The Nexus between environmental knowledge and ecotourism attitude among the local youths in Co-educational Secondary Schools in Bondo Sub-County, Siaya County, Kenya

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ABSTRACT

Kenya's pursuit to be among the top tourism destinations globally require strategic focus as envisaged in Kenya's Vision 2030 and the Constitution of Kenya 2010. Ecotourism supports environmental conservation as well as generating economic opportunities. It additionally emphasizes benefits to the local community and suggests that the involvement of the residents is important for the effective management of tourism. Bondo district is endowed with vast ecotourism resources yet the residents lavish in poverty. The objectives of the study were: To investigate the relationship between youths' environmental knowledge and ecotourism attitude in Bondo district; to propose a structural relationships between, environmental knowledge and ecotourism attitude; and to recommend an appropriate strategy for community capacity building for promotion of ecotourism in Bondo District and its environs. This study used students enrolled in Form Three at 16 co-educational day secondary schools in Bondo district. Random sampling technique was used to derive representative sample from the target youth population. Structural equation modeling using AMOS (Analysis of Moment Structures) was used to develop structural models for the relationships. A strategy for community capacity building was proposed based on the relationship between environmental knowledge and ecotourism attitude (.70). Analysis indicated that residents' environmental knowledge strongly influence attitudes towards ecotourism. Residents' involvement in ecotourism may be stimulated through: appropriate management strategies aimed at increasing their environmental knowledge; encouraging positive ecotourism attitudes, and environmental planning that promotes residents' affinity for local attractions.

1.0 Introduction

Globally, the tourism industry faces a multitude of significant sustainability-related challenges. Those that need to be resolved through the greening of the industry include: energy and Green House Gas emissions; water consumption; waste management; loss of biological diversity; and effective management of cultural heritage (UNEP, 2011). Ecotourism is a segment within tourism industry that focuses on environmental sustainability (UNEP, 2011), this enables it play a critical role in addressing the sustainability challenges of global tourism.

Tourism is a major earner of foreign exchange and contributes about 10 per cent of Gross Domestic Product (GDP) and 9 per cent of formal employment to the Republic of Kenya. It brought in US $800 million. Tourism remains the future hope for many developing countries give that agriculture which has been the mainstay economic activity is facing adverse effect of climate change (Hayombe, Agong, Maria, Mossberg, Bjorn & Odede, 2012).

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In Kenya there is a sustained campaign towards greening of tourism (Republic of Kenya, 2007)), despite the critical issues and challenges affecting competitiveness and sustainability of the country as tourist destination, efforts have been made towards sustainable tourism. Tourism in Kenya has had difficult times over the years, particularly a prolonged period of lackluster performance in the 1990s (Mayaka & Prasad, 2011). A post-election period of civil unrest in 2008 and the global economic crisis in 2009 only made inbound international tourism business more challenging (Mayaka & Prasad, 2011). Despite periods of recovery such as 2004–2007 and 2010, prolonged poor performance has characterized the last two decades, raising the concern of key stakeholders. There appears to be systemic and strategic issues and challenges that may be undermining the competitiveness and sustainability of Kenya's tourism industry (Mayaka & Prasad, 2011).

Growth of tourism and the lack of resources to manage tourism have led to persistent tensions between stakeholders and presenting long-term threats to the tourism industry (MacHaria, Thenya & Ndiritu, 2010). Overpopulation, changes in land use, poaching, deforestation, land degradation, conflicts due to unequal sharing of revenue, poor infrastructure and insecurity all contribute to these tensions (MacHaria, Thenya & Ndiritu, 2010). In Kenya, the popularity of ecotourism has much to do with the search for a richer holiday experience by the guest (Okech, 2007). Kenya initiated some of Africa's earliest experiments in community-based conservation using park and tourism revenues as well as the first efforts to systematically adopt ecotourism principles and practices in its national park system (Honey, 2008).

Today there exists concerns that ecotourism may have stagnated and requires redirecting. This emerges out of observations that donor funding for development of infrastructure that supports ecotourism has significantly reduced (Goma, 2006). Funding is now directed at capacity building for communities and development of plans.

The Lake Victoria Region's vast potential has not been fully utilized. Touristic sceneries of the Lake beaches and forests in Bondo: Usenge beach, Wich Lum, Osieko, Ramogi forest among others; have not been exploited to support ecotourism transformation in the region. Environmental resources are steadily declining, fish resources, in the Lake Victoria is nolonger guaranteed to support sustainable livelihood (Hayombe., et al (2012). Ecotourism provides an alternative development path for the region as it promotes environmental conservation. However, sustainability in ecotourism transformation is a concern: that is how to motivate the local community attitude to ecotourism ventures. This study attempts to discern the relationship between the local youth s' environmental knowledge and how it influences their attitude towards ecotourism. The relationship between knowledge of environment and ecotourism attitude would guide future community capacity building strategies to upscale ecotourism in the region.

1.1 Objectives of the study

1. To investigate the relationship between youths' environmental knowledge and ecotourism attitude in Bondo District, Siaya County
2. To propose structural relationships between, environmental knowledge and ecotourism attitude;
3. To recommend an appropriate strategy for community capacity building for promotion of ecotourism in Bondo District and its environs.

