



Campus scenery as a tool for sustaining academic environment. (A case study of Abubakar Tatari Ali polytechnic, Bauchi, Bauchi state)

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Abstract

Most Nigerian colleges, polytechnics and universities do not have an effective campus scenery design. This has exerted major strain on the welfare and productivity of staff and students in the institutions. Some of the reasons for ineffective campus scenery in Nigeria are inadequate resources for guiding the development of the scenery, saddleless of physical planning unit with the responsibility of campus activities, lack of campus master plan that will guide campus scenery design, poor maintenance of existing limited scenery elements, and lack of research to guide the institutions in developing campus scenery design. Hence adequate attention on campus scenery is highly required. This research study investigates the relationship between campus scenery and the sustainability of academic environments in higher institutions of learning with particular reference to the Abubakar Tatari Ali Polytechnic, Wuntin Dada campus, Bauchi, Bauchi state. A quantitative research design was adopted, using a survey of students and staff across selected unit schools. Data were collected on perceptions of campus scenery (green spaces, architectural design, recreational facilities, and artworks) and their impact on learning efficiency, social interaction, mental well-being, and institutional image. Results were analyzed using descriptive statistics and regression analysis. Findings reveal a significant positive correlation between well-maintained campus scenery and students' academic performance, institutional satisfaction, and overall sustainability of academic environments. Recommendations are made for higher institutions to adopt structured campus landscaping and maintenance policies.

Keywords: Scenery, campus, institution, environment

Introduction

The sustainability of higher education institutions extends beyond academic programs to the physical environment in which learning occurs. Campus scenery has measurable impacts on students' academic productivity, mental health, and institutional loyalty. The scenery on campuses plays a significant role for the daily campus life and activities. It will also affect the educational system and academic researches positively (Ahmet, Sertac & Metin, 2016) [5]. Campus scenery continues to be one of the most defining aspects of institution's identity and has a great impact on quality of every day's life for students, staff and other visitors. Providing well scenery's around classes, places for interacting with friends in the evening time, or places for sharing traditions that connect the present with the past are just a few ways that scenery shapes academic experience (Andrew, 2018) [4]. In an age of online and off campus learning, institutional scenery is now playing a critical role in both attracting and retaining staff and students and fostering meaningful engagement, conversation and participation (Perry, Elly & jim, 2017) [19]. The entire campus environment becomes a landmark space with the gateways and associated academic, residential, commercial and celebratory uses. The overall scenery, hence reinforces the vision of the campus and its park setting, and defines the character of the various open spaces (Adekunle & Basoron, 2016) [1].

The importance of scenery in our Campus environment is multi-dimensional and its benefits are unquantifiable. In many cases, people do not understand the importance of scenery until they are gone, when their water supplies disappear or their soil erodes quickly or the local climate changes. Scenery provides benefits such as erosion control, flood prevention, moderation of weather extremes and their

impacts, maintenance of biodiversity, filtration of pollutants from water (mitigation of the effects of salinity) and air (removal of carbon dioxide from the atmosphere), preservation of soils and renewal of nutrients, production of food and fiber for human use, provision of shade and aesthetic appeal, opportunities for recreation, etc. (Adebenga, 2013).

The major obstacle to scenery planning and development in Nigerian institute of learning is largely economic, and public awareness about its importance and relevance is lacking (Oduwaye, 1998) [18]. Most Nigerian colleges, polytechnics and universities do not have a defined campus scenery plan design. This has exerted major strain on the welfare and productivity of staff and students in the institutions (Adekunle & Basoron, 2016) [1]. Some of the reasons for ineffective campus scenery in Nigeria are resources for guiding the development of the scenery, saddleless of physical planning unit with the responsibility of campus beautification, poor maintenance of existing limited scenery elements, and lack of research to guide Polytechnic, colleges and universities in developing campus scenery plan design (Elf,1996) [7]. Therefore, Nigerian colleges, polytechnics and universities deserves attention on campus scenery development which this study intend to conduct with particular reference to Abubakar Tatari polytechnic, Wunti dada campus Bauchi which have similar problems.

