

PERSONAL VARIABLES AND CONSERVATION OF TROPICAL RAINFOREST RESOURCES IN CROSS RIVER STATE, NIGERIA

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Abstract

This study investigated the influence of community members' personal variables and resource conservation practices in tropical rainforest in Ikom Education Zone of Cross River State. Community members' personal variables were sub-divided into two – gender and age. A survey design was adopted for the study. Study's population was made up of all rural dwellers in the study area. Sample was drawn using purposive sampling procedure with a sample of 555 respondents drawn for the study. A 20-item questionnaire tagged “Community Members' Personal Variables and Resource Conservation Practices in Tropical Rainforest Questionnaire” (CMPVRCPTRQ) was utilized to collect data. Cronbach Alpha was used to estimate the reliability of the instrument. The two hypotheses formulated for the study were analysed using independent t-test and One-Way Analysis of Variance (ANOVA) and tested at .05 level of significance. The findings revealed that gender and age had a significant influence on resource conservation practices in tropical rainforest. Recommendations included that; awareness should be created amongst locals in proximity of tropical rainforests on the uniqueness of the forest's services towards each of the environment and mankind.

Introduction

Among all forest types, the ones situated within the tropics, generally known as tropical rainforests are the most endowed. Aside the common environmental and ecological forest functions, they house a little more than half of all the world's biodiversity and about two-thirds of its fauna and flora species; they store about half of the world's terrestrial carbon; they have a wide variety of highly valued and exotic flora and fauna endemic to the forest' habitat; they are known as the “world's largest pharmacy” as many of its plants have been found to be effective against a wide range of diseases, and; it is the source of livelihood for more than 2.5 billion rural people (also the highest of all forest types) (Ajake and Enang, 2012; Takon and Amalu,

2013; Philip, Akintoye, Olorundami, Nkpena, Ukata & Harrison, 2014). In spite of all the above stated natural endowments, the tropical rainforest covers only about 6% of the earth's terrestrial surface.

Based on the nature of the people living in close proximity of the forests, the practices which the forests and its resources are subjected to include a wide range of agro-based activities; extraction of a wide variety of non-timber forest products (NTFPs) for edibles, craft-making resources, medicines/herbs, fodder, chemicals, fuel-wood, etc; logging; spiritual fulfilment and other purposes related to their pattern of livelihood. In Cross River State, most of the forests are of the tropical rainforest types. According to Enuoh and Bisong (2014), the State had 17 forest reserves as at 1960. The Forest Reserves (FR), where they are located and their sizes in terms of landmass are stated as follows – Afi River FR (Boki – 383.32 km²); some part of Agoi FR (Akamkpa, Biase & Yakurr – 46.62 km²); Boshi FR (Boki – 41.44 km²); Boshi Extension FR (Boki – 67.34 km²); Cross River North FR (Etung – 129.50 km²); Cross River South FR (Etung & Ikom – 349.65 km²); Ikom Fuelwood Plantation (Ikom – 1.06 km²); Ikrigon FR (Ikom – 5.29 km²); Okwangwo FR (Boki – 468.79 km²), and the Ukon River FR (Obubra & Yakurr – 313.39 km²).

In 1994, a British Overseas Development Administration Forest Inventory Report for the state revealed the following - Afi River FR (31% cleared); Agoi FR (33% cleared); Boshi FR (51% cleared); Boshi Extension FR (35% cleared); Cross River North FR (61% cleared); Cross River South FR (21% cleared); Ikom Fuelwood Plantation (100% cleared); Ikrigon FR (100% cleared); Okwangwo FR (now part of the Cross River National Park), and the Ukon River FR (16% cleared) (Cross River State Government (CRSG), 1994). Reasons fingered for the above were clearing and burning the forest for agro-based purposes, logging and fuel-wood extraction. Attendant issues of unsustainable harvesting of NTFPs, poison-based hunting and fishing techniques, and unauthorized poaching were also mentioned as factors which contributed to the issues faced by the forests.