2.0 Literature Review

2.1 Ecotourism

The World Watch Institute (WWI), reports that the ecotourism sector is growing by 20% due to the growing environmental and social concerns, while growth for the global tourism sector as a whole was 7.5%. Ecotourism contributes both to environmental conservation and the economy (Mawere & Mubaya, 2012; Chiutsi, Mukoroverwa, Karigambe & Mudzengi, 2011). It is persistently becoming a significant topic in the tourism industry (Weaver & Lawton, 2007; Vincent & Thompson, 2002) and is recognized as a sustainable way to develop regions with abundant tourism resources (Weaver, 2011).

The distinction between ecotourism and conventional tourism lies in the very characteristics of ecotourism, i.e. nature- or culture based travel activities, enhanced public environmental awareness, conservation of local environmental resources, and minimized tourism impact, empowerment of local people and financial benefits to the local communities (Weaver, 2011; Honey, 2008). Though the meaning of ecotourism may differ slightly for different stakeholder groups, it is generally understood as a responsible way of travel in

which local features are appreciated and special attention is paid to minimizing negative impact from visitors especially in areas relatively undisturbed by humans (Ceballos-Lascuráin, 1996).The strong emphasis on the local community, such as conserving local resources and increasing local benefits, highlights the close association between ecotourism and local residents (Republic of Kenya, 2007).

Residents, one of the essential stakeholder groups (Zhang & Lei, 2012), thus play a key role in ecotourism. Their participation contributes to a distinguishing quality in tourism management (Drumm, 1998). The success of ecotourism depends on a harmonious relationship between residents, resource protection and tourism (Ross & Wall, 1999). However, obstacles remain in terms of building a positive, synergistic relationship. First, the top-down decision-making process commonly used by local tourism authorities often overlooks the importance of residents' opinions (Byrd, 2007). Further, insufficient knowledge about sustainable resource utilization on the part of the residents leads to their distrusting interpretation of ecotourism as an attempt to restrict their use of local resources and traditional activities (Ross & Wall, 1999a). Engaging residents in ecotourism management not only facilitates their comprehension of local tourism (Byrd, 2007) but also improves the quality of planning and decisions by incorporating the locals' views (Carmin, Darnall, & Mil-Homens, (2003)). Stimulating local participation in the management process thus forms an essential basis for successful ecotourism. Promoting ecotourism in Bondo District requires full engagement of the residents who are the key stakeholders. This study strives to develop a structural relationship between factors that influence participation intention of the residents and to build capacity of the residents to utilize their resources sustainably

2.2 Environment as a Factor for Success in Ecotourism Ventures

Environmental factors refer to the natural environment such as natural features and the ecological processes occurring in an area (Marzouki, Froger & Ballet, (2012). Natural features, including scenic vistas and landscapes, climate, topography, wildlife and vegetation, are important to the type and level of tourism in an area (Hayombe., et al, 2012). Tourism can be important to natural resource conservation because part of the income from tourism can be re-invested into maintaining natural areas (Weaver, 2011). In this, tourism has enabled rehabilitation of old and creation of new sites, and has fostered administrative and planning controls such as restricted access to sensitive areas that maintain the quality of the environment.

The physical location of an area is an important factor in tourism demand. Usually rural locations relatively close to metropolitan areas are tourism locations in high demand (Mathiesen & Wall, 1982). The goals of ecotourism management strategies are to protect the environment and to provide the tourist with a great ecotourism experience. Ecotourists are motivated by ideas of wilderness, wildlife, parks, learning, nature and physical activity and these ideas should underlie the management of ecotourism (Hayombe., et al, 2012; Eagles, 1997). Moreover, ecotourism should be managed toward a more active form so that activities contribute to the health and viability of the environment where they take place (Orams, 1995). In many cases, and despite good intentions and attempts to reduce negative effects on the natural environment, tourism has been detrimental to the environment.

Soil compaction, damaged vegetation, water quality problems, disruption to wildlife, air and noise pollution, are but a few of the negative environmental effects caused by tourism (Mathiesen & Wall, 1982). Furthermore, protected areas (e.g., national and state parks) have undergone the cumulative and interactive effects of many small-scale, independent, low-intensity tourism developments over the decades (Nelson, 1994).

Increasing the number of ecotourism activities can pose environmental problems because, despite being non-consumptive and low-impact, people engaging in ecotourism consume resources and generate waste (Weaver, 2012). Knowledge of environment is therefore a crucial factor that this study explores to cushion the local environment from the dangers to environment associated with increased ecotourism activities and by respecting its carrying capacity.

2.3 Environmental Knowledge and Attitudes Towards Ecotourism

Knowledge of environmental issues is generally considered a prerequisite to environmental concern (Zhang & Lei, 2012). Researchers imply that an individual's knowledge of environmental issues is important to decision making within an ecological context (Hayombe., et al 2012; Zhang & Lei, 2012).

