

Comparing Pro-Environmental Attitudes between Males and Females in Embu North Sub-County, Kenya

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Abstract

This study examined pro-environmental attitudes between males and females in Nginda Ward, Embu Sub county, Kenya. The research relied on two theories, theory of planned action and theory of pro-social behaviour. The research followed a descriptive design. Questionnaires with both closed and open-ended questions were used to collect data. The researcher administered questionnaires in person and filled the entire questionnaire according to the participant's responses. 245 participants, comprising 124 adults (comprising men and women) were engaged. Descriptive statistics were adopted for summarising data and comparing responses between groups. Differences in environmental attitudes between females and male participants were examined to determine if the differences were statistically significant. A total of fourteen environmental problems were mentioned by participants to be prevalent in Nginda ward. The top three environmental problems mostly mentioned by participants included deforestation, water pollution and air pollution. Results showed that differences in environmental attitudes between females and males were not statistically significant. However, more females than males perceived various environmental problems to be more serious. Differences between female and male perceptions in relation to the seriousness of various environmental problems were statistically significant, $F(1,239) = 8.07, p < 0.001$. The findings of this research can guide interventions by government and donor agencies seeking to mobilise and engage participation by both males and females to combat environmental problems in Nginda ward. Future studies are needed to find out whether the scale will produce a similar result in other groups in this community which include the business community, factory workers and eatery owners.

Key Terms: Environment, Stakeholder, Environmental attitudes, Pro-environmental attitudes

How to cite this article in APA (6th Edition)

Njeru F. R. (2020). Comparing pro-environmental attitudes between males and females in Embu North Sub-County, Kenya. *Editon Cons. J. Econ. Dev. Stud.*, 2(1), 56-63.

Introduction

Environmental degradation has become a matter of concern, globally. According to Moyer (2015), the world is undergoing great environmental stress due to global warming, climate change, ocean degradation, deforestation and loss of biodiversity. According to the United Nations Development Program (2012), 24% of the world population lives in poverty due to the degradation of the environment. Reversing environmental degradation is among the top agenda in the sustainable development goals 2030, namely goal number thirteen that aims to "take urgent action to compact climate change and its impacts," and goal number 15 that aims "to protect and promote sustainable use of terrestrial ecosystem, sustainably manage forest, compact desertification and halt and reverse land degradation and halt biodiversity loss," (UN, 2012) Environmental degradation has far-reaching implications, especially among the marginalised populations, women and children. Continued pollution of water sources means that women have to trek long distances in dearth for the precious commodity. Deforestation reduces the time for women to do other productive work, as women have to spend more time looking for firewood. Scarcity of firewood and water resources mean more time, thus increasing poverty (Blackden, & Wodon, 2006).

Upwards trends in desertification, soil erosion, global warming and emission of greenhouse gases, to loss of biodiversity pose a threat to socio-economic development and livelihood of millions of world population, especially in third world countries. Worldwide greenhouse gas emissions are on the rise, posing a threat to human health and potentially exacerbating climate change. Global warming has expanded endemic malaria regions; hence the prevalence of malaria, which is a leading cause of death in some countries was on in (IPCC, 2014). According to Bladimir (2015), air pollution was a leading course of infant mortality death due to asthma and other related diseases. On the other hand, deforestation causes soil erosion which

leads to water pollution and as a result, aquatic life is affected.

According to Pfeifer et al. (2012), Africa population explosion and the increased demand for wood has caused deforestation, which in turn increases carbon emissions in the atmosphere. Between 2001 and 2009, 9.3% of protected forests were destroyed, which is 17,167 km². Loss of forest cover is attributed to cultivation, demand for grazing land, timber as well as places for settlement for the growing population. There has been a rise in efforts to mainstream environmental education. The number of non-governmental organisations working to address environmental degradation has risen significantly over the last ten years.

Kenya has not been spared by the rising trends of environmental degradation. The country has continued to experience upward trends in overpopulation, deforestation, water pollution, inappropriate technology, air pollution, soil erosion, overgrazing, loss of biodiversity and global warming. According to a report by the country's National Environmental Management Authority (NEMA, 2016), the country experienced 14.8 million cases of air polluted sickness were reported in 2016. Population and industrial growth have been reducing land for settlement and food production. For instance, Taita hills have lost 98% of its indigenous forest through deforestation. Most of the country's water resources diminishing hence threatening rapidly threatening livelihoods, particularly in rural areas.