Within this unique forest are endemic fauna and flora such as the Cross River gorilla (*gorilla gorilla dielhi*), the bare-headed rock fowl (*picarhates oreas*), Sclater's guenon monkey (*cercopithecus sclateri*), the African rainforest elephant (*loxodonta cyclotis*) and some exotic flora species such as *habenaria prionociaspedon* and *cola philippi jonesi* (Odey, Eyamba & Chapman, 2006; Borokini, 2014). Already, fauna species such as the black duiker (*cephalophinae niger*), bush cow (*syncerus caffer brachyceros*), leopard (*panthera pardus pardus*), water chevrotain (*hyemoschus aquaticus*) and the giant pangolin (*smutsia gigantean*) are believed to be extinct within the area (Enuoh and Bisong, 2014). In addition to the fauna species, Bisong and Buckley (2014) reported that about half of the 86 commercially exploited tree species within the present study area were identified as being threatened towards extinction with some species requiring urgent conservation attention.

As for loss of NTFP species, Ogar, Bisong and Eka (2016) revealed how logging activities within the area had grossly depleted a wide variety of them towards the brink of being critically endangered. In 2009, the area was included among the Global Biodiversity Hotspots. In conservation parlance, a Global Biodiversity Hotspot is an area which has less than a quarter of its original biodiversity left. It is believed that the designation of the area as a Global Biodiversity Hotspot was because of the subsequent Directorate for International

Development (DFID) assisted Cross River State Forest Inventory Reports in 2003 and 2006 which projected the state's forest and its resources to disappear completely based on the current rate of deforestation.

Environmentally, deforestation ensures that forests' ability to provide services to the earth's life support system declines drastically, giving way for global warming and its attendant consequences. Lack of forest cover also ensures habitat destruction thereby bringing about undesirable changes in ecosystem functioning that could affect water and soil conservation adversely. Most importantly would be a drastic decrease in the production of natural oxygen, thus leading to a change in the environment's natural air composition. Socio-economically, deforestation could cause untold hardship to the community members, due to their dependence on the forest as their source of livelihood. A wide range of diseases/ailments could remain incurable if attention is not paid towards the community members' forest conservation practices. Lastly, a wide range of products and resources obtained from the forests could become very scarce thereby upsetting the pattern of livelihoods of the community members.

There are many factors which are connected with community members' resource conservation practices in tropical rainforests. Research works have shown that their personal variables such as gender and age are inclusive in the factors which can possibly influence their positive or negative resource conservation practices in the forest. In research parlance, gender is a variable that depicts the difference between being either a man and a woman. Some studies reveal that males have more conservation prone tendencies than females (Tadesse and Abay, 2013; Eneji, Mubi, Husain & Ogar, 2015) while some have revealed females as having more conservation prone tendencies (Nordlund and Westin, 2011; Kobbail, 2012). Age as a research variable concerned with the chronological number of years that a person has existed as a living entity on earth. Some research works have revealed that younger ones have more favourable conservation prone tendencies (Arjunan, Holmes, Puyravaud & Davidar, 2006; Braga, Azeiteiro, Oliveira & Pardal, 2017) while others have revealed older ones as being more conservation prone (Ansong and Roskaft, 2011; Wakwaya, 2013).

Based on the above stated evidences from research works, it is premised that personal variables can possibly serve to influence community members' resource conservation practices in tropical rainforests. The variables investigated are gender and age. In line with the presupposition that community members' resource conservation practices in tropical rainforest could be influenced by their personal variables, this study investigated the influence of personal variables on resource conservation practices in tropical rainforest in Cross River State, Nigeria.

Statement of problem

Among all forest types, the forests situated within the tropics are the most naturally endowed. In addition, among all forest types, they serve the highest number of rural people on earth. These facts imply that they play very vital roles towards the continuous existence of each of the earth's life support system and man's survival. The forest within the study area is a rare type only typical of West Africa, thus providing habitat for some flora and fauna species both endemic and non-endemic to the area. Recent reports have revealed a high level of deforestation with projections being made that the forest and its resources will disappear in about 18 years from now. Despite the reports even making the forest within the area to be

designated a global biodiversity hotspot by the United Nations, unsustainable tropical rainforest conservation practices continue unabatedly.