As the public becomes increasingly aware in environmental protection, studies have focused on how to promote positive attitudes towards various environmental issues and have found environmental knowledge to be of crucial consequence. For example, students' understanding of environmental science is associated with their environmental stances (Zhang & Lei, 2012; Tikka, Kuitunen, & Tynys, 2000); community leaders' environmental knowledge positively correlates with their attitudes towards conservation ((Zhang & Lei, 2012); recreationists' knowledge about local wildlife is proportional to their support for wildlife conservation (Aipanjiguly, Jacobson, & Flamm, 2003). An insight into the purpose of protecting the local environment (Aipanjiguly, Jacobson, & Flamm, 2003) contributes considerably to residents' attitude towards conservation. In short, environmental knowledge positively affects attitudes towards environmental actions. Increasing residents' environmental knowledge may effectively promote positive attitudes towards ecotourism (Zang & Lei, 2012). Though studies have been done on relationship between environmental knowledge and ecotourism attitude, no documented studies of the same has been done in Bondo district, hence the need for this research.

2.4 Attitudes Towards Ecotourism

The theory of reasoned action has been applied in various domains (Zhang & Lei, 2012), viewing favorable attitudes as a determinant of behavioral intention, which further predicts the individual behavior (Ajzen & Fishbein, 1980). A high correlation between attitudes, behavioral intention and the subsequent behavior has also been established (Lai & Nepal, 2006; Vaske & Donnelly, 1999). Accordingly, identifying the mechanism behind participation intention is instructive towards enhancing the participatory behavior of local people in ecotourism management.

Residents' attitudes have been closely examined to understand the support level for tourism, its relationship with perceived impact from tourism being among the most studied (Andereck, Valentine, Knopf, & Vogt, 2005; Teye, Sirakaya, & Sönmez, 2002).

Tourism impact as it relates to the strength of support for tourism has multiple dimensions, including economic, & cultural (Dyer, Gursoy, Sharma, & Carter, 2007).

Residents appear to give stronger support to local tourism when they have more positive perception of its impact (Zhang & Lei, 2012; Andereck & Vogt, 2000). In addition, taking account of residents' attitudes towards ecotourism is a prerequisite to incorporate their participation (Zhang & Lei, 2012; Page & Dowling, 2002). Understanding residents' attitudes towards ecotourism management principles can help planners devise more efficient and appropriate management strategies as they deal with possible conflicts between conservation of local resources and economic development of the area, leading ultimately to more smooth running of ecotourism (Lai & Nepal, 2006).

Giving due consideration to the locals' views on resource usage increases the appropriateness of resource management strategies in ecotourism (Agardy, 1993). Accordingly, residents' positive attitudes towards ecotourism, particularly those related to the characteristics and management principles of ecotourism, may subsequently encourage their active involvement in local tourism. Natural resource use in Bondo District has been characterized by depletion of forest and water resources, water pollution, wetland clearing and indiscriminate waste disposal. Building the capacity of the community on sustainable natural resource utilization is key to promoting positive attitude towards ecotourism and environmental conservation.

3.0 Methodology

3.1 Research Design

The overall research design was exploratory survey. The framework of the research design included data sources, data collection methods, data analysis and data presentation techniques. Data sources were both primary and secondary. Primary data sources were from the Co-educational day secondary schools in Bondo District. Secondary data sources were from library publications and internets. Data collection methods employed Structured Questionnaires, and Observations. Data analysis was done using both descriptive and inferential statistics.

3.2 Target Population

The study focused on students who are enrolled in Form Three at 16 mixed-secondary schools in Bondo district. According to Government of Kenya (2011), there were 837 Form Three students in Bondo district.

The number of boys registered is 486 and that of girls is 353. Co-educational secondary schools were picked because they source students from the neighborhood. The students who are both girls and boys reside and have daily interaction with the study area. The study used the Form Three students; their three-year stay in secondary school has exposed them to environmental and geographical education which is crucial for appreciation of the surrounding. The choice of the Co-educational secondary schools was guided by the fact that they draw their students from the local community and represent both genders.

3.3 Sample Design

The study used a sample of 264 respondents selected from the 16 co-educational day secondary schools in Bondo district. Purposive sampling was used to select Form the three classes. Based on the sample of 264 respondents, the respondents were drawn from each school using proportionate method based on the number of students in Form Three class of each school then random sampling was used to select the individual respondents. Stratified sampling was used to divide the target school population into two groups: girls and boys. Random sampling was then used to select the final subjects proportionally from the different strata. This ensured that the researcher had adequate representation of respondents from each sex in the final sample. Simple random sampling was then used for each group. Each student of the target population was assigned a number. A set of random numbers were then generated and the students having those numbers were included in the sample.

3.4 Data Analysis

Data in this study were analyzed using AMOS 18, a program distributed by Small Waters Corporation for solving structural equations with latent variables. AMOS is graphical SEM analysis tool that can fit multiple models in a single analysis by constraining parameters within the models. Amos enables a researcher to simultaneously analyze data from several populations, such as multiple ethnic groups. Increase the reliability of variables in the analysis by including multiple indicators. Impute missing values and latent scores, such as factor scores, with multiple imputations. It can also be used for longitudinal studies, multiple-group analysis, and reliability analysis.

