MOTHER EARTH, MOTHER AFRICA & AFRICAN INDIGENOUS RELIGIONS

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AFRICAN IMAGINATION OF TECHNOLOGY AND ENVIRONMENTAL STABILITY

Examples of Kikuyu and Luhya
communities in Kenya

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Abstract

Community and environmental sustainability are a global concern that calls for the civilised, the professional practitioners, the creative thinkers, and the future world to participate in providing, creating and establishing a sustainable environment. This study aims at stimulating and informing the discussion on the concept of community and environmental sustainability, as well as on how technology has influenced it. It explores African concepts of environmental sustainability with relevant examples from the Kikuyu and the Luhya communities in Kenya. The chapter highlights an African imagination of community and its role in the conservation of natural resources, and the creation of sustainable economic conditions for African communities. A survey was conducted in Roysambu, a small village in Nairobi, Kenya. The study picked a sample of 150 respondents in the area, who were selected using random sampling. One stipulation in this selection was that each of the members of the study sample was either from the Kikuyu or Luhya communities. The study also adopted the diffusion of innovation theory, which explains that over a duration of time, an innovation or idea is adopted by users and spreads in a given social system or population (Rogers, 1983). The study established that it is important for communities to live according to their traditions and values despite the intense technological wave, with the support from the government, in order to create a balance between traditional ways and the technological ways of establishing a sustainable environment.

Introduction

The relation between the environment and sustainability is an idea that has been in existence for many decades. Different perspectives on and perceptions of the concept are emerging and this has changed how the communities in Africa respond to the whole issue of environmental sustainability. Shiel (2018) explains the environment

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as the sum total of the elements, factors and conditions in the surroundings that may have an impact on the development, action or survival of an organism or group of organisms. Environmental sustainability has been defined as “a condition of balance, resilience, and interconnectedness that allows human society to satisfy its needs while neither exceeding the capacity of its supporting ecosystems to continue to regenerate the services necessary to meet those needs nor by our actions diminishing biological diversity” (Morelli, 2011). The positive and negative growth of Africa is linked to the sustainability of its environment. This makes the study of the African imagination regarding environmental sustainability amongst different communities in Africa of such importance.

This chapter maps out the concept of environmental sustainability in Africa using the examples of the Luhya community, who belongs to the larger linguistic group known as the Bantu, and the Kikuyu community, who come from the central part of Kenya. The examples are based on these groups’ methods of conservation of natural resources and creation of sustainable economic conditions. The chapter also explains the challenges facing environmental sustainability by the Luhya and Kikuyu community such as the decline of general culture, lack of government support, undermining of community participation by politicians, and the intense wave of technological development. Moreover, it points out the impact of technology on environmental sustainability as entailing the decline of traditional modes of sustainability and the erosion of culture.

Enhancing environmental sustainability is not only the role of the government and other big organisations, but also of the communities who are the major beneficiaries of that same environment. A sustainable environment ensures good psychological, physical and sociological conditions in the country, which in turn contributes to the quality of the ecological system, health conditions and food security of future generations. The traditional disciplines, values and norms of the society that used to guide management of the environment have been swept away by the rapidly advancing technological wave, an issue that has confused different communities in Africa regarding environmental sustainability. There is always enough that the environment gives us; if we could also give it enough attention, then the problems associated with environmental sustainability in Africa will always attract the best remedies for the good of both the current and the future generation.

Methodology

Since there is quite a substantial number of Kikuyus and Luhyas in Roysambu, self-administered survey research questionnaires were used for data collection in both residential and business premises. The survey included a study sample of

150 respondents, who were selected using random sampling. The stipulations for this selection were that each of the members of the study sample was an active user of WhatsApp and that their primary residence was within Roysambu.

The researcher resides mostly in Roysambu and therefore elected to use the residents of Roysambu as the research population. It was a convenient choice and it meant that the researcher could administer the questionnaire with less difficulty. Since the researcher elected to use a combination of convenience and purposive sampling, selection of the respondents depended largely on the researcher's judgement. For one, not all targeted members of the population could be accessed and so only those who were conveniently available to participate in the study were approached. The business people in shops and those who were by the roadsides were approached to fill in the structured questionnaires to the best of their abilities. Questions were clarified for the respondents when necessary to ensure that they provided reliable information. Given that it is not possible to apply statistical methods in either convenience or purposive sampling, the results lack external validity and are therefore not representative of the entire Roysambu population.

