CHAPTER 24

Residents' Perception of Tree Planting in Minna Urban Housing Environment

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Introduction

The environmental benefits of trees in urban housing landscapes are numerous and well established in the literature. Urban trees improve air quality, cool environmental air temperatures, filter, retain storm water, absorb carbon dioxide, and contribute to healthier and more beautiful landscape (Nowak *et al*, 2008; McPherson and Simpsons, 2002). These benefits and uses range from intangible psychological and aesthetic benefits to amelioration of urban climate change and mitigation of air pollution (Mohammed and Saring, 2012). The intangibility meaning of tree relates to the perception and how people relate to the physical settings in their built environment (Muhammad, 2014). This varies from one culture to another as identifying the cultural value of trees in a community can be extremely difficult.. Historically the main benefits of urban trees relate to health, aesthetic, food, fodder, fuel wood and timber for construction, recreational benefits and expressing cultural value (Bassett, 2015). In recent times, trees in the urban built environment are important as they provide good aesthetic landscape, absorb carbon dioxide, reduce environmental temperature, reduce housing energy consumption and create a pleasant environment for different outdoor activities. There is also an important educational value of urban trees. Contact with trees, in particular for children, help to learn about nature and natural processes in an artificial environment (International Society of Arboriculture, 2011). Urban streetscape with big trees may provide urban residents with the opportunity to recover from daily stress; revive memories and regain confidence (Yang and Zhao2016). While these benefits of urban trees abound and not hidden, tree planting as an element of urban housing is fast reducing in planning, design and developmentinMinna. There is the need to provide more knowledge on the role of urban trees in the improvement of the environment and relate this to the social functions such as fostering mental and physical health of the

urban residents, increase in socioeconomic interactions and reduction in the high consumption of domestic energy.

A general observation shows that the building envelopes are being surrounded with concrete materials as a landscaping element in some areas and others are exposed to all sorts of soil erosions of various degrees in the housing environments of the study area. This presents a unique opportunity to explore the perceptions that the urban residents of Minna have for trees and other forestry elements in the housing neighbourhoods. The purpose of this study therefore was to understand how urban residents perceive trees in the built environment for urban managers and other decision makers for better management and for integrating forestry activities into social infrastructure in the built environment. Understanding the residents' perceptions towards their built environment is critical for developing an effective housing infrastructure development strategy. The study was conducted among the low-income housing neighbourhoods of the study area.

Literature Review
Benefit and Uses of Trees in the Built Environment

The benefits and uses of trees in an urban built environment range from both tangible and intangible psychological and aesthetic benefits to balance the urban climate and mitigate against air pollution (Moskell*et al.*, 2010). A number of studies carried out to investigate different tangible aspects of urban forestry show that benefits of trees in urban landscapes are numerous. Urban trees have been found to improve air quality, reduce the ambient temperatures, filter and retain storm water, sequester carbon, and contribute to healthier and more beautiful urban built environment (McPherson *et al.*, 2002; Nowak *et al.*, 2008;).Trees have long been recognised as both urban landscaping and ornamental elements. Attia (2006) investigated the use of trees in urban landscaping design in hot, arid climates of Al-Suhaymi, Cairo and discovered that the use of trees in urban landscape design was not only restricted to a purely ornamental function but also used to control and improve the microclimate around and inside the building. Urban forests are a living infrastructure that is made up of trees, shrubs, vines and other kind of vegetations that can modify the microclimate of a space by reducing the air temperature, heat, sun glare and serve as wind breakers in a built environment (Moskell*et al.*, 2010). Urban forestry is the study and management of trees for their social, economical, cultural, and environmental potentials (Zhang *et al.*, 2007). Trees are perennial plant with an elongated stem, trunk and bear leaves in most of the species. Trees are good urban natural element for creating good aesthetics and pleasant

environment for different outdoor activities (Tan *et al.*, 2015). Kuo *et al* (1998) assess the preferred pattern of high-rise buildings surrounding a public open space in a densely populated neighbourhood of Chicago concluded that the presence of trees has strong, positive effects on residents' sense of comfort, health and safety.

Sociologists have empirically established that a built environment with planned vegetation has lower crime rates compared to similar environment without vegetation. The convergence of diverse groups of people around a tree could be an informal surveillance for the neighbourhood for effective deterrents to neighbourhood crime (Kuo and Sullivan, 2001). Trees as landmarks are capable of giving a neighbourhood a new and beautiful identity that can bring diverse groups of people together (Moskell *et al.*, 2010). Vegetation in public spaces serves as the boundary demarcation that discourages criminal behaviour (Popoola, 2001).

The ecosystem urban trees promote biodiversity (Savard *et al.*, 2001), reduction of urban heat and prevention of urban storm water and nutrient runoff (Akbari *et al.*, 2001). Thus trees help to create balance in the ecosystem characterised by human activities. The concept of ecosystem directly links people and natural processes (Baur *et al.*, 2014). This informs the need for natural resource managers to incorporate an understanding of people's attitudes and perceptions about ecosystem services into natural resource planning and management. Urban settings are spaces where humans and natural elements are in close and persistent contact.

In recent times, observation shows a decrease in green area and green buffer within the urban centre under investigation. The socioeconomic activities of the urban residents kept modifying the urban landscape. It is imperative to recognise the thermal behaviour of various urban hard landscaping elements such as concrete and asphalt pavements as these have environmental impact such as heat radiation that has effect on public health. Several studies have established that the critical surface temperature of a pave surface is due to its inability to absorb the solar radiance (Chudnovsky *et al.*, 2004; Doulos *el al.*, 2004). Asphalt rooftops were the warmest urban elements in the daytime with exterior walls and trees with the highest surface temperature elements in the night time (Synnefa *et al.*, 2011). The concrete and granite slab pavements exposed to direct solar radiation increase the atmospheric temperature during the daytime due to their reflective characteristics (Yang and Zhao, 2015). Martinez and McMullin (2004) provided understandings about individual behaviour to

volunteer for urban forestry activities. Zhang *et al* (2007) investigated public attitudes toward urban trees and supporting urban tree programs in Alabama and discovered that for individual's attitude to supporting tree programs depends on stable income, education, gender, experience and residential location.

In essence, the people's perception of urban tree described by studies can be expressed in four categories: socioeconomic, environmental, cultural, health-related as well as consequential effects of trees to the built environment. In the general term evaluation of how urban trees are perceived is diversified and subjective depending on the individual knowledge, experience and value attached to it. A more important issue is evolving a sustainable urban forestry support strategy. To develop a sustainable program for urban forestry the study focus on people's perception of trees and how to integrate tree programs into social infrastructure for community comfort. Incorporating an understanding of public attitudes and perceptions about the urban tree program into management decisions can lead to objectively better decisions, increased trust in urban management agency activities and lessen the likelihood of domestic energy cost for more urban liveability.

Public Perception of Urban Trees

The public attitude and perceptions about urban trees play a prominent role in the engagement of the urban residents in urban tree, plant and management. Perception evolved from observations and interaction with the environment (Williams, 2012). Public opinion and views for the urban trees is therefore a significant central issue in this study. Perception has been defined as the ability to recognise and interpret sensory information (Cherry, 2011). Perception is seen as human attitude. Attitude is a mindset or a tendency to act in a particular way due to an individual's experience and temperament (Cherry, 2011). Perception therefore can also be understood to be a process of making meaning from the stimuli of sensation of the environment over a period of time.Perceiving differences that exist in a built environment about a phenomenon is a process that takes time and the perception degree even varies among the individuals' urban residents. Public Attitudes are a complex combination of things which include personality, beliefs, values, behaviours, motivations, objects and other characteristics common to members of a society (Kilman, 2015).

Human behaviour towards forestry in a particular society is guided by the prevailing culture and perceptions of the entire environment (Taubert and

Pretzsch, 2007). What the environment means to the individual determines his behaviour toward such environment. Behaviour is driven through a constant process of perception and interpretation mediated by an individual's experience of the world around them (Manning *et al.*, 1999). Individuals maintain a certain attitude to respond positively or negatively toward some aspect of the perceived environment.

Through culture, people, groups and individual define themselves, conform to society's shared values, and contribute to society development. Perception as a human culture of a given urban milieu varies among the individual urban residents. In many cultures around the globe for instance, sacred trees are strictly protected, cutting and injuring the tree in any way is regarded as sacrilege. The consequential effect of violating this norm can be devastating. In Greece and Rome for instance, sacred groves were protected by gods and there were strict regulations against any violation of these groves (Dafni, 2007). In some culture, trees beneath which saints are buried are regarded as sacred and must be preserved (Gorman, 2004). Therefore culture is central towards embracing or rejecting the attitude of trees planting in an urban centre. There is the need to understand the perception of the residents' who inhabit the urban centre under investigation towards tree planting in their built environment.