3.4.1 Structural Equation Modeling (SEM) using AMOS Software

Structural Equation Modeling was used in this study because it presents a powerful, flexible and comprehensive technique for investigating relationships between measured variables (Zhang & Lei 2012, MacCallum, R. C. & Austin, J. T. (2000). It requires specification of a model based on theory and research, is a multivariate technique incorporating measured variables and latent constructs, and explicitly specifies measurement error. A model (diagram) allows for specification of relationships between variables; $\mathbf{H_0}$. Environmental knowledge (EK) positively influences youths' attitude towards ecotourism (EA); $\mathbf{H_0}$. Youths' attitude towards ecotourism positively influence their landscape likeability (LL); $\mathbf{H_0}$. Landscape likeability positively influences participation intention. It was used in this study to test hypothesized patterns of directional and nondirectional relationships among a set of observed (measured) and unobserved (latent) variables which this study had sought to determine.

The model applied in this study is borrowed from (Zhang & Lei, 2012) in their study 'A structural model of residents' intention to participate in ecotourism: The case of a wetland community' The validity of the measurement models was tested to determine how measured variables logically and systematically represented the constructs involved in the proposed models (Zhang & Lei, 2012). Series of structural equation modeling (SEM) tests (CMIN, GFI, CFI & RAMSEA) were run to estimate the structural model (Hair et al., 2010, pp. 737,738). CMIN is a Chi-square statistic comparing the tested model and the independence model with the saturated model. CMIN/DF, the relative chi-square, is an index of how much the fit of data to model has been reduced by dropping one or more paths. One rule of thumb is to decide you have dropped too many paths if this index exceeds 2 or 3. GFI, CFI & RAMSEA tests were further run to confirm fit of the Model since CMIN is sensitive to sample size.

3.4.2 Measurement of Variables

Forests, Wetlands, Lake and Beaches served as the main environmental resource and played a definitive role in local ecotourism in the study area. The constructs developed were all related to the forests, wetlands and Lake Environment and were measured using a questionnaire on a five-point Likert scale with 1 for "strongly disagree", 2 for "disagree"3 for "neutral", 4 for "agree" and 5 for "strongly agree."

3.4.2.1 Environmental Knowledge

Previous research studies have developed various measures to assess environmental knowledge for certain research purposes (Tarrant, Bright, & Cordell, 1997). Knowledge assessment in present times places more emphasis on measuring what participants do understand rather than what they do not know using esoteric questions. To examine the environmental knowledge of the local youths, the study applied five simple items (Appendix 3, A1, A2 and A3) based on basic wetland, lake and forest features. Participating youths were asked to rate their understanding of the five items.

3.4.2.2 Attitudes Towards Ecotourism

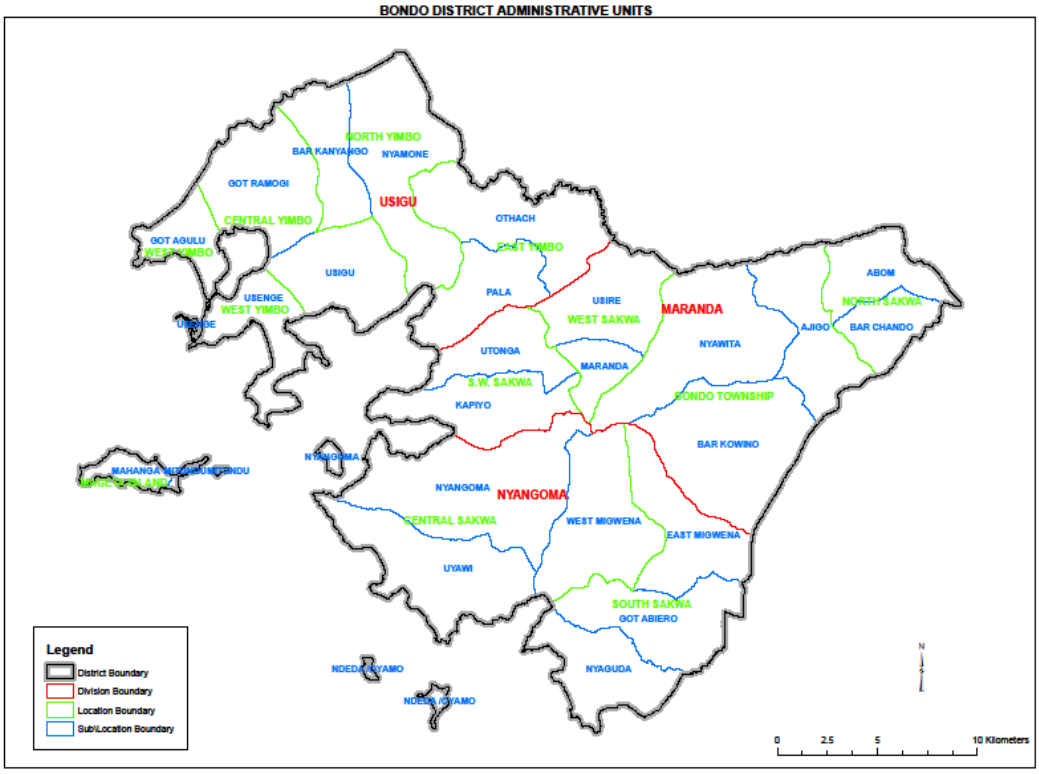
Instead of assessing participants' overall support for ecotourism, their opinion was explored in more details in this study. Five items (Appendix 3, B1, B2, B3, B4 & B5) were gleaned from the characteristics and management principles of ecotourism. The items were generated to assess participants' opinions about the core values of ecotourism including nature orientation (Byrd, Cárdenas, & Greenwood, 2008) and environmental awareness and education enhancement (Byrd et al., 2008). They also evaluated the youths' attitudes towards specific ecotourism management strategies which consist of management principles pertaining to minimizing impacts to the local environment (McGehee & Andereck, 2004), regulation and restriction of local resource usage (Andriotis), environmental responsibility and conservation contributions (Zhang & Lei, 2012).