As is required of all survey research, the questionnaire began with a carefully crafted introduction outlining the purpose and procedures of the research study and informing the respondents that the final paper will be published for educational purposes and to provide knowledge about the communities. It not only gave clear instructions to the respondents on how to answer the questions, but also informed them that they were free to decline participation or withdraw at any time.

Theoretical framework

The diffusion of innovation theory explains that, over a duration of time, an idea or an innovation is adopted by users and spreads in a given social system or population. Rogers (1983) defines innovation as a practice, object or idea that is perceived by any adopter as new. The theory is one of the oldest in the social sciences. Rogers (1983) was able to synthesise well over 3,000 previously conducted studies on adoption and diffusion to come up with a good number of generalisations. These generalisations explained the process through which innovations, such as creation of a sustainable environment, spread through the populations of probable adopters. The theory is fitting for the current research study because, at a community level today, people are shifting away from their traditional ways of creating a sustainable environment and adopting new ways of doing this through technological innovations.

The first important generalisation of the theory is that any innovations must possess certain characteristics. They may have a relative advantage, be more compatible, less complex, and their trial ability and observability are less demanding (Rogers, 1983).

The impact of this generalisation amongst the adopters is that it affects perception and eventually determines the rate and patterns of adoption. The second generalisation is that adopters differ in their personal characteristics. Some potential adopters are said to be more innovative compared to others. Such differences are easily observed through their level of education, occupation and tech savvy, amongst other characteristics. The current study will closely investigate the demographics in the dominant phase to see how this generalisation is applied.

Rogers (1983) further noted that any adoption decisions require a series of stages to unfold. The starting point is the knowledge of the innovation and this is naturally followed by persuasion, the decision to adopt, implementation and finally confirmation. As the third generalisation of the theory, it explains how different adopters are predisposed towards varying forms of influence in the different stages.

The fourth generalisation that the theory of innovations makes is that there are individuals amongst any given population who act as change agents and/or opinion leaders and can, therefore, accelerate the adoption of an innovation (Rogers, 1983). This is especially the case in instances where the potential adopters think of such change agents and opinion leaders as possessing characteristics similar to theirs.

Finally, diffusion of innovations theory generalises that, as a process, diffusion will normally start out slowly amongst a few pioneering adopters and will then reach a take-off point when a more established community of adopters will develop. At this stage, there is more peer influence working amongst the adopters. In the course of time, there are no additional adopters and so the growth declines. The end result is a cumulative 'S'-shaped adoption curve.

According to Attewell (1992), there are two distinctive styles that almost all diffusion research tends to follow. These are adopter studies and the macro-diffusion studies. The author defines adopter studies as those whose primary concern is to understand the differences in the innovativeness of adopters. In this case, innovativeness is taken to mean the time of adoption. It concerns itself with the early adopters, early majority, late majority and laggards. On the other hand, macro-diffusion studies are basically concerned with characterising the rate as well as patterns of adoption of a technology across a select community of the potential adopters. It is an approach that largely employs mathematical models of the process.

For the purposes of this study, the researcher elected to take an adopter study approach. Guided by the various generalisations made by this theory, the research will look at the manner in which early adopters, early majority, late majority and laggards fit cumulatively into the adoption curve and establish the dominant phase, which will in turn be examined in relation to various factors.

Literature review

A lot of studies have been done and published to understand the concept of environmental sustainability from a variety of perspectives. This study will focus only on the literature that provides relevant information from the African perspective on environmental sustainability and then narrowed down to the Luhya and Kikuyu communities in Kenya. This chapter explains how environmental sustainability has been perceived by the two communities in Kenya and the changes that the new technology has made to it (Jayne, Chamberlin & Headey, 2014). Various issues affect environmental sustainability in Africa: land pressure, the evolution of farming systems, development strategies in Africa on food policy (Acho, 1998), human interference, environmental instability, the environmental consequences of rapid urban growth in Bamenda (Barnes et al, 2017), and the impact of plastic debris on marine life. I agree with the aforementioned statement that each scholar addressed specific aspects of environmental sustainability in Africa.