The study area

Minna the Niger State Capital is located in the southern part of the state between Longitude 6^0 32'E and 60 33'E and Latitude $9^0$35'N and90 36'N. The urban centre is about 120 Km away from Abuja and 140 Km Northeast of Kaduna. The estimated population of Minna is 299 373 (NPC, 2018). The city has been experiencing unprecedented population growth due to the influence of Federal Capital Territory on one hand and due to natural growth on the other hand. Figure 1.0 shows the sampled area from the Map of Minna urban centre.
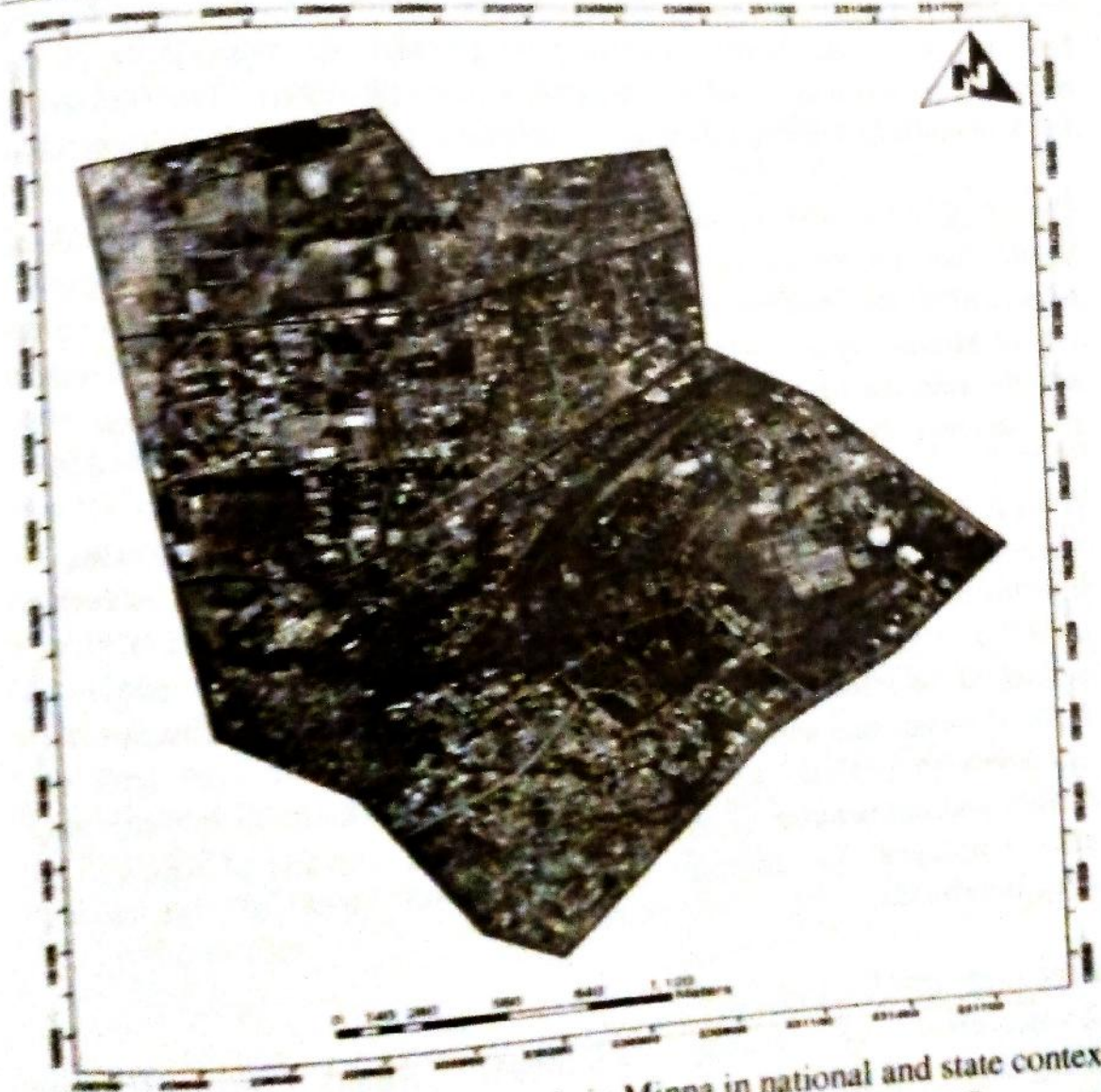
Figure 1: Selected Neighbourhoods in Minna in national and state context
Source: Modifications from Google Earth Image, 2017

Material and Method

The study of the residents' perception of tree planting in a Minna urban housing environment employed both primary and secondary sources of data. The study adopts the mixed method approach; that is both qualitative and quantitative data were collected for the study. The primary data collected include the perceived importance of urban trees for free social interactions; perceived benefits and negative features of urban trees; participation in urban forestry and incentives for volunteer time for urban tree planting activities; perceived importance of trees in reducing the environmental temperature and the perceived importance for legislation for tree planting and maintenance in the urban centre. The secondary data collected include relevant literature on effect of tree planting on environmental and health condition of people, the importance of tree planting for environmental sustainability amongst others. The instruments for data collection are questionnaire, interview guide and digital cameras.

Chanchaga LGA which covers the larger part of Minna has eleven political wards that comprises of seven neighbourhoods. Therefore, three (3) neighbourhoods were selected for the study due to their centrality in the city of Minna. Figure 1 shows the location of Minna in the national context and the selected neighbourhoods. Figure 2 shows the Google image of the selected neighbourhoods depicting the level of green space within the city.

A total of 75 houses were selected for the study and 107 questionnaires were retrieved out of which 15 were considered invalid due to incomplete information. Thus 92 completed questionnaires which represent 61% were used for the analysis. The Simple random sampling technique was employed for selection of houses for the study. Descriptive statistics in the form of mean, frequencies and percentages and a 5-point likert scale were employed to analyse the perception of the residents to environmental quality and the benefits of urban trees in Minna. The use of ARCGIS was also employed to analyse the land cover area of the selected neighbourhoods.

Findings and Discussions
Availability of Forest Elements within the Selected Neighbourhoods in Minna

The findings of the research as observed shows that 67.9% of the land area within these neighborhoods was a built-up area; where concrete and hard surface cover the land area. The analysis of the Google Earth Image of the

... neighbourhoods was shown in Table 1. It was observed that the ... land area for the selected neighbourhoods is 720.9Ha. This was disaggregated using GIS software to determine different land size allocated to the different land uses. The identified land uses and land cover comprise of built up area, green space and bare ground. Table 1 shows the proportion of different land area available to different uses in the Minna city centre.

Table 1: Land Area Available to Different Land uses in Minna City Centre

Class	Area (ha)	Percentage
Green Area	107.4	14.9
Bare ground	124.2	17.2
Built-up	489.3	67.9
Total	720.9	100.0

Source: Google Earth Image, 2017

The finding shows that the selected houses for the study revealed that 54% of the houses are without trees as all the land areas have being built up. While 46% of the houses selected have trees either in the front, backyard or both locations. The implication of this is that there is a high level of built up area with little or no recourse to planting of trees and green space in the selected neighbourhoods.

Types of Trees available in Minna Central Area

The identification of different forest commonly found in the selected neighbourhoods shows that there are 12 types of trees available at different proportion. These found trees are commo... with the savanna trees that usually grow in the tropical regions. The m... functions of these trees are to provide shades and medicinal value to ...eople. Table 2 shows the botanical and local name of the trees found in ... selected neighbourhoods.

Table 2: Some of the common Forestry Elements in the Selected Neighbourhoods

SN	Local Name	Scientific Names
1	Dogon-Yaro, Neem	Azadirac... indica
2	Lapa-Lapa	Jatroph... cura
3	Mango	Mangi... indica
4	Moringa	Moring... jera
5	Lemu	Kausrc...
6	Markee	Aunge... rocarpus
7	Gawo (Ogunwo)	Acaria...
8	Pawpaw	Carica ...ya

9	Masquerade tree	Polyalthiaspp
10	Bitter leaf	Vernominamygdalina
11	Guava	Psidiumguavaja
12	Akoko	Newbodialeavis

Source:Authors' Field Survey, 2017

Location of Forest Elements within the Housing Environments

The finding of the location of forestry elements available in the Minna city centre varies according to the preference of the house-owners and the available space to plant such plants. The analysis of the location of available trees in the Minna city centre is shown in Figure 2 thus.
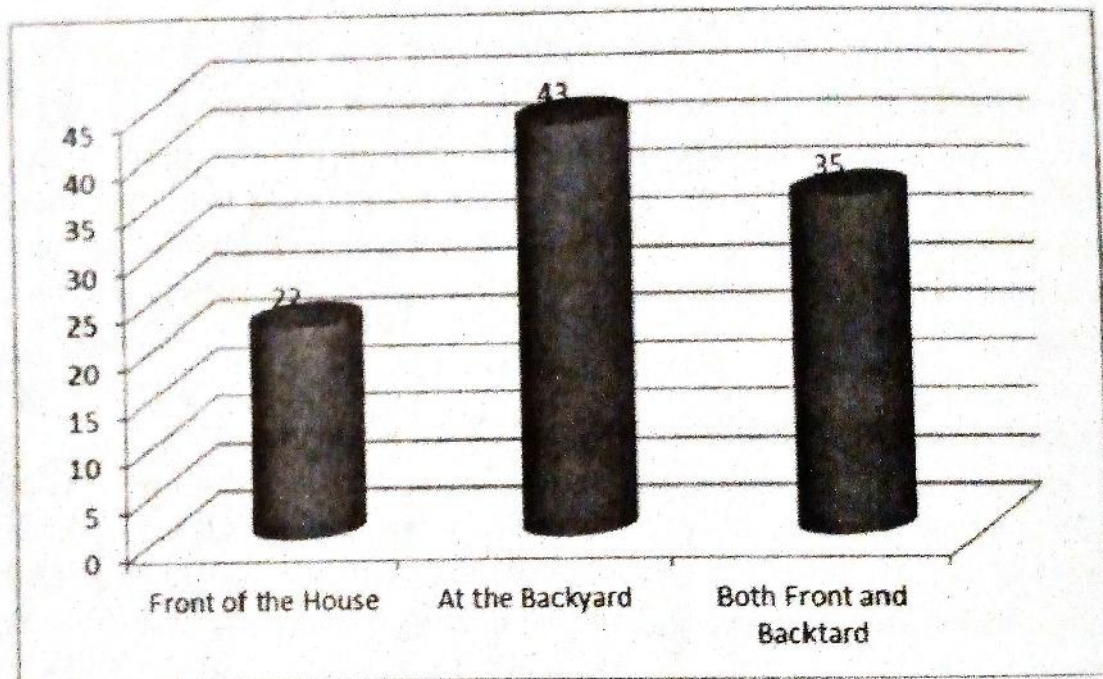
Figure 2: **The locations of the trees in the houses studied.**
Source: Authors' Field Survey, 2017

A general observation about houses with trees shows the preferred location of trees is at various locations relative to the buildings within the compound. Figure 2 shows the predominant locations of trees within the houses surveyed. The findings also revealed that 43% of the houses have trees planted in the backyard. The trees found in the backyards of the buildings are usually those that bear fruit and those that can be used for local herbs that have moderate roots that may not affect the building foundations. Plate I and II are a typical example of houses with trees in the compounds.
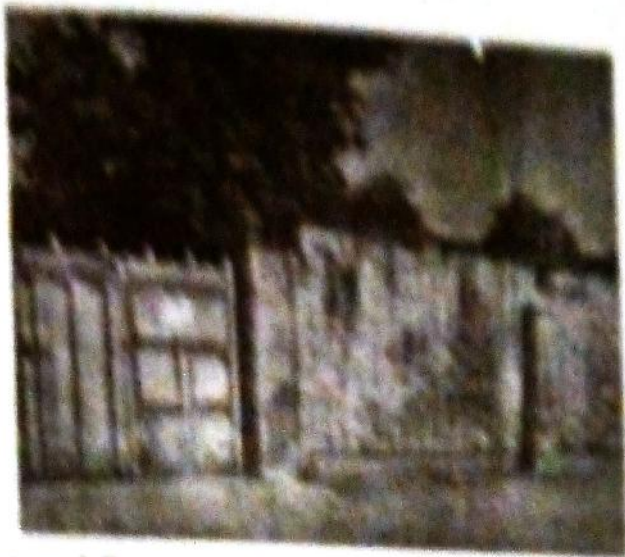
Plate I & Plate II: Tree Planted Front and Backyard of Houses in Minna

Most of the houses selected for the study has trees in front of the buildings are those that are directly planted in front of buildings especially houses along the major access roads. The types of trees found in this location are trees with deep taproots. This category of trees is mainly for medicine, nuts and for other domestic purposes which include shading for social interactions. The preference of trees at different locations relative to the building is explained by some of the respondents as thus:

Perception of the Importance of Urban Trees for Social Interactions

Trees are widely, and increasingly, recognised as an important contributor to people's wellbeing and to the liveability of places, both in rural and urban contexts. Government at different levels have emphasised the importance of managing and enhancing the national tree stock, to maximise these benefits and to ensure their continuance in the face of the threats that face trees now and in the coming years. Trees in urban areas contribute in a number of different ways. These include:

Perception of Economic Benefits of Tress in Minna City Centres

The economic benefits of tree planting and availability in residential premises as perceived by the residents of the Minna city centre is presented in Table 3. The level of perception varies but has the mean Economic Perception Index (EPI) is 4.11.

Table 3: Respondents' Perception on Economic Benefits of Trees in Minna City Centres

Perception	Level of Satisfaction					Me	S
	SD	D	N	A	SA	an	D

The presence of trees in the outdoor tends to increase property values and enhances the desirability of particular properties	0.4 5	0.1 3	0.2 0	2.6 4	1.6 0	4.7 0 S A
Tree lined streets, green corridors and open spaces are an attractive feature of townscapes, increasing the attractiveness of towns to visitors and promoting leisure activity and associated spend	0.0 1	0.0 4	0.2 0	2.9 6	0.8 2	4.0 3 A
Trees provide shade, helping to reduce energy costs	0.0 0	0.1 7	0.2 9	2.3 5	1.2 0	4.0 1 A
Tree planting can improve the appearance of derelict land, increasing land values	0.0 0	0.1 7	0.4 3	3.3 5	0.5 4	4.4 9 A
Trees provide environments that encourage inward investment and business location	0.0 3	0.3 0	1.0 8	1.6 1	0.3 3	3.3 5 N
Mean Economic Benefits	**0.0 9**	**0.1 6**	**0.4 4**	**2.4 6**	**0.9 6**	**4.1 1**

Source: Authors' Fieldwork, 2017.

The result shows that the level of economic perception of tree planting and availability within the house and the neighbourhood is high (Table 3). Respondents strongly agree that availability of trees improves the property value and desirability of properties with an EPI of 4.70, while respondents agree to the following assertions: trees increase the attractiveness of the neighbourhoods (4.03); trees provide shade and reduce energy cost (4.01) and trees improve the appearance of derelict property (4.09). However, the respondents were indifferent about the trees' contribution towards inward investment and business location with an EPI of (3.35). This implies that the residents believe on the economic benefit of trees within the house and the neighbourhood with an overall EPI of 4.11. Plate III shows one street in the selected neighbourhoods which lack tree due to extensive building and rebuilding of the urban space. The consequential effect of absence of trees is erosion and unpleasant environment as shown in the Plate III.

Minna City Growth and the Poor: Policies, Challenges and Prospects
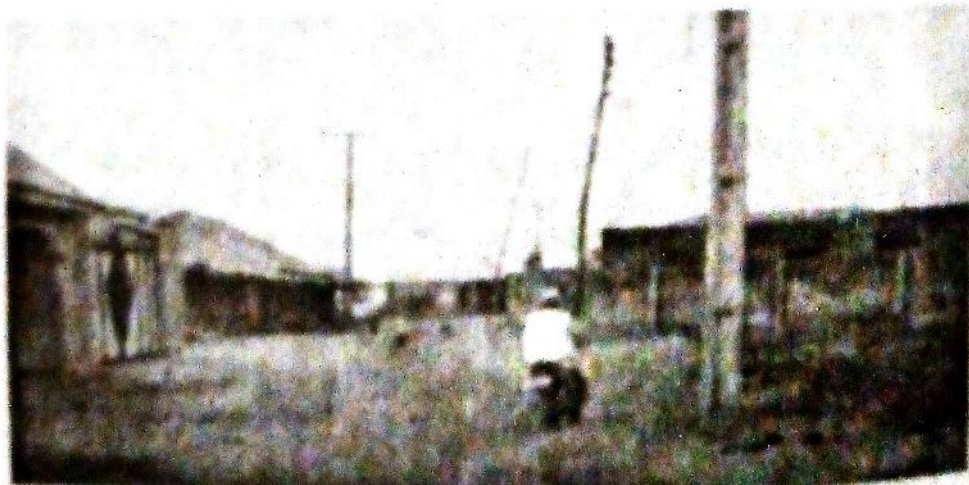
Plate III: Absence of tree planting express Housing environment in Kpakungu.

Perception of Social and amenity benefits of Trees in Minna City Centres

The Social and Amenity benefit of the availability of trees elements in the Minna city centre was obtained using the Social and Amenity Perception Index (SAPI). The mean index was estimated to be 3.88 (desirable condition) as shown in Table4.

