

Environmental Implications of Sculpture Landscape in Ancient Cities with Reference to Enugu, Nigeria

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Received July 29, 2024; revised and accepted September 20, 2024

Abstract: The study aimed to examine the environmental implications of landscape sculptures in Enugu, with the objective of examining the historical record and awareness of the cultural connotation of Landscape sculptures to the city development. Based on a qualitative approach, this study examines six landscape sculptures situated in the central business district of the city. The study employs mainly the primary sources of data which include; site visits and interviews, focus group discussions, and secondary data such as Archives and internet search engines. Using a purposive and simple random sampling technique, a sample size of 60 community elders and youth were interviewed through focus group discussion (FGD), and oral interview with the aid of a questionnaire. Data were qualitative and quantitative analysed. Findings identified six major landscape sculptures without and with cultural connotations; the Otigba Statue, the White Lion statue, and the status of Park Lane hospital, while others; were sculptures of the three wise monkeys, coal miners, and Edward Anike statue. Findings discovered that more than 90% of the youth are not aware of the historic record and connotation of the landscape sculptures in the city. Keys findings show non-marketable values of environmental implication. The Chi-square result ($X^2 = P\text{-Sig} > 0.05$) shows that the environmental implications of the sculpture landscape have no statistical relationship to the economic value of city development, but the non-marketable values show a positive implication of environmental and social implications to city development. The study suggests public enlightenment to enhance landscape sculpture preservation. Further examination of landscape sculpture preservation techniques should be considered for sustainable city development.

Key words: Landscape sculpture, environmental implication, connotation, historical record.

Introduction

Nigeria boasts a rich indigenous architectural heritage, reflecting centuries of diverse cultures and traditions across its regions. Many African cities particularly

ancient cities in Nigeria are decorated with some sculpture landscape design in the city. The sculpture landscape city design is attractive and seen as articles of environmental aesthetics. Objects of cultural heritage should be preserved, and preservation could manifest

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itself in different folds which could be environmental, animal, marine and human preservation or conservation (Leap, 2014). Sculpture landscape is an important physical evidence of ancient art forms and a major element of urban landscape art. It is one of the effective ways to artistically record the history and culture of the country or city (Xue & Dai, 2016). sculpture landscape is seen as a decorative object and linked with architecture, garden, religion, cemetery, folk art, and can affect the development of human culture, (Xiaoping and Xiaobo, 2020). For example, the sculpture landscape industry in China's city has made some achievements despite some hinges. However, some countries have not realised the role of the sculptured landscape.

Elements of city landscape sculpture could serve as Eco-tourism sites and be useful in balancing man's activities in the ecosystem to reduce global warming; Chukwurah (2000), Vandruff et al. (1995), Jones & Whitehead, (2010), Fuwakpe & Onyekwelu (2010). The sculptural landscape could serve as a cultural identity that ascribes values and meanings to both tangible and intangible elements of human experience (Xiaojing and Paul, 2020).

Enugu city is decorated with sculpture landscape design from time memorial, however, some of the sculpture landscape design areas are being affected by the ongoing rehabilitation while some are dilapidated. In some African countries such as Ghana and particularly Nigeria, cultural heritage assets such as sculpture landscapes of architectural monuments, and other landmarks sustainability are under threat caused to various factors (Beier, 1980; Feldman, 2000; Hari Srinivas, 2020; Sarfo-Mensah et al., 2010) According to Xiaoping and Xiaobo (2020), the development of some sculpture landscapes across the country is monotonous landscape forms, low artistic content, and have no relationship with the environment.

Though some authors (Chukwurah, 2022; Xiaojing and Paul, 2020; Xiaoping and Xiaobo, 2020), have examined sculpture landscape but their study for example, Xiaoping and Xiaobo (2020) centers on the development trend of Landscape Sculpture based on Big Data analysis method, while Xiaojing and Paul (2020), focus on The Role of Landscape Art in Cultural and National Identity in Chinese and European Comparisons. No previous study has examined the environmental implications of sculpture landscapes in Nigeria particularly in Enugu for the development and sustainability of sculpture landscapes across city and country. Enugu becomes the right choice as an ancient city known for diverse cultural and historical symbols. The current study, therefore, aims to investigate the

environmental implications of the sculpture landscape to support strategic action for the preservation of landscape sculpture for sustainable development. The specific objectives include:

1. To identify and analyse the historic cultural connotation of some of the city sculpture landscape design.
2. To assess the level of awareness of the historical cultural connotation of the sculptured landscape in the city.
3. To assess the environmental implications of city landscape sculpture.

The research hypothesis raised; Ho: There are no significant environmental implications of the sculpture landscape to the city development.

The study is necessary to enlighten the public on the cultural connotation and environmental implications of city sculptures, which is vital for effective preservation, and for further research on this subject. The findings of this study are also very significant to contribute to the existing knowledge that would advance policy formulation for the preservation of sculptures and landscapes to passing on to future generations for sustainable development.

Wen and White's (2020) study concluded that Landscape art is a constant feature of Chinese culture. In Europe, landscape sculpture is seen as significant in the determination of cultural and national identities; and served to support a certain definition of Chinese culture including playing some political role in Holland, England, Norway and Finland.

Preserving the city's sculpture land use areas of interest is to safe guard and prevent them from being destroyed by natural and artificial forces for life existence and continuity from generation to generation. Man's quest for housing development, agricultural activities, and industrial uses hampered the environment's natural aesthetics and historical sculpture land uses. The documentation of every form of change in the cultural historic monument or sculptures is also a means of preservation, (ICOM-CC). Technological advancement and innovations of various kinds of development particularly in the building industry which arise from pressure in population growth have damaged large parts of historical sculpture and landscape design in most Nigerian cities, (Beier, 1980; Hari Srinivas, 2020). Most developed countries practice the reservation and conservation culture of historic buildings and sculptures owned by the public and private, and the control techniques are influenced in such a way that

maintenance adaptation works are executed. However the legal maintenance provisions differ from country to country (America Institute of Conservation, 2006). Studies done by Beugelsdijk et al. (2006) revealed that cultural heritage assets have an important role to play in defining local identity, and may have value in maintaining cultural differentiation at the regional level by homogenising pressures from cultural globalisation. Kadocsa (2007) noticed that cultural values have the ability to enhance the stability of any social system. In the history of human development, the sculpture is accompanied by human civilisation, which Liu et al. (2016) used as instruments of princes and nobles to distinguish social classes and create spiritual idols.

Material and Method

The Study Area

Enugu State is one of the states in the south eastern part of Nigeria. Enugu is located between 6° 27'N and 7° 29' E. It covers about 73 square kilometers area. Enugu falls within the Equatorial belt that sits almost 223 meters above sea level. Enugu is the 29th largest in area and 22nd most populous with an estimated population of over 4.4 million as of 2016 (N.P.C, 2016).

Research Design

The study adopted the survey and descriptive research design. The study was conducted in Enugu urban, which consists of three senatorial zones. Enugu East, Enugu North, and Enugu South.

Data was collected from primary sources through a questionnaire, oral interview, and Focus group discussion (FGD) approach to draw beliefs, perceptions and attitudes of the participants through a moderated interaction (Cornwall & Jewkes, 1995; Hayward et al., 2004; Israel et al., 1998; Kitlinger, 1994; Morgan, 1996), for detailed insights into the subject matter about the connotation and historical record of the landscape sculptures in the city. The FGD technique qualitative data collection approach is useful for the study as a bridging strategy for scientific research and local knowledge (Cornwall & Jewkes, 1995).

Population, Sample, and Response rate

The current metro area population of Enugu in 2024 is 876,000 (N.P.C). Due to the need for indigenous community leaders, only titled men above the age of 70 years, community youth who are within the age limit (20-40) were identified. The reason behind the choice

of research participants is because they are the key informants and are knowledgeable about the historical records of the city sculpture landscape and due to the lack of reliable data about the total population of the community leaders and the difficulties in identifying such community elders and youth, who were willing to respond to questionnaires, the authors decided to sample 30 community leaders and 30 youth which is a total sample size of 60 participants used for the study.

Sampling Techniques and Data Collection

Stratified, purposive, and simple random sampling techniques were adopted, indicating a selection of eligible participants from the various segments of the population in the city. An FGD guide and interview were designed to explore participants' opinions about the historical records of the city sculpture landscape and the awareness of the cultural connotations of the sculpture for sustainable development. About 12 FGD and 6-person interview was conducted within the location of each monument. This was to derive the opinion of these aged people who are well informed on the history of these important areas and items of preservation. Each FGD comprised same age grade, and same sex persons to protect participants from unnecessary constraints. The instrument used for data collection was a structured questionnaire, which was designed by the researchers to elicit a response from the respondents. The instrument was divided into two major sections. A contains the socio-demographic data, and section B comprises 3 questions which is A, B, C. (A) the respondents were asked to identify and narrate the historical record and cultural connotation of the landscape sculptures around the community in the city (B) to indicate if you are aware the historic and cultural connotation behind the city landscape sculpture. (C) indicate the variables of environmental implications of landscape sculptures in the city. The questions were addressed through primary sources of data, which were generated from 12 focus group discussions (FGD) conducted among the aged title men and indigenous community youth and oral interviews. Question (A) was directed to only the elders and question (C) was addressed to the youth alone while question (D) was addressed to all the participants both the elders and youth. Each FGD comprised 5 participants which was driven by strict adherence to ethical principles in social science research (Chukwurah et al., 2022). About twelve FGD were conducted, six FGD each among the elders and the youth respectively in the 3 senatorial zones and 6 persons were interviewed within the city. The odd-

even product-moment correlation statistics were used to test the reliability of the instrument. The coefficient index was calculated, and the score obtained was 0.88. Data were analysed qualitatively and quantitatively using Chi-square (X^2). The participants were purposive selected based on gender, age, status and availability. The focus group discussion (FGD) and oral interview took place in the church premises by self and the other two researchers.

Analytical Methods

The study adopted Chi-square (X^2) statistical techniques were used to test, “Ho”: there is no significant relationship between the environmental implications of sculpture Landscape and the economic value of city development. The environmental implications of landscape sculptures were operationalised using responses (Disagree, Neutral, and Agree). “The sculpture landscape of the city has significant economic value,” while city development impact was measured by responses to “The natural landscape has little impact on the city’s development.”

Results and Discussions

Results from the Elders FGDs Identified Six Major Historic Records of Landscape Sculptures

The Sculpture of Otigba (Local Drummer)

The sculpture of a local drummer is located at Otigba junction close to the office of the fire service in the city of Enugu. It is one of the city’s most recognised and photographed monuments representing the philosophy of monism (solo entertainment). The Local drummer sculpture was designed in 1980 by a third-year student named Afuba Christopher of the Institute of Management and Technology (IMT), Enugu. The sculpture was born out of the inspiration of a giant drum called Nne-Igba (mother of drums). The sculpture was made with cement during the military regime. And serves as a place of significance to the entire environment. In the year 2020, the sculpture was vandalised by hoodlums during the #EndSars protest. However, the original artist was consulted, and soon after it was restored to its original glory.

The sculpture in Figure 2 was installed during the period of coal mining. It symbolises “hear no evil”, “see no evil” and “speak no evil”. The statue serves as a point of interaction in the state. It is located around Ozubulu Street, close to the office of the EFCC in Enugu. Currently, the sculpture is in good condition.

The white lion sculpture is solely meant to depict the name of the government house which is known as the lion building. The sculpture of the white lion is located in front of the State government house, and over the years it has gone through a series of reconstruction and repainting. It is in good condition currently.

The sculpture is situated in Enugu North close to New Market in Enugu Urban. The sculpture depicts the story of the 49 coal miners who lost their lives for protesting against low monthly wages for their labour, asking for salary increases. The antecedent occurred in 1949. The sculpture serves as a commemoration of the events that affected the inhabitants of Enugu.

The research shows that the sculpture is in very good shape. The Coal Miners sculpture in Enugu State has a historical and cultural significance to the people of the region. Enugu State was once a major coal mining hub in Nigeria. These miners played a crucial role in extracting coal, which fueled industrialisation and economic growth in Nigeria. The statue serves as a tribute to the resilience, hard work, and sacrifices of the coal miners who toiled under challenging conditions to support their families and contribute to the prosperity of the region. The status shapes the identity culture of the state.

The Edward Anike sculpture is located at Abakpa junction in the eastern part of Enugu city. It was erected in honour of a great and prominent figure in the history of Enugu State, in Nkanu land for his tireless effort for his people in the person of HRH Igwe Edward Anike Nnaji, the Ike Nike 1 of Nkanu Land. The Edward Anike sculpture holds significant historic and cultural symbolism for the people of Enugu State. Edward Anike was a renowned politician and philanthropist who made significant contributions to the development of Enugu State and Nigeria as a whole. The landscape sculpture serves as a tribute and to commemorate his legacy, leadership, and contributions to the community. Edward Anike was known for his advocacy for social justice, education, and empowerment of the people. He played a key role in promoting democratic values and championing the rights of the marginalised and underprivileged. Edward Anike’s leadership and activism exemplify the spirit of service and dedication to community welfare.