In their studies, scholars such as Jayne et al. (2014) synthesised how people, markets and governments are responding to the rising pressures on land. This is the result of rapidly changing demographic conditions and the immense challenges that mounting land pressures pose. These challenges include, in the context of current evidence of unsustainable agricultural intensification, a rapidly growing labour force associated with the region's current demographic condition and limited non-agricultural job creation. They argue that these challenges are manageable but require explicit policy actions to address the unique developments in densely populated areas.

Acho (1998) focuses on urban environmental problems and their different dimensions such as geological, climatic and cultural factors. This study was based in Nigeria. The researcher explained that the cultural factors seem to be more pronounced in the Nigerian context because most of the identified urban environmental issues are so much associated with the way of life of the people, either as reactions to urbanisation or their spatial heritage. Their effects are far-reaching in pursuing sustainable development in the country.

On the other hand, in a study done in the United Kingdom Barnes (2017) points out that environmental sustainability is affected by *technology* and argues that technology has a positive impact on the environment. But there is also a negative side. Our *technological* innovations have the potential to harm our *environment*, but if we use them wisely and develop *sustainable* methods, they could also help solve the *ecological* problems we have created.

The Luhya concept of environmental sustainability

The Luhya, Luyia or Abaluhya, as they are interchangeably called, are the second-largest ethnic group in Kenya, after the Kikuyu. The Luhya belongs to the larger linguistic group known as the Bantu. The Luhya are comprised of several subgroups with different but mutually understood linguistic dialects. Some of these subgroups are Ababukusu, Abanyala, Abatachoni, Avalogoli, Abamarama, Abaidakho, Abaisukha, Abatiriki, Abakisa, Abamarachi and Abasamia.

The ethnic homeland of the Luhya community is located in western Kenya, north of Lake Victoria and stretches from Kisumu to Webuye going north and south, and from Kapsabet on the east to the Ugandan border on the west (Okello, 1977).

In the Luhya community, the conservation of natural resources is a community responsibility. It is not an individual role. The god of the land, *Wele Khakabha*, who is a male, is considered omnipresent in the environment and therefore is in charge of the moral guidelines concerning the well-being of the environment. For someone to thrive in the community, they must be in harmony (*Kumulembe*) with the environment. This peace comprises a person's health, wealth and blessings.

Traditional Luhya livelihood systems conserved natural ecosystems through culturally controlled utilisation strategies such as extensive and rotational grazing, shifting cultivation, and the use of substitutable and complementary resources. These strategies were disrupted by colonialism through the introduction of tenure systems (Wekesa, 2000). Animal bones, crocodile nails and ostrich shells were used to make ornamental objects for different rites (Burt, 1980).

To the Luhya community, the environment will always be protected because of the benefits that the community derives from it. The soil has been the most valuable natural resource amongst the Luhya community since ancient times. It is considered the origin of the human race. One of the most common myths amongst the Luhya group relates to the origin of the Earth and human beings. According to this myth, *Were* (God) first created Heaven, then Earth. The Earth created by *Were* had three types of soil: top soil, which was black; intermediate soil, which was red; and bottom soil, which was white. From the black soil, *Were* created a black man; from the red soil, he created a brown man; and from the white soil, he created a white man. (Kamau, 2013).

The soil is still considered sacred because of the burial ceremonies and growing of food crops. Since the western part of Kenya is considered to have the most fertile soil and experiences rainfall regularly, even people outside the region rely heavily on this area for food. Additionally, soil has been valued as a home of humanity, "where the feet of humanity tread and support the self" (Kenyan saying).

Trees are valued worldwide because of their ability to keep the ecological environment in order. The Luhya community believes that everything that has a good side always has an evil side as well, and so it is for the trees. Trees are valued as much as life, because their presence has the ability to either sustain or kill both human and life.

Mwene (2018), in his story of trees with cultural significance amongst the Luhya community, illustrates the significance of trees to the environment and why they are respected and conserved. The *Kumukhuyu* tree bears small red-orange berry-like fruits that are edible. First, they are only consumed when fully ripe. Secondly, you must only eat the ectoderm, because the endoderm is made of seeds that allows insect to thrive within, without spoiling the fruit. Besides the fruits acting as obvious attractants to other life forms, the *Kumukhuyu* tree also allows bushes, shrubs and climbers to grow under it. This means it acts as a perfect foil for predators. Foxes, particularly, love the *Kumukhuyu* tree.