Issues of forest clearings for large scale mono-crop agricultural land uses coupled with slash and burn practices decimate the forest immensely from an agro-based dimension. From the commercial dimension, logging and fuel-wood extraction have also contributed a very significant quota towards the fast rate at which the forest is disappearing. On a much lower scale though with significant impacts on the forest and its resources are aspects of harvesting NTFPs unsustainably, unauthorized poaching and usage of chemicals/poisons for hunting and fishing. It is based on the issues stated above that this study sought to inquire the following – to what extent do personal variables influence community members' tropical rainforest resource conservation practices in Cross River State, Nigeria?

Purpose of the study

The purpose of the study was to investigate the influence of personal variables on community members' tropical rainforest resource conservation practices in Cross River State.

Statement of hypotheses

1. Gender has no significant influence on resource conservation practices in tropical rainforest
2. There is no significant influence of age on resource conservation practices in tropical rainforest

Gender is a conceptualized social construct which depicts the difference between being either a male or a female. As a concept, it is somehow synonymous with the term “sex” which also implies an individual's masculine or feminine being. It is a concept which attracts inquiries into due to the fact that nature has bestowed different and unique physical features and characteristics on each of a male and a female. The gender type in turn then influences the difference in uniquely different values, mentalities, attitudes, and subsequently, behaviour.

An individual's age is the person's chronological number of years which the person has existed as a living being amongst people. An individual's age is an important indicator which depicts whether the person is a child, a teenager, a young adult, someone in his or her forties or fifties, a sexagenarian, a septuagenarian, an octogenarian, a nonagenarian or someone who has clocked a century and above. Aside depicting the chronological number of years of an individual's existence, knowing an individual's age could help predict an individual's vitality, energy and vigour levels. As a human-based variable, researchable interest is usually kindled on it due to its perceived influence on how an individual reasons and behaves in the different stages of his or her existence.

Ansong and Roskaft (2011) investigated determinants of attitudes towards forest conservation management. Investigating gender as a determinant of disposition to forest conservation, it was revealed as an insignificant predictor of attitude towards forest conservation. This meant that neither did any of the males or females have a more significant attitude towards forest conservation than the other. Gender and sustainable forest management was researched by Mwangi, Meinzen-Dick and Sun (2011). They revealed that in terms of forest monitoring, male dominated groups were more prone to embarking on such while female dominated groups were very unlikely to conduct such at all. Also, in terms of adopting technologies/management practices which enable forest sustainability, female

dominated user groups were found to be significantly less likely to adopt such while male dominated groups were found to reveal significant adoption tendencies.

Kobbail (2012) researched on attitudes of locals towards community forestry practices and examined the influence of gender on each of attitude towards community forestry and participation in community forestry. It was revealed that gender had a statistically significant but negative effect on attitude towards community forestry but rather a significantly positive effect on participation in community forestry. Utilization of forest resources, attitude, and perception of locals towards management of community-based forests was studied by Ratsimbazafy, Harada and Yamamura (2012). They ascertained predictability of gender on attitude towards conservation of forest reserves and found out that gender was a statistically significant predictor of attitude with females serving to have a more favourable disposition towards the forest reserve than males.

An assessment of determinants of decision to participate in community forest associations was conducted by Musyoki, Mugwe and Muchiri (2013). Verifying gender as an influential factor for joining a community forest association, it was found out that gender had a statistically significant association with decision to being part of a community forest association with males being statistically more prone to participating in the associations than females. Predictors of community based forest management were surveyed by Tadesse and Abay (2013) who reported gender as a statistically significant but negative determinant of participation in co-management of community forest. An inquiry of perceptions concerning utilization of forest products was conducted by Sunderland et al., (2014). Assessing comparative participation of males and females in the forest user groups, female members were found to be lesser than the male participants in the forest user groups.