Respondents' Perception on Social and Amenity Benefits of Trees in Minna

Perception	Level of Satisfaction					Mean	SD
	SD	D	N	A	SA		
Trees make public spaces more appealing, encouraging their use for social interaction and cohesion activity	0.3	0.1	0.2	2.0	1.6	4.1	8
	3	6	7	1	2	9	90
Trees make developed areas more attractive, breaking up the built environment visually and providing a more pleasant vista and aesthetics, and providing visual variety and seasonal change	0.1	0.4	0.5	1.7	1.5	4.3	8
	0	0	0	9	2	1	82
Trees help to obscure unattractive and unappealing areas such as industrial areas or large functionally designed buildings	0.2	0.4	0.5	1.5	0.8	3.6	8
	0	7	9	3	6	5	70
Trees provide contact with the natural environment for urban residents, which can be beneficial in a variety of ways	0.3	0.5	0.8	1.4	1.8	4.3	8
	0	7	3	1	4	1	82
Trees provide shade for outdoor activities such as children's play and social gatherings	0.2	0.4	1.0	1.6	0.4	3.6	8
	0	0	2	1	3	6	70
Social and Amenity Perception Index (SAPI)	0.2 3	0.4 0	0.6 4	1.6 1	1.0 8	3.8 8	

Source: Authors' Fieldwork, 2017

Perception of Health Benefits of Tress in Minna City Centres

The extent of perception of the health benefit of tree planting and its availability in building environment was obtained through the Health Benefit Perception Index (HEPI). The mean HEPI was 4.11 (desirable condition) and presented in Table 5.

Respondents' Perception on Health Benefits of Trees in Minna City Centres

Perception	Level of Satisfaction					Mean	SD
	SD	D	N	A	SA		
Trees and the spaces they enhance are important to people's mental health and well being	0.2 3	0.3 4	0.6 0	1.5 0	1.5 2	4.5 6	8 95

	SD	D	N	A	SA	Mean	SD
Trees help to mitigate atmospheric pollution, and reduce the impact of traffic on air quality	0.19	0.45	0.54	1.82	1.10	4.10	0.89
Trees provide separation of walking and cycling routes away from traffic, improving the attractiveness of routes for exercise and sustainable transport	0.11	0.56	0.68	1.81	0.41	3.66	0.82
Health Benefit Perception Index (HEPI)	0.17	0.45	0.64	1.94	0.88	4.11	

Source: Authors' Fieldwork, 2017

Perception of Environmental Benefits of Trees in Minna City Centres

The Environmental Benefits of the tree planting and availability in the neighbourhood was obtained from the residents of Minna city centre and the mean Environmental Perception Index (EPI) was 4.13 as shown in Table 6.

As the population of the residents of the selected neighbourhoods grows, there is increasing pressure on the existing housing stock culminating into all kinds of housing transformation activities in the form of additions, alteration and modification to the existing houses thereby decreasing the surrounding space in the housing environment. This impacts significantly on the urban forestry activity in the urban centre as most of the trees have given way and the habit of either paving the housing environment with concrete or exposing the environment to all kinds of erosion is on the increase in the urban centre (see plate IV). This attitude has been contributing to increase in both environmental heat and all sorts of erosions.

Table 6: Respondents' Perception on Environmental Benefits of Trees in Minna

Perception	Level of Satisfaction					Mean	SD
	SD	D	N	A	SA		
Trees have a positive impact in mitigating the effects of climate change	0.24	0.46	0.58	2.15	1.06	4.49	0.93
Trees reduce the "heat island effect" of localised extremes of temperature, which lead cities to have higher average temperatures than the surrounding countryside	0.021	0.32	0.56	2.01	1.04	4.14	0.88
Trees provide a diverse habitat for smaller creatures, and for nesting and roosting birds	0.10	0.22	0.36	2.26	1.13	4.07	0.88
Trees reduce atmospheric pollution by absorbing CO_2	0.12	0.25	0.33	2.38	1.03	4.11	0.78
Trees reduce the noise and visual impact of urban traffic	0.11	0.25	1.01	1.27	1.13	3.77	0.72

	SD	D	N	A	SA	Mean	SD
...an reduce wind speeds and slow rainfall, ...ing the risk of flooding.	0.18	0.26	1.01	2.01	0.76	4.22	0.89
Mean Environmental Perception Index	0.16	0.25	0.64	2.01	1.03	4.13	

Source: Authors' Fieldwork, 2017

Plate IV: Erosions due to absence of tree.

Perception of Cultural Heritage Benefits of Tress in Minna City Centres

The cultural heritage benefit of the availability of forest elements in the Minna city centre was obtained using the Cultural Heritage Perception Index (CHPI). The mean index was estimated to be as shown in Table 7.

Table 7: Respondents' Perception on Cultural Heritage of Trees in Minna City Centres

Perception	Level of Satisfaction					Mean	SD
	SD	D	N	A	SA		
Trees are part of an inherited landscape that links us with our past	0.20	0.30	0.42	2.12	1.06	4.10	0.90
They are also part of the landscape legacy we leave to those who succeed us	0.11	0.22	0.42	2.21	1.04	4.00	0.81
Trees are important identifiers of place, acting as landmarks, or as key features of local character, and often feature in the naming of urban spaces, locations and buildings, or the ways in which we identify places with one another.	0.12	0.21	0.89	1.68	1.00	3.90	0.88
Cultural Heritage Perception Index (CHPI)						**4.00**	

Source: Authors' Fieldwork, 2017

Perceived Benefits of Tree Planting to Residents of Minna City Centre

The trees planted by residents of the Minna city centre have different benefit and this highlighted in Table 8. The benefit ranges from medicinal, fruit production to provision of shade for residents to relax especially during the heat period when the temperature can soar to as high as 38°C in Minna between March and May.