Foxes use the bushes to waylay prey. They also hide their loot in the bushes and in the tree's hollow (*ekhombe*). Despite the benefits of this tree to the fox, Bukusu folklore is that the fox and the *Kumukhuyu* tree do sometimes have disagreements with each other. When that happens, the fox will defecate in the tree's shade. As a result, the Bukusu saying, *Kumukhuyu kwasinya enjusi*, is used to remind people about the ungrateful, wily ways of the fox (Mulembe Nation, n.d.). The *ekhombe* of *mukhuyu* trees are also used by bees as hives. The *Kumukhuyu* tree continues to give by bestowing surrounding communities with eternal rights to honey (Mwene, 2018).

In the Luhya community, the environment is believed to be under patriarchal care. Men own and are given the responsibility of taking care of the environment. Women are always oppressed by this tradition because it denies them the freedom to own land.

The concept of environmental sustainability amongst the Kikuyu community

The Kikuyu, also known as the Gikuyu, community of the East African country are the largest tribe in Kenya with a population of 6.6 million in 2009. They account for close to 17% of the total population of Kenya (Boyes, n.d.). The Kikuyus are believed to have come from West Africa along with other Bantu and settled around Mount Kenya. They practised farming because of the fertile volcanic highlands. Today, most of the Kikuyus have migrated to the capital city of Nairobi and other towns, but their territories still remain in the Mount Kenya area and the central highlands such as the Nyeri, Murang'a, Kiambu and Kirinyaga regions of Kenya (Jenkins, 2008). The Kikuyu were fortunate to have an attractive country with adequate rainfall, rich volcanic soils, and teeming with flora and fauna except in periods of adversity. They were largely self-sufficient; they grew 49 types of food plants besides keeping livestock (Leakey, 1981).

The Kikuyu culture of environmental sustainability and conservation of natural resources has been practised since they settled in Kenya. They still uphold their cultural traditions and are believed to be a tribe that had a lot of political and economic influence in *Kenya* since colonial times (Rothchild, 1969). Because of the political and economic power that they have in the country, their regions are always given the first priority of development by politicians. The community always raises a concern if they do not experience any kind of development in their region. This sometimes forces the leaders to tour the area and ensure that the development plans are initiated and progress is made. This is same way that President Uhuru Kenyatta embarked on commissioning projects in central Kenya a few days after the region's Members of Parliament decried the dismal development track record in the area (Oruko, 2018).

Amongst the Kikuyu community the environment is always given the utmost attention because they believe that their survival depends on how good their environment is. Initially, the sacred *Mugumo* tree was mythically imbued with religio-political power, used by the elders for social and religio-political control of the community. The community was therefore advised not to cut down the tree; instead, the tree was to be conserved and respected (Muriuki, 2005).

The Kikuyu tradition of protecting the sacred *Mugumo* tree is still upheld, despite the fact that traditional beliefs are diminishing in the current generation. Ojukwu and Esimone (2014) explain that youths are exposed to new environments associated with the social changes that come with new cultures that contradict African moral values. Traditional Kikuyu society depends on the use of various medicinal herbs to treat human and livestock ailments. People in Kenya suffering from, for example, erectile dysfunction, hail the advent of Viagra, yet the Kikuyu do not mind consulting herbalists on whether there is anything similar in the traditional pharmacopoeia (Karimi, 2002).

Kenyatta (1938), in his book *Facing Mount Kenya*, stressed that all land was owned by individuals or *mbaris*, and none was held communally in the sense that everyone had equal access to it. This implied that the role of environmental conservation when it comes to land was individual, a view which is maintained until today. The traditional land of the Kikuyu community is not supposed to be sold (Bunche, 1941) and, therefore it is preserved according to their rights and rituals. Leakey (1981) explained that the Kikuyu's traditional law provided for the formation of what would now be called forest reserves. This meant, of course, that much more of the forestland could be left undisturbed.

Today, the Kikuyu community is the most developed in their land usage, and their environment is in a better condition than that of any other community in Kenya.

Most of their traditional methods of ensuring environmental sustainability are still active despite the technological wave.

Land and women in the Luhya and Kikuyu communities

Traditionally, the Luhya and the Kikuyu communities have similar traditions about land ownership and inheritance. In both communities, men are the ones who own and control the land and are therefore held responsible for protecting and creating a sustainable environment. This has led to the oppression of women in these societies. Women have been prevented from owning property, the same property those men control and are authorised to take care of. Women in this community have usufruct rights, but they have been excluded from inheriting land.

It is true that Kenyan women have made tremendous contributions to the overall economic growth through their agricultural practices, but a look at the agricultural sector where women are highly represented reveals a high degree of marginalisation, neglect and outright discrimination against women in the distribution of economic resources (Karanja, 1991). This shows how the traditional laws enslave and oppress women; this situation should be addressed at a community level to ensure that women are given a place in these societies.

In the Kikuyu community, the unmarried daughters had a right to use the land within the paternal homestead, but they can only plant annual crops. Whenever a father decides to allocate land to any unmarried or divorced daughter, these women are likely to be forcefully evicted from the land by their male siblings, who believe that daughters have no right to share paternal land with them (Kilson, 1995).

Women in the community play a very major role by creating a sustainable environment and therefore they should be treated fairly by being allocated land to own and inherit with no man's interference. Perhaps there should be a law in the country that allows women to inherit land, a law that removes that particular tradition that oppresses the major conservators of the environment.

Challenges facing environmental sustainability in the Luhya and Kikuyu community

The digital era has eroded the traditional methods and rules for ensuring environmental sustainability. Today the world has become a global village where everyone is learning from others. There is no one best way of doing things; social media have led to people relying on whatever information that is published as solutions to problems.

In the Luhya and Kikuyu communities, the traditional ways of environmental conservation are no longer in existence. The sacred trees such as the Kumurembe and Mugumo trees in the Luhya and Kikuyu communities are no longer spared. They are cut down because people no longer fear the consequences. The traditional beliefs and cultural values have been eroded by Westernisation.

The social networking platforms such as Google are doing excellent work in the promotion of action to address various issues of environment preservation. Nowadays, instead of people sticking to the traditional ways of creating a sustainable environment, Google is being used as an advanced method of searching for new ways of sustaining the environment. The Kikuyu community, known for having a high economic standard in Kenya, is taking advantage of the new technology in businesses and agricultural practices.

From global warming, climate change to solid waste management and renewable energy news, social media platforms are very active with participation from a large number of people, especially the youth or younger generation (Robelia, Greenhow & Burton, 2011). This generation no longer understands or acknowledges the traditional ways of environmental sustainability; this is because either they have not been taught about them or they have intentionally accepted being swept away by the new ways of conserving the environment that have been initiated by the new technology.

Technology has given communities the ability to change some of their behaviours and conduct clean and green businesses, but still people are not keeping up with the pace of the environmental changes happening locally and globally because of indiscriminate utilisation of natural resources. Social media has become an important tool for providing a space and means for the public to participate in influencing or disallowing environmental decisions made by governments and corporations that affect all. This has developed a mode for people to be connected with local environmental challenges and interpretations to larger-scale stories that will affect the global community (Warner, Eames & Irving, 2014)

Undermining of community participation by politicians

The world we are living in is said to be a global village bringing together isolated people. At local and national levels, the community is always underestimated in politics, discouraging the creation of a sustainable environment. Poor leadership in Africa is the root of a lot of challenges facing the continent and its people.

In Kenya, since the leadership is mainly in the hands of the Kikuyu ethnic group, the community tends to relax and expect that their people will defend them in ensuring

that the environment is well taken care of. Currently, President Uhuru Kenyatta is facing a rebellion in the Mount Kenya region over claims that the government has neglected the area, which is overwhelmingly supported by the Jubilee. The rebellion, which has been simmering, boiled over at New Year 2019, when Gatundu South's Member of Parliament, Moses Kuria, openly accused the President of ignoring the region and focusing on developing areas that voted for the opposition (Wainaina & Ndung'u, 2019).

The more things change, the more they stay the same. This means that there has been a misuse of the word 'change' by politicians in society today. In every election, in every change of leadership, the word '*change*' is not far away. It not only conveys the promise of a better future and the removal of a flawed past; it appeals to the desire for something new (Winchester, 2018). Once the politicians get into power, they forget about the promises, the lives of the people in the society, and the environment they promised to work on.

The unfinished long-term infrastructural projects started by the politicians during the campaign periods are left at standstill. This kills the energy and the morale of the residents who are supposed to be the beneficiaries of the same environment. They give up and sometimes, with the poor standards, do not know what to do to complete the projects. In Kenya, when the road construction activities are not completed, roads become worse and impassable for long periods before any action is taken by the government, leading to the citizens suffering.

The intense technological wave

Despite the fact that innovation and technology have led to improvement and new alternatives of environmental sustainability, it has also led to the unstoppable challenges to the environment such as the emission of harmful gases into the atmosphere. This has led to climate change. The challenges of getting a long-term strategy that includes a search for full technological alternatives to the hydrocarbon-based technologies for low- or zero-emission innovations in large-scale technologies for energy production, distribution and use are yet to be resolved. These innovations are difficult to forecast and likely to be radical in the sense that they will go far beyond our current knowledge bases and technological horizons (Smith, 2008).

Findings

The research question sought to establish the rate at which the residents of Roysambu adopted technological methods for ensuring environmental sustainability. The aim was to establish the various phases of adoption and enable the researcher to select

identify most intense phase of adoption. As indicated in Table 9.1, the dominant phase of adoption fell occurred with the early majority adopters at 36%, representing the respondents who said they had adopted the use of technological measures for environmental sustainability, about 1-3 years after they learnt about it and they do not remember when they conformed to the traditional ways of doing things. Adoption amongst the other categories was fairly equally distributed, with a small margin of variation. The late majority adopters showed the second highest number at 22%, while early adopters came a close third with 21.5%, and the laggards took the last place at 20.5%.

Table 9.1 The rate of adoption of technology in creating a sustainable environment amongst residents of Roysambu²

Adoption rate	Number	Percentage
Less than one year (Early adopters)	30	21.5
1–3 years (Early majority)	50	36.0
3–5 years (Late majority)	31	22.0
Over 5 years (Laggards)	28	20.5
Total	139	100.0

The next research question sought to determine how this dominant group varied according to factors such as demographics and satisfaction. To establish how these factors influenced the dominant phase of adoption, percentages were calculated for each against the dominant group, the findings for which are displayed in Table 9.2 and then discussed.

Table 9.2 How the dominant phase of adoption varied according to demographics and satisfaction

Demographics	Number	Percentage
Gender		
Male	46	46
Female	54	54
Age group		
18–25 years	43	43
26–35 years	45	45
36–45 years	5	5
Over 45 years	7	7
Occupation		
Student	15	15
Part-time employment	14	14

2 Twenty-one respondents either declined to participate in the survey or did not report adoption of technology by answering the core question.

Demographics	Number	Percentage
Full-time employment	38	38
Self-employed	30	30
Not working at the moment	2	2
In training: Internship or apprenticeship	1	1
Education		
Primary School	1	1
High School	11	11
Certificate training	6	6
College diploma	36	36
University degree	38	38
Master's degree	6	6
Main tribe		
Luhya	69	69
Kikuyu	76	76
Others	5	5
Level of satisfaction		
Satisfied	39	39
Very satisfied	57	57
Dissatisfied	3	3
Very dissatisfied	1	1

Gender and age

The levels of adoption amongst the age groups differed significantly between the youth and the older generation amongst Roysambu residents. There were 43% of people aged between 18 and 25 years, while the highest number (45%) was amongst those who were aged between 26 and 35 years old. The lowest number of adopters in the dominant phase were those aged between 36 and 45, at 5%, while those aged over 45 years did not vary much from their closely preceding age set, at 7%.

Occupation

Full-time employees reported the highest number in the dominant phase of adoption, at 38%, which was followed closely by those who are self-employed, at 30%. Students and part-time employees did not differ much, at 15% and 14% respectively. The lowest numbers were recorded amongst those not working (2%) and those doing internships (1%).

Education

Respondents with a university degree indicated the highest figure of 38% in the dominant phase of adoption, while those with a college diploma came a close second at 36%. According to the results in Table 9.2, there was a significant drop in these numbers, with high school graduates coming in a distant third with 11% and those with master's degrees fourth at 6% of the respondents in the dominant phase.

Main tribe

It was not surprising that an overwhelming majority in the dominant phase, at 76%, identified as members from the Kikuyu tribe, while 69% were from the Luhya community. The remaining 5% were members of other tribes who participated in the study.

