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The Influence of Landscape Layout and Lighting on Perceived Safety

Ademakinwa Olasunmbo O [1*], Bodunde Victor O [2], Omokolade Oluwaseyi D [3], SUNDAY David O [4], Adenubi O O [5]
[1-5] A Study of Master's Students in the Department of Architecture, University of Lagos, Nigeria

* Corresponding Author: **Ademakinwa Olasunmbo O**

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Abstract
Campus safety remains a critical concern in higher education, making it essential to understand how physical environmental features shape students' sense of security. This study investigated the influence of landscape layout and lighting on perceived safety at the University of Lagos (UNILAG) campus, evaluating key landscape features including pathways, vegetation density and placement, and open spaces, alongside varying lighting levels. Data were gathered from 111 Master's students in the Architecture Department using structured questionnaires across selected campus locations, including high-traffic areas, isolated pathways, parking facilities, and recreational spaces. Grounded in Crime Prevention Through Environmental Design (CPTED) principles and environmental psychology theories, the study identified patterns between specific environmental features and perceived safety levels. Findings revealed overgrown vegetation (mean=4.630) and poor lighting (mean=4.928 priority) as top concerns, with open visible spaces enhancing safety (mean=4.937). It concludes that targeted lighting and maintenance improve perceptions; recommends prioritizing streetlights on isolated pathways.

Keywords: Campus lighting, Crime Prevention Through Environmental Design (CPTED), Landscape layout, Perceived safety, University of Lagos (UNILAG)

1. Introduction

The university campus offers an academic and sociocultural environment for community development among individuals from diverse backgrounds. As a hub for knowledge acquisition and a symbol of human social civilization, it plays an essential role in societal progress (Dong *et al*., 2023) [6]. Iranmanesh *et al*. (2022) [13] argued that students' interaction with urban spaces increases their sense of belonging and strengthens city-campus relationships. Similarly, investments in education contribute to personal salaries and national GDP growth (Li *et al*., 2023).

Universities, as complex organizations with diverse users, are susceptible to security threats. Nigeria, Africa's most populous nation, faces rapid urbanization: 53.4% of its ~122 million people lived in urban areas in 2023, with a 4% annual growth rate double the global average (ISS Africa Futures, 2024; Intelpoint, 2025; Novatia Consulting, 2024) [16]. This strains education infrastructure. At UNILAG, adaptable learning spaces with furniture enhance environmental perceptions, paralleling safety via design (Adeyemi *et al*., 2025) [1].

Campus safety encompasses environmental design factors (Huang, Ceccato, & Kyttä, 2022) [10]. Nigerian contexts demand cost-effective strategies, as landscapes shape first impressions (Cheche *et al*., 2023) [4].

1.1. Objectives of the Study

The main objective was to investigate how landscape layout and lighting influenced perceived safety among Master's students in UNILAG's Architecture Department, developing evidence-based recommendations. Specific objectives were:

To identify perceived safety challenges associated with landscape layout and lighting at UNILAG.

To determine landscape and lighting factors militating against students' sense of security across zones.

To assess how pathway design, vegetation density, open spaces, and lighting levels influenced perceived safety.
To recommend strategies improving perceived safety and security management.

2. Literature Review

University campuses represent unique urban ecosystems where physical design directly influences human behavior and security perceptions. While traditional safety measures emphasize personnel and technology, growing evidence demonstrates that landscape layout and lighting serve as powerful, cost-effective determinants of how students experience their environment—particularly during vulnerable evening hours. This literature review critically examines these relationships through the lens of Crime Prevention Through Environmental Design (CPTED) principles, with specific attention to pathways, vegetation management, open spaces, and strategic lighting
The analysis holds particular relevance for the University of Lagos (UNILAG), where rapid urbanization compounds campus safety challenges amid Nigeria's position as Africa's most populous nation. Architecture Master's students—trained to analyze spatial dynamics—offer uniquely informed perspectives on these environmental cues, bridging theoretical design principles with lived campus experience. Grounded in environmental psychology and global CPTED applications, this review identifies evidence-based strategies that align with UN Sustainable Development Goals (SDGs) 11 (safe communities), 16 (peaceful societies), and 15 (sustainable land management), while informing the current study's methodology and UNILAG-specific recommendations

2.1. Conceptual Framework

Natