bound dichotomous choice" and the variance and covariance of the "double-bounded dichotomous" choice parameter estimate is also lower than the "single-bounded dichotomous choice" (Hanemann, L. et al.1991).

The random-utility system also requires the inurement of WTP. The double-bounded dichotomous choice in the price inquiry process successively

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questions WTP visitors in the questionnaire twice for the targeted commodity. The price of the second inquiry into the price depends on the first price. In particular, the second price will be higher than the first one when visitors are willing to pay the first time, and is usually twice as much as the first one; when visitors are not willing to pay for the first price, the second price would be less than the first one and the second price is half of the first one. However, whether visitors are willing to pay two prices or not willing to pay, the analysis could only realize that the WTP visitors were more than or less than the second price. Thus, the double-bounded dichotomous selection cannot result in the WTP visitor's upper or lower limit. Figure 2 shows the CVM price inquiry of the double-bounded dichotomous selection.
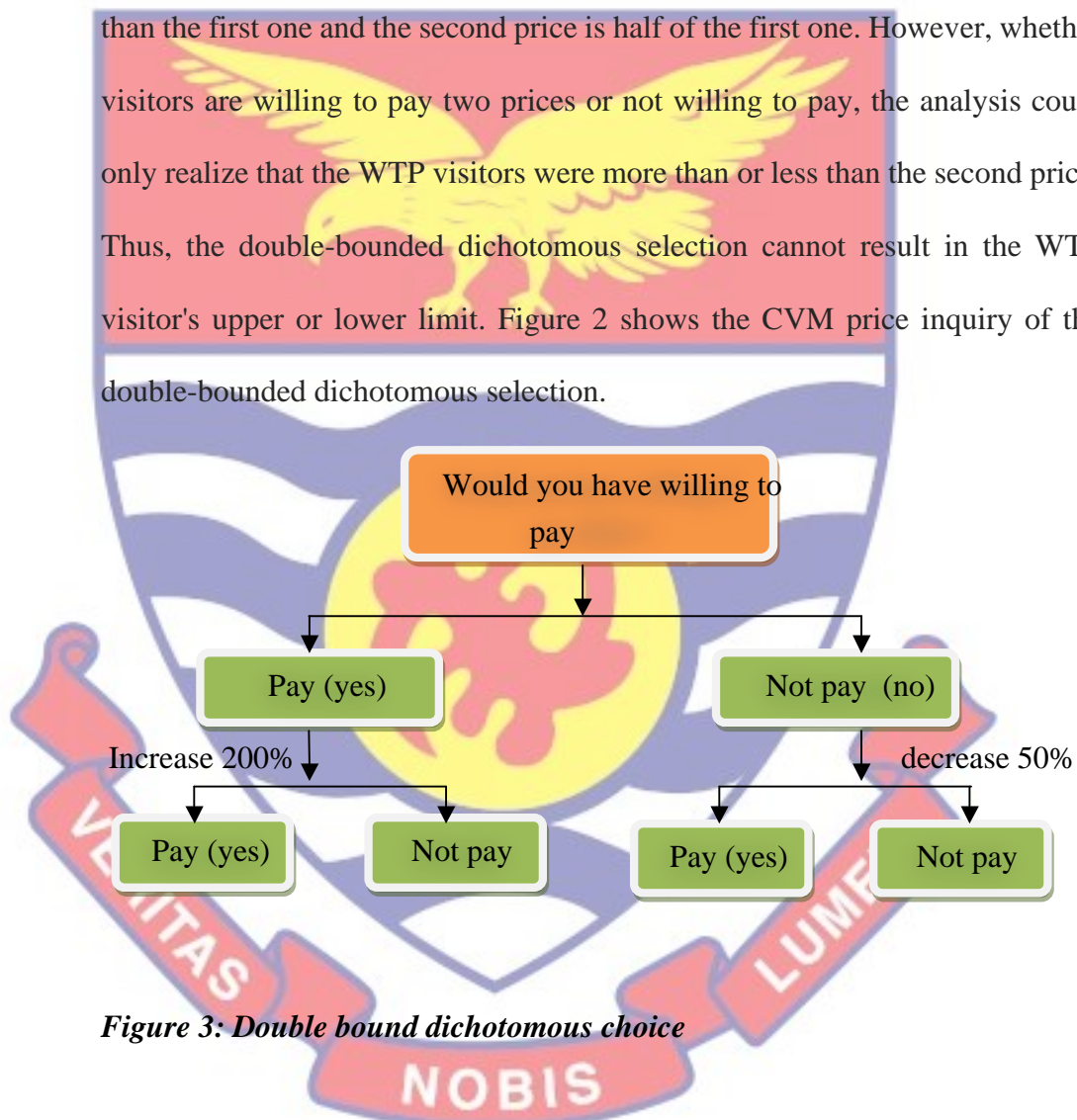
Figure 3: Double bound dichotomous choice

In general, the bigger the sample, the smaller the variance as calculated by the standard error on the mean WTP and defined in confidence intervals. In CVM studies, from a sampling (confidence interval) perspective, a sample size of 200-2000 visitors is typically needed to achieve fair reliability.

Analytical Framework

Logit Model Specification for WTP

To test the research hypotheses that 'individual characteristics and socioeconomic factors do not determine the willingness to Pay (WTP), equation (1) was estimated:

$$WTP_i = \alpha_0 + \alpha_1 incomeL_i + \alpha_2 EduL_i + \alpha_3\ Entrance\ fees_i + \alpha_4\ Age_i$$

$$+ \alpha_5 Sex_i + \alpha_6\ Marital_i$$

$$+ \alpha_7\ Loc_i .. \tag{1}$$

Here the study is interested in determining the probability of an individual's WTP for the park.

This is represented by a binary random variable T_i that takes the value of one if the individual is involve in WTP and zero otherwise, as follows:

$$WTP_i = \begin{cases} 0\ if WTP_i \geq 1 \\ 1\ if WTP_i < 1 \end{cases}$$

The logit model in a linear, additive form for the logarithm of odds is specified as

$$\ln\frac{\Omega_i}{[1-\Omega_i]} = \eta_i = \alpha_0 + \alpha_1 X_{ij} + \ldots\ldots\ldots + \alpha_k X_{ik} \tag{2}$$

For the logistic, the multiplicative model for the odds is specified as:

$$\frac{\Omega_i}{[1-\Omega_i]} = e^{\eta_i\prime} = e^{\alpha_0} (e^{\alpha_k})^{xi1+1} \ldots\ldots\ldots (e^{\alpha_k})^{xik} \tag{3}$$

The conditional probability π_i is then

$$\Omega_i = \frac{1}{[1 + e^{-\eta_i}]} = \frac{1}{[1 + e^{-\sum_{j=0}^{k} \alpha_j X_{ij}}]}$$

The partial regression coefficients (α_j) are interpreted as marginal changes of either the logit or odds ratios. For Logit, thus, the coefficient α_j indicates the change in the logit due to a one-unit increase in X_j.

On the other hand, odds ratio is interpreted as multiplicative effects on the odds. Thus, e^{α_j} is the multiplicative effect on the odds of increasing X_j by one, while holding constant the other explanatory variables. In general, the logistic model stipulates that the effect of a covariate on the chance of "success" is linear on the log-odds scale, or multiplicative on the odds scale. Thus,

If $\alpha_j > 0$, then $e^{\alpha_j} > 1$, and the odds increase.

If $\alpha_j < 0$, then $e^{\alpha_j} < 1$, and the odds decrease

Demand curve reflects marginal willingness to pay (WTP), while the area below the demand curve represents total WTP. This concept is illustrated in the figure I below, which depicts a simple demand curve.
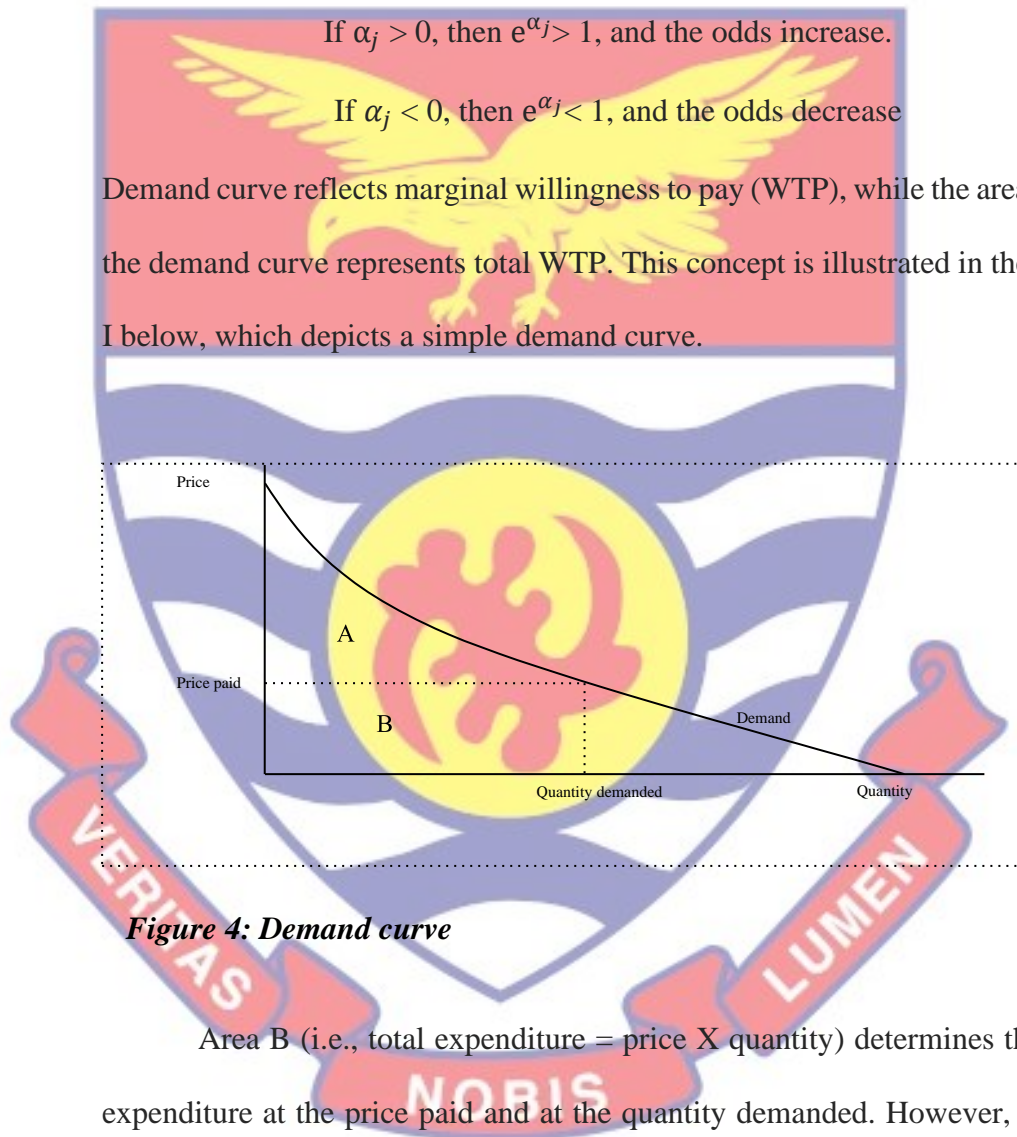
Figure 4: Demand curve

Area B (i.e., total expenditure = price X quantity) determines the total expenditure at the price paid and at the quantity demanded. However, studies that only recognize expenditures do not capture the additional value implied by the surplus of the economy, Region A. For clients over and above the rate they actually pay, market surplus may be viewed as the amount of WTP. The WTP for this study is extracted from the overall expenditure found on a daily trip by each visitor. The demand curve generated would also consider the opportunity

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costs of people engaging in leisure activities. That is, the value of individuals' hours spent on a trip that could have been used for alternative activities like working. The recreational experience created in the survey would enhance an ideal ecotourism site such as Kakum and would ask visitors how much they would pay to visit such a site under eight different price scenarios. The inference here is that the hypothetical location is equidistant from visitors. In contrast with changes in demand, the answer to this provides a benchmark, or status quo, scenario to be expected from enhanced leisure experiences.

General Econometric Approach

Modern economics does not propose any unique functional type. The most common practice is to test different functional types statistically, such as:

(1)   Linear $r = \theta + \theta PP$

(2)   Log-linear $log\ r = \theta + \theta P$

(3)   Double-log $logr = \theta + log\theta P$

(4)   Negative exponential $r = \theta + log\theta P\ P$

"The estimated consumer surplus for an individual making visits to the site in case of a linear form is given by CS = $-r^2/2$. The linear functional form implies finite visits at zero cost and has a critical cost above which the model predicts negative visits. The consumer surplus in case of the log-linear functional form is given by CS= -r/2. It implies a finite number of visits at a zero cost and never predicts negative visits, even at an extremely high cost (Garrod and Willis, 1999). Having tried various functional forms it was decided that the linear functional form was the best fit for our data. Therefore, only linear regression results were reported."

Empirical Review

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There is substantial empirical work on economic valuation using the CVM, but it focuses more on developing countries. In order to value Queen Elizabeth Park in Scotland, Hanley (1989) used the CVM and the TCM. His findings indicated WTP was lower in TCM than what was obtained in the CVM. Ankomh and Osei Adu (2014) were able to give an estimate of the recreational value of the Kakum National Park using a technique called the Travel Cost method, their recreational value of the KNP was estimated to be GH¢981,188 in 2013. Twerefou and Adjei Ababio in 2009 estimated the economic value of the Kakum national Park with the individual travel cost method and the value was extrapolated to be about US$ 2.10 billion. Their results also indicated that the annual per person value of the site is about 67.28 (US$ 46.40) which translates into an annual aggregate value of 8,481,653.20 (US$ 5,849,416) in 2009.

To estimate the economic value of participants in mountain biking in Moab, Utah, Chakraborty and Keith (2000) used both regular and truncated count data from TCM. The empirical estimates were found to be 2.25 and 2.53 trips under truncated Poisson and truncated negative binomial models, respectively, for average trip demand per person per season. For both versions, the market surplus per person per trip was roughly US $585.The total annual use value for mountain biking in the Moab area was estimated to be US $1.33 million. Rosenberger and Loomis (1999) estimated the value of ranchland for visitors visiting a resort town in the Rocky Mountains through a TCM that combines data on observed behavior data from real trips with contingent behavior data on intended current visitation if the resource has been converted to urban and resort uses. A Poisson regression model of random effects was

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calculated using panel results. Their findings show that twenty-five percent of the samples would decrease tourism, and if ranch open space were converted to urban and resort uses, twenty-three percent of the sample would increase visitation. No net improvement in the average CS per trip for summer visitors in general has the cumulative impact of transforming ranch open space to resort and urban uses.

A meta-analysis of outdoor recreation economic values of the past 30 years was carried out by Shrestha and Loomis (2003) in the US and found an average predicted CS value of $47.10 per day with original values ranging between $1.97 and $116.78 from current recreation valuation studies. Previous research has also shown that pristine natural resources and wilderness sites are extremely important. With values ranging up to $218 per day, Loomis (2000) published around two dozen wilderness recreation studies. Park et al. (2002) registered a CS value of snorkeling trips in the Florida Keys using the CVM of $481.15 per ride. A leisure demand formulation that ignores the problem of alternative sites is truly misrepresented. Caulkins et. al., (1985) found out that the neglect of a replacement in a demand function contributes to skewed market surplus (CS) estimates Rosenthal (1987) showed that the absence of substitute prices from the travel cost model induces a substantial bias in CS estimates using data from a common database representing 60,000-day US military corps users. According to Wing et. al., (1989), if the omitted price is perfectly correlated to other captured values, omitting substitute prices has some welfare effects. In the recreational demand model, researchers such as Cesario and Knetsch (1982) and Sutherland (1982) used the gravity / logit model to control replacements. Others, as cited in Grogger and Carson (1995), such as Agnello

et al., (1991), used a different approach to catch the problem of alternative locations. This study uses a dummy variable to capture visitors' awareness of substitute sites due to the lack of data.

Among many economists, the issue of treatment of non-participants in travel cost analysis has caused some concern. Smith (1988) contrasts five methods with microdata for estimating the cost of travel leisure demand models. Standard formulation of considering all non-participants as putting a null value on the site in question would therefore be adopted.

In economics, such as health economics, cultural economics, transport security and economics, as well as environmental economics, the Contingent Valuation Approach (CVM) is commonly used. It is a simple, straightforward and scalable approach that has been widely used in environmental assessment recently. In a contingent valuation analysis, there are four types of elicitation technique used, namely the bidding game, payment card, open ended, and dichotomous choice. The dichotomous option (Mitchell and Carson, 1989) is often referred to as the referendum type method. Dichotomous collection, however, is the most commonly suggested type for the NOAA Panel (1993) CVM questionnaires. After the introduction of the NOAA Blue Ribbon Panel study on contingent valuation (Arrow et al. 1993), the dichotomous option or referendum-style approach has been the preferred strategy for the implementation of contingent valuation. Carson, et. al., (2001) shows that contingent valuation of single prices maximizes consistency with rewards, thus reducing strategic actions. You will find general references to methods of contingent valuation in Champ, et. al., (2003). CVM is one of the most significant discussions. Balderjahn (2003) considers accurate WTP estimates

necessary for an optimal pricing strategy to be established. WTP is the sum or value of money that the individual is prepared to pay for a product and services in detail (ADB, 2007). It tests whether a person is willing to sacrifice his or her income.

A visitor is asked in the dichotomous selection format if he will be willing to pay a stated monetary value. If the true WTP is above the specified monetary value and 'NO' for otherwise, a 'YES' answer will be given. The key benefit of this strategy is that it is like an approach to 'take or leave it' since the condition it poses is similar to when ordinary products and services are bought by customers. In fact, this strategy would reduce CVM biases, such as strategic bias, design bias, and interviewer bias compared to other elicitation approaches (Mitchell and Carson, 1989). The closed-ended WTP approach was used, following guidelines from environmental literature (Arrow et al., 1993), to estimate the benefits of the National Park 's protection. Individuals were asked whether they would pay particular additional fees for a given product, with 'YES' and 'NO' being potential answers. The sum of the bid differed between visitors and the only details collected from each person is whether their maximum WTP is above or below the offered bid.

Visitors are expected to think and disclose their responses on WTP in a given contingent scenario. Researchers have found several problems that can lead to visitors claiming that WTP amounts vary from the amounts they will actually pay. When the interviewer asks about their WTP, visitors can think about the other goods and services. The researcher must be imaginative and have a good idea or strategy to prevent this disorder, which can simulate the exact situation. Researchers need to make sure visitors are aware of what CVM

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actually tests and its intent. Both of these would eliminate CVM biases, such as strategic bias, architecture bias and bias of the interviewer (Mitchell and Carson, 1989). To estimate WTP (Hanemann, 1984), logistic regression methodology was also used. The likelihood of saying 'YES' to a bid at different levels of the independent variable has been calculated using this method, as shown in the appendix.

Advantages of using Contingent valuation method are:

- Contingent value method is a flexible method and can applied to any goods or services.

- It is helpful for the marketer as they tell us about the potential customer willingness to pay for particular goods or services.

- It is helpful in ascertaining the profitability of the business.

- It does not rely on market or observed behaviour.

Disadvantages of using contingent valuation method are:

- It is time consuming and costly survey.

- It prepared Complex data set and required analytical techniques.

- This method can lead to potential biasness.

Contingent Valuation Method has been suited in various circumstances such as

- Commodities which are available for sale in regular marketplace.

- Deals with public goods such as improvement in air and water.

- Useful in private and public Parks.

- Nonmarket commodity such as reduce the risk of death.

Chapter Summary

The chapter reviewed the literature related to ecotourism. The review has been done according to the concept valuation of ecotourism, to those factors

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that attract people to work in this industry, and to the benefits people receive. The Chapter in addition reviewed the concept and studies on ecotourism from books, journal, website and internet. Finally, the chapter review literature on the theoretical framework and empirical framework.

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CHAPTER THREE

METHODOLOGY

Introduction

The research design used to gather data on projected demand for ecotourism services is mentioned is explained in this chapter. The chapter also covers the strategies used to determine the population of interest and sampling procedures. The research methods, the data collection process and methods as well as information on the study area and a map depicting Kakum National Park are all presented in this chapter.
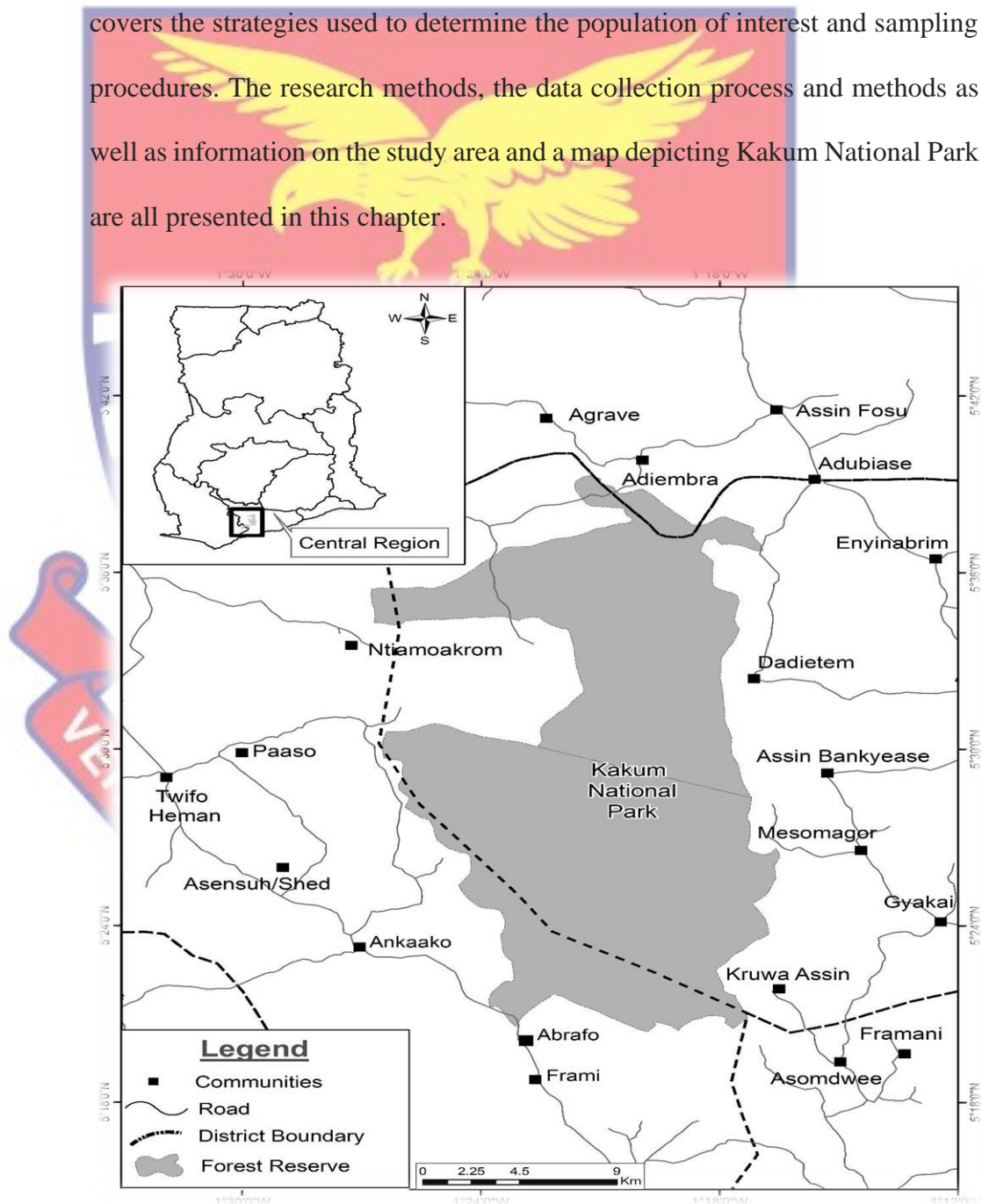
Figure 5: Study Area Source: GIS Lab UCC

Kakum National Park

Under the Wildlife Reserves Regulations (Ll 1525) under the administrative authority of the Wildlife Division of the Forestry Commission of Ghana in 1992, the Kakum Conservation Area was legally gazetted as a National Park and Resource Reserve.). The Kakum National Park is mostly flat with only a few undulating highlands between 150-250 m above sea level. In the south-western portion, most of the hills climb up to 250 m. It is classified as a semi-deciduous moist tropical forest and a continuation of the evergreen tropical moist forest of Western Ghana. The region is notable as a remnant of the fast-vanishing tropical rainforest of the West Coast of Africa.

The Kakum Conservation Area's primary drainage consists of the rivers Kakum, Nemini, Nchemna that flow into the sea to the south-east, and the rivers Obuo, Sukuma, Panim Bosumfuo and Afia that flow into the river Pra to the west. Other rivers include Ajuesu and Aduasu to the east, and Benebe, Aboabo, Ongwa and Abogbo to the north. The Kakum River is a significant source of water for the Cape Coast and its environs. A two-peak rainy season faces the area. The main peak occurs between May and July and the slight drop occurs between September and December, separated by a short dry period in August. The rainy season is followed from January to April by a long dry season in which most streams dry up and rivers break into pools. The mean annual rainfall varies between 1,500 mm and 1,750 mm. South-westerly and usually light are the winds that prevail. The average relative humidity is around 85 percent with temperatures that average about 25 ° c.

There is a forest of tropical rain covering the area. The uniqueness of this park lies in the fact that it was established in Ghana on the initiative of local

people and not by the State Wildlife Department responsible for wildlife conservation (Twerefou and Ababio, 2012). It is also the only park in Africa with a canopy walkway 350 meters (1,150 ft.) long that connects seven treetops that provide access to the forest and allows visitors to experience a canopy of tropical rainforest from suspension branches. The Park was officially opened in 1994, as the population density of Kakum National Park forest elephants was the highest in the world in 2012 (African Elephant Protection Act: Review Report, 1998-2000). Kakum National Park was chosen for this study because it the most visited tourist site in Ghana, it proximity to the researcher, the Kakum national park been one of the biggest ecotourism park in the sub region and the financial strength of travel expenses was also considered as a factor for not selecting a very long distanced park.

Plate 1: Some recreational activities at the Kakum National Park.

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Research Design

The descriptive design was used for the research. Typically, a descriptive survey seeks to determine visitor perspectives or experiences in a predetermined structured manner on a specified subject. Babbie, (2004) proposed that, for descriptive explanatory and exploratory purposes, surveys are acceptable. He observes that surveys are mainly used in studies that have individuals as the unit of analysis and as an outstanding means of measuring population attitudes and orientations. According to Best and Kahn (1993), the event or situation already exists or has occurred in the descriptive survey, and the researcher primarily selects the relevant variables for their relationship for an analysis.

Sampling Procedure

A critical issue for valuation studies is sampling. While some researchers prefer stratified population sampling (Choe, et al., 1996), others only use simple random user group sampling (Farber, 1988). Schaeffer, et al (1996) suggest that a systematic sampling usually spreads more evenly across the whole population and can therefore provide more population information than any amount of data contained in a simple random sampling. This research used systematic sampling, where every sixth visitor was intercepted, to complete the questionnaire.

Target Population

Sample size was calculated using Stovin's Formula, which is written as *n = N / (1 + Ne2) where n = number of samples, N = total population and e = error tolerance."*

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The number of visitors to the KNP can be as high as 1000 Statista (2010) on a typical day. This gives the park a total of 3000 visitors within the survey period of 3 days. Hence, with a 95 percent confidence level and 5 percent error margin, the sample size was calculated as:

n= N/ (+ Ne²) =3,000 / (1 + 3000 * 0.05 2) = 352 visitors.

A total of 350 visitors were chosen at the site for the survey questionnaire. Geographically, purposive sampling and convenience sampling was used to select Park.

Research Instruments

The data collection research instrument was mainly a questionnaire. Pre-test was done to ensure that errors and ambiguities in the instruments are addressed before the actual data collection for validity and reliability purposes to be ensured.

Ethical Issues

Ethical clearance was sought from my department (Geography and Regional Planning) and Ghana Visitors Board and Wildlife Division. Also, the consent of participant was sought and voluntary participation was encouraged. Confidentiality and anonymity of the visitors will be assured as well as properly citing and referencing all sources to acknowledge authors in the field of study.

Data Source

In order to estimate the recreational value of Kakum National Park, this study uses the Contingent Valuation Method (CVM). CVM techniques were adopted by the researcher. This research aims to study the tourism situation in general, examine factor which affected to the willingness pay for the entrance fees. Participant was asked what amount of money they would be willing to pay

for the benefit of the public, and the perception of their justice would depend on their response. To capture values which could not be calculated via the Economic Market Instrument, a contingent valuation survey tool was used. The attitude and preference of individuals with regard to recreational benefits and their non-market values were elicited. In order to assess the degree to which entry fee changes have impacted the recreational benefit of the participant, the participant was asked about their WTP to define the variables influencing the WTP.

Primary data was the source of data for this analysis. During the time of study, the primary data was collected from visitors to Kakum National Park. In collecting the primary data, the researcher used questionnaires while secondary data was collected from papers, ecotourism studies, and published and unpublished works of other internet researchers and authors, as well as demographic data from the Ghana Visitors Bored and Wildlife Division, Ghana.

Data Collection Process

350 visitors were systematically randomly chosen for data collection, considering the essence of the visits. This was used to calculate the travel costs incurred by individuals while visiting the park. Via the use of questionnaires, which were individually administered by field assistants and field managers, the necessary information was obtained.

Data for the study was collected at the chosen ecotourism hub, Kakum National Park, through a survey of visitors. Non-visitors have not been sampled and are thus exempt from this study. The collected information included the number of visitors to the location, place of origin, socio-economic characteristics (income, age, education, sex and some measure of the subjective

intensity of preferences provided for the specific type of recreation), length of the trip, time spent at the park and among others. Both domestic and international visitors who were systematically sampled were included in the target population. Each visitor older than 18 years of age was intercepted, then asked about their interest and time to complete the survey. This approach was taken because the experience and current conditions of visitors to the park could help them respond more accurately. The surveys were simultaneously performed at designated locations. The method chosen was considered fair and representative, as it ensures that all guests have an equal opportunity to be selected as participants.

Data Analysis

To ensure that there were no errors in the responses and information, the data collected from the field was crosschecked and edited. To simplify data entry, processing and interpretation, the edited questionnaires were then coded. The data entry and analysis were processed with Stata and Statistical Package for Service Solution (SPSS 22V), the charts were generated using Microsoft Excel, and the tables and other figures were designed with Microsoft word.

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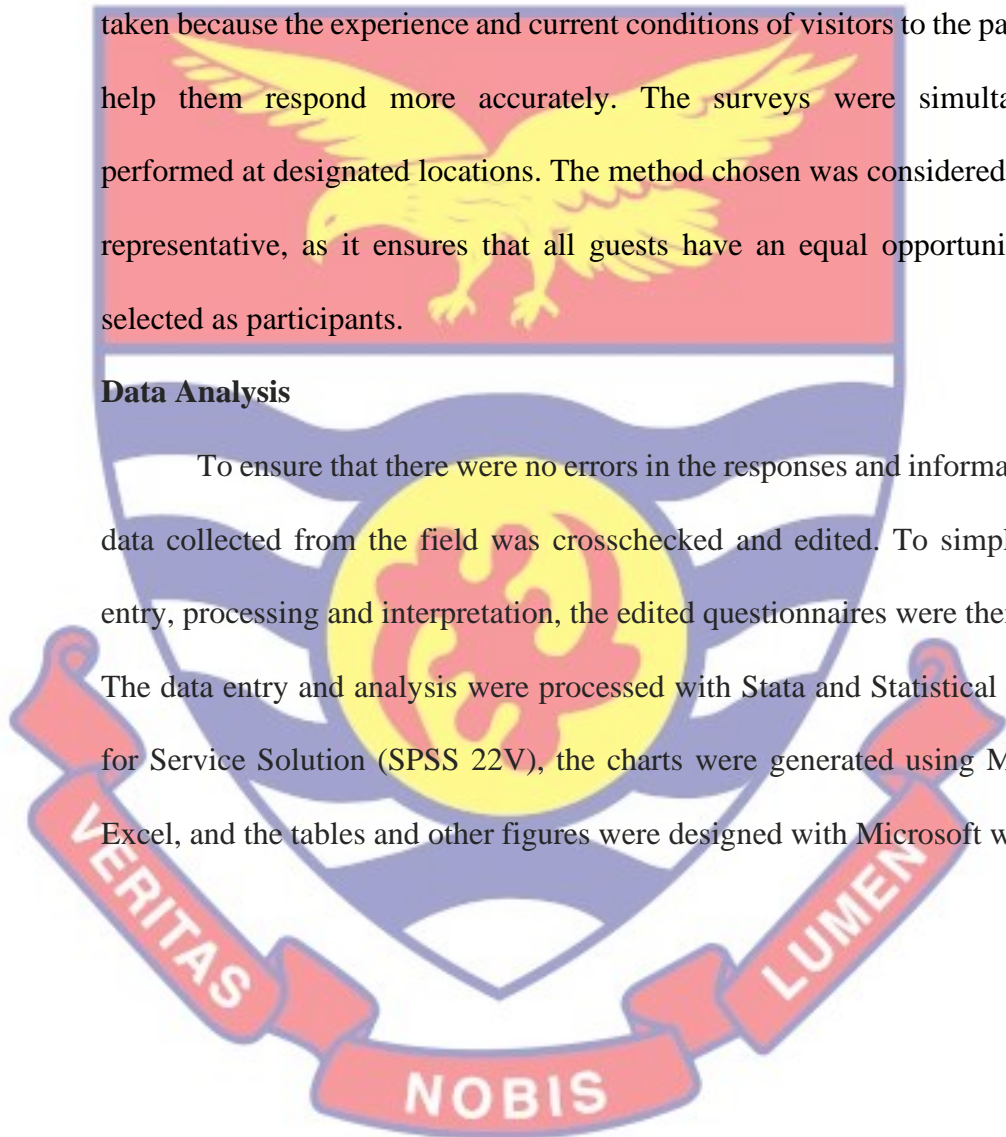
Chapter Summary

The chapter described the various methods used in data collection and analysis. The chapter provided a complete overview of the physical characteristics of the field of study. The chapter further defined the strength and weakness of the design of the study; the key research tools were the questionnaire. Systematic sampling was the sampling technique used in the analysis. The chapter explained the appropriateness of the choice of certain techniques for sampling. The chapter highlighted the research ethics of the 350 visitors, such as confidentiality and anonymity. The next chapter present the results and discussions.

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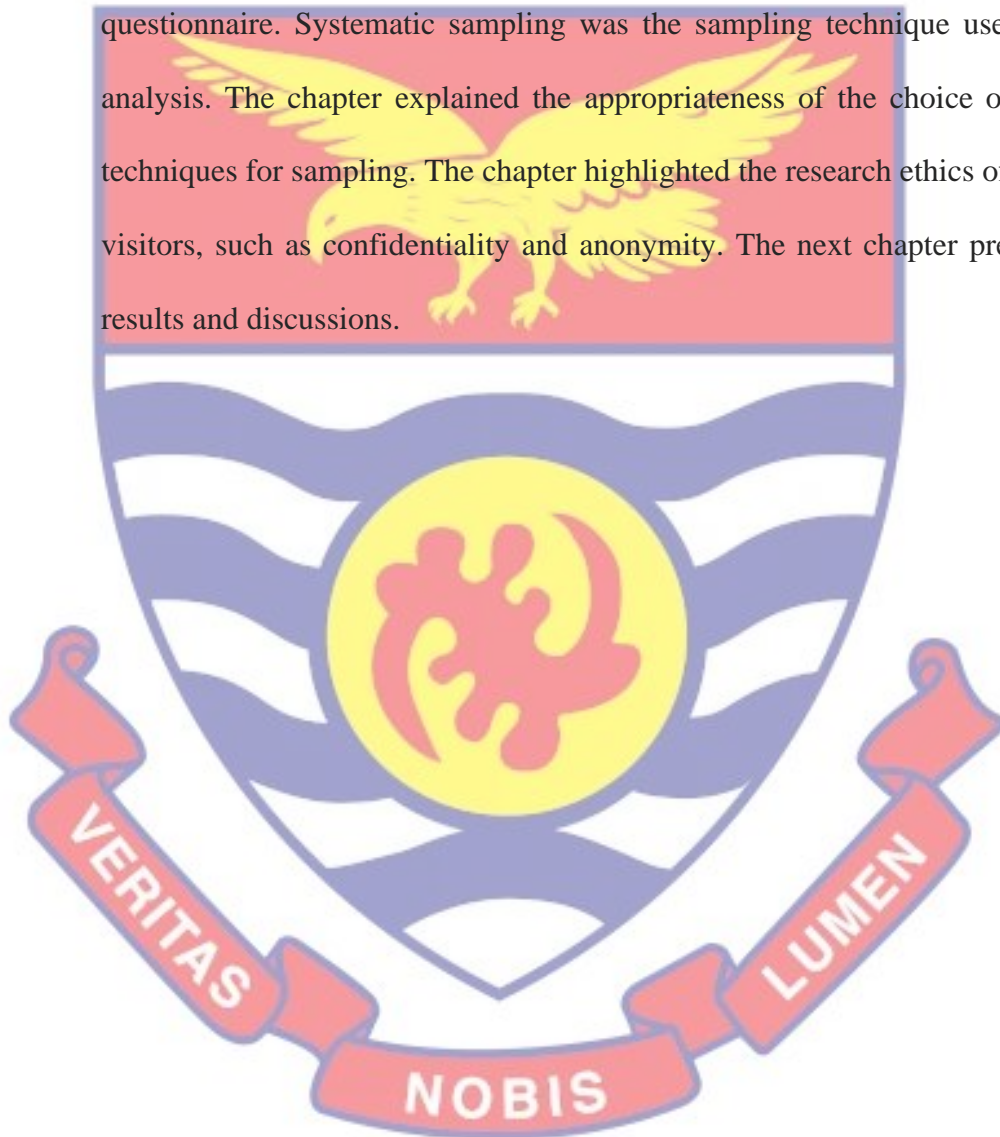
CHAPTER FOUR

RESULTS AND DISCUSSION

Introduction

Chapter four of this study presents the discussions and the results of the study which is in line with the objectives of the study. The results and the discussions were done on the demographics variables, factors that affect willingness to pay, consumer surplus and recreational value. This chapter is organized into two parts, the first is on the demographics' characteristics, such as Gender, Educational background of Visitors, Age and Country of origin. The second part is devoted to the description of the responses in accordance with the research questions. Analysis was made with the help of STATA software and SPSS, bar graphs, pie chart and tables were used to represent the results.
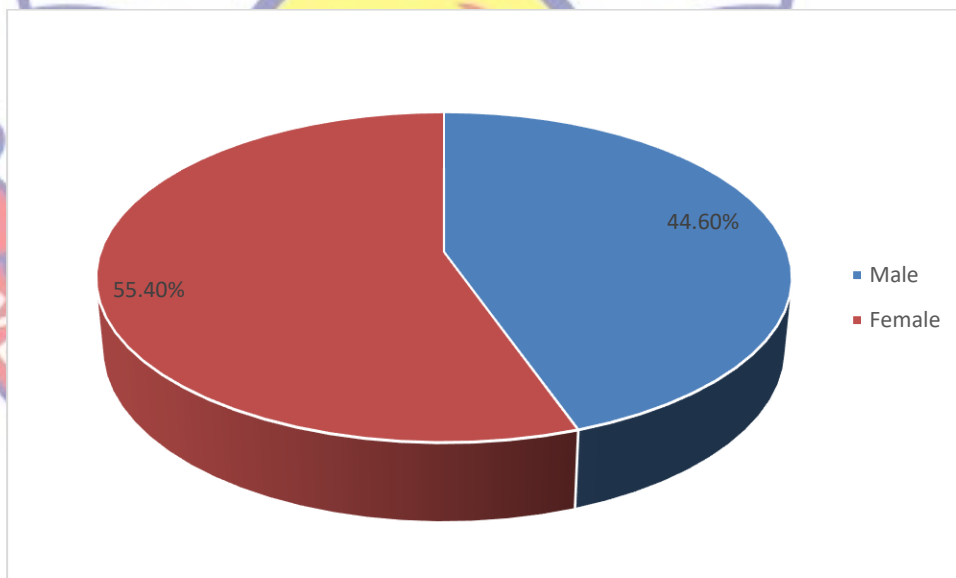
Figure 6: Gender of Visitors

Source: Field Data 2019

Three hundred and fifty visitors were systematically selected for the study. With the gender of the respondents, it was almost equally divided between men and women, thus 44.6% and 55.4% respectively. Visitors were

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intercepted at locations where the researcher and his assistance were likely to encounter them after their visit to the park. This is an indication that there were more females in the study. Gender has been noted as one variable that influences needs and aspirations in addition to the perceptions and attitude to events and issues (Mason and Cheyne, 2000). This finding is in consonance with Collin and Tisdell, (2002) who indicated that one of the factors that affect demand for travel is the gender of the visitors and that motivation and travel patterns between men and women varies.

Table 1: Distribution of Marital Status

	Single	Married	Widow/Widower	Divorce	Other	Total
Male	90	60	3	0	3	**156**
Female	108	64	0	8	14	**194**
Total	**198**	**124**	**3**	**8**	**17**	350
%	**56**	**35.4**	**0.85**	**2.3**	**5.45**	**100**

Source: Field Data (2019)

One of the factors that affect the visitor decisions on vacations is their marital status, (Kattiyapompong and Miller 2008). The study reveals 56% are single, 35.4% married, 0.85% widowed and 2.3% divorced. Unmarried being more in the study could be attributed to the availability of time at their disposal and also, the fact that this group has fewer domestic responsibilities as compared to the married. Lee and Bhargava (2004), who suggested in their research that unmarried (single) spent more time enjoying than married couples, showed similar findings. Lee and Bhargava (2004) also reported that singles have more time compared to those with families to participate in more visitors' activities.

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Table 2: Educational level of visitors to the Park

	Primary	Junior high	Secondary	Tertiary	Total
Male	6	32	100	18	156
Female	3	36	99	56	194
Total	9	68	199	74	350
Percentage	2.6	19.4	56.9	21	100

Source: Field Data (2020)

The educational level of respondents is equally one important attribute that influences visitor's perception of safety (Sönmez & Graefe, 1998). Out of 350 visitors who completed the questionnaires, 56.9% reported to have secondary education. Those who reported higher (Tertiary) level of education represented about 21% of the sample, 2.6% reported primary level of education and 19.4% reported Junior High School.

There is a principle that educated people have valued for recreation than uneducated and less educated people, and this result supports this theory (Weaver and Oppermann, 2000). This result indicate that the respondents were highly educated. These results collaborate the work of (Husbands, 1989), who indicated that the educational level of individuals has been noted to influence their perceptions and participation in tourism development (Husbands, 1989).

Table 3: Residence of origin (Geographical location)

	Urban	Rural	Total
Male	127	29	156
Female	142	52	194
Total	269	81	350
Percentage %	77	23	100

Source: Field data (2019)

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Literature indicates that sustainable tourism is contextual and that is viewed as sustainable practice and travel varies from by visitors and their location (Kearsley, 1998). Majority of the visitors about 77% are urban dwellers and about 23% are resides in rural area. The Table indicates more females who visited the park came from urban areas than males. It is noted that more urban people are likely to embark on recreational tour than rural people base on numerous of reasons. Urban dwellers allocate recreational time to visit tourism centers, also it noted that most rich people stay in urban areas hence the purchasing power to pay and travel to ecotourism destinations. Again, most of these visitors' destinations are found in rural areas and urban people are more likely to travel to rural areas than rural people to rural areas. This is in relation the works of Christaller (1964) who stipulated that visitors site located in rural areas has attracted a lot visitors and tourism for some years now.

Table 4: Income level of Visitors

Income Level	Frequency	Percentage
0-500	24	16
500-1000	10	6.7
2000-3000	31	20.7
3000-4000	12	8
4000+	11	7.3
Total	**350**	**100**

Source: Field Data (2019)

The income level of the respondent was ascertained during the study. From the data it was realized that 16% of the respondent earn between 0-500 Cedis, 6.7% of them earn between 500-1000 Cedis, 29.7% of them earn between 2000-3000, 8% earn 3000-4000 Cedis and 7.3% earn 4000 or more. It was realized that

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majority of the Tourist who visited the Kakum park earn between 2000-3000 cedis.

Table 5: Age distribution of the Visitors to the park

	Age						
	18-25	**26-35**	**36-45**	**46-55**	**56-65**	**65+**	**Total**
Male	37	76	21	8	12	2	**156**
Female	64	72	18	17	19	5	**194**
Total	**101**	**147**	**39**	**25**	**31**	**7**	**350**
Percentage (%)	**28.9**	**43.7**	**11.1**	**7.1**	**8.8**	**2**	**100**

Source: File data (2019)

Age is one of the influential determinants of individual needs, aspirations, perception and attitudes towards issues (Amuquandoh, 2006). The results indicate that the mean age of the study is 33years. From the sample 350 visitors, 194 representing 55.4% were females and 156 (44.6%) were males. With regards to the age distribution, class interval of 26 – 35 are in majority, this constitute 43.7%, 101 of the visitors, representing 28.9% were within the age bracket of 18 – 24 years and this represents 11.1% of the visitors. However, the age class interval of 36-45 constitutes just 7.1% (25) of the visitors. The rest falls within 46-55years (7.1%) and 56-65years (8.8%). 7 out of the 350 visitors to the park during the survey were above 60 years (2%). These findings relate and validate the sense that for recreational purposes, young people travel long distances and that the likelihood of individuals engaging in wildlife activity increases when an individual is young and decreases when an individual grows old (Spence 2002).

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Table 6: Transport mode of the visitors to Kakum National Park

Transport Mode	Frequency	Percentage
Tour Bus	149	46.5
Taxi	69	18.5
Private Car	200	26.6
Motorcycle	1	0.3
Public	31	8.2
Total	**350**	**100**

Source: **Field Data (2019)**

46.5% of visitors sampled for the study travelled to the Kakum National Park by Tour bus, 26% travelled to the park by their own private cars while 18.5% use taxi, 8.2% used public bus and 0.3% reported that the came to the park with motorcycle. It can therefore be deduced that visitors of different ages, sex, marital status, occupational status, and income levels commonly use tour buses as asserted by Boakye and Owusu-Mintah (2008) about visitors in Ghana.

Table 7: Time spent at the park

Hours	Frequency	Percentage
≥2	151	40.2
3-4	162	50.3
5-7	12	3.2
7≤	24	6.2
Total	350	100

Source: Field Data (2019)

Decrop (2005) states that the total time spent during visitation at each attraction site is relevant for some reason. 50.3% of the visitors spend 3-4 hours at the park, 6.2% of visitors spend 7 hours, 3.2 % spent between 5-7 hours and 40.2% spend 2 or more hours at the park. Time cost is the opportunity cost of

traveling from one's residence to the recreational site. This is consistent with the work of Grinberger et al. (2014), who discovered that visitors enjoyed the time spent on tourism site activities and that visitors spend more time on recreational sites.

Table 8: Prior knowledge of the Park

Knowledge about the park	Frequency	Percentage
YES	261	74.6
No	89	25.4
Total	**350**	**100**

Source: Field Data (2019)

Prior knowledge and experience may offset risk and uncertainty needs Lehto et al. (2004). 261 visitors indicated that they have previously heard about Kakum National Park whiles 89 of them indicated that they have never heard of the Kakum National Park beforehand. The results indicate that majority of the respondents had prior knowledge of the park before visiting. This corresponds to the works of Gursoy (2003) who state that relationship between the prior knowledge of visitors site is positive with information search since the prior knowledge information search and makes it easy for visitors to visit.

Table 9: Last visit to the Park

Last visited	Frequency	Percentage
Never visited	196	56.0
Once	110	31.4
Twice	15	4.3
Three times	14	4.0
Four or More times	15	4.3
Total	**350**	**100**

Source: Field Data (2019)

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From the table above, it was realized that 56% of them indicated the never visited the Kakum National Park before, 31.4% of them have visited just once, 4.3% just twice, 4.0% of them three times and 4.3% of them have visited four or more times. It indicated here that majority of the respondent have never visited the Kakum National Park before. This correspond to the works of Poon (1992) who stated that new visitors at a site are more than frequent visited visitors. In effect, analysis of satisfaction and intention of revisiting are results of impact of satisfaction and dissatisfaction derived from first visit to the destination center.

Table 10: Visitors reasons for visiting Kakum National Park

Services	Frequency	Percentage
Canopy Walk	265	73.0
Bird Watching	18	5.1
Relaxation	12	4.3
Sight-Seeing	22	3.4
Combination	42	12.0
Total	**350**	**100**

Source: Field Data (2019)

There are various reasons why people embark on journeys to some visitor's destinations. There are number of recreational activities at the Kakum Park include the canopy walkway, bird watching and many more. Majority of the respondent 73% came to visit because of the canopy walkway, 5.1% came for Bird watching, 4.3% relaxation, 3.4% sight-seeing and 12.0% for any combination of the above mentioned. It noted that the Kakum walkway at the park has been the most important attraction to more people who visit the park.

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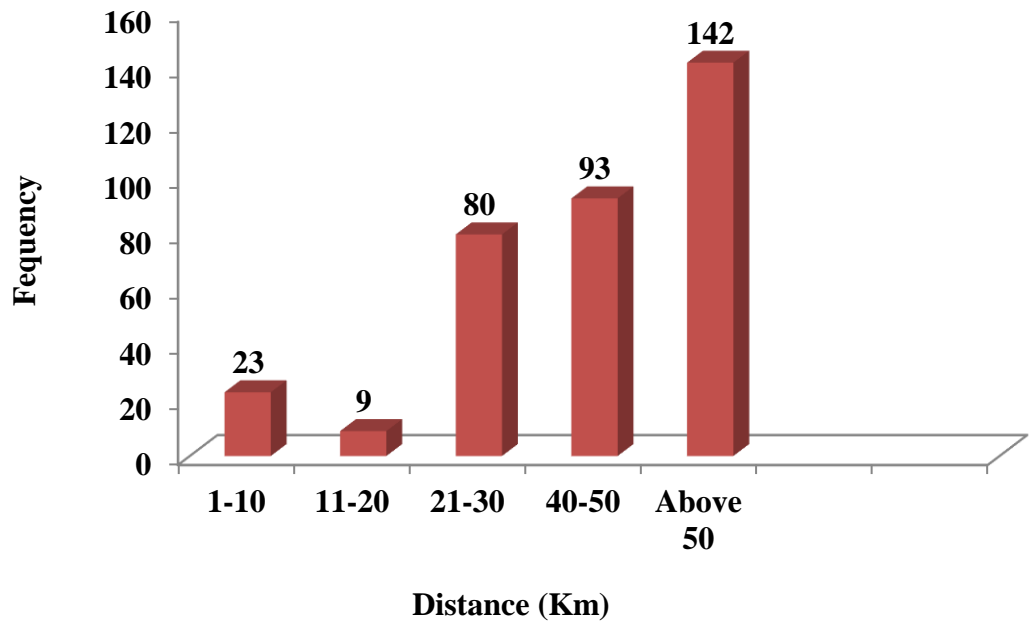
Figure 7: Distance travelled by visitors (km) to the Park

Source: Field Data 2019

From the study, 142 out of 350 people reported travelling more than about 50 km to visit the Kakum National Park and that represent the highest kilometers travelled to the park representing 37.8% of the sampled population. About 6% travelled about 1-10 km to the Park, 1.9% travelled between 11-20km to the park, 21.3% travelled between 21-30km and 24.7% also travelled 40-50km to the park. It is realized that majority of the visitors travelled from a very longer distance and there are some factors that could explain their motivation of travel. The first law of Human Geography, also known as the law of Tobler, defines the influence of distance from one location on people's movement.

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Estimated factors that affect the willingness to pay
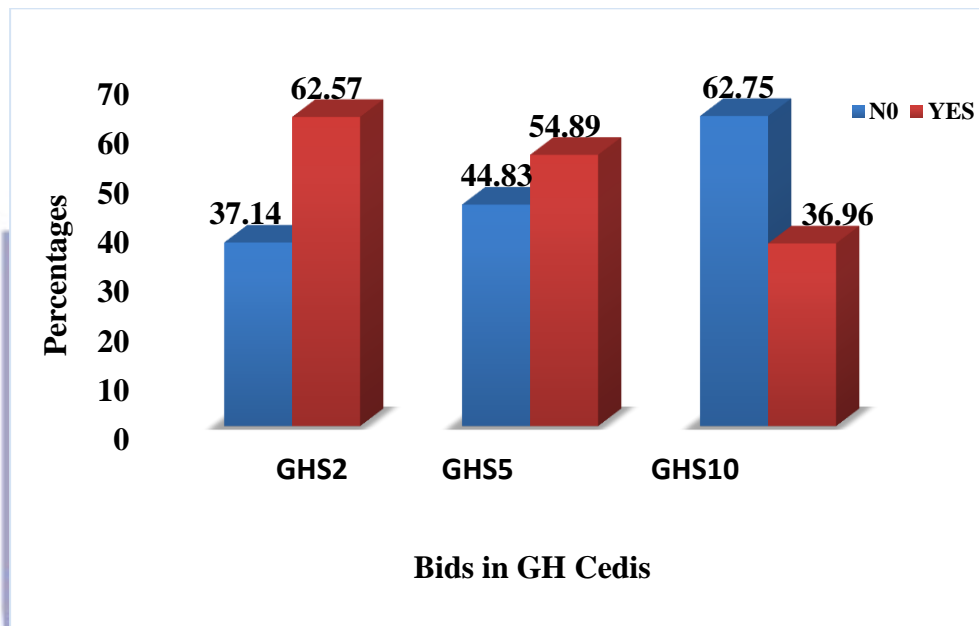
Figure 8: Entrance fees biddings

Source: Field Data (2019)

Entrance fees are collected and dedicated to the improvement of conservation and maintenance of recreational centers Peters (1998). The current entrance fee of the Kakum Park is GHS2 and that was used at the base to ask whether visitors will pay that amount and if they will or not when the amount increases. The result indicates that 62.6% affirm that they will pay the GHS2 as the entrance fee and 37% indicated that they will not pay that amount. Again, when the entrance fee was increased to GHS5, 54.9% indicated that they will pay and 44.8% indicted that they will not pay. At an increase to GHS10 entrance fee, 36.9% says they will pay and 62.8% indicated that they will not pay. It was realized that as the entrance fees increase from GHS2 to GHS10, the number of YES response decreases and vice versa.

From the study it was realized that majority 62.6% indicated that they will pay the GHS2 entrance fee and majority 62.8% indicated they will not pay for the GHS10 increment of the entrance fees. The willingness to pay here was estimated by the dichotomous variable with the values of the bidding prices above with "YES" and "NO" as the responses.

Table 11: Logistic Regression Estimate of Determinants of willingness to Pay (WTP)

Variables	GHS2 Odds Ratio	GHS5 Odds Ratio	GHS 10+ Odds Ratio
Male (ref=female)	1.1663***	1.8409**	1.5247*
	(.3518)	(.2258)	(.5473)
Age	1.9749**	1.0621***	.3655**
	(.3518)	(.5085)	(.2151)
Age square	.8972**	1.0291**	1.0909**
	(.0612)	(.0813)	(.0995)
Income	1.9395**	1.8852**	1.0412**
	(.1079)	(.1026)	(.1465)
Entrance fees	.9670**	0.891***	.7602***
	(.1654)	(.4289)	(5.5685)
Entrance fees square	.9945*	.8134**	.25914**
	(.1168)	(.1130)	(.0637)
Marital (married)			
Single	1.9207**	2.725549**	1.5413**
	(1.3161)	(1.240002)	(.7912)
Married	1.902486**	2.785988**	3.41111**
	(1.872801)	(1.350216)	(1.974646)
Education (ref=<JHS)			
Junior High School	1.4056**	.3657**	4.5275**
	(1.1981)	(.2850)	(4.4744)
Secondary/Technical/Vocational	1.2944**	.3781**	2.8972***
	(1.07017)	(.2809)	(2.7640)

Tertiary	1.0026	.2876	1.5848***
	(.8618)	(.2237)	(1.5856)
Location	17.1967**	4.5962	3.0567***
	(5.7772)	(1.3216)	(1.3405)
Constant	.0369**	.2054	.0133***
	(.0570)	(.2876)	(.0240)
Number of obs	350	350	350
Wald chi2(10)	80.47	66.73	69.11
Prob > chi2	0.000	0.000	0.000
Pseudo R2	0.2314	0.1838	0.4175
Model specification test _hat	0.000	0.000	0.000
	0.665	0.104	0.111
_hatsq			
Hosmer-Lemeshow	275.53(0.2165)	246.85(0.1516)	495.76
goodness-of-fit test			(0.516)

Robust Standard Errors in Parentheses. *** p<0.01, ** p<0.05, * p<0.1

Source: Field Data (2019)

The table represent the entrance fee and the willingness to pay at the various price for leisure at the Kakum National Park. The results indicate that if an individual is a male, the odds of willingness to pay GHS 2 for leisure will increase by a factor of 16% as compared to a female and is statistically significant at 5%, holding all other factors fixed. Similarly, if an individual gains an additional year in age, the odds of willingness to pay GHS 2 for leisure will increase by a factor of 97% and is statistically significant at 5%, holding all other factors constant.

The WTP odds ratios indicates that the socio-demographic variables such as, Sex, Age, Marital Status and Educational background independently have significant impact on the decision to pay for entrance fees of the park. This result is related to the works of Ahmed and Hussain (2006) who reported a direct

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relationship of educational level and WTP for the entrance fee. Similarly, Wilson and Tisdell (2003) also reported in their work that higher income groups pay higher entrance fees than lower income groups. In this study, WTP was positively related to income ($P<0/01$). However, Iasha et. al., (2015) also reported significant association between income and WTP.

The results also indicate that the location of the visitors either in urban or rural setting equally have an impact on the recreational value of the park.

Compared to their counterparts from rural areas, urban visitors are more likely to pay for higher entry fees and this correlates to the works of (Ankomah and Osei, 2014) who published the same findings on location and willingness to pay

Again, the results indicate that men pay for increase in entrance fee than women. This is evidence in the works of Scott and Lochhead (1997) that women systematically earn less than men. The willingness to pay for entrance fees of the environmental characteristics depends on visitor's behavioral intent.

The Table 11 shows the effect of improvement in social amenities on recreational value. The infrastructure of tourism can be seen as the physical elements designed and erected to cater for visitors. A number of scholars have theoretically identified a close relationship between tourism growth and infrastructure (Iweka, 2014). Results of the study indicates that improvement in sight seeing will increase recreational value by 0.9%.

Table 12: Effect of improvement in social amenities on recreational value

VARIABLES	(1) Actual value Log value
Social Amenities (ref= recreational site)	
Sight seeing	0.00904**
	(0.145)
Bird watching	0.138**
	(0.147)
Relaxation facilities	0.0715**
	(0.157)
Walking tracks	0.0680**
	(0.160)
Park information (ref= information of the Park)	
Maps	0.657***
	(0.163)
Information signs	0.576***
	(0.165)
Precaution signs	0.958***
	(0.241)
Traffic (ref=traffic)	
Road condition	0.753***
	(0.184)
Traffic safety	0.823***
	(0.183)
Traffic signs	0.481*
	(0.248)
Sanitation (ref= Others)	
Waste Disposal	0.575***
	(0.203)
Lavatory	0.584***
	(0.202)
(ref= Others)	
Services	1.562***
	(0.0923)
Accommodation	1.607***
Total Observation	350
R-Squared	0.628

Robust Standard Errors in Parentheses. ***** p<0.01, ** p<0.05, * p<0.1**

Source: Field Data (2019)

Similarly, if there is an improvement in bird watching facilities activity, recreational value will increase by 13.8%. Again, an improvement in relaxation facilities increase recreational value by 7.15% and it is statistically significant at 5%. Any improvement in walking tracks will increase recreational value by 6.8% and is statistically significant at 5% (Senarathna 2017).

These results can be used to evaluate the effect of changes in social amenities on the recreation benefits of the Kakum National Park. In this is study, obvious that an improvement in the road conditions and the precautional signs of the park would have the highest increase in the recreation value of the park by 75% and 95% respectively. Similar results were reported by Hensher and Johnson (1981).

Improved traffic safety will also affect the number of visits by 82%. An improvement in the sanitation of the park will increase the recreational value of the park by 57 percent based on the elasticity of the projected number of visits from the tour. This is related to the works of Kirtland et.al, (2004) who opined that parks and recreation center are rated high with respect to their good traffic safety condition and maintenance of the park and that the traffic safety of a facility's equipment and features are important to the parks development.

The leisure appeal of the park would also be improved by 71 percent by upgrading the park's relaxation facilities. (Hignel, 2010) demonstrate that the planning, design and redesign of relaxation facilities for public parks and their maintenance are essential to population health and society and park improvement. This analysis shows that the information gathered from the Kakum National Park and Recreation survey can be used to analyze policies that influence recreation participation and visitation. The estimated in this

analysis can be used to estimate recreation benefits from improving access to social amenities and from visitation to the park. The work of (Popesku, 2011) also claimed that tourism facilities and amenities are the basis for the growth of tourism.

The importance of tourism infrastructure is reflected in the fact that it can help to increase the efficiency of tourism service creation and delivery and, in some cases, even to increase the availability of tourism services, such as in remote destinations. Page and Lumedon (2004) have argued that the road network communication structure of a visitor's destination has an impact on the tourism experience, describing how people travel and why they choose various types of holiday destination.

Table 13: Improvement called by Visitors

Area of Improvement	Specific Details
Recreational Site	Site-seeing, Birdwatching, Relaxation, Tracks for walking, Exercise, Canopy walking, Other
Information about Park	Information sign, Visitor's information center Maps, Precaution sign
Traffic	Traffic safety, Traffic signs Road conditions, Parking
Miscellaneous	Lavatory, Waste disposal, Food and beverage services, Accommodation

Source: Field Data (2019)

As a component of the tourism product, tourism infrastructure is of particular importance for the long-term growth of tourism and the general progress made by visitor's destinations in providing visitors with the services needed. Many expressed their wish for improvements to the facilities and infra structure of   the Park thus the quality of the site itself such as the canopy walk,

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bird watching, relaxation, walking tracks, excising and others. More specifically, 120 visitors (out of 350) called for improvements in Traffic which comprises of road conditions, traffic safety, traffic signs, signage and parking space. 30 of the visitors wished for improvements in what was termed as miscellaneous on the questionnaire which includes waste disposal, lavatory, food and beverage services and 6 said they would like to see the opening of an eco-museum at the site. A better or additional summer hut should be developed, according to 350 visitors. Finally, 20 visitors called for overall infrastructure improvements, including accommodation.

Table14: General dominance analysis on the relative effect of improvement in social amenities on recreational value

	Dominance. Stat	Standardized Dominance. Stats	Rankings
Recreational site	0.0014	0.0031	13
Park information	0.0168	0.0379	5
Traffic	0.0167	0.0379	6
Sanitation	0.0078	0.0177	9
Canopy Walk	0.2665	0.6027	1
Education	0.0158	0.0357	7
Sex	0.0210	0.0474	4
Age	0.0110	0.0248	8
Age2	0.0073	0.0165	10
Loginc	0.0066	0.0149	11
Logamt	0.0274	0.0620	3
Entrance fee	0.0419	0.0948	2
Marital	0.0016	0.0035	12
Location	0.0005	0.0012	14
Number of obs	350		
Overall Fit Statistic	0.4422		

Source: Field Data (2019)

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The consequences of the dominance analysis recommend that if the aim is to build the overall estimation of the recreation canter, the overall spotlight ought to be on the walkway. With the most noteworthy rating of 1, the overhang walkway had the most elevated standard predominance measurements of 0.6027, Amuquandoh, (2006) who revealed in his examination that "around 91 percent of respondents related their visit somehow to the covering walkway. Most respondents demonstrated that they were in the recreation canter to see the covering walkway (94%, mean = 1.37), see and feel the overhang walkway (94%, mean = 1.37) and challenge themselves by intersection the shelter walkway (92%, mean = 1.49) Amuquandoh, (2006). This finding means that the essential park fascination being the shade walkway. From the table with a dominance statistic of 0.0419 with the rating of 2nd place, the entrance fee of the park followed 2nd position. The recreation entrance fee demonstration to boost revenue and support site-specific projects is addressed by a fair amount of research (Absher, McCollum, & Bowker 1999).

From the table with a dominance statistic of 0.0419 with the rating of 2nd place, the entrance fee of the park followed 2nd position. The recreation entrance fee demonstration to boost revenue and support site-specific projects is addressed by a fair amount of research (Absher, McCollum, & Bowker 1999).

In order to increase the park's relative value, more emphasis should also be put on road conditions and traffic which comes third after entrance fees with a standard dominance value of 0.0274. Road infrastructure, therefore, increases visitor's accessibility to destinations located in different parts of the country; and sound air flights allow visitors to experience a comfortable transition from the aircraft to the destination country's borders and vice versa. Scholars such as

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Ibrahim (2013) give a sound explanation of how international and domestic tourism contributes healthy functioning depends on road and air infrastructure.

Gender (Sex) of the visitors comes with a positioning of 4th which infers that sex is a factor that inspire the inclination to venture out to an objective. Collin and Tisdell, (2002) demonstrated that one of the main considerations impacting the interest in movement is sexual orientation. In light of movement inspiration, the movement designs among people differ.

The fifth ranking from the table is on park information (Map). The knowledge about the park is very important to the value of the park. People should have access to information of the park when needed and that will increase the number of visitations to the park. A map provides information on existence, the location of, and the distance between ground features, such as populated places and routes of travel and communication Kirkland et.al, (2008).

The sixth item ranking on the table is the traffic conditions, this implies the focus to improve the value of the park should also have improvement in the traffic condition of the park in mind. This is related to the works of Kirkland et.al, (2008) who opined that parks and recreation center are rated high with respect to their good traffic safety condition and maintenance of the park and that the traffic safety of a facility's equipment and features are important to the development of the park.

Education background of the visitors ranking seventh from the table. Ranking eight from the table is age with a standard dominance statistic of 0.0110. The educational level of respondents is equally one important attribute that influences visitor's perception of safety (Sönmez & Graefe, 1998).

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Again, to improve on the value of the park, sanitation needs to be considered as a factor to contribute to the value of the park. Sanitation is ranked 9th on the table with a dominance statistic of 0.0078. According to WHO, sanitation is the provision of safe disposal facilities and services of faces and human urine (Zhou et al., 2018). As the tourism industry is very sensitive to perceptions or images (ADB, 2014), hence, if the visiting visitors are dissatisfied with sanitation facilities in a country, they are likely not to visit again and discourage other potential visitors as well.

In general, if the dominance statistics is doubled, we will have the entrance fee getting the highest standard dominance statistics of 0.0948. This suggests that the entrance fee has a factor on the value of the generated in the park. This result collaborates the work of Azen (2013) who used this same method to estimate relative effect of improvement in social amenities on recreational value.

Table 15: Estimated Consumer Surplus and Value of the Park

Variable	Amount (GHS)	Total no. visitors
Total value of the park	221, 050.6	350
Consumer surplus	6865	350

Source: Field Data (2019)

GHS 6865 (US\$ 1181.58) was calculated to be the consumer surplus. This demonstrates the importance of the benefit that visitors derive from visiting Kakum National Park. The surplus also indicates the amount that the visitors are willing to pay to enjoy the park's environmental resources. The Park's annual monetary value for recreation is about GHS 221,050.6 (approximately US\$ 38046.57). This is not the park's revenue, however. This is related to the

work of Mustafa (1994) who estimated total annual net economic benefit for Sungai Congkak forest reserve in Selangor, Malaysia at US$ 6692.86 and the consumer surplus per trip was RM 5.80 (US$ 1.40). Saayman and Saayman (2017) also used the contingent valuation approach to obtain the non-consumptive value or appreciative value of the rhino, based on three surveys conducted in the Kruger National Park (KNP) of South Africa from 2011 to 2013.
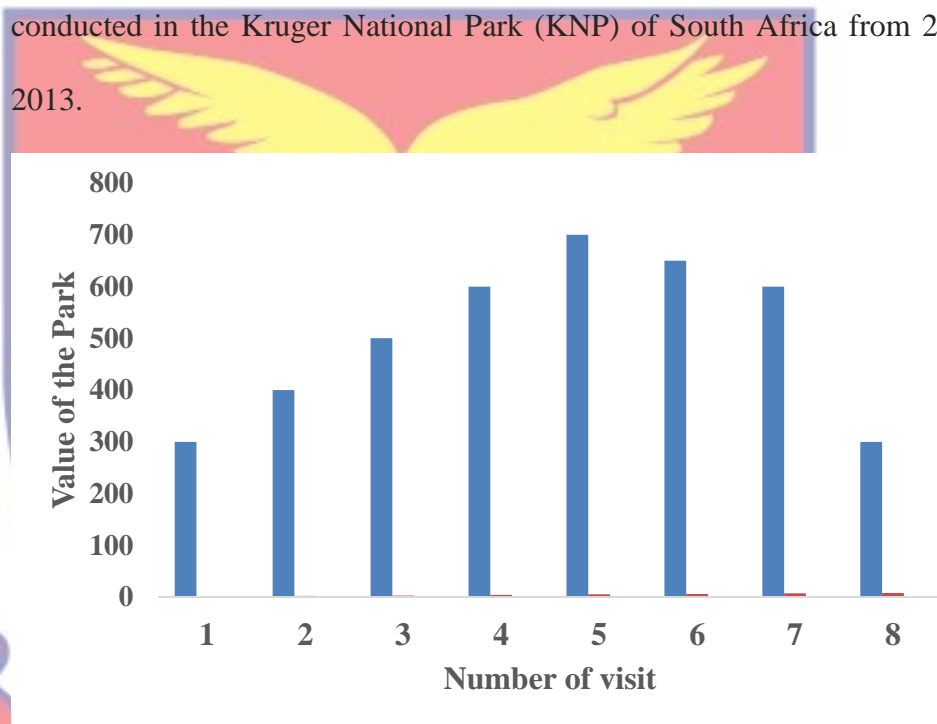
Figure 8: Relationship between the number of visit and the value of the Park
Source: Field Data (2019)

Figure 9 shows the relationship between the values of the Park against the number of visits. The figure 2 show the value of the Park increases and attain maximum value and decreases. The curve determines that the value of the park also increases with the number of visits to the park, reaches a maximum value and begins to decrease. This implies that as the individual visit to the park increases that value attached to the Park also increases, attains maximum and decreases.

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Table 16: How would you describe the quality of recreational benefits at the Park

Response	Number of Responses	Percentage (%)
Poor	14	9.3
Fairly good	27	18.0
Good	47	31.3
Very good	38	25.3
Excellent	24	16
Total	150	100

Source: Field Data (2019)

The table above depicts how would you describe the quality of recreational benefits at the Park, 14(9.3%) respondents graded the recreational benefits of the Kakum Park as poor, 27(18%) respondents rated recreational benefits of the Kakum Park as fairly good. However, 47(31.3%) respondents graded it as good, 38(25.3%) respondents graded recreational benefits of the Kakum Park as very good and 24(16%) respondents graded recreational benefits of the Kakum Park as excellent. It was realized that majority of the visitors who visited the Kakum national park good.

Table 17: Visitor's level of Satisfaction

Items	Yes	No
Do you know any other National Park that you would like to visit instead of this Park?	103(68.7%)	47(31.3)
Would you like to have an improvement in the recreational services been provided by the Park?	107((72%)	42(28%)
Are you satisfied with the existing recreational benefits of the park?	103(68.7%)	47(31.3%
Total	150	100

Source: Field Data (2019)

The study also seeks to know the level of visitor's satisfaction of the Kakum national park. It was realized that 68.7% know other National Park that they would like to visit instead of this Kakum Park, 72% of the visitors would like to have an improvement in the recreational services been provided by the Park and finally 68.7% majority of the visitors are satisfied with the existing recreational benefits of the park.

Table 18: If you were not on this trip today, what would you most likely be doing?

Responses	Number of Responses	Percentage (%)
Working at job	32	21.3
Watching TV	44	29.3
Housework	39	26
Shopping	19	12.7
Other	16	10.7
Total	**150**	**100**

Source: Field Data (2019)

Visitors sampled for the study responded to what they are most likely be doing if you were not on this trip, 32(21.3%) indicated they would have been working at job, 44(29.3%) respondents indicated they would have been watching TV, 39(26%) respondents indicated they would have been doing housework. Meanwhile, 19(12.7%) respondents indicated they would have been doing shopping and 16(10.7) respondents indicated that they would have been doing other things if they were not on this trip.

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Table 19: Victor's level of satisfaction for activities at the Kakum Park

| Recreational Benefits	Strongly disagree	Disagree	Agree	Strongly Agree
Sight-seeing	22(14.7%)	32(21.3%)	63(42%)	33(22%)
Bird-watching	23(15.3%)	22(14.7%)	65(43.3%)	23(15.3%)
Relaxation	12(8%)	15(10%)	83(55.3%)	12(8%)
Exercising	10(6.7%)	7(4.7%)	81(54%)	52(34.7%)
Walking tracks	13(8.7%)	10(6.7%)	78(52%)	49(32.7%)

Source: Field Data (2019)

Visitors were asked about their level of satisfaction of the various activities they came for at the Kakum national park. It was realized that 14% of the visitors strongly disagree with the sight-seeing activity, 21.3% of them disagree they enjoy the sight-seeing at the park, however, 42% majority agrees that they enjoy the sight-seeing activity of the park whiles 22% also strongly agrees that they enjoyed the Kakum park sight- seeing. Again, 15.3% strongly disagree that they enjoyed bird watching, 14.7% also disagreed while 43.3% majority of visitors sampled for the study agree they enjoyed it and 15.3% also strongly agreed they enjoyed the bird-watching activity of the park. Relaxation of the park was also strongly disagreed by 8% of the visitors and 4.7% also disagree they enjoyed any relaxation of the park. However, 53.3% agrees they enjoyed the parks relaxation facilities while 8% strongly agreed they also enjoyed the relaxation of the park. 6.7% of the visitors strongly disagreed that they enjoyed exercising at the park, 4.7% also disagrees while 54% agreed the enjoyed exercising at the park and 34.7% strongly agreed they enjoyed exercising at the Kakum Park. Finally, the working tracks at the park was also accessed by the visitors, 8.7% of them strongly disagree they like the walking tracks of the park and 6.7% also disagreed, however, 52% of the visitors agreed

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the like the walking tracks of the park and 32.7% of them strongly agreed the liked the walking tracks of the park.

Chapter Summary

The chapter present the results and the discussions of the study. The chapter provided a complete result of the study according to the objectives of the study. The results were presented with charts and tables. The next chapter present the summary, conclusion and recommendation of the study.

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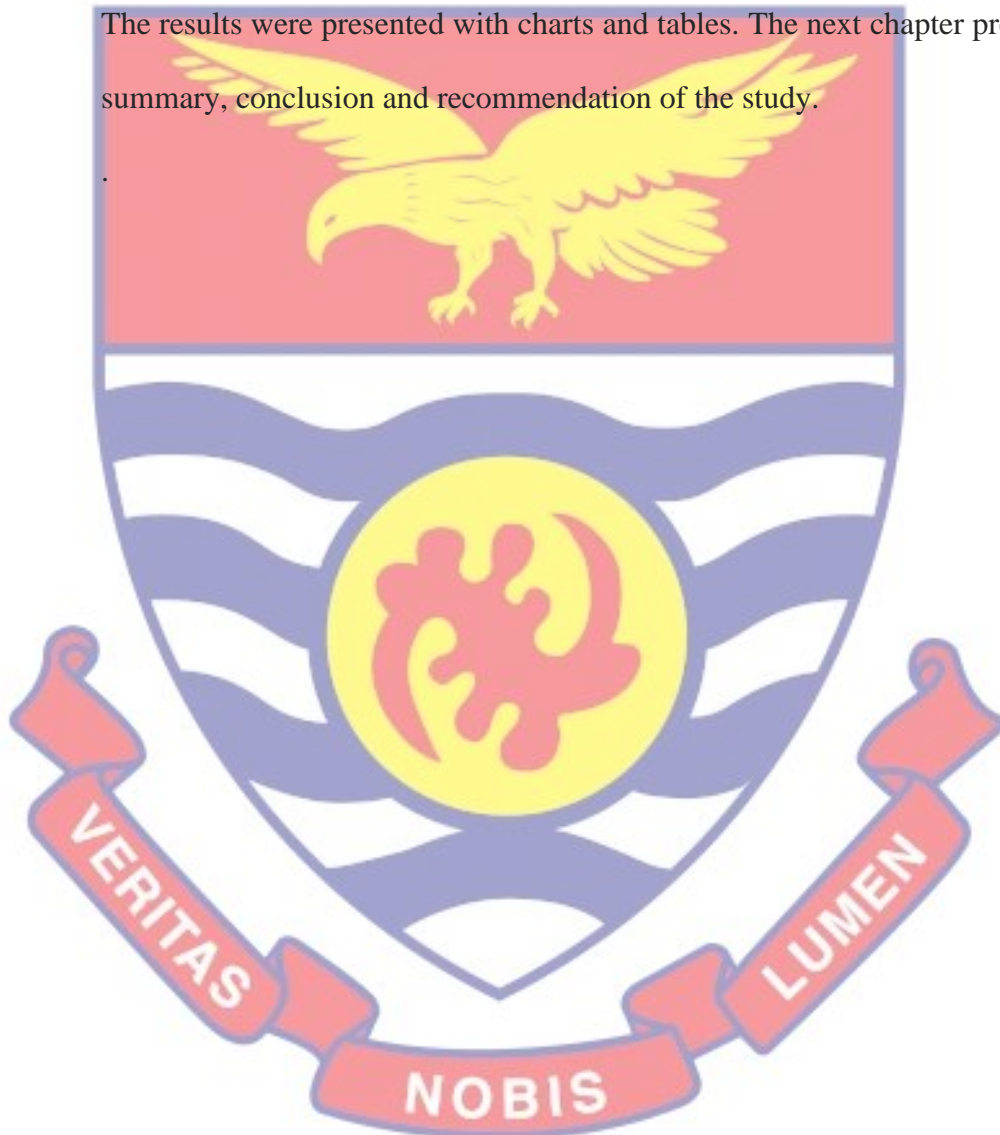
CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATION

Introduction

Chapter five of this study summarizes major finding of the thesis. Major conclusions are made based on the findings of the study and some recommendations are on the benefit of estimating the recreational value of the Kakum National Park.

Summary

Improvement and growth in ecotourism has brought an increasing interest among Government and Non-Governmental Organization in conservation of natural resource, valuating nonmarket products techniques were used to estimate environmental resources and their economic benefit. The contingent evaluation method was used to measure and analyze the recreational benefits of the Kakum National Park. Estimating the recreational benefits of the Park is the main objective of the thesis with the following specific objectives;

1. Assess the factors that affect visitor's willingness to pay (WTP)

2. Determine the consumer surplus and recreational value of the Park.

3. Ascertain improvements in the social amenities of the park on recreational value.

Contingent Valuation method was employed in this study to estimate the benefits associated. This study employs CVM to estimate the benefits associated with recreation in the Kakum National Park. A sample size of 350 visitors were selected from the KNP. The quantitative data was analysed using STATA Software. The result was then presented in tables and diagrams.

Major Findings

The following were the major findings:

The Kakum canopy walk is one of the main attractions of the park. Visitors come to have enormous experience about the park. There are just a few places in Ghana that provides this kind of experience. The study shows that age $(P < 0.001)$, gender $(P < 0.001)$, income $(P < 0.05)$, marital status $(P < 0.05)$, educational level and locational $(P < 0.05)$ are key socioeconomic variables significantly influence visitor's willingness to pay for the entrance fees. Moreover, improvement in social amenities such as walking tracks $(P < 0.05)$, lavatory $(P < 0.001)$, information signs $(P < 0.01)$, accommodation $(P < 0.001)$ and condition of the road $(P < 0.00)$ will increase the recreational value of the park. The Kakum Park recreational value was estimated as GHS 221,050.60 (approximately US$ 38,046.57) and the Consumer Surplus as GHS 6865.00 (US$ 1181.58).

The WTP model indicates that, sex, age, educational status, and marital status had significant impact on the decision to involve in the payment of entrance fees of the park. It was also indicted that income had impact on the payment of the entrance fee of the park.

KNP is one of the most environmental valuable resources in the country. The Kakum Park recreational value was estimated as GH₵ 221,050.60 (approximately US$ 38,046.57) and the Consumer Surplus as GH₵ 6865.00 (US$ 1181.58). If the number of visits of the park increases, it expected that that value of the park increases as well over time.

Dominance analysis was used to measure the improvement in social amenities on recreational value, that if the focus is to improve the relative value

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of the park then the general concentration should be on the canopy walk with the highest standard dominance statistics of 0.6027 with the highest ranking first followed by the entrance fee of the park with a standard dominance statistic of 0.0419 ranking second. The impact of the social amenities of the park has an important factor in managing the park efficiently.

Conclusions and Recommendation

In view of the good amount of consumer surplus and the recreational value of the park, the following recommendations are made; The Government of Ghana should budget an annual amount of money in managing and maintaining the park. The study has proven that if the social amenities of the park is improved it will attract a lot of visitors and hence increase the revenue generated for the park. Wild life conservation authority and the government of Ghana should also introduce a standard entrance fee for the visitors both local and foreign.

The value associated with the recreational value of the Kakum National Park and the entrance fee of the park can enhance the management and conservation of the park. This study will also provide more attention for valuation of non-market product and the benefits that accrue by investing in them.

Government and Authorities in charge of Tourism can use the results to help identify areas where improved entrance fee generates significant benefits. The importance of WTP in both the decision to recreate and the number of visits indicates a need to maintain or improve recreational value in order to protect the national park.

Advertisement of the park should be improved at all levels in the country in the

media, magazines and other mediums to increase the visibility of the park especially for foreign visitors. Brochures of the park should be printed and given to embassies worldwide to increase the information base of the park.

Contribution to knowledge

One impact of this thesis about valuating the recreational benefit of ecotourism is that it gives some accurate account and benefits of our environment. Valuation methods that have was used in this study will help to estimate the benefits and problems that people may experience resulting in improvement in social amenities of Kakum National Park in order to inform policy discussions and decisions.

Ecotourism development have a great potential of financial benefit to a country hence estimating their value will help curb the problem of environmental degradation, for example illegal mining in Ghana (Galemesy).

This study will enhance the preservation of ecotourism centers and enhances the tourism industry of Ghana and will provide a positive attitude and experience among visitors (both foreign and domestic) at the destination areas. Finally, the study should serve as an "eye-opener" to people in the industry thus; the study will also provide economic and social benefits to government and employment to the people.

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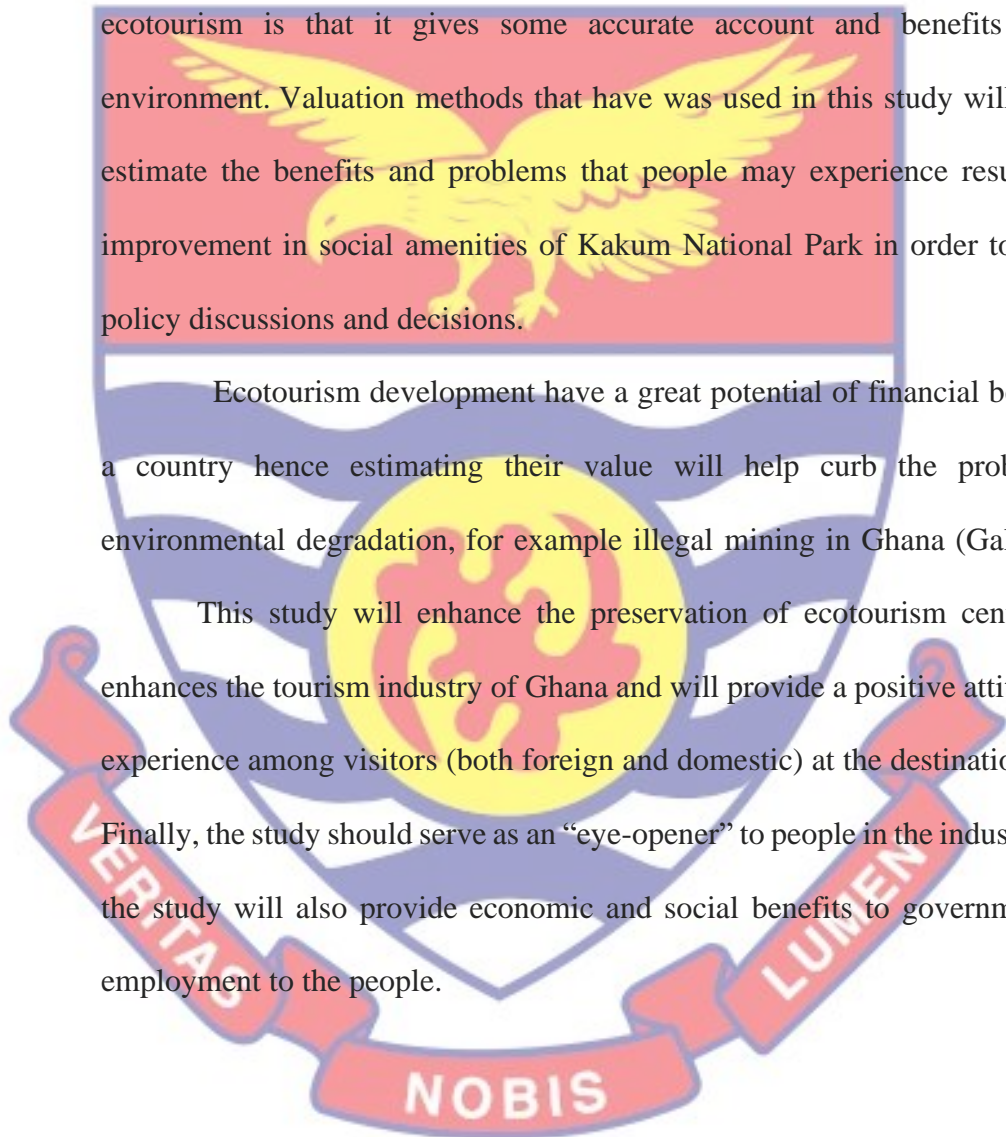
Suggestion for Further Studies

The study was done in Central Region at Kakum National Park and employed a systematic sampling method to recruit the sample size for the study. But research of this kind that estimates the recreational of a national park should cover all the various aspect of the consumer's purpose of visit. Studies should be done in all the national parks of the country so that the recreational values of these parks could be estimated for planning and development purposes. Policies by the government should be investigated to ascertain the right approaches that may be taken to address the improvement recreational value of the parks in Ghana on ecotourism and well-being of visitors. Finally, there should be studies on mapping ecosystems in Ghana.

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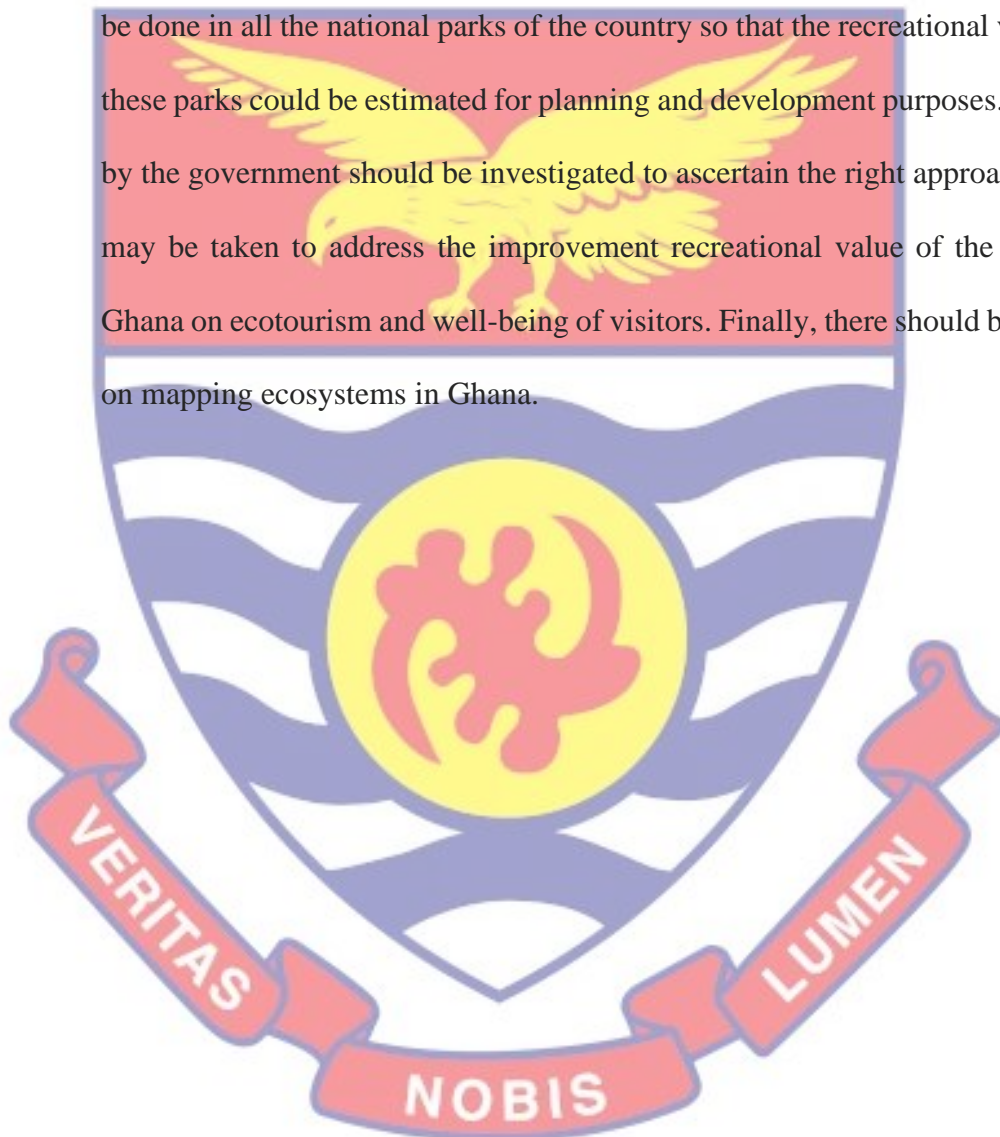
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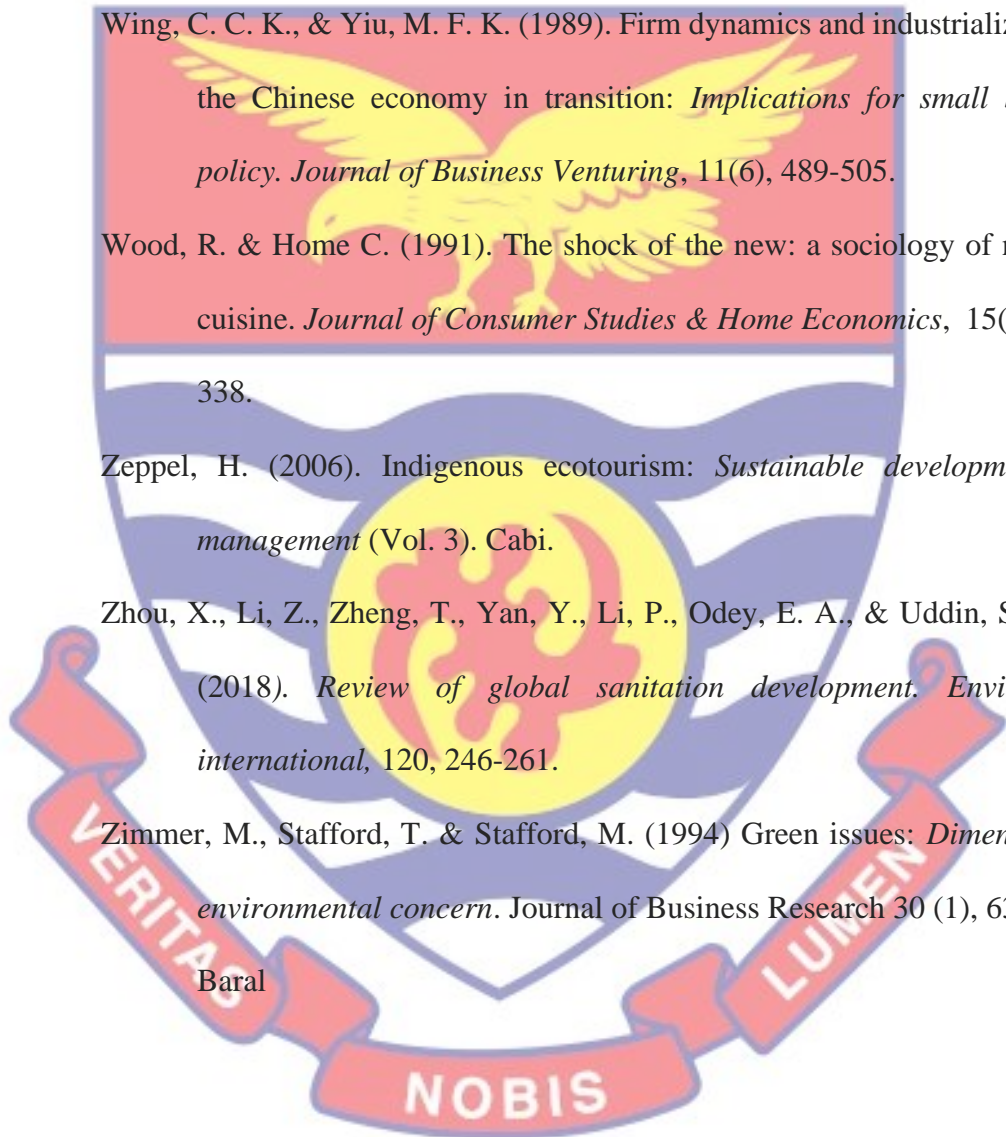
APPENDICES

APPENDIX A

UNIVERSITY OF CAPE COAST

COLLEGE OF HUMANITIES AND LEGAL STUDIES

FACULTY OF SOCIAL SCIENCES

I am a post graduate student of the Department of Geography and Regional Planning in the University of Cape Coast. We are conducting a study on "Estimating demand for ecosystem services, A study of Kakum National Park. The aim is to estimate the recreational benefit of these parks to assist planning and policy. The study is based on a selected sample so your participation is critical. The information you supply will be given the outmost confidentiality. You are therefore not to write your name anywhere in the questionnaires. In filling the questionnaire, please be as honest as possible. Thank you for your help.

Please tick [√] the appropriate bracket or write where applicable

Section A: Socio-demographic characteristics of visitors.

Please tick [√] where applicable.

 Name of the Park ………………………………

    1. Gender:

      A. Male

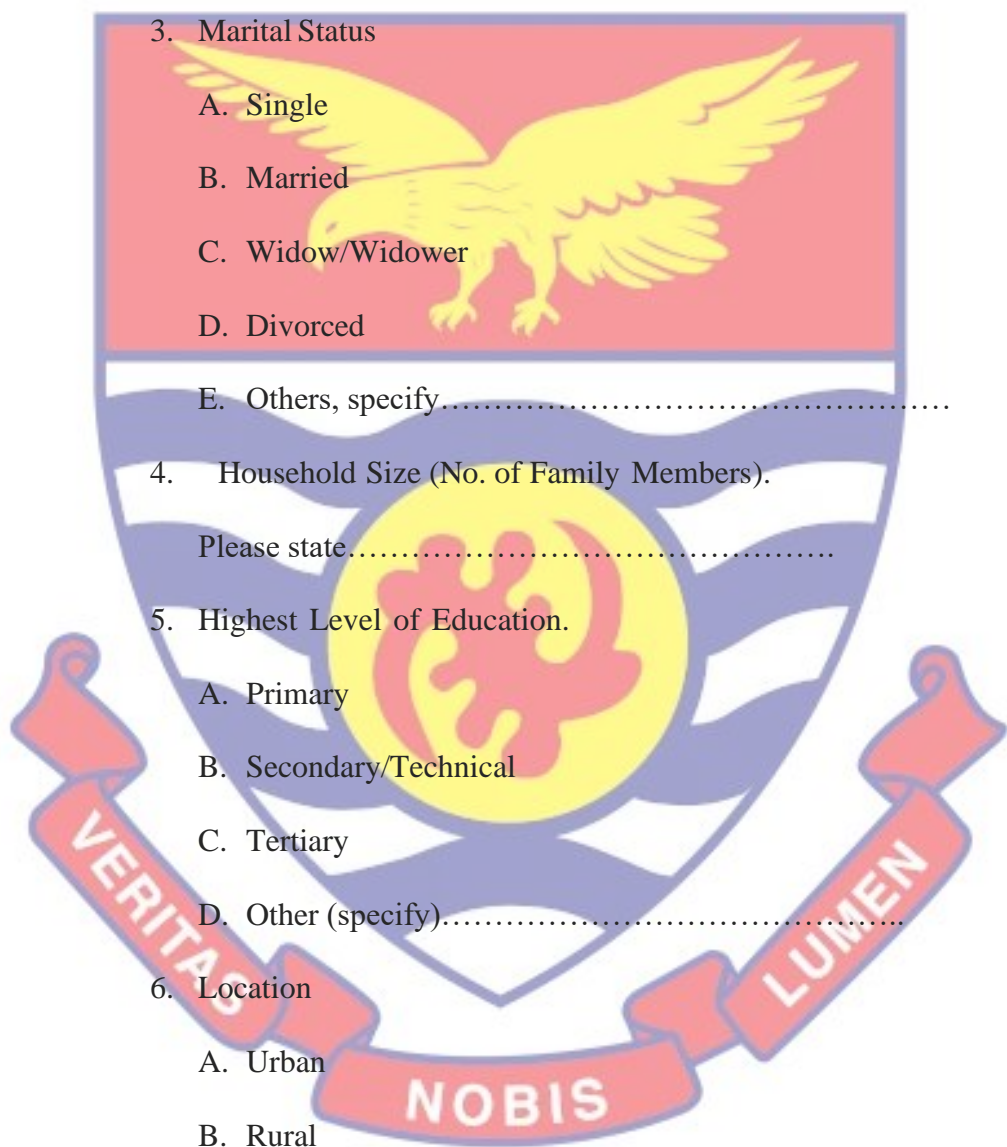   B. Female

    2. What is your age? (Years)…

      A. 18- 25

B. 26-35

C. 36-45

D. 46-55

E. 56-65

F. 65+

3. Marital Status

   A. Single

   B. Married

   C. Widow/Widower

   D. Divorced

   E. Others, specify…………………………………………

4.   Household Size (No. of Family Members).

   Please state…………………………………………..

5. Highest Level of Education.

   A. Primary

   B. Secondary/Technical

   C. Tertiary

   D. Other (specify)…………………………………..…..

6. Location

   A. Urban

   B. Rural

7. Nationality.

   Please

   state…………

8. What is your average monthly expenditure………………………

9. What is your income (GHS./month)……………………….

   A. 0-500

   B. 500-1000

   C. 1000-2000

   D. 2000-3000

   E. 3000-4000

   F. 4000+

10. What is your profession? Please state……………………………..

11. How much did you spend on the entrance fee of this park?

    Please state……………………………………………GHS

12. How much did you wanted to pay for the entrance fee?

    Please state………………………………………….GHS

13. How much did you spend on transportation for visiting this park?

    Please

    state………………………………………………………………..G
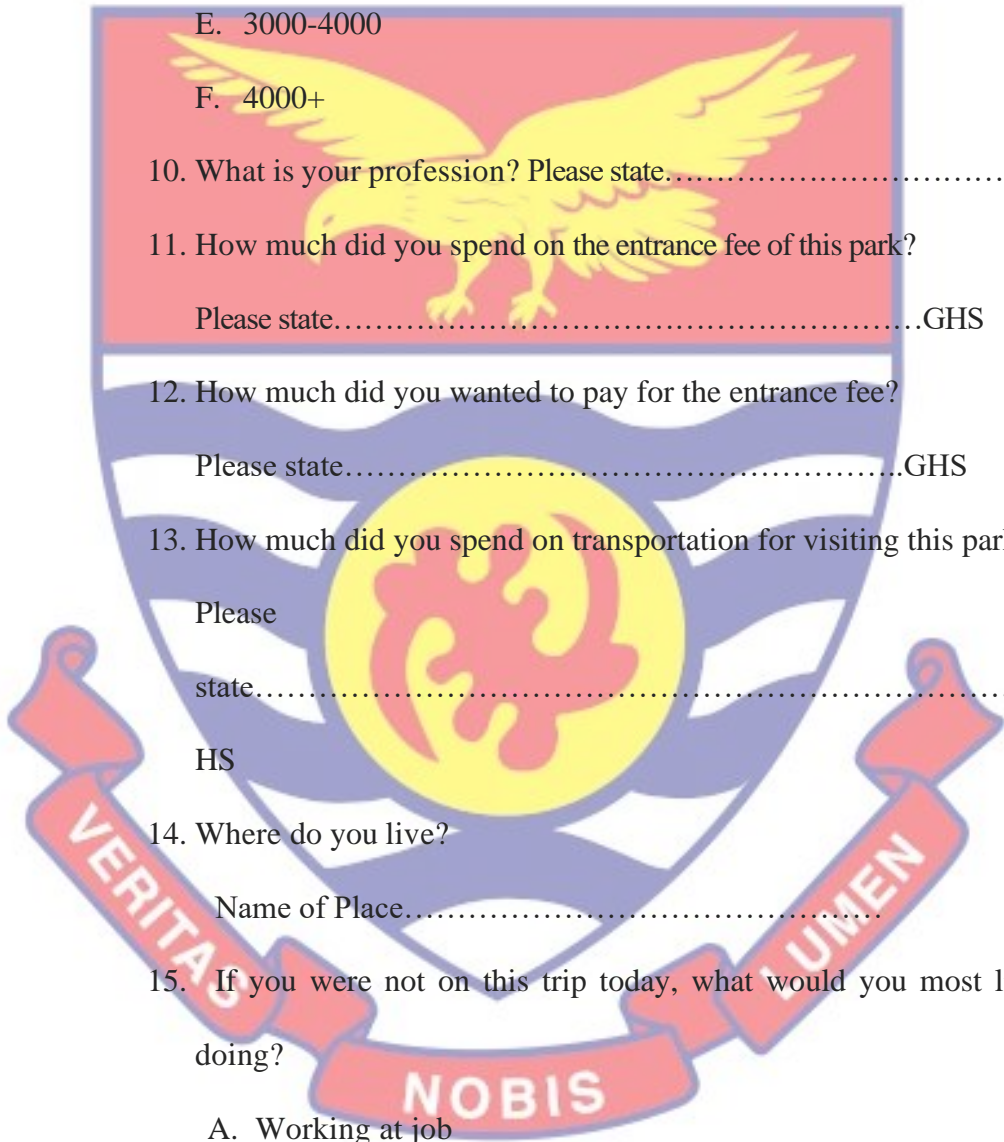
    HS

14. Where do you live?

    Name of Place……………………………………

15. If you were not on this trip today, what would you most likely be

    doing?

    A. Working at job

    B. Watching TV

    C. Housework

    D. Shopping

    E. Other (please specify)………………………

16. How many hours did you spend at the Park today?   …………………………Hours.

17. How did you come to this Park?

    A. By Tour bus

    B. By Taxi

    C. By Private car

    D. By Motorcycle

    E. By Public Bus

    F. By Airplane

18. How much did you spend on your trip from your home to this national park;

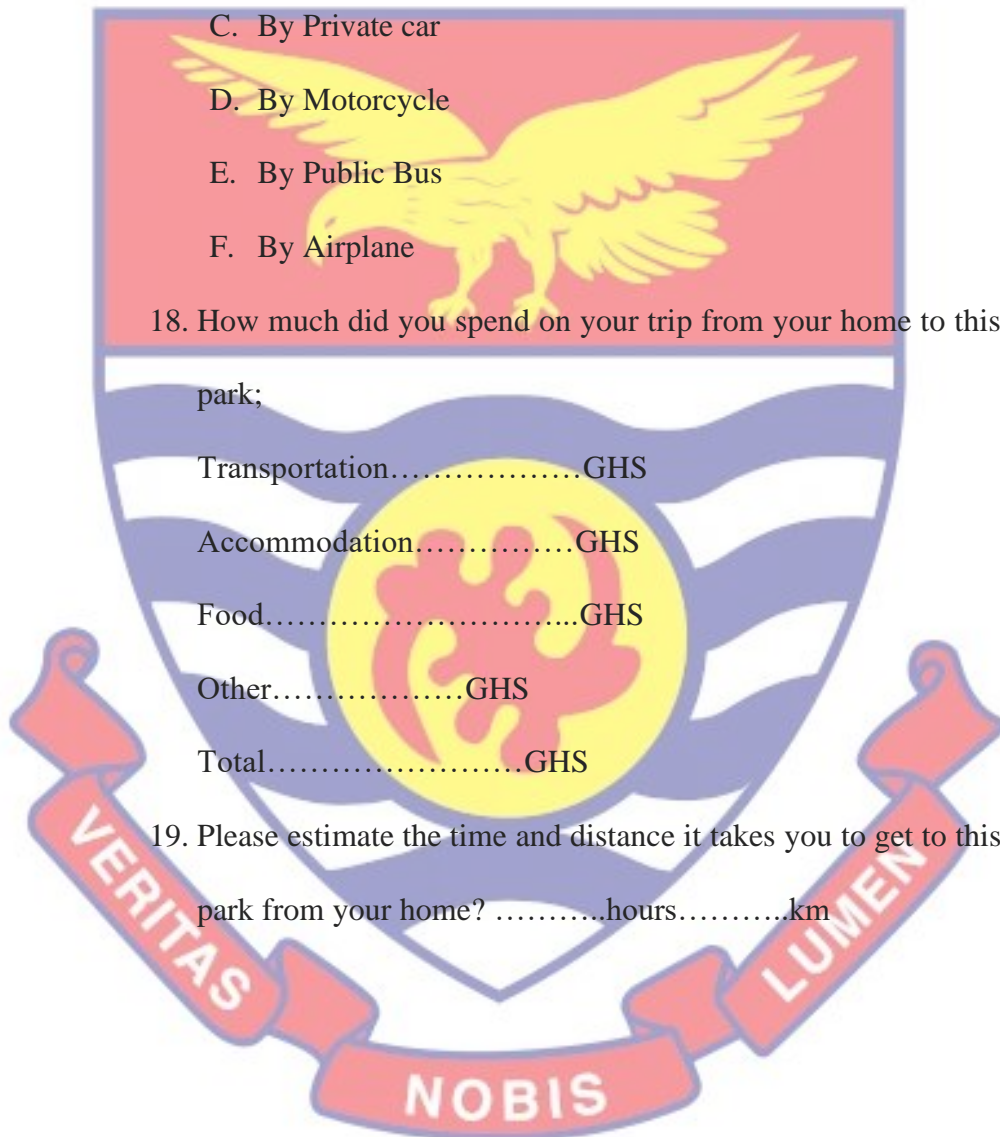   Transportation………………GHS

    Accommodation……………GHS

    Food…………………….....GHS

    Other………………GHS

    Total……………………GHS

19. Please estimate the time and distance it takes you to get to this national park from your home? ……….hours……….km

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A. Recreational Benefit and demand of the Park

Please read the items carefully and tick **[√]** the response which best expresses

your satisfaction of the following recreational benefit.

Recreational **Benefits**	Strongly Dissatisfied	Dissatisfied	Neutral	Satisfied	Strongly Satisfied
Sight-seeing					
Bird-watching					
Relaxation					
Exercising					
Walking tracks					
Others Please specify					

B.   Improvements in the social amenities of the park

20.   If you are not from Ghana, you came to Ghana for?

A.   Conference Attendance

B.   Business

C.   Visiting friends and relatives

D.   Recreational Purposes

E.   Others

21.   How would you describe the quality of recreational benefits at this

Park?

A.   Excellent

B.   Very good

C.   Good

D.   Fair

E.   Poor

22.   Where did you get the information from this park?.................................

23.   Do you know any other National Park that you would like to visit instead of this Park?

A.   Yes

B.   No

23b. If Yes, which one? Please state…………………

23c. If yes, what would be your total cost to visit that park as compared to this Park?

…………………………………......GHS

24.   Would you like to have an improvement in the recreational services been provided by the Park?

A.   Yes

B.   No

25.   Are you satisfied with the existing recreational benefits of the park?

A.   Yes

B.   No

25a. If No to Q 25, why?

A.   Satisfied with the existing recreational benefits/services of this Park.

B.   Don't have any money; cannot afford

C.   Govt.'s responsibility

D.   Not my responsibility

E.   Others (Specify)………………………………..

26.   If yes to Q.25, what types of improvements would you like to see at this park?

(i)   **Recreational Site:**

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Sight-seeing

Bird-watching

Relaxation

Walking tracks

Exercising

A.   Other…………………………………..

(ii)   **Information about the Park**:

A.   Maps

B.   Information Sign

C.   Precaution Sign

D.   Visitors Information Centre

(iii)   **Traffic:**

A.   Road Conditions

B.   Traffic Safety

C.   Traffic Sign

D.   Parking

(iv)   **Miscellaneous:**

A. Waste disposal   B. Lavatory

(v) Food and Beverage

A. Services

B.

Accommo

dation

C. Others …………………………………

D. Visitor's Attitude towards Entrance Fees

27. What is the entry free to this Park?...GHS

28. If this Park needs more income to provide better services for visitors, such as more recreational facilities, improved cleanliness, greater traffic safety, public safety and forest fire protection, how should these recreational services be financed?

    A.   Raise the entry fees

    B.   Raise govt. budget

    C.   Donation to Park fund

    D.   Other………………………………………

Suppose there were no other sources of improvement except imposing/raising entry fees, would you be willing to pay higher entry fee (GHS)?

Visitorss	Please thick√ appropriate the higher entry fee you are willing to pay.				
Non Ghanaian Students	2	10	20	25	30
Non Ghanaian adults	2	15	30	40	50
Ghanaian Student	2	6	8	9	10
Ghanaian Adult	2	12	14	16	20

29. What is the most you would be willing to pay f or the entry fee to this park?

Maximum amount……………………………………….GHS

30. If you are willing to pay for improved quality of recreational services in the near future, perhaps you may wish to come to the park and spend more time for recreation. How many more times would you then be here? Visits/year.

 Please State……………………………………………………

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APPENDIX B

ODD RATIOS

VARIABLES	(1) WTP1 GHS 2	(2) WTP2 GHS 5	(3) WTP3 GHS>10
Male (ref=female)	0.122**	-0.106**	0.184
	(0.087)	(0.058)	(0.020)
Age	0.552**	0.129	-1.297**
	(0.053)	(0.479)	(0.555)
Age squared	-0.0904**	0.0189	0.141*
	(0.0681)	(0.0785)	(0.0821)
Amount	-0.005**	0.008***	0.0225***
	(0.00157)	(0.00177)	(0.00301)
Amount squared	6.01e-05	-2.67e-05*	-2.82e-05
	(4.60e-05)	(1.41e-05)	(1.78e-05)
Single	1.030**	1.029**	0.285
	(0.448)	(0.474)	(0.456)
Married	1.319***	1.076**	1.096**
	(0.481)	(0.489)	(0.492)
JHS	0.316	-1.107	1.351
	(0.835)	(0.800)	(0.846)
SHS	0.219	-1.099	0.946
	(0.810)	(0.764)	(0.802)
Tertiary	-0.110	-1.425*	0.234
	(0.847)	(0.806)	(0.860)
Urban (ref=rural)	2.798***	1.477***	1.084***
	(0.342)	(0.282)	(0.376)
Constant	-3.624***	-1.683	-3.440***
	(1.292)	(1.213)	(1.313)
Observations	350	348	350

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