Level of satisfaction with the environment

As expected, the level of satisfaction was very high in the dominant phase of adoption. Respondents who indicated that they were very satisfied were recorded at 57%, while 39% participants were satisfied. A miniscule 3% were dissatisfied, while only 1% were very dissatisfied.

Discussion

In line with the diffusion of innovations theory, the first concern for the researcher was to establish whether the rate of adoption fitted the S curve and how this explained the dominant phase of adoption of technology amongst Roysambu residents. The findings indicate that there is some correspondence with the assumption made by Rogers (1983); there is usually a slow start amongst the pioneering group of adopters and this is often followed by a more established group of adopters. Even though the findings show that in the dominant phase the early majority adopters were high at 36%. The other phases of adoption seemed to vary only slightly. Early adopters were at 21.5%, late majority adopters at 22%, and laggards at 20.5%. This seems to indicate a semblance to the adoption curve, but is too close to call.

To understand these results better, the researcher looked at the outcome of the survey through the prism of yet another generalisation of the theory: the idea that there are differing characteristics amongst potential adopters. Three specific areas of the findings fit with this generalisation: occupation, education and age group. Greater receptivity for technology was found amongst the educated, who have great knowledge about the environment. The results also indicated that those with a university degree and a college diploma featured prominently in the dominant phase of adoption. At 38% and 36%, respectively, this is indicative of the fact that

the university and college graduates may have shared expertise informally amongst themselves in the learning institutions they attended and that some social structures formed as a result. In this way, their response to social pressure spiked their adoption of technology, whether or not they perceived it as valuable.

According to Kenneth, Zhao and Borman (2004), this is also about social capital, where adoption correlates with the idea of fitting in. However, those with a master's degree (6%) and those with a PhD (2%) may not fit this generalisation specifically for residents of Roysambu, more because the dominant phase of adoption consisted of a higher number of younger residents who may not yet have attained that kind of educational qualification.

The youth are also an important factor in the dominant phase of adoption. The findings indicated that those aged between 18 and 35 years of age had a combined share of 88%. One may argue that this is largely because younger people are more receptive to new innovations and are willing to try out new things more than the older generation are. There is not a big difference amongst men and women when it comes to the early majority adopters.

Technological ways of creating a sustainable environment at the community level seem to have replaced the traditional ways. People are very satisfied and praising the use of technological innovations to preserve the environment to the extent that they have forgotten their traditional roles of the community. They look to politicians to provide ways in which they can handle the environmental issues.

Conclusion

Tradition existed before technology and every community in the world has its own traditional ways of creating a sustainable environment. In many African countries such as Kenya, Nigeria and South Africa, traditional ways of conserving the environment are still followed, even with the overwhelming intrusion of technology. Achieving a sustainable environment at community level is possible only if clear rules, guidelines and boundaries are stated for both the government and the members of the respective community by clearly outlining the roles of each individual.

The African imagination related to environmental sustainability is evolving every day, with the intense technological wave playing a major role in introducing new ways of conserving the environment through, for example, the use of machines and chemicals. This has led to the fading of traditions. For example, in the Kikuyu and the Luhya communities in Kenya, trees that were of cultural significance such as the Mugumo and Kumukhuyu trees are no longer revered as before. The communities now cut down these trees and use them to make charcoal, build settlements and even

use them for cooking fuel. Other trees that were used for herbal purposes and rituals are no longer preserved. The cutting down of these trees has aggravated the environmental degradation in times of lack of rainfall in the regions.

Women, who are the major environmental caregivers, should be allowed to own the land that they conserve and it should not only be owned by men to impose rules on women. The Kikuyu and the Luhya traditional laws oppress women when it comes to land ownership. Something that is of concern is that women are not valued in society. My assumption here is that if women were to be given land to own, then their economic status could increase twofold.

Technology is good, but it also has its negative side. Despite the fact that it has led to inventions and innovations that have resulted in better ways to create a sustainable environment, it has killed the traditional ways of conserving the environment. Communities no longer think of the remedies they have at hand; they rely on and wait for the government to donate machines and chemicals to them so that they can maintain the environment. To be on the safe side, the communities need to educate their children about the traditional ways of conserving the environment rather than raising a generation that will depend exclusively on technology.

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