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Residents of Neighborhoods Willingness to Pay for Park Development in Makurdi Metropolis, Benue State, Nigeria

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Abstract:

The study was conducted to assess current state of urban parks and willingness to pay for park development by residents of neighborhoods in Makurdi metropolis. Systematic random sampling was used to select 200 residents in 13 neighborhoods. Data for the study was obtained through semi structured questionnaire. The Likert scale rating was used to measure the current state of urban parks. The contingent Valuation Method was used to elicit the resident willingness to pay for park development in the study area. The results showed that the parks were in a bad state, residents were knowledgeable about the existence and benefits of park (51.8%); and willingness to pay was high (60.8%) while the mean amount willing to pay among the respondents was N444.5/month/household. Although the residents' willingness to pay was very high among the respondents, the lower bids amount was highest (80.9%) because most of the respondents were low income earners. It is therefore, recommended that more financial support by government and the private sector should be provided to develop and manage the existing parks in the metropolis in order to provide avenues for recreation and augment revenue generation. Management of existing parks in the metropolis should plant more trees to attract patrons.

Keywords: Urban parks, residents, willingness to pay, development

1. Introduction

The beauty of towns and cities is a function of its urban and architectural plan and design. Such design as high quality built environment consisting of buildings, access roads and public spaces cannot alone ensure that a town or city is an attractive and appealing place to live and work but that the landscape of parks contribute as much to the quality of the urban environment as good architecture (Sati and Joshua, 2015)

Urban parks provide immense benefits and it is expected that much spaces in urban areas will be reserved for such purposes (Collins 2014). Studies on several African countries revealed that there is intense pressure on green spaces for different human activities resulting in persistent deterioration of these spaces especially in urban areas where the pressure is more profound (Kestermont et al.2011; Cilliers et al.2012). Parks and open spaces have often lost this funding competition, implying that parks have far less tax support than they used to. The role of urban parks in the general wellbeing of urban residents is well documented by scholars; Sati and Joshua, (2015) reported that the visual appearance and attractiveness of towns and cities are strongly influenced by their green spaces. When harmony exists between green spaces and buildings in neighborhood areas, it is simply functional, livable, amenable and enjoyable. Urban parks provide habitats for wildlife regulate microclimate and perform other valuable ecological functions (Gairola and Noresah, 2010). Report by other scholars such as (Nowak et al., 1998; Cummins and Jackson, 2001; Isenberg and Quisenberry, 2002;Crompton 2001; Aldous, 2005; Groenewegen et al., 2006; Jim and Chen, 2006; Fam et al. 2008; Baycan-Levent et al 2009; Escobedo et al., 2011 and Bertram and Rehdanz, 2014) also point to the fact that the benefits of green spaces could offer include increment of property values especially houses sited close to green spaces, creation of more job avenues as many individuals will have the opportunity to work in various parks and gardens and other related businesses, and revenues will be generated to augment government expenditure . It willalso support the development of children, and promote social interaction and cohesion. Green cover and urban forests can also moderate temperatures by providing shade and cooling an area, thus helping reduce the risk of heat-related illnesses for city dwellers. However, there has been steady conversion of urban parks in Makurdi metropolis to other economic venture such as drinking joint.

It is against this backdrop that this study was conducted to assess the state of facilities of the existing Parks in the study area, ascertain perceived benefits of the establishment of urban parks in the study area and determine residents' willingness to pay for park development in the study area for decision making and policy.

2. Methodology

2.1. Study Area

The study was conducted in Makurdi metropolis. Makurdi is the capital city of Benue state. Makurdi is located in the North central Nigeria on Latitude 7.44° N and Longitude 8.32° E; situated in a valley 100m above sea level (Figure 1). Its surrounding settlements are within the Benue River Basin of the Benue valley platform. The area is largely an undulating plain which is drained by River Benue and its tributaries and by some tributaries of Guma and Katsina-Ala River emptying into the Benue River (Tamen, 2015). The area has a population about 875, 000 people according to the Benue State, Bureau of Statistic (BoS, 2015)

2.2. Sampling Procedure and Sample Size

The area was divided into 13 major neighborhoods. These are Northbank, Wurukum, High level, Low level, Wadata, Ankpa Quarters, Federal Housing Estate, Federal Low-cost, Judges Quarters, Commissioners Village, Welfare Quarters, Gyado Village, and Modern Market. Five neighborhoods were randomly selected for the study included, North Bank,

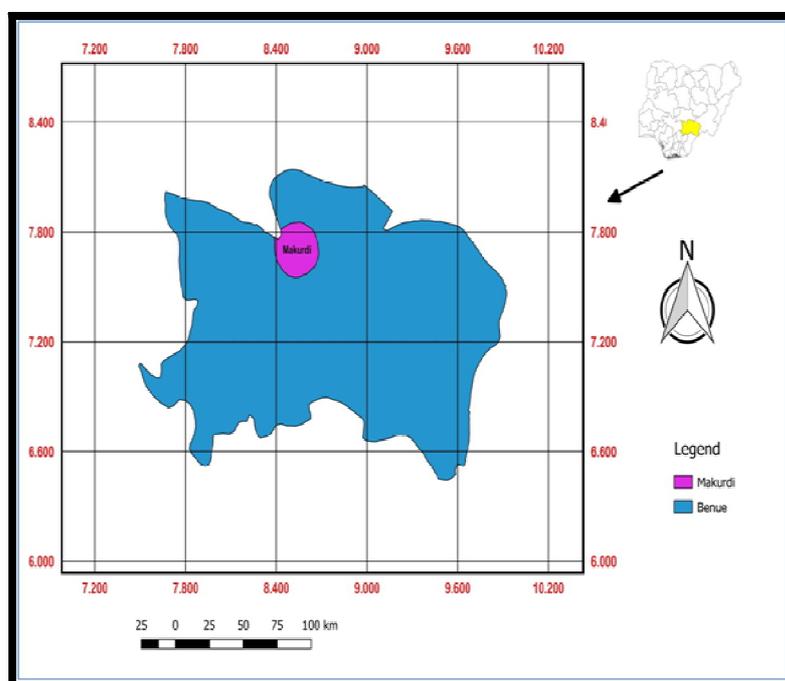


Figure. 1. Map of the Study Area

High level, Judges' quarter, Ankpa Quarter, and Commissioners' Village. Forty houses were systematically selected from each of the neighborhoods and one respondent (house head) selected from each house; The starting house was picked randomly; afterwards, every 3rd house along the routes in the area was selected until a sample of 40 respondents was obtained for each survey area. Therefore, the sample size for the study was 200. Face-to-face oral interview was also conducted with 10 visitors from each of the four major parks and gardens within the metropolis. These were; Cool off/Pages Park and Garden at Low level; Woodland/Doo Park at Kashim Ibrahim way Old GRA; Maryam Abacha Children Amusement Park, and Rocore Park at Ankpa Quarters. At each of the parks the 10 visitors were randomly selected and interviewed to know their level of understanding and perceived benefits of the park establishment; and the aspect of park (in terms of facilities) development that would likely triggers their patronage.

2.3. Data Collection

A semi-structured questionnaire was used to collect field data. In order to collect relevant information, the heads of the households or someone who is clearly involved in making decisions about the expenditures and commitments of the households in the neighborhoods were interviewed.

The study employs the payment card system of Contingent Valuation Method (CVM) estimating the value the people have on parks in their locality. The approach asks people to directly report their willingness-to-pay (WTP) for Park development in their locality as rather than inferring them from observed behaviours in regular market places (Mitchell and Carson, 1989).

2.4. Questionnaire Design

The questionnaire used in the survey was designed to extract information on Residents' perceptions of benefits of the establishment of urban green spaces and determine how much residents are willing to pay for park development in their neighborhood. The questionnaire contained two sections:

- Questions on residents' understanding and perceived benefits of urban parks.
- Contingent valuation scenario. A simple hypothetical plan for park development in the neighborhood was presented to the respondents and asked, assuming the government or community introduce a plan similar to this will they be willing to accept and pay for the development?

For this survey, dichotomous choice elicitation method was used to ask if a respondent was willing-to-pay the proposed project if offered by the State Ministry of Environment or the Community and a payment of certain amount of money is required. If the respondent answered "yes" then he/she was considered willing-to-participate in the plan, before asking whether he/she was willing to pay (WTP) and how much he/she was WTP. The bid presented ranged from ₦100 to ₦3000.

2.5. Data Analysis

A five point Likert scale rating was used to measure the current state of urban parks in the study area in line with (Dagba et al., 2017). The weighted scale was derived based on the following values: Very good (VG) = 5, Good (G) = 4, Moderate (M) = 3, Bad (B) = 2, Very Bad(VB) = 1.

The Mean Score (MS) of the respondents is expressed as $MS = \frac{\sum f}{n}$

Where :

f = Summation of the five point rating scale and

n = Number of points

$$MS = \frac{1 + 2 + 3 + 4 + 5}{5}$$

$$MS = 3.0$$

The Likert Weighted Score (WS) is expressed as : $WS = \sum_{i=1}^n f_i x_i$

The Likert Weighted Mean Score (WMS) is expressed as : $WMS = \frac{\sum_{i=1}^n f_i x_i}{N}$

Where :

f = frequency of respondent

x = Likert scale point

N= Total Number of respondents

Using the interval scale of 0.05, the Upper Limit (UL) Cut-off is MS+0.05 (3.0+0.05 = 3.05). The Lower Limit (LL) Cut-off is MS - 0.05 (3.0-0.05 = 2.95). Based on these two extreme limits any variable with WMS below 2.95 (WMS<2.95) is considered 'Bad'. Variable with WMS between 2.95 and 3.05, Moderate' any variable WMS greater than 3.05 (MWS>3.05) is considered 'Good'.

Economic valuation method as adopted by Adekunle (2005) was used to analyse Willingness to Pay (WTP) values for park development in each selected neighborhood and entire study area by application of the formulae:

$$WTP = \frac{\sum fx}{n}$$

Where:

WTP= mean willingness to pay value

Σ= Summation sign

f = frequencies of mention of plant species

x = Species value in Naira (₦) and

n = Number of respondents

3. Result and Discussion

3.1. Current State of Facilities of Existing Parks in the Study Area

The current state of the parks as presented in Table 1 shows that the parks are in a very bad state (WMS=2.25, MS<2.95).

Variable	Very good	Good	Moderate	Bad	Very bad	WS	N	MWS	Decision
State of facilities	1(5)	2(8)	5(15)	13(23)	3(3)	54	24	2.25	Very bad

Table 1: Current State of Facilities of Existing Parks in the Study Area

Mean Score (MS) = 3.0. Lower Limit = 2.95, Upper Limit = 3.05. Total Number of Respondent (N) = 24

Very Bad = MS<2.95, Moderate = MS between 2.95 and 3.05, Very Good = MS>3.05

Note: Values in Brackets Are Products of Likert Scale Values and Values outside the Brackets Are Frequency of Respondents

3.2. Perceived Benefits of Urban Parks in the Study Area

Table 2 shows that the most perceived benefit of urban parks in the study area is Social services (35.91%) followed by recreational services (22.65%). Others were environmental (16.57%), economic benefit (7.73%), aesthetic (7.18%), Health (6.08%), natural ambient and serenity (2.01%) and ecosystem services (1.51%).

Benefits	Frequency**	%
Aesthetic	13	7.18
Environmental	30	16.57
Health	11	6.08
Economic	14	7.73
Recreational	41	22.65
Social	65	35.91
Ecosystem service	3	1.51
Natural ambient and serenity	4	2.01
Total	181	100

Table 2: Perceived Benefits of Urban Parks

Source: Field Survey, 2017

** Multiple Responses

3.3. Willingness and Amount to Pay for Park Development in the Study Area

Majority of the respondents (60.8%) reported 'yes' on willingness to pay (WTP) for park development in Makurdi metropolis (Table 3), while 39.2% reported 'No'.

The amount the respondents were willing to pay for park development in the study area is shown in Table 4. The amount the respondents were willing to pay range from ₦100 to ₦3000 per month and 80.9% of the respondents were willing to pay the bid amount of 100- ₦500 while a smallest proportion of the respondents (2.5%) were willing to pay ₦3000 and above for park development in their neighborhood. The mean amount the respondents were willing to pay for park development in the study area was ₦444.50.

WTP	Frequency	%
No	78	39.2
Yes	121	60.8
Total	199	100.0

Table 3: Willingness to Pay for Park Development

Source: Field Survey, 2017

Bid Amount (₦)	Midpoint (x)	F	Fx	%
100-500	300	161	48300	80.9
600-1000	550	25	13750	12.6
1100-1500	1300	4	5200	2.0
1600-2000	1800	4	7200	2.0
2100-2500	2300	0	0	0
2600-3000	2800	5	14000	2.5
Total		199	88450	100

Table 4: Amount Willing to Pay for Park Development in Makurdi Metropolis

WTP Mean Amount = ₦444.50

4. Discussion

4.1. Current State of Existing Parks in Makurdi Metropolis

The face-to-face oral interview revealed the past and current state of facilities of existing parks in the study area. During this survey, visitors who claimed to have known the major parks (such as Pages, Woodland, MACAFA and Rocore Parks) in Makurdi metropolis for the past 15 to 30 years ago said that these parks were established by the Government of Benue state. MACAFA Park was established by the Ministry of Women Affairs and Social Development and Commissioned by her Excellency Mrs. Fatima Abubakar on the 24th July, 1998. The survey revealed these parks were established to serve recreational and event purposes while providing other ecosystem services. These parks had provided facilities for both children and adult recreation and events (such as Army day celebration, Government rallies, Picnics among others) and were seen to have been overcrowded during festive periods.

It was found during this survey that these parks except MACAFA were currently being managed by private individuals; the recreational aspect of these parks had been apparently relegated to the back as the amenity now served as eating and drinking joints. The survey also showed that other joints like Cool Off and Doo parks were carved out from Pages and Woodland Park respectively and were currently being managed by private individuals as entities.

Most of the original facilities (buildings, seats, fountain, and statues among others) of the parks were observed to be in an already dilapidated state. Other structures like kiosks, canopies as well as farming activities were seen in the parks. The trees were also being removed without replacement.

The highest proportion of respondents (13 visitors) observed that the parks had deviated from their original aim of establishment and currently in a bad state while 4.2% (1 visitors) said that the parks still maintains its original status and that they were in good state (table 2).

Reasons for the current status of the major parks in Makurdi metropolis could be traced to, lack of funding, misappropriation/diversification of fund meant for their management, dearth of professional managers, and negligence on the part of the government. This supports the findings of Collins (2014) that the overall development of urban green spaces in Africa was found to be hindered by many challenges. These challenges include urbanisation, low resource base of institutions on green spaces, lack of priority to green spaces, the influence of poverty, corruption, uncooperative attitudes of the local people and political instability. This finding is in with assertion of Oyedele, (2012), that the challenges for infrastructural development in third world countries are many; that demand surpasses the supply and finance that will stimulate rapid provision is not there.

4.2. Perceived Benefits of Parks

The knowledge of benefits of urban parks among the respondents was high. Approximately 51.8% of the respondents have this knowledge (Table 3). This may be due to higher educational status attained by the greatest proportion of the respondents. This study also found that the social benefit of park was the most frequently perceived benefit of urban parks. This agreed with the findings of Jim and Chen (2006); and Isenberg and Quisenberry, (2002) that green spaces provide avenues for recreation, support the development of children, and also promote social interaction and cohesion. This finding also support that of (Tan 2011) that landscape parks within neighborhood allow free interaction among residents of the local neighborhood.

4.3. Willingness and Amount to Pay for Park Development

The residents were willing to pay for park development in their neighborhood. According to the results from the questionnaire survey, the average amount the respondents were willing to pay for park development was N444.5/month/household. This represents the estimated value of recreational opportunities and benefit derived from urban parks within the study area. The findings on the use of CVM to value park development in this study also agrees with the works of Predeep et-al. (2007). They reported that the mean WTP for tourist for environmental fund was (Rs 6.73). Overall, 73.58% of tourist agreed to contribute towards environmental fund. Also, Kim et al., (2007) used CVM to value the World Cultural Heritage (Changdeok palace complex) in South Korea. The degree of WTP among respondents could be attributed to their high educational status which exposed them to further knowledge on the benefits of parks to the environment. This agreed with Suman et al. (2011) whose findings indicated that WTP would be higher among visitors with graduate school education.

Although the willingness to pay was very high among the respondents, the acceptance of lower bids had the highest percentage because most of the respondents were low income earners. This finding agreed with Adepoju (1990) who asserted that though people are willing to contribute, they are able to contribute more in kind than in cash and that poverty is a major constraint to urban redevelopment. The economic values obtained in this study for willingness for park development is an indication of the values society place on parks. This values in terms of their Willingness to Pay (WTP) for use and conservation of the resources is viewed as indicative rather than absolute (Adekunle (2005).

4.4. Reasons for Not Willing to Pay for Park Development

The respondents who reported a zero WTP were asked a follow-up question to explore their reasons. A large majority answered "have no extra incomes" which is true to the finding of Jim (2012). He recorded that some non-positive bidders reported financial constraints for restricted participation because they came from the low income class. 3.85% felt the parks in the metropolis were already sufficiently good and did not need further development. 21.79% (17 people) reported zero WTP because they considered park development a responsibility of government. This agreed with the findings of Jim (2012). He observed that some citizen in Hong Kong were not willing to pay for conservation of urban green spaces because they criticized government for shirking its responsibility and discharging burden on people. 3.85% believed that they had paid taxes related to urban development. Otherwise, 28.21% responded a zero WTP reason relating to mistrust of fund application (diversification of fund); and 7.69% chose "other reasons" as captured by Shang et al. (2012). A small proportion of the respondents said they were not willing to pay because of the absence of park in their neighborhood.

5. Conclusion

The finding of this study indicated that urban parks in Makurdi metropolis were in very bad state and apparently nominal parks because there was a great deviation from the original purposes of their establishment. The location of these parks is a major barrier for further expansion even when the need arises. Undeterred by the current status of the existing parks in Makurdi metropolis, the CVM approach applied to this study indicated that the residents placed more value on parks and were willing to pay for their development and establishment of new ones in their neighborhood. However, the amount willing to pay was low N444.5 per month because most respondents were low income earners. Reason for respondents not willing to pay for park development was a matter of attitude expression rather than a revelation of low perceived benefits of parks in the study area. The existing policy relating to urban park should be reviewed to involve the

residents in the development of parks in Makurdi metropolis. More financial support by government and the private sector should be provided to develop and manage the existing parks in the metropolis in order to augment revenue generation. Management of existing parks in the metropolis should plant more trees to attract patrons. Land owners of undeveloped expanse of land within the metropolis and its environs should venture into Park establishment as there is ready market for patronage.

6. References

- i. Adekunle, M.F. 2005. Economic Valuation of Forest Plants Used in Traditional Treatment of Guinea Worm Infection in Ogun State. Unpublished Ph.D. Thesis Submitted to the Department of Forestry and Wildlife Management, University of Agriculture Abeokuta. 182pp.
- ii. Adepoju, G.O. (1990), Poverty as a Constraint to Citizen Participation in Urban Redevelopment in Developing Countries: A Case Study. *Urban Studies*, 2(73): 371-384
- iii. Aldous, D. E., (2005), Education and Training Opportunities for Turf Management in Australia. *Acta Horticulturae*, 672, 71-7.
- iv. Baycan-Levent, T. and Nijkamp, P. (2009). Planning and Management of Urban Green Spaces in Europe: Comparative Analysis. *Journal of Urban Planning and Development*, 135(1), 1–12.
- v. Benue State, Bureau of Statistic (BoS, 2009). Population Figures. Bureau of Statistic, Benue State, Nigeria.
- vi. Bertram, C. and Rehdanz, K. (2014), The Role of Urban Green Space for Human Well-being. Institute for New Economic Thinking and Kiel Institute for the World Economy Working Paper, No. 1911, March 2014.
- vii. Cilliers, S., Cilliers, J., Lubbe, R., and Siebert, S. (2012), Ecosystem Services of Urban Green Spaces in African Countries: Perspective and Challenges. *Urban Ecosystem*, 18(4):681-702.
- viii. Collins, A.M. (2014), Urban Green Spaces in Africa: Nature and Challenges. *International Journal of Ecosystem*, 4(1):1-11.
- ix. Cummins, S. K. and Jackson, R. J. (2001): The Built Environment and Children's Health. *Pediatric Clinics of North America*, 48(5), 1241–1252.
- x. Dagba, B.I., Azeez, I.O. and Ancha, P.U. (2017). Assessment of Community Based Forest Management Practices in Benue State, Nigeria. *Journal of Environmental Science, Toxicology and Food Technology*, 11, issue 7 Ver. 1:1-8
- xi. Escobedo, F. J., Kroeger, T. and Wagner, J. E. (2011). Urban Forests and Pollution Mitigation: Analysing Ecosystem Services and Disservices. *Environmental Pollution*, 159(8), 2078–2087.
- xii. Fam, D., Mosley, E., Lopes, A., Mathieson, L., Morison, J. and Connellan, G. (2008). Irrigation of Urban Green Spaces: A Review of the Environmental, Social and Economic Benefits. CRC for Irrigation Futures Technical Report, No. 04/08.
- xiii. Gairola, S. And Noresah, M.S. (2010), Emerging Trends of Urban Green Space Research and Implications for Safeguarding Biodiversity. *Nature and Science*, 8(7): 43-49.
- xiv. Groenewegen, P., Van den Berg, A., De Vries, S., and Verheij, R. (2006): Vitamin G: Effects of Green Space on Health, Well-being, and Social Safety. *BMC Public Health*, 6(1):149.
- xv. Himayatullah K., Farman A., Humayun K., Mahmood S., and Saba S. (2014), Estimating Willingness to pay for recreational services of two public parks in Peshawar, Pakistan. *Environment Economics*, 5(1)
- xvi. Isenberg, J. P. and Quisenberry, N. (2002). Play: Essential for all children. A position paper for the Association for Childhood Education International. Retrieved from, http://365waystounplugyourkids.com/play_Essential_for_kids1.htm on 12th April, 2017.
- xvii. Jim, C.Y. and Chen, W. Y. (2006). Recreation Amenity Use and Contingent Valuation of Urban Green Spaces in Guangzhou, China. *Landscape and Urban Planning*, 75, 81-96.
- xviii. Kestermont, B., Frenedo, L. and Zaccai, E. (2011), Indicators of the Impacts of Development on Environment: A comparison of Africa and Europe. *Ecological Indicators*, 11, 848–856.
- xix. Kim, S.S., Wong, K.K.F. and Chao, M. 2007. Assessing the Economic Value of a world Heritage Site and Willingness to Pay Determinants: A Case of Changdeok Palace. *Journal of Tourism Management*, 28:317-322.
- xx. Mitchell, R.C. and Carson, R.T. (1989). Using Surveys to Value Public Goods: The Contingent Valuation Method (Resources for the Future); RFF Press: Washington, DC, USA, pp. 15-52.
- xxi. Mustapha, A. (2013). Application of Mann-Whitney U Test Non Parametric Statistical Tool to Temperature Variation in Kano Metropolitan, Nigeria. *International Journal of Innovation Environmental Studies Research*, 1(3):69-76.
- xxii. Nowak, D. J., McHale, P. J., Ibarra, M., Crane, D. E., Stevens, J. C. and Luley, C. J. (1998). Modelling the Effects of Urban Vegetation on Air Pollution. In S. Gryning, and N. Chaumerliac (Eds.), *Air pollution modelling and its application*, XII:399–407. New York: Plenum Press.
- xxiii. Oyedele, O.A. (2012). The Challenges of Infrastructural Development in Democratic Government. FIG Working Week, 2012: Knowing to Manage Territory, Protect the Environment, evaluate the Cultural Heritage. Rome, Italy. 6th to 10th May, 2012. 15pp.
- xxiv. Pradeep, C., Bliss, S. and Vindhyya, P.T. 2007. Non-market Economic Valuation in Developing Countries: Role of Participant Observation method in Contingent Valuation Method Analysis. *Journal of Forest Economics*, 13:259-275.
- xxv. Sati, Y.C. and Joshua, J. O. (2015): Perception of Green Space as Element of Architecture Composition of Solomon Lar Amusement Park Jos, Nigeria. *International Journal of Research in Humanities and Social Studies*, 2(8):72-80.

- xxvi. Shang, Z., Che, Y., Yang, K., and Jiang, Y. (2012). Assessing Local Community Willingness to Pay for River Network Protection: A Contingent Valuation Study of Shanghai, China. *International Journal of Environmental Research and Public Health*, 9(11), 3866-3882.
- xxvii. Suman, M., Jinyang, D., Yaoqi, Z and Chad, P. (2011). Using Contingent Valuation to Estimate the Willingness of Tourists to Pay for Urban Forests: A Study in Savannah, Georgia. *Urban Forestry and Urban Greening*, 10:275-280.
- xxviii. Tamen, J.T. (2015). Evaluation of Cost Recovery for Water Supply in Makurdi Town, Nigeria. A Dissertation Submitted to the Department of Urban and Regional Planning, ABU, Zaria.
- xxix. Tan, T.H. (2011), Measuring willingness to pay for houses in a Sustainable Neighborhood. *International Journal of Environmental, Cultural, Economic and Social Sustainability*, 7:1-12.