An assessment of gender as a factor of forest resource conservation was carried out by Ukwetang, Otu and Neji (2014) whose result revealed gender having a statistically significant association with attitude to conservation of forest resources. The finding was in such a way that females' positive attitude was significantly higher than that of males. Daksa and Kotu (2015) assessed determinants of deforestation and one of the study's inquiries examined gender as a determinant of deforestation. The study revealed gender as an insignificant predictor of deforestation.

Ezeali (2015) examined gender and sustainable management of forest resources with a verification of the following – (i) gender mostly responsible for forest conservation; (ii) gender which mostly generates adverse impact on forest conservation, and; (iii) predictability of gender towards adopting improved forest resources conservation measures. Result revealed females being mostly responsible for conservation of forest resources, males being the ones who mostly generate an adverse effect on conservation of forest resources and gender serving as a statistically significant but negative predictor of adoption of conservation measures concerning forest resources with females serving as the ones more likely to adopt improved conservation measures concerning forest resources. Factors which influence participation in exploiting and managing forest resources among locals in enclaves of national parks was investigated by Eneji, Mubi, Husain and Ogar (2015). Study's finding revealed sex as a significant but negative predictor of locals' participation in managing forest's resources in a conservative manner with males being found to be more likely to participate more in the conservation of forest resources.

Mukoni (2015) examined traditional male and female roles in conservation of natural resources among indigenous forest dwellers and assessed different traditional male and female natural resource conservation roles. The following were revealed; (i) men were forbidden from felling certain tree species (mostly very large ones), and in order to checkmate them, any on-looking woman was mandated to report any such incident in order not to be treated as an accomplice; (ii) women were mostly responsible for ensuring the conservation of certain tree species which grew beside water sources, mostly those which prevented water conservation; (iii) women were responsible for planting trees and grasses where necessary while men were responsible for constructing ditches, contours and terraces where necessary, and; (iv) men were mostly responsible for ensuring that their fauna habitats were conserved while women were mostly responsible for checkmating any illegal kill.

Wakwaya (2013) assessed locals' attitudes towards degradation of forest resources vis-à-vis conservation practices and the study's objectives included ascertaining age bracket which was more responsible for both degrading and conserving forest resources within the area. The investigated age brackets were 10-20, 21-30, 31-40, 41-50, and, 51 and above. Result revealed age bracket of 41-50 as being most responsible for degrading/conserving forest resources, followed by the 51 and above age bracket, before the 21-30 age bracket, then the 10-20 age bracket, and lastly, the 31-40 age bracket. Meijaard et al., (2013) evaluated perceptions about the value of forests and one of the study's objectives included assessing age as an explanatory variable for indicators of forests' values. The assessed indicators of forest values were; direct economic uses, other forest uses, cultural/spiritual importance, environmental health benefits, direct health benefits, ecosystem services, advantages of small-scale clearing, advantages of large-scale clearing and disadvantages of large scale clearing. Age was found to be a significant explanatory variable for all the indicators of forest values except other forest uses and advantages of large scale clearing. Overall, the finding was in such a way that older respondents were found to attach more value to the forests than younger ones.

Attitude of locals towards forest conservation practices was investigated by Lepetu and Garekae (2015). Age was examined as a predictor of willingness to partake in management and conservation of a forest reserve's resources. It was revealed as an insignificant and negative predictor of locals' willingness to be part of managing and conserving the forest reserve's resources. Communities' attitudes toward conservation of forest resources in a national park were studied by Odebiyi, Ayeni, Umunna and Johnson (2015). Age as a correlate to attitude towards the conservation of the national park's resources was probed and it was revealed as an insignificant but negative correlate of attitude towards conservation of the park's forest resources. Yang et al., (2015) assessed how locals' changing perceptions of forest values of a newly established forest reserve influenced their attitude towards the reserve. Age as a determinant of each of support to, and satisfaction with the forest reserve was surveyed which was revealed as a statistically significant determinant of each of the locals' support to, and satisfaction with conservation of the forest reserve. The finding was in such a way that older ones were found to show more tendencies towards each of the investigated variables.