The park-lane sculpture is located in front of Enugu State Hospital, the oldest hospital in the state. It was erected in honour of the healthcare department for their efforts in providing and promoting good healthcare in the state. The sculpture depicts a figure associated



Figure 1: Sculpture of Otigba (Local Drummer)
Source: Researcher's survey (2024)



Figure 2: The Three Wise Monkeys.
Source: Researcher's survey (2024)



Figure 3: The lion statue.



Figure 4: The coal miners statue.
Source: Researchers' Survey 2024

with healthcare professionals, a nurse, a doctor, and other healthcare workers, symbolising the importance of medical care and public health in the community. It serves as a tribute and legacy to the dedication and service of healthcare professionals who have worked tirelessly to provide medical treatment and support to the people of Enugu State. The Park-Lane Hospital Landscape sculpture is still in good shape.

Findings from the Elders forum focus group discussion (FGD) show that some of the city's landscape sculpture has no cultural connotations.

Remark reaches by one FGD

The city's landscape sculpture adds immensely to the aesthetic of the city. Though some of them like the White lion landscape in the city have no cultural connotation for example, the Edward Anike landscape sculpture located at Abakpa Juncture, the coal miners, among others has cultural connotations for the city development.

The study examines the awareness level of the youth on the city landscape connotation. Findings from the youth FGD revealed that the youth are ignorant of the city landscape's cultural connotation.



Figure 5: Edward Anike.
Source: Researchers survey (2024)



Figure 6: Park-lane Hospital Landscape sculpture.
Source: Researchers survey, 2024

Summary remark reaches by the youth FGDs

The city's Landscape sculpture is seen as an object to beautify the environment. We are not fully aware of any cultural connotation. We only see it as a landmark or a mark of honor to some of the state philanthropists. We are ignorant of the historical records of the city's Landscape sculptures.

The research assessed the environmental implications of the city landscape sculptures. Findings from the research participants revealed eight values of environmental implications of city landscape sculptures which are; endowment value, existence value, emotional value, strengthening local and national identity, social cohesion, aesthetic value, and conservation of agricultural land. This finding shows that the environmental implications of the sculptured landscape are non-marketable value of city development. Another implication of the finding is that the environmental implications of city sculpture do not influence the economic value of city development but can cause a positive change or improvement to the environmental and social development of the city.

For further illustration, the Chi-square (X^2) statistical test of the result shows that the critical value for $\alpha = .05$ with $df = 4$ is 9.488. As our calculated χ^2 (1.53) is less than this critical value, we fail to reject the null hypothesis. See Table 1.

Table 1: Chi-square test results

Statistic	Value	df	p-value
Pearson Chi-Square	1.53	4	.821
N of Valid Cases	60		

The Chi-square result which shows ($X^2 = P\text{-Sig} > 0.05$) supports the findings that the environmental implications of the sculpture landscape do not influence the economic value of city development. The result summarises the finding that the sculptured landscape has a positive environmental implication for the city's development and sustainability. This finding agrees with (Landry, 1997; NORAD, 1997), that the cultural heritage of preservation could have non-marketable values, but create a sense of place and identity as an emotional value.

Conclusion

The study discovered that Enugu city landscape sculptures are articles of beautification. Not all the landscape sculptures have cultural connotations. It was

discovered that the majority of the youths are ignorant of the cultural connotations behind those sculptures of cultural significance. More importantly, the study discovered that the environmental implications of the city Landscape sculpture are of non-marketable value, and have no statistically significant relationship or influence on the economic value of city development. However, the non-marketable values of environmental implications of landscape sculpture are of positive environmental and social values to city development. The study therefore suggests regular maintenance and public enlightenment of the historic record of the city landscape sculptures for effective preservation, and sustainability.