In Embu County, drivers of environmental degradation include Kathangariri tea factory located in Nginda ward, which consumes an estimated 1,200,000 cubic meters of wood fuel to process tea leaves per year (Lagat, 2015). This fuel was purchased from the local community. Because the majority of the rural residents are poor, the majority are involved in the sale of firewood and charcoal for livelihoods. Consequently, these activities have led to soil erosion. Moreover, runoff from the tea factory is a major contributor to the pollution of streams and wetlands, while

emissions from the factory contribute to air. Rising trends in urban centres and towns in Embu country have further accelerated the use of wood since they use charcoals and wood fuel for cooking. Biomass usage accounts for over 92.2% of energy source in Embu County. All these degradations remain pervasive despite efforts by the national environmental management authority to educate people on the need to conserve the environment.

Nginda ward has continued to experience worsening environmental degradation during the last ten years. This poses a huge threat to socio-economic development and growth of the people in this area. Deforestation and water pollution, pose a threat to the livelihoods of thousands of people living in the ward towns and rural areas. Women and children undergo suffer disproportionately from the consequences of environmental degradation. Kenya's 2010 constitution has anchored public/community participation as a core pillar for ensuring better governance, accountability, transparency, and also effectiveness in combating environmental degradation. Few studies have been conducted to examine why environmental degradation has persisted in Nginda ward despite opportunities for communities to self-organise and confront these problems. There has been very little research to investigate rural communities' environmental attitudes and pro-environmental behaviour, which are key to mobilising community participation. The researchers aimed to fill this knowledge gap by investigating environmental knowledge, attitude and pro-environmental behaviour in Nginda ward in Embu county Kenya.

LITERATURE REVIEW

Gender and environmental knowledge

Environmental knowledge helps individuals, groups or a community take responsibility for their intellectual destiny and develop the capacity to cope up with their development challenges. It is also involved changing the working patterns in which stakeholder changes the course of their development and implements their coping mechanism their own way rather than other donor

agencies implementing for them. Sivamoorthy, Nalini and Satheesh Kumar (2013), in their study environmental awareness and practice among college student in India, found that men were more knowledgeable about the environmental problem than females. However, they had no action plan on how to conserve were less concerned and not emotionally attached. This view was supported by Ogunbode and Arnold (2012), while researching on environmental awareness in Nigeria, found men were knowledgeable than female; however, participation in pro-environmental behaviour was very low.

Some scholars have reported that men have a level of information gathering concerning the environment. Education affects societal awareness and social life. Unfortunately, although men seem to have huge access to information, the education levels do not seem to translate into shape pro-environmental behaviour.

Sadik and Sadik (2013) argue that environmental knowledge of men is not a good indicator of corresponding pro-environmental behaviour; environmental attitudes are shaped by behaviour and thinking about the environment. The study reported that environmental knowledge and positive thoughts on environmental knowledge were not enough to change a personal viewpoint in order to have accountable behaviour toward the environment. Other factors were responsible, including culture, economic status and personal behaviour. While the majority of men may be considered to bear stronger environmental knowledge, they are scarcely conscious of environmental problems and the negative consequences associated with degradation.

According to Wariua-Nyalwal et al. (2013), stakeholder participation is key to the success and sustainability of every development. Bladimir (2015) has noted that men dominated the stakeholders who were involved, the federal government of Brazil municipality government, agencies and civil society. The policy did not target men and youth, yet their activities contribute to environmental

degradation. The policies developed led to a notable reduction of deforestation in the Amazon region. This policy changes on forest conservation; on the other hand, it reduced the cases of low birth weight in the municipality among the Amazons that were affected.

Shandra et al. (2008) in their research on women non-governmental organisations and deforestation sought to investigate the role women play in environmental conservation. They found out that in countries where women were involved in the activities of the nongovernmental organisation, conservation activities were high and highly rated. The probable reason why women were more involved in conservation effort was that more women than men are affected by the impact of environmental degradation, especially deforestation (Rocheleau et al., 1996). As discussed earlier, deforestation increases workload in the house, and the distance women have to cover looking for firewood and other forest resources.

According to Rudel et al. (2005), the reason why women participate in a non-governmental organisation dealing with deforestation was that women bear the brunt of environmental mismanagement. Shandra further noted that the higher, the more the number of women in the political representation, the more the number of policies passed, causing more implementation and prevention of environmental degradation (Shandra, 2008). Women were more positive towards environmental conservation. According to Misfud (2012) who studied several groups in Malta Island, he also discovered that environmental knowledge played a key role in behaviour change toward environmental conservation.