1. Statement of the Problem

The physical environment of higher institution plays a vital role in sustaining academic activities. Scenery today is a basic requirement for human survival (Morley, 2008) [15]. Pollution has no natural boundaries; therefore, cooperation at all levels of government and academic institutions of

learning to avert the adverse effect is very imperative, as man advance in technology, so also advance in destroying his environment increase. And this destruction can only be arrested and the ill-effects reversed through effective scenery planning and management. No responsible member of any academic society can advocate for absence of scenery (Lovejoy, 1970) ^[12]. Literature has proved that a well-structured scenery may create a pleasant experience and encourage students to spend time to learn and positive socialize on campus (Hajrasouliha, 2017; Carrus *et al.*, 2015) ^[9], help students lead more effective, self-disciplined lives (Taylor *et al.*, 2002) ^[21], enhance concentration and improve academic performance (Kweon *et al.*, 2017 ^[10]; Matsuoka, 2010 ^[16]; Li & Sullivan, 2016) ^[13], promote students mental health (Wang *et al.*, 2018) ^[23] and increase physical activity (Dyment & Bell, 2007) ^[6], students in Nigeria and other African countries have highlighted the benefit of green infrastructure (Abimbola & Agboola, 2023) ^[2]. Empirical evidence linking campus scenery directly to sustainable academic environment remain insufficient and fragmented.

2. Objective of the Study

1. To examine the effect of campus greenery and landscaping on students' concentration and academic performance.
2. To evaluate the relationship between architectural aesthetics and institutional satisfaction.
3. To determine how recreational and cultural scenery influences social interaction and mental well-being.
4. To assess the overall impact of campus scenery on institutional sustainability.

Literature Review

Concept of Scenery: Scenery is define as art of arranging landform, structures (vertical and horizontal), Vegetation, water and climate to make good outdoor space. It is the integral part of our culture and plays essential roles in the quality of our environment, economic wellbeing, as well as physical and psychological health (smith, 1997) ^[20]. Scenery also operates as a symbolic and cultural construct. Beautiful, well maintained campus landscapes often reflect institutional identity, prestige and commitment to quality education. Consequently, in higher education, scenery serves not only as a decorative element but as an active toll for sustaining academic life, engagement, and productivity (Wilkins *et al.*, 2022 ^[24]; Abimbola & Agboola, 2023) ^[2]

Concept of Campus: Campus is the buildings of a college, polytechnic or university and the land that surrounds them (online Cambridge dictionary). The campus is not only a physical space but also a symbolic representation of institutional values, culture, and identity. A well designed campus foaster community, collaboration, and belonging, while also serving as a marketing tool to attract students, staff, and funding. Recent studies emphasize that student's perception of campus design and facilities significantly affect their satisfaction, well-being, and academic performance (Wilkins *et al.*, 2022 ^[24]; Mpunda & Shen, 2024) ^[17]

Concept of Campus Scenery: can be seen as the physical embodiment of a college's value, providing space for study, play, outdoor events, aesthetic appreciation which also divided into two as Hard and Soft scenery. Scholars

emphasize that campus scenery serves both functional and symbolic roles. Functionally, it provides spaces for relaxation, recreation, and restoration, thereby enhancing student's psychological well-being and academic focus (Kaplan & Kaplan, 1989 ^[11]; Ulrich, 1991) ^[22]. Symbolically, it reflects the identity, cultural, and prestige of an institution, shaping how students, staff, and visitors perceive the institution environment (Wilkins *et al.*, 2022) ^[24]

1. Benefits of Campus Scenery

Academic benefits: Students in visually appealing and well maintained campuses report higher level of academic engagement and concentration (Wiilkins *et al.*, 2022). Access to campus greenery is link with improved cognitive performance, reduced mental fatigue and better learning outcome it also give an atmosphere for teaching and research activities.

Aesthetic benefit: A beautifully scenery campus environment is a well suited place for living, learning, meditation, therapy, recreation, and overall human health and well-being. Campuses all over the world, prides in the beauty of its environment. Carefully scenery and 'manicured' lawns and gardens, and trees properly situated maintained and trimmed makes for a qualitative learning environment (Adebenga, 2013).