Janmaimool and Denpaiboon (2016) evaluated predictors of rural dwellers' engagement in conservation behaviours and age was examined as a predictor of ecological behaviour (conservation of forest resources). Age was revealed as an

insignificant predictor of the locals' ecological behaviour. Chinangwa, Pullin and Hockley (2016) evaluated rural dwellers' welfare impacts of forest co-management. Study's objectives included ascertaining age as a determining factor both for locals' willingness to pay (WTP), and how much will be willingly paid for being part of co-managing the forests' reserves. Results revealed age serving as a statistically insignificant and negative predictor for each of WTP, and how much will be willingly paid. Tadesse and Teketay (2017) investigated perceptions and attitudes towards joint forest management among rural dwellers. Age as a predicting factor of attitude towards each of management of forest through joint approach, and being given responsibility to protect forest were investigated. Result revealed age as an insignificant predicting factor of attitude towards each of managing the forest through a joint approach and, being bestowed responsibility to protect the forest. Tesfaye (2017) researched on implications of sustainability of forests and livelihoods based on locals' perceptions and attitudes towards a joint forest management system. Age as a determining factor of voluntary participation in conservation of a forest reserve was examined and it was revealed age as a statistically significant indicator of willing participation in joint forest management. Braga, Azeiteiro, Oliveira and Pardal (2017) evaluated conservation attitude of fishermen and their indigenous ecological knowledge of the European sardine. Age as a correlate of attitude towards conservation of sardines was ascertained and it was revealed to having a statistically significant but negative correlation with attitude towards conservation of sardines. Jatana and Paulos (2017) inquired status of farmers' participation in a joint forest management program. Age as a determining indicator of farmers' participation in managing and conserving the forest's resources was investigated which revealed it as a negative but statistically significant indicator of farmers' participation in the management and conservation of the forest's resources.

Methodology

A survey design was utilized for the study. The study was conducted in Ikom Education Zone of Cross River State. The population comprised all rural community dwellers in the area while purposive sampling technique was employed to select 555 respondents for the study. A questionnaire tagged "Community Members' Personal Variables and Resource Conservation Practices in Tropical Rainforest Questionnaire" (CMPVRCPTRQ) was used for data collection. The reliability estimate method used was Cronbach Alpha and the result revealed the consistency to be .78 while One-way ANOVA was used for data analysis.

Results and discussion

HO 1: The first hypothesis stated that gender has no significant influence on resource conservation practices in tropical rainforest of Ikom Education Zone. The hypothesis was analysed using Independent t-test analysis, tested at .05 levels of significance and presented in Table 1.

Table 1: Independent t-test analysis of gender and resource conservation practices in tropical rainforest of Ikom Education Zone

Gender	N	Mean	SD	t-value	p-level
Male	221	37.08	6.43		
				-4.222*	.000
Female	293	39.35	5.47		

*Significant at .05 level; $p < .05$.

The result in Table 1 revealed that the mean score obtained by the 221 male subjects as regards to resource conservation practices in tropical rainforest of Ikom Education Zone was 37.08 with a standard deviation of 6.43 is less than the mean score of 39.35 with a standard deviation of 5.47 obtained by the 293 female subjects. The mean difference was statistically significant since the obtained t-value of 4.222 in absolute sense with a p-value of .000 met the criteria for significance at .05 alpha level. This means that male subjects in tropical rainforest of Ikom Education Zone had a significant lower mean than the females as regards resource conservation practices. Based on this, the null hypothesis which stated that gender has no significant influence on resource conservation practices in tropical rainforest of Ikom Education Zone was rejected.

HO 2: The second hypothesis stated that there is no significant influence of age on resource conservation practices in tropical rainforest of Ikom Education Zone. The hypothesis was analysed using One-way ANOVA, tested at .05 levels of significance and presented in Table 2.

TABLE 2: One-way ANOVA of age and resource conservation practices in tropical rainforest of Ikom Education Zone

Age	N	Mean	SD
Below 30 years	109	36.61	5.90
30 – 50 years	287	38.25	6.06
Above 50 years	118	40.31	5.42
Total	514	38.38	6.00

Source of variance	Sum of squares	df	Mean square	F-ratio	p-level
Between groups	785.045	2	392.523	11.340*	.000
Within groups	17687.486	511	34.613		
Total	18472.531	513			

*Significant at .05 alpha level; $p < .05$.

The result in Table 2 revealed that the mean score obtained by the 109 subjects who are below the age of 30 years was 36.61 with a standard deviation of 5.90 is less than the mean score of 38.25 with a standard deviation of 6.06 obtained by the 287 subjects who are between the ages of 30 – 50 years and this is also less than the mean score of 40.31 with a standard deviation of 5.42 obtained by the 118 subjects who are above 50 years of age. This implies that the higher the age, the better the resource conservation practices among the residents of tropical rainforest of Ikom Education Zone. The result further revealed that the calculated F-ratio obtained was 11.340 with a p-value of .000 at .05 level of significance with 2 and 511 degrees of freedom. With the obtained result, the F-ratio was to be statistically significant and the hypothesis which stated that age has no significant influence on resource conservation practices in tropical rainforest of Ikom Education Zone was rejected.

Since resource conservation practices in tropical rainforest of Ikom Education Zone were significantly influenced by age, the source of the difference was determined using Fisher Least Significance Difference (LSD) Post Hoc Test multiple comparison analysis. The result is presented in Table 3.

TABLE 3: Scheffe Post Hoc Test for age and resource conservation practices in tropical rainforest of Ikom Education Zone

Age	N	Mean	Mean difference	p-level
Below 30 years	109	36.61	-1.65*	.013
30 – 50 years	287	38.25		
Below 30 years	109	36.61	-3.70*	.000
Above 50 years	118	40.31		
30 – 50 years	287	38.25	-2.05*	.002
Above 50 years	118	40.31		

*Mean difference is significant at .05 level; $p < .05$.

The result of the Fisher LSD Post Hoc Test analysis as presented in Table 3 revealed that the mean score in resource conservation practices among the subjects who are below 30 years of age differ significantly in absolute sense when compared with that of those who are between 30 – 50 years of age in favour of those who are between 30 – 50 years of age (MD = -1.65; $p < .05$) and also significant when compared with the mean score of those who are above 50 years of age in favour of those who are above 50 years of age (MD = -3.70; $p < .05$). The result finally revealed that the mean score in resource conservation practices among the subjects who are between 30 – 50 years of age differ significantly in absolute sense when compared with the mean score of those who are above 50 years of age in favour of those who are above 50 years of age (MD = -2.05; $p < .05$). Based on these, the source of the difference was basically from

all the various age categories but was more from those that are above 50 years of age. The result of the first hypothesis showed that gender has a significant influence on resource conservation practices in tropical rainforest of Ikom Education Zone with the females engaging in better resource conservation practices than the males. The basis for this result could probably be attributed to the premise that the females have more “ecological management related-values” in their interaction with the forest resources than the males. In addition, the finding could also be premised on males being more concerned with “economic management related-values” than “ecological management related-values” in their interactions with the forest resources. As a result of the finding, could it be presumed that female locals would do better than their male counterparts if they (the locals) were entrusted with responsibilities to co-manage the forests and its resources than males? Or would the males do better than the females if they were enlightened on the need to adopt more “ecological management related-values” than “economic management related-values” in their daily interactions with the forest and its resources?