These findings seem to corroborate those reported by Frank, Hironaka and Schofer (2000) who found that the higher the number of non-governmental organisations, the more the environment was protected. According to Maathai (2006), where gender is an important factor in measures designed to curb deforestation. Women also

have been found to have offered motherly as well as ecosystem love supporting agroforestry. In Kenya, Wangari Maathai started green belt movement that supported women to reforest the deforested areas in Kenya (Maathai, 2006) they offer technical as well as financial support at grassroots levels and advocate the setting of parks and national reserves. According to Shandra et al. (2008), women advocate for water and environmental conservation through campaigns, letter writing, and protesting against environmental degradation.

Rawat (2004) has further argued that in most cultures, women are more associated with the environment since they collect firewood; prepare alcohol, pottery and food to increase their income. Thus, they conserve and care for the environment more than men. Participation of Women through NGO has increased, especially on reforestation activities. They participate in researching and providing guidance which is geared toward improving the environment-Women are known to pressure governments to put policies in place to reverse environmental degradation (United Nations, 2004). Religious attractions to forests such as the use of forests for religious ceremonies have led to the protection of forests. Kayas in the coastal region of Kenya are good examples of forests that have been protected due to societal and cultural values. The Ministry of Environment and Natural Resources (2013) argues that the Kayas of the Kenyan coast have preserved a block of forest in the coast due to traditional values attached to it.

Previous research has concentrated on women's role in the conservation of the environment. There is a paucity of research that has investigated whether environmental stewardship among women is influenced by factors such as level of education. The strategies relating to preventing forest degradation from avoiding increased workload amongst women can be traced back to 1992 in a meeting held in Brazil in Rio. This climax of the policy process was a session paper number 6 of 1999. This progressed to give birth to environmental management and coordination

through parliamentary registration. The promulgation of the 2010 Constitution known as green Constitution gave an elaborate roadmap to a sustainable environment.

To highlight the significance of environmental conservation in Kenya, Chapter Five of the constitution is dedicated to environment and land. The environment has also been enshrined in the economic and social right. However, there are lapses in the enforcement of the provisions of the Kenya constitution in relation to environmental protection. Important questions can be raised that relate to how the environment is integrated into the policies of the government to ensure sustainable development.

The Kenya environment management policy is treated as sectoral therefore are inconsistencies to address environmental issues at a national level. Such complex environmental problems highlighted above require coherent and compressive policies which are participatory at all levels by all stakeholders, especially women. It is out of this that the research is out to assess women's knowledge and attitude towards the environment. According to the National Environmental Management Authority, Kenya faces numerous sustainable development challenges which range from deforestation, water pollution, soil fertility decline, loss of biodiversity, and destruction of water resources.

There is little research on the role the community plays to rehabilitate the degraded environment through tree nursery establishment at the family level and to replant the deforested area arising from behaviour change. This is the gap the study seeks to investigate.

METHODOLOGY

The research used descriptive design. The target population was composed of 410 households. Out of this 30% was sampled as key respondents who were affected by the impact of environmental degradation but also key in conservation drive through simple random sampling. The household sample was selected from the register obtained

from a social worker in the ward, which gave a total of 244 respondents. The data collection instrument was piloted with a sample of 15 participants to ensure reliability and validity of data collected. Reliability was obtained through running the data on SPSS scale until the required threshold of 0.7 and above was obtained by deleting items which had low percentage. Closed-ended questions were supplemented with open-ended questions to ensure additional perspectives from the participant in relation to environmental attitudes. Participants' environmental attitudes were measured using 11 statements from the New Environmental Paradigm scale (NEP). The Cronbach's alpha value for the 11 NEP statements was 0.70. Descriptive statistics were used to summarise and compare responses between groups. Inferential statistics (MANOVA) were used to examine if differences in environmental attitudes, environmental knowledge and pro-environmental behaviour, between adults and school children, and also between females and male participants, were statistically significant.

RESULTS AND DISCUSSION

Environmental Attitudes

Participant environmental attitude was measured according to the level of agreements or disagreement on (11) statements from New Environmental Paradigm scales (Dunlap Relay:2008). Participants were required to rate their level of agreement/disagreement with each statement based on a scale of 5 = strongly agree to 1 = strongly disagree (overall score range, 11- 55). The Cronbach's alpha value for the 11 statements was 0.70, (mean 3.80 ± 0.70SD). A high score means an individual had a higher agreement on an item related to a particular statement. Male-female comparisons revealed an amazing result between their perception and attitude.

Limit of the number of people that the earth can support

Interestingly among the adults, Female respondent strongly agreed with the statement that the earth is approaching the limit of the number of people it can support at (36.9%). However, the majority of the females,

although below half, were in agreement that the earth was almost overpopulated. Females seemed to have understood that people were increasing. Males' responses were different and slightly lower than females (28.5%) strongly agreed. Generally, females are involved more in family affairs than males; thus, the perception of the increasing population was expected to be higher on female than male. Thus their attitude was generally positive toward population explosion, which affects the environment, although it was below average. However, the male perception was low, which in turn affected their attitude such that their response indicated a very low percentage. Any intervention will have to focus strongly on males as well as females so as to capacity build them to understand the effects of the population, thus shaping their attitude.

Human ingenuity will ensure that we do not make earth unliveable

Sadly, both gender respondents were below average and very close to each other with (32.8%) female strongly agreed while almost the same (32.5%) supporting the statement. The reactions indicate disagreement that human was genuine and therefore, natural problems have nothing to do with human beings. The attitude on the statement is negative. Both male and female were dishonest. They were in a state of denial. There seems to be some disconnect between ingenuity and earthly life. The minimal difference indicates that both understand the consequences of human interference with nature somehow. Lot was required to change this attitude. The intervention will need to focus and include both genders in all areas of project designing, planning, implementation, monitoring and evaluations so as to voice their concerns, worries and needs.

The so-called "environmental crisis" facing humankind has been greatly exaggerated

The responses to this statement were amazing. (30.9%) of male strongly disagreed while Female (28.7 %) strongly agreed. Sadly, both male and female respondents showed

mixed perception and attitudes over this statement. For male, there was crisis while for female there wasn't. However, the majority of male agreed there is crisis while the majority of female disagreed. The responses indicate strong disagreement between genders as well as imbalance. However, Nguviu sub-location being on the slopes of Mt Kenya may not have experienced a serious environmental crisis. Probably this may explain why there was a mixed reaction to this problem. However, male responses should not be ignored.

The findings reflect Ogunbode and Kate (2012) study on environmental awareness and attitude in Ibadan, Nigeria, who found that males were more aware of environmental degradation than female. Their views were completely opposite; male saw crisis while female saw exaggeration of the crisis. The attitude on both was different. This means that mitigation measure will have to focus on both in order to reconcile and bring both on board for successful implementation of a project geared towards achieving the desired goals.

Generally in all the (11) statements, female perception and attitude on environmental problems highlighted were above those of male except(3)on the earth has plenty of natural resources, plant and animals have equal right, and environmental crisis facing human beings has been exaggerated.

CONCLUSION

Environmental degradation in Kenya has worsened over the last four decades, with the country's forest cover declining from over 17 per cent in the 1960s, to less than 1 per cent in 2000. The country's per capita availability of freshwater resources has remarkably dropped over the years due to rising population growth, degradation of water resources and water catchments, climate change and run-away rise in various point and non-point water pollution sources. Public participation in both urban and rural areas is envisaged in a core strategy of engaging various stakeholders by government and donor agencies in

combating the country environmental problems. This research examined environmental attitudes amongst males and females in Nguviu Sub-location. Based on this study's findings, it can be argued that more females than males in the sub-location consider various environmental problems to be a lot more serious compared to males. Women and also girls, especially those from the rural areas, are involved in water and firewood collection among, other chores, and they are highly vulnerable to environmental degradation compared to males.

RECOMMENDATIONS

Future research may need to find out why women were willing to contribute money than do actual work. There is need to found out whether women were so busy to afford time for volunteering or they are rich such that they can afford the contribution of money. Further research should be done to investigate environmental knowledge and attitude in other groups in the area, e.g. business community, eatery owners, and tea factory workers. This survey was just for a section of the society; thus, the altitude and knowledge of others was required. There is

need also, to replicate this research in other wards and compare findings. This will reveal whether the environmental problem is rampant or in pockets within the country.

The county government should make sure that NEMA offices and officers are in every sub-location, where reports and feedback, as well as monitoring, can be obtained. Respondents were willing to support government policy; thus, NEMA should utilise the goodwill of the community by being available for then and implementing the policy together while monitoring and evaluating. National environmental management authority should involve the local community in conservation drive and more so young people and women who have indicated willingness to support. All actors in environmental management should work together in collaboration so as to address to environmental problem from a common standpoint. The problem is the community was willing to collaborate with the government that is not available.

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