3.5 Reliability Test

Majango Mixed Secondary School in Rarieda District was used as a pilot school to test reliability items in the questionnaire using Cronbach's Reliability Statistics. The components of environmental knowledge and ecotourism attitude, were included in the questionnaire.

Study Area

The study area is Bondo District, Siaya County in western Kenya. Bondo District lies between Latitude 0° 26" to 0° 90" and Longitude 33° 58" E and 34° 35" W. The district was curved out of Siaya in May 1998. It borders Siaya District to the North, Kisumu District to the East and Homa Bay and Mbita Districts across the Winam Gulf to the South East and South. To the West is the Republic of Uganda. The district covers a total of 1,972km^2 out of which 972km^2 is land mass while the rest 1,000km^2 is water surface which is great touristic scenery. Administratively, the district is divided into three divisions namely Maranda, Nyangoma and Usigu (Figure 1). The study area includes the co-educational day secondary schools found in all divisions in Bondo District (Figure 2)



Map of Bondo Disctrict Administrative Units Division Boundaries of Bondo District
Figure 1: Administrative Map of Bondo District. Source: Government of Kenya
Source: Bondo District Development Plan, 2008-2012.

Wildlife Resources

Different animal species exist in Bondo District that include crocodile, hippos (in the Lake Victoria), antelopes, wild pigs and the wetland birds as illustrated in plates 1, 2, 3 & 4. There is no protected area for the animals and hence the available species roam which make them susceptible to poaching as well as creating human-wildlife conflicts. Cases of hippos killing people, destroying crops and causing injuries have been reported in the past years while crocodiles have caused deaths of fishermen.

4.0 RESULTS

4.1 Introduction

The objective of the study was to investigate the linear relationship of the youths' environmental knowledge, ecotourism attitude, landscape likeability, and participation intention in Bondo District. It also intended to recommend an appropriate strategy for community capacity building for promotion of ecotourism in Bondo District and its environs. This section provides detailed findings of the study ranging from respondent characteristics, variable summary to model fit findings.

4.2 The Profile of the respondents

The demographic profile of the respondents is shown in Table 2. The number of male respondents was greater than that of female, at 58% and 42% respectively, reflecting the ratio of enrolment between boys and girls in secondary schools in Bondo District. Majority of the youths interviewed (88.3%) belonged to the 16-20 years age bracket, with 3% of 10-15 and 8.7% above 20 years.

4.3 Environmental Knowledge

Perception	Strongly Agree	Agree	Don't Know	Disagree	Strongly Disagree
Lake Resources	66%	28%	1.1%	3.4%	1.1%
Wetland	70.1%	22.3%	1.5%	4.2%	1.9%
Forest	43.2%	43.9%	1.5%	8.7%	2.7%

Table 1: Environmental knowledge among the youths in Bondo District, Siaya County

Knowledge for environmental among the youths was high for all the environmental constructs that were used for this study. Lake, wetland and forests as crucial environmental resources for the area recorded approval of 94%, 93.3%, and 87.1% respectively among the local community youths. The Lake as a crucial environmental resource got the highest approval with the 66% of the youths responding with 'strongly agree' and 28% with 'agree'.

4.4 Ecotourism Attitude

Perception	Strongly Agree	Agree	Don't Know	Disagree	Strongly Disagree
Nature/culture	51.5%	37.5%	5.3%	4.5%	1.1%
Habitat	52.3%	32.2%	4.2%	8.7%	2.7%
Eco-transport	63.6%	28.0.9%	2.7%	3.8%	1.9%
Zoning	62.5%	30.7%	1.9%	3%	1.9%
Conservation	31.4%	41.3%	10.2%	11.7%	5.3%

Table 2: Ecotourism attitude among the youths in Bondo District, Siaya County

The local community youths' attitude to ecotourism was equally high with approval rate of 89%, 84.5%, 91.6%, 93.2% and 72.7% respectively for all the action that were intended to conserve environment, preserve culture, promote eco-friendly travels, protect natural habitats and zone important habitats. These results indicate great potential to involve the youth in local tourism since just less than 15% displayed ignorance and improper attitude towards ecotourism and conservation.

4.5 Results for the fit of the proposed models

The validity of the measurement models was tested to determine how measured variables logically and systematically represent the four constructs: Environmental Knowledge, Ecotourism Attitude, Landscape Likeability and Participation Intention involved in the proposed model (Zhang & Lei, 2012; Hair *et a.l,* 2010). A series of structural equation modeling (SEM) tests was run to estimate the structural model (Zhang & Lei, 2012; Hair *et al.,* 2010).