Table 8: Perceived Benefits of Tree Planting to Residents of Minna City Centre

SN	Scientific Names	Local Name	Benefit
1	Azadirachtaindia	Dogon-Yaro, Neem	Shade, Medicine
2	Jatrophacauca	Lapa-Lapa	Ornamentation, Medicine
3	Mangiferaindice	Mango	Food, Shade
4	Moringaoleifera	Moringa	Medicine
5	Rutaceaespp	Lemu	Food
6	Anogeissusleiocarpus	Markee	Medicine
7	Acacia abida	Gawo (Oganwo)	Medicine
8	Carica papaya	pawpaw	Food, medicine
9	Polyalthiaspp	Masquerade tree	Ornament, medicine
10	Vernomiaamygdalina	Bitter leaf	Food, medicine
11	Psidiumguavaja	Guava	Food, medicine
12	Newbodialeavis	Akoko	Medicine, ornamental

Source: Authors' Fieldwork, 2017

Purpose of Planting Trees around their Buildings in Minna City Centre

As indicated in Table 9, most of the respondents planted trees around their houses for the purpose of providing food such as fruit, nuts and vegetable leaves. The study also revealed that 15% indicated that it is for the purpose of making their environment to be more beautiful and attractive and for the provision of medicinal plants especially Neem (Azadirachtaindia).

Table 9: Purpose of Planting Trees around the Buildings

Purpose of Tree Planting	No of Respondents	Percentage
Provision of food such as fruits	9	9.8
Making the environment to be more beautiful and attractive	14	15.2
Provision of medicinal plants	10	10.9
Provision of shade along the streets	17	18.5

Absence of relaxation opportunities	22	33.8
Importance of microclimate	6	7.6
Presence of Environmental hazards (pollution, erosion)	11	14.1
Total	82	100.0

The perception of the benefit of planting trees around the houses indicated that the respondents are of different. An Islamic teacher in Makera ward schsworks interacted with in the conduct of the... remarked that:

This Neem tree was one of the many trees we met on this land. It was supposedly preserved for providing both shelter and for medicinal purposes. When I started working on this building the trees were used for describing the house location to people since there was no proper address for each of the housing units. Today the tree serves many useful purposes among which include providing shade for people of different background who come to buy things from the shops and the leaves and bark are useful for local herbs and for curing fever, and other malaria related cases.

Another Respondent in the same neighbourhood added that:

Trees were the first shelter provider in the history of mankind. Wherever there is a tree the likelihood of people and even domestic animals gathering there is inevitable. People no longer recognise the importance of having trees in a house due to lack of knowledge about its benefits. Besides, the urban plot sizes and the organisation of the housing in urban areas hardly allow for trees to be planted around the houses due to their threats to surrounding houses which make the roots and branches to attack the houses structurally.

Plate V: Tree Planted outside the Houses for social interactions.

The predominant set of trees identified in the course of the study is Mango (*MangiferaIndice*) and Neem(*Azadirachta India*) which occurred in 15 and 12 houses respectively. Another set of common trees is Moringa (*Moringaoleifera*) and Akokotree (*Newbodialeavis*). Moringa is perceived as medicinal as its leaves are boiled and taken as food for it being effective for taken care of general body weakness and constipation related cases. The *Akoko* tree is perceived mostly for protection and ornamental for beautification of the environment as stated by a woman who deals with local herbs:

'*Moringa is highly perceived as food for its medicinal value. The boiled leaves are eaten raw and the boiled water is said to be good enough for preventing vein related pains and the leaves is a good antidote for constipations*'.

An important aspect of the surveyed was to investigate house owners' perception towards the importance of planting trees in their housing environment. The respondents recognised that trees provide positive and some negative values. The positive values include improved of natural air quality, provide shade and shelter for different kinds of unorganised associations of people for social and economic benefits. The negative views centres on the damages cause to the building foundations and other building fabrics.

These views were expressed by a 65 years old woman who processes traditional herbs and also work as a traditional birth attendant.

"Trees are the first shelter provider known to human existence. It provides foods, shelter, cool breeze and a good source of healings for many human diseases. The dearth of knowledge about the trees usefulness among the people in the cities and the availability of orthodox medicine to alternative means of treatments have been the main reason why people do not value the growth of trees in their houses. Besides tree planting require adequate caring at the nursery and constant maintenance especially during dry season and all these require some financial commitment by the individuals who value tree in his environment."

The discussion revealed that many benefits of trees to human existence have been eroded, especially among the youths in the urban areas due to lack of awareness about what trees, leaves and their roots could be used for in terms of healings, protection and prevention of many epidemic among the urban residents. The financial requirement to facilitate tree planting to maturity stage is another important reason why people perform tree planting. The negative values of trees were explained by a 76 years old Islamic clerics explained as thus:

"The values of trees go beyond producing fruits and providing shelters for human activities. Trees provide shelters to animals and even the spirit (jinns).trees are sawn to timbers and logs for human construction activities. I think one of the reasons why people do not plant trees in their houses is because some trees could serve as abode for both spirit and some dangerous animals including reptiles and birds for instance I decided to cut the Markee (Anogeissusleiocarpus) in front of my house for this reason. Markee is a tree that harbor jinns and these creatures may be disturbed by some human activities especially the children due to their ignorance of their presence around the trees and thereby get afflicted by the jinns".