Health and Social benefits: Exposure to green spaces reduces stress, anxiety and depression among students (Ulrich, 1991 ^[22]; Liu *et al.*, 2025) ^[14]. Attending the garden or gardening is a way to exercise; workers with a view of natural elements, such as trees and flowers, have been found to experience less job pressure, were more satisfied with their jobs and reported fewer ailments and headaches than those who had no outside view. Playtime and recreation in outdoor green spaces can have a positive impact on staff and students

There are also food, medicinal, and social products which are fundamental to developing and maintaining human health and well-being that are directly produced from grasses, shrubs, and trees planted in campus Scenery, for example, lemon grass, Apples from Apple trees, *Ewuro* (*Vernonia amygdalina*), *Dongoyaro* leaves (*Azadirachta indica*), fibre from palm trees, to mention but a few. Mango trees while providing shades and aesthetic benefits also produces fruits for human consumption (Adebenga, 2013).

2. Environmental benefits

Erosion Control: The roots of plants (grass, shrubs and trees) serve as an extensive net that holds the soil in place, thereby preventing excessive erosion of the soil and its nutrients. The roots also absorb water from the soil, allowing the trees to act as natural storage tanks of freshwater, and slowing the loss of rainwater from the ecosystem through runoff. Some of the water absorbed by trees is released into the air as water vapor through the leaves; this restores moisture to the atmosphere and helps maintain the water cycle in the local environment (Adebenga, 2013).

Microclimate Regulation: Tress and green lawns help moderate campus temperature by providing shade and reducing heat absorption from built surfaces. This mitigate

the urban island heat effect, by creating a cooler and more comfortable environment for students and staff (Liu *et al.*, 2025)

3. Problems of Campus Scenery in Nigeria

Scenery today a basic requirement for human survival (Morley, 2008) [15]. Pollution has no natural boundaries; therefore, cooperation at all levels of government and academic institutions of learning to avert the adverse effect is very imperative, as man advance in technology, so also advance in destroying his environment increase. And this destruction can only be arrested and the ill-effects reversed through effective scenery planning and management. No responsible member of any academic society can advocate for absence of landscaping (Lovejoy, 1970) [12].

The problems of campus scenery in Nigeria involved physical, socio-economic, cultural, legal, and administration (Oduwaye, 1998) [18].

Physical: Physically, the problem includes ecological, lack of campus infrastructure and lack of adequate open-space planning and management within the institutions (Oduwaye, 1998) [18].

Socio-economic: Include low funding to institutions, lack of public enlightenment and participation to both staff and students of the institutions.

Legal and administrative problems: This include general absence of specific laws on campus scenery planning requirements, lack of political will on the part of management, lack of appropriate manpower, coordination and absence of a multi-disciplinary approach to physical planning administration. Despite all the problems mentioned above, little attention has been given to deliberate campus scenery planning and implementation in many institutions of higher learning in Nigeria (Oduwaye, 1998) [18].

4. Campus Scenery development in Nigeria

University of Ibadan campus, the former College of Arts and Science which now is the North Campus of the Ibadan Polytechnic and the University College Hospital, Ibadan, could be described as the pioneers of modern campus scenery design as an art in Nigeria. The University of Ibadan permanent campus was designed as a broad ornamental lawn with an informal grouping of clumps of trees. Courtyard gardens, with herbaceous planting and paving shaded with shrubs, were provided. This design was greatly influenced by the humid climate which encourages rapid growth of plants (Falade, 1998) [8]. The Obafemi Awolowo University (formerly University of Ife) campus could be regarded as one of the most beautiful campus scenery in Africa. The firm of A.M.Y. Architects and Engineers of Hanfa, Israel, prepared the master plan for the central area of the campus. The scenery plan was prepared by the planning and scenery department of Wisconsin's College of Agriculture and Life Sciences under the guidance. The design and implementation of the scenery

plan of the campus is under the skilful ingenuity of planners and horticulturist (Oduwaye, 1998) [18]. Other institutions of notable scenery planning characters in Nigeria are The International Institute of Tropical Agriculture, Ibadan, The recent trend in the environmental campaign by the government and other individuals has encouraged many academic institutions to participate in the development of campus Scenery and general beautification exercise of the campuses in various parts of the country.