4.5.1 Environmental Knowledge and Ecotourism Attitude model

Validity of the measurement model

The validity of the measurement models for the constructs was evaluated (Zhang & Lei, 2012, Hair *et al.,* 2010, Bagozzi & Phillips, 1982). The goodness-of-fit (GOF) for the measurement model for the relationship between environmental knowledge and ecotourism attitude was $X^2(19) = 35.430$, $p > .001$. Since this value is sensitive to the sample size, several indices were drawn to confirm the validity of the measurement model (Zhang & Lei, 2012; Hair *et al*., 2010; Tabachnick & Fidell, 2007). The tested indices all show a good fit (RMSEA .057, CFI .931, and PNFI .460. The t-values associated with the loadings of all the indicators were significant at the .001 level. Two criteria for construct validation, i.e. convergent validity and discriminant validity, were then examined (Zhang & Lei, 2012; Bagozzi & Phillips, 1982). For convergent validity, the composite reliability (CR) for all the constructs was above the threshold value of .70.

The study intended to answer four key research questions; the first was on the relationship between the youths' environmental knowledge and their attitude of ecotourism. The results show a strong positive correlation between the youths' knowledge of environment and their attitude to ecotourism. A positive correlation of .70), which confirms that the hypothesis: $\mathbf{H_0}$. Environmental knowledge (EK) positively influences youths' attitude towards ecotourism (EA) is supported.

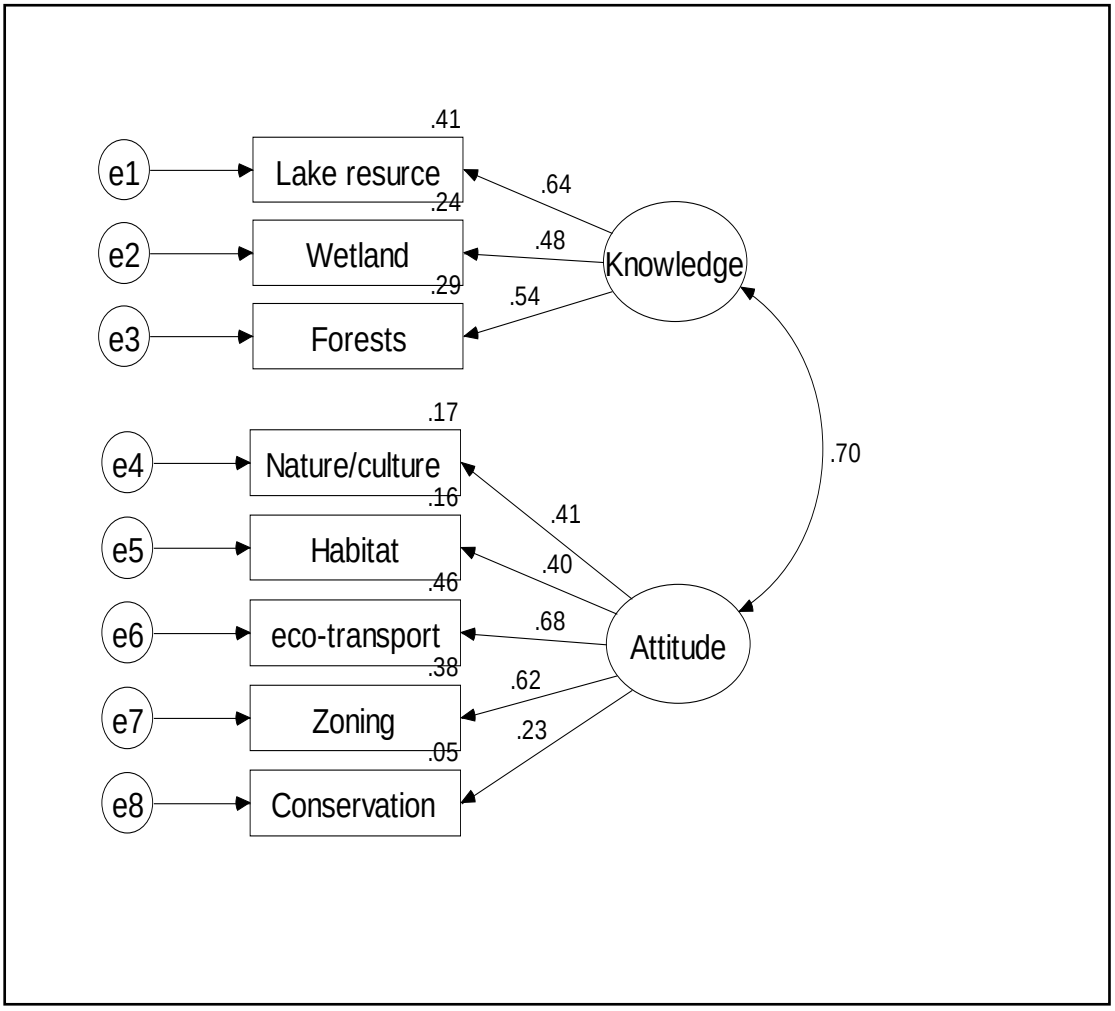


Figure 8: Standardized path estimates diagram for structural relationship of Youths' Knowledge of Environment and Ecotourism Attitude
Source: Author (2012)

5.0 DISCUSSION

Introduction

The goal of ecotourism is to capture a portion of the enormous global tourism market by attracting visitors to the natural areas and using revenues to fund local conservation and promote economic development. It strives to promote sustainable development maximizing the benefit of a region's tourism potential for the local community and preserving the natural areas for future generations (Hayombe *et al,* 2012).