Furthermore there are also trees which do not constitute spiritual threats as explained above but rather prevent some spiritual misfortunes like Thunder and thieves attack. Forestry species like cabura and sawaya (Hausa) are some typical examples of such species. The knowledge of this kind is rare among the urban residence as alternatives and more scientific proven ways are available. Consequently such has been reducing the perception of people to trees planting activities in the urban scene of Minna.

There are trees that also have spiritual values and benefits which people's attitudes are not disposed to. In the view of a 65 years old woman who also double as a native traditional birth attendant in the study area said:

'Orthodox medicines have eroded our traditional knowledge about the many benefits of certain trees of spiritual value. There are many healing antidotes that can be derived from the use of herbs prepared from some special trees which cannot be found within the urban areas except in the forestry areas. These trees like Iroko (Milletiaexelsa) and Gawo (Acacia Abida) are good for evil attacks in the dream which can lead to fear and obsession and other kind of nightmare which are very difficult to cure by the orthodox medicine.

The story was corroborated in the summary response of some of the respondents when they asserted that;
'The use of herbs prepared from barks and leaves of trees have been said to be dangerous for lack of scientific ways of preserving and prescribing the doses. However, even the orthodox medicines are products of trees and animals components. Therefore there should awareness especially among the youths on the knowledge of how to identify trees benefits and these will encourage the urban residents on the importance of trees as asset rather seen trees as mere ornaments for beautification alones".

This suggests the reason why fruits trees are more in the urban centre studied given the lack of knowledge about the healings and other spiritual values of trees around the urban built environment. Another area discovered by the study were the difficulty in identifying the different trees species even in the local dialects among the majority of the respondents. For instance most of the respondents who are civil servants interviewed could not identify most of the trees species and their perception of trees does not go beyond providing shade, fire wood and that trees could be used as wind breakers in the presence of strong winds. Some respondents argued that:

"There were many trees in this area long ago. As the area grew up the trees were cut for the houses to be put in place. There is no space for tree planting due to congestion as a result of population growth which necessitates the needs for more accommodations'.

Some of the respondents maintained that urban housing is highly susceptible to alterations as socioeconomic activity increases principal for

more accommodations as this support the house owners than tree planting economically. This suggests that housing transformations has been reducing the urban housing spaces and this is more preferred to tree planting by the house owners. Consequently the urban owners' attentions have been more on expanding construction activities rather than taking tree planting as an integral part of urban infrastructure.

The study investigated further the perception of urban residents to participate in voluntary tree planting exercise. The respondents agree to participate in voluntary tree planting activities. They maintained that tree campaign has little impact on the grassroots urban residents who are predominantly low income earners due to financial requirements for maintaining trees to mature stage. The respondents view is summarized:

'Tree planting goes beyond the ordinary public enlightenment. There must be a way of involving all the urban residents through organised community associations designated for tree planting and the trees planted must be given statutory backing due to time and little financial commitments required for nursing trees to maturity stage. By so doing surroundings housing space will be prevented from been encroached upon with additional structures as it is the case in the present times and trees cannot be cut indiscriminately by any individuals in the urban centre'.

The explanation offered by the respondents' shows that what the governments have been doing over the years is yet to have a meaningful impact on the populace without political will to encourage organized community participation and protection for trees planting campaign in the urban centres especially among the low income groups due to financial commitments required and long time it takes for a tree to be matured.

Conclusion

The goal of the paper was to understand how trees are perceived by the residents of Minna urban centre. The result of this study establishes that the existence of a tree within a house encourages socioeconomic interactions among the urban residents. However, rapid physical transformations of the houses were responsible for the high pressure on the surrounding spaces which could be used for tree growth. There is substantial dearth of forestry activities especially among the low income housing areas in the urban centre of Minna. This attitude has encouraged mass destruction of forestry species rather than preserving trees especially during construction activities. This is evidenced in the very few forestry species in the selected

neighbourhoods when compared with the quantity of homes survey and the available open lands. The perceptions of trees among the residents transcend fruits and shelter provided by the trees. However, this view reside within the elder groups (56 years and above) among the community residents. The diversified values of trees need to be promoted among the urban residents especially the youths. The study also shows that most of the medicinal and spiritual valued trees that were in existence prior to developing the neighbourhoods have been destroyed due to different human activities in the neighbourhoods investigated. This attitude has made it difficult for many urban residents to identify and know the usefulness of many of these categories of forestry species and their values for medicinal and spiritual purposes. An interesting finding is that the urban residents are willing to participate in urban forestry activities if trees and other forestry species would be provided, protected and recognised as urban infrastructure. The urban residents are also willing to participate as volunteers for tree planting in the urban centre given the recognition, motivation and encouragement by the government. Such urban residents' voluntary organisation can mobilise residents to become involved in tree planting events. The motivation is for the sake of involving the urban youths and for restoring the natural environment through volunteerism. The study also discovered that due to increasing housing transformations among the house-owners most of the public spaces meant for urban infrastructure have been converted to shops and other kind of urban accommodations. This housing transformations attitude required proper regulation and monitoring in the urban centre of Minna for protecting urban infrastructure including forestry species so as not to eliminate forestry tree without replacing it with similar specje. The study, therefore suggests, among other things, that tree planting should be encouraged through the use of organised volunteers among the urban residents with an incentive package to the volunteers for recognition. Besides, the government should evolve a policy for integrating forestry activities as part of the urban housing, infrastructure with strict monitoring for sustainable urban built environment.

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