References

- American Institute of Conservation (2006). Definition of terms. Available from: www.aic.stanford.edu/geninfo/defn.html
- Awuah-Nyamekye, S. and P. Sarfo-Mensah (2012). Mining or our Heritage? Indigenous Local Peoples Views on Industrial Waste of Mines in Ghana. InTech, Available from: <http://www.intechopen.com/books/industrial-waste/mining-or-our-heritageindigenous-local-people-s-views-on-industrial-waste-of-mines-in-ghana>
- Beugelsdijk et al. (2006). Toward a unified Europe? Explaining regional differences in value patterns by economic development, cultural heritage and historical shocks. *Regional Studies*, **40(3)**: 317-327.
- Beier, B. (1980-1980): Health culture in the Heartland, <https://www.press.uillinois.edu/books>
- Chukwurah, G.O. (2022). Preservation of urban historic and cultural heritage site in Delta State, Nigeria. *International Journal of Science and Management*, **5(2)**: 42-47.
- Chukwurah, G.O. and E. Onyekwelu (2020). Conservation of eco-tourism Site in Nigeria. *Journal of Environmental Engineering and Studies*, **5(1)**: 30-35.
- Cornwall, A. and R. Jewkes (1995). What is participatory research? *Social Science and Medicine*, **14**: 1667-1676.
- Encyclopedia, "ICOM-CC International Council of Museums Committee for Conservation", Available at: <http://www.icom-cc.org/home/#.XnRY1eozbIU>.
- Feldman, R. (2000). The Ethics of Belief. *Philosophy and Phenomenological Research*, **60(3)**: 667-695.
- Fuwakpe, A.J. and C.J. Onyekwelu (2010). Urban forest development in West Africa: Benefits and challenges. *Journal of Biodiversity and Ecology Sciences*, **1(1)**: 77-94.
- Hari, S. (2020). Heritage and Conservation Strategies: Understanding the Justifications and Implications. Policy Analysis Series E-100. April.

- Hayward, C., Simpson, L. and L. Wood (2004). Still left out in the cold: Problematizing participatory research and development. *Sociologia Ruralis*, **44**: 95-108.
- Holz, V., Kagan S., Hauerwaas A. and P. Wedler (2018). Culture in sustainable urban development: Practices and policies for spaces of possibility and institutional innovations, *Journal of cultural heritage management and sustainable development*. *City, Culture and Society*, **13**: 32-45.
- Jones & Whitehead for City of Melbourne (2010). Street Trees & Climate Change: Issues & Strategies
- Israel, B.A., Schulz, A.J., Parker, E.A. and A.B. Becker (1998). Review of community-based research: Assessing partnership approaches to improve public health. *Annual Review of Public Health*, **19**: 173-202.
- Kadocsa, G. (2007). Entrepreneurial management. Budapest and München: Amicus Press.
- Kitzinger, J. (1994). The methodology of Focus Groups: The importance of interaction between research participants. *Sociology of Health and Illness*, **16**: 103-121.
- Landry, C. (1997). Forward to the past: Cultural heritage a trigger for renewal? *Urban Age*, **4(4)**: 8-15.
- Liu, N., Yu, G. and S. Mao (2016). Trend measurement of economic management research based on network data. *China Soft Science*, **(4)**: 133-142.
- The Leap (2014). What Is Conservation; The Four Area Uncovered. Available at: [https:// www.theleap.co.uk/what-is-conservation/](https://www.theleap.co.uk/what-is-conservation/).
- Morgan, D.L. (1996). Focus Groups. *Annual Review of Sociology*, **22**: 129-152.
- National Population Commission (2016): Official gazette for the national population and housing survey. Abuja, Nigeria.
- Norad (1995). Initial Environmental Impact Assessment, series 12: Urban Development, NORAD, Oslo.
- Van Druff, L.W., Leedy, D.L. and F.W. Stearns (1995). Urban wildlife and human well-being, *In*: Sukopp, H. Numata, M. and A. Huber (eds.). *Urban Ecology as the Basis of Urban Planning*. SPB Academic Publishing, Amsterdam, pp. 203-211.
- Xiaojing, W. and W. Paul (2020). The role of landscape art in cultural and national identity: Chinese and European comparisons. *Sustainability*, **12**: 5472. doi:10.3390/su12135472
- Xue, T. and L. Dai (2016). Spatial characteristics and influencing factors of urban activities from the perspective of big data: A case study of six districts of Beijing. *Urban Issues*, **(4)**: 25-30.
- Zhou, X. and X. Lian (2020). Discussion on development trend of landscape sculpture based on big data analysis method. *Journal of Physics: Conference Series*, **1550**: 032035.

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