Methodology

The target population for this research includes staff, students and heads of planning units of the polytechnic. There are about 21,772 students and 727 staff in the polytechnic making the total of 22,044. 60 students and 22 staff were taken from each of the six (6) schools and five 5 from physical planning unit, making a total of 400 samples considered in this research base on Krejcie and Morgan sample table of 1970. This research adopt a quantitative, cross-section survey design to examine the relationships between campus scenery (independent variables) and academic environment sustainability (dependent variables). A stratified random sampling technique was used, the strata was define by respondent category (Higher National Diploma, National Diploma, National Certificate of Education and Degree undergraduate). Instrument of Data Collection was a structured questionnaire with five sections was developed using a 5-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree). The sections covered: campus greenery and landscaping, architectural design and aesthetics, recreational/cultural scenery, mental and social well-being, and institutional sustainability. The secondary data were obtained from textbooks, seminar papers, journals, project dissertations and research materials on campus scenery. Simple descriptive statistics was used in data analysis. Tables and charts were employed to present the magnitude of occurrences of the variables that were obtained.

Description of Study Area

Abubakar Tatari Ali Polytechnic (ATAPOLY) is owned state tertiary institution which is located at Wuntin Dada of Bauchi metropolis. It was established by edit No. 1 of 1988. The institution offers courses of National diploma, Higher National Diploma, National Certificate of Education and Degree programs. ATAPOLY. Bauchi is located on latitude 10° 19' 55'' and 10° 20' 58'' and longitude 9° 50' 50'' and 9° 51' 29'' East of the prime meridian. ATAPOLY has a total land mass of 113.5Hectare as main campus which is located in wuntin dada within Bauchi metropolis. Bauchi state is well linked with other state like Gombe and Taraba through Gombe road, Plateau and Kaduna states through Jos road, Kano and Jigawa States through Ningi road, Yobe and Borno states through Maiduguri road and Dass, Tafawa-Balewa and Plateau state through Dass road. It covers a total land area of 49,119 square kilometers