The finding of this study is in agreement with that of Nordlund and Westin (2011) who revealed that female forest owners display more ecological-centered forest management values than male forest owners who were more concerned with economic-centered forest management values. The finding is also in line with that of Kobbail (2012) who observed that females portray more positive forest management tendencies than males. Ukwetang et al. (2014) reported a significant gender disparity in terms of disposition to conservation of forest resources with females displaying more positive tendencies than their male counterparts. Lastly, Ezeali (2015) reported gender as a significant determinant of sustainable management of forest resources with females being found to have lesser adverse impact on forest conservation than the males. However, the study's finding contradicts that of Ansong and Roskaft (2011) who reported that gender was found to be an insignificant predictor of attitude towards forest conservation. The finding also contradicts Daksa and Kotu (2015) who revealed no significant difference between males and females in terms of gender as a determinant of deforestation.

The result of the study's second hypothesis revealed the significant influence of age on resource conservation practices with the finding implying that the higher an individual's age, the more better the person's resource conservation practice. In order to determine the source of the difference between the various age categories, a Post Hoc Test was conducted and it was revealed that the source of difference was from all the various investigated age categories but more from those who were above 50 years. The finding is somehow not surprising as it was presumed that better resource conservation practices do increase with age, as older ones were believed to have greater ecological value of the resources than the younger ones. Also, this finding could be based on the presupposition that older ones have more direct interaction and subsequently, more benefits of the forest and its resources than younger ones who would be interested in other facets of endeavour such as schooling.

The finding is in concordance with that of Musyoki et al., (2013) who ascertained age as a significant factor of decision to join a community forest association with older ones being more prone to joining such associations than younger ones. The finding also agrees with Meijaard et al.,'s study (2013) who reported age as a significant predictive factor of higher forest values with older ones exhibiting more favorable dispositions than youths. Yang et al., (2015) also reported age as a significant

determinant of locals' support towards and satisfaction with conservation of a forest reserve with those older being more pleased towards forest conservation than those younger. Also, Tesfaye (2017) reported age as a significant determining indicator of willingness to partake in joint forest management with younger ones showing lesser tendencies to join such a programme than their elders.

On the other hand, the finding disagrees with that of Lepetu and Garekae (2015) who discovered age serving as a negative and insignificant predictor of willingness to be part of conservation and management of forest resources. The finding is also not in line with that of Odebiyi et al., (2015) who revealed that a teachers' age had no significant linkage with locals' dispositions towards forest resources conservation. Janmaimool and Denpaiboon (2016) also revealed age as an insignificant predictor of locals' ecological behaviors. In their study, Chinangwa et al., (2016) also reported an insignificant predictability of age on willingness to donate money for conservation of forest resources. In an investigation of attitudes and perceptions towards joint forest management, Tadesse and Teketay (2017) reported age as an insignificant predictor of each of managing the forest, and being given responsibility to safeguard the forest.

Conclusion and recommendations

In present times, based on an accumulation of long-standing negligence of human beings towards the environment, the era of environmental sustainability has been ushered in. This implies that it has become an imperative for man's actions or practices in terms of natural resource exploitation to be more conservative in nature. The need for extreme conservative measures towards natural resource exploitation in some ecosystems such as the tropical rainforest is even more of an imperative due to the unique services it renders both to the continuous functioning of the environment and man's survival. Continuous careless exploitation of this unique ecosystem type by males and younger ones is fingered as one of the major reasons which ushered in the phenomenon of climate change. The continuous unsustainable exploitation of this unique ecosystem type can only lead to greater and more undesired impacts from the phenomenon of climate change. Without ameliorating the exploitation tendencies, it implies that human beings might have to learn to embrace more undesired reactions from the environment if we do not learn to appreciate that the need to be more conservative towards natural resource exploitation in one of its most unique ecosystems.

Based on the findings, the following were recommended;

1. Awareness should be created amongst locals in proximity to tropical rainforests on the uniqueness of the forest's services towards each of the environment and mankind
2. Vigorous efforts should be made towards designing joint forest management programmes which would stem the tide of deforesting the tropical rainforest within the area
3. Locals in proximity of tropical rainforests should be included in any forest conservation programme which would be designed to conserve forests within their domain

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