The results of the respondents' ecotourism experiences show that Bondo District has great potential for ecotourism ranging from the rich culture of the local people to natural Forests for nature walk, wetlands for bird watching and biodiversity education. Other ecotourism attractions include beautiful beaches for sand bathing, boat racing, sport fishing and other water games. The respondents' perception of ecotourism is equally positive, meaning that they view ecotourism as an alternative source of income and empowerment to the community. The respondents also consider ecotourism as a way of preserving the natural resources for the future generations. However, the results show that very little effort has been directed towards the creation of awareness for ecotourism among the youth.

5.1 Relationships between Environmental Knowledge and Ecotourism Attitudes

The local community youths' knowledge of environment was tested by assessing their understanding of the basic features of the Lake, Wetlands and Forests in Bondo District. The large effect size (0.70) between environmental knowledge and ecotourism attitudes demonstrates a determinative impact of environmental knowledge on ecotourism attitudes, implicating a very strong relationship between the two variables. Educational programs can help promote both people's environmental knowledge (Zhang & Lei, 2012; Kruse & Card, 2004) and attitudes towards environmental actions (Baral & Heinen, 2007).

The results show that (66.3%) of the youths strongly agreed that they consider the Lake as a crucial resource that supports both plants and animal lives in Bondo District. Among the respondents who participated in the study, (28%) agreed and only (1.1%) reported that they did not understand. The remaining (4.5%) did not agree that the Lake was crucial in supporting lives. The results also show that (92.4%) of the respondents are knowledgeable of the basic wetland features whereas (87.1%) confirm knowledge of the importance of forests in protecting water catchments. Concerning Ecotourism Attitude, the results show that (87%) of the respondents agreed that Lake, Wetland and Forests tourism should based on enjoying and appreciating nature and culture; (84.5%) agreed that ecotourism should avoid interfering with natural habitats; (91.6%) confirmed that low-impact transport is crucial for ecotourism; (93.2%) accepted that important habitats should be designated as protected areas and (72.7%) accepted that part of the revenue generated from tourism should be used for conservation. The results therefore demonstrate a positive correlation (.70) between Knowledge of Environment and Ecotourism Attitude.

The study shows that (62.7%) of the community youths had ecotourism experiences in Bondo District. Their experiences included visiting the natural forests for nature walk, Lake Victoria beaches particularly Wich Lum, Usenge, Uhanya and Osieko for sport fishing and sand bathing. This further give credence to the fact that high environmental knowledge among the youth, and ecotourism experiences in the region have made the local youth to be aware of the potential of local environmental resources. The findings of this study support earlier research into environmental behavior which confirmed that knowledge is linked to attitudes and attitudes to behavior (Zhang & Lei, 2012; Cottrell, 2007). This assumption suggests that if people become more knowledgeable about the environment and its associated elements, they are likely to become more aware of the environment and its problems hence more motivated to act toward the environment in more responsible ways (Zhang & Lei, 2012; Hungerford &Volk, 1990).

Destruction and degradation of natural ecosystems featured prominently with 67% of the respondents expressing great concern that if corrective actions are not taken by the stakeholders involved, then the future generations will miss the attractive experiences as well as posing a serious threat to environmental health of the region. Forest clearing, quarrying and sand harvesting were particularly mentioned as agents of destruction to the sand beaches and in the natural forests. This further confirms high knowledge of environment among the local youth.

The positive effect of environmental knowledge on ecotourism attitudes envisaged in this study are consistent with a previous study by (Zhang & Lei, 2012; Hsu & Roth, 1996; Lai & Nepal, 2006) indicating that residents' environmental knowledge positively affects attitudes towards ecotourism, which in turn directly and indirectly determine the intention to participate in ecotourism through their individual landscape affinity (Zhang & Lei, 2012). This study further confirms causal relationships between residents' environmental knowledge and ecotourism attitudes in local tourism. That is to say, knowledge of the local environmental resources determines people's attitude to ecotourism which in turn facilitates residents' participation in local tourism (Zhang & Lei, 2012; Lai & Nepal, 2006).

Environmental education is a sequential process intended to improve individuals' environmental knowledge with the ultimate goal of encouraging pro-environmental attitudes and behavior (Zhang & Lei, 2012; Farmer, Knapp, & Benton, 2007). The study shows dimensions of ecotourism attitudes which affect landscape likeability and residents' participation intention in tourism management: encouraging environmental awareness and provide a basis for more precisely tailored educational programs for residents. The findings also suggest that knowledge about the local environmental resources and their characteristics and management principles of ecotourism can all be incorporated into educational programs at a level comprehensible to the local people in order to encourage positive attitudes in the residents and advance their involvement in local tourism (Zhang & Lei, 2012).

5.2 Conclusions

This study identified four significant factors that important for capacity building to transform ecotourism for the benefit of the local community. Environmental knowledge strongly influenced other factors; ecotourism attitude; landscape likeability, and participation intention. The level of environmental knowledge among the respondents either influenced their ecotourism activities positively or negatively.

This environmental knowledge is linked to ecotourism attitude as local residents perceive ecotourism activities as modes of achieving sustainable utilization of environmental resources. The findings of this research have shown that the youths who participated in this study are willing to engage in pro-environmental and ecotourism activities. Their intention to participate in ecotourism is however, determined by their knowledge of environment and landscape likeability. The findings have also shown the importance of environmental education and awareness campaigns in promoting the residents positive attitude to ecotourism. It has indicated the value of providing the residents with formal and informal environmental education and training as the first step to introduce them to the benefits of ecotourism in the region and beyond. It's also evident from the findings that improving the landscape is crucial for transforming the region's ecotourism status. Landscape Likeability also positively influences the residents' intention to participate in ecotourism activities.

6.0 Recommendations

Regarding the residents' knowledge of environment and ecotourism attitude, both environmental knowledge and attitudes towards ecotourism can be effectively promoted through appropriate educational programs. The educational programmes may include exposing the youths and the residents to the real threats and challenges facing the environment in Bondo District. This includes visits to natural forests and wetlands in Bondo District.

Environmental education may also include improving the access to the heavily polluted Lake Victoria by increasing the interaction between the people and the lake. This can be done by opening up the shoreline through the construction of walking paths for people to appreciate the serenity of the lake while at the same time witnessing the injustices done to the lake in the form of water pollution. For example Bondo District is endowed with a vast fresh water Lake, one way of improving the landscape is by opening up the lake for accessibility to the locals as well as the tourists. This can be done by creating a shoreline promenade to enable a closer relationship between the residents and the nature. This is to raise the residents' awareness about the high value of Lake Victoria for Bondo region and the actual condition of water in the Lake. It also opens up the beauty of the Lake to the locals to improve their affinity to the landscape, which in turn promotes participation in ecotourism activities by the local residents

This transformation of the landscape has the potential of strongly influencing the residents' affinity to their landscapes as unique attractions to tourists; this would eventually encourage responsible environmental behavior among the residents. This plays an important role in building the residents capacity on the environmental conservation and the value of natural resources in the region.

2. Regarding the Tourist Landscape, the quality of local tourists' landscape in Bondo district can be enhanced through appropriate environmental design. Constructions of walking trails in natural areas such as forests have the potential of enabling residents and tourists enjoy the beauty, serenity and peacefulness of the natural forests. Landscape likeability has both direct impact on individuals' participation intention and indirect one as a mediator between attitudes and intention. Enhancing the quality of local tourist landscapes through sustainable environmental design can, besides boosting the tourist attraction, support residents' affinity for the local environment and elevate their willingness to engage in ecotourism management.

3. There is need to establish a prototype beach for sustainable development purposes, a demonstration beach for environmental and sustainable development education. Activities in the beaches are major source of pollution to the Lake, the beaches further act as entry points for those who visit the lakes, Forests and wetlands for leisure activities. It is therefore necessary to develop a pilot beach as a prototype to educate residents on sustainable use of Lake Beaches and wetland to promote environment conservation, community empowerment and cultural preservation.

4. Learning institutions have the potential to enhance domestic tourism when locals come to camp and study wetland/lake ecology, thereby providing an entry point for community members to engage with Ecotourism experts on the goals and expectations of the eco-tourism project. Ecotourism Agencies and players should works with local people through organized groups such as Site Conservation Groups, Common Interest Groups (farmers, papyrus products makers, fisherpersons etc), the Beach Management Unit, Village Environmental Committees and schools. These groups have women, youth, and men. This broad cross-section of society minimizes local elites from dominating ecotourism project.

5. Building Capacity on the importance of wetlands. The knowledge on the importance of wetland is crucial in ecotourism promotion (MacHaria, Thenya & Ndiritu, 2010). When residents learn about the value and importance of wetland, their environmental behavior is expected to shift to pro-wetland. Conservation and management efforts for wetlands and their associated watersheds can achieve more with well informed stakeholders. Public education and awareness of the benefits of biodiversity conservation, adoption of wetland user-friendly alternatives, and income generating enterprises offer a unique opportunity to sustainably manage and conserve wetlands amidst increasing populations, poverty and limited resources (MacHaria et al).

Capacity building for ecotourism should therefore include awareness on the importance of wetland and its richness in biodiversity. To access wetland for awareness purposes, there is need to facilitate access to the wetland areas around the Lake and in-land wetland areas for educational purposes. This must be done with caution as wetland environment is an ecologically sensitive environment. Access to the wetlands must be restricted to limited number of people at any given time. Assembly points and walk boards within restricted points in the wetlands are necessary, strictly for wetland education purposes.

The wetlands in Bondo District and environs are under great threat, people have encroached into the wetlands, and land cover under wetland is continuously on the decline. The walk boards and assembly points in the wetlands should enable the students and residents come face to face with rate of wetland destruction and level of encroachment in these ecologically sensitive areas.

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