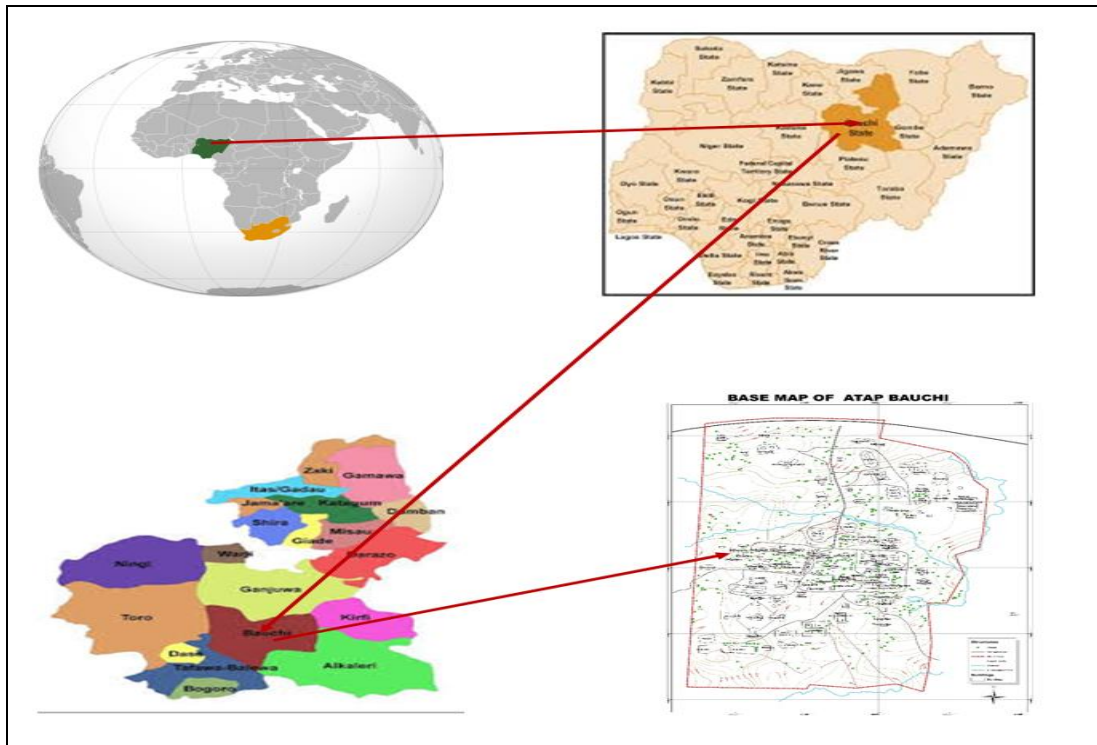


Fig Map of Glove showing Nigeria, showing Bauchi, showing Study area

Data Analysis

Descriptive statistics was used (mean, frequency, percentage) summarized respondents’ perceptions. Correlation analysis examined relationships among

variables were Pearson’s correlation coefficient was used. Multiple regression analysis tested the predictive power of campus scenery on sustainability of academic environment.

Table 1: Descriptive statistics of campus scenery and academic environment outcomes

Variable Mean(M)	Std. Deviation	N
Green Infrastructure 3.85	0.74	400
Landscape Aesthetics 3.62	0.81	400
Accessibility & Usability 3.94	0.69	400
Maintenance & management 3.47	0.88	400
Biodiversity & natural features 3.58	0.76	400
Student well- being 3.73	0.72	400
Academic engagement 3.65	0.70	400
Student satisfaction 3.82	0.75	400

Source: Author’s 2025

Table 2: Correlation Matrix (Pearson’s r)

Variable 1	2	3	4	5	6	7	8
Green infrastructure 1							
Aesthetics. 62**	1						
Accessibility. 55**	.58**	1					
Maintenance. 48**	.51**	.44**	1				
Biodiversity. 60**	.57**	.50**	.41**	1			
Well-being. 56**	.49**	.45**	.40**	.50**	1		
Engagement. 49**	.43**	.41**	.38**	.44**	.58**	1	
Satisfaction. 61**	.55**	.52**	.47**	.54**	.59**	.62**	1

Source: Author’s 2025

Note: $p < 0.01$ (2-tailed)

Table 3 Multiple Regression Analysis (dependent variable)

Predictor B Std. variable error	Bete(B)	t-value	Sig. (p)
Green infrastructure 0.28 0.05	.34	5.60	.000
Landscape Aesthetics 0.15 0.06	.18	2.50	.013
Accessibility & Use 0.12 0.05	.14	2.30	.021
Maintenance & Mgt. 0.09 0.04	.11	2.25	.025
Biodiversity & Nature 0.17 0.05	.19	3.40	.001

Source: Author’s 2025

Model summary: $R = .73$, $R^2 = .53$, adjusted $R^2 = .52$, $F(5,394) = 89.42$, $p < .001$

Result Analysis

Table 1 of descriptive statistics shows accessibility and usability ($M=3.94$) highest, while maintenance and management ($M=3.47$) was lowest, suggesting upkeep of campus scenery is a major concern.

The correlation analysis in Table 2 revealed significant positive relationship between campus scenery and academic environment outcomes. For instance, green infrastructure was strongly associated with student satisfaction ($r=.61, p<.01$).

The regression model in Table 3. Indicated that campus scenery dimensions collectively explained 53% of the variance in student satisfaction ($R^2 = .53, F = 89.42, p < .001$). Among the predictors, green infrastructure ($B = .34$) and biodiversity ($B = .19$) made the strongest unique contribution.

Discussion

The findings confirm that campus scenery is not merely aesthetic but a measurable factor that enhances academic performance, satisfaction, and sustainability. Green spaces were found to have the strongest effect, validating theories in environmental psychology. Institutions with deliberate landscaping policies will recorded higher student satisfaction, supporting the idea that physical environment shapes educational outcomes.

Conclusion

The study concludes that campus scenery plays a significant role in sustaining academic environments in higher institutions. Institutions should

Recommendations

1. Invest in campus greening projects and eco-friendly landscaping.
2. Integrate architectural aesthetics with functional academic spaces.
3. Provide recreational and cultural scenery to encourage interaction and well-being.
4. Adopt regular maintenance policies to sustain campus beauty and functionality.
5. Institution should increase funding in maintenance scenery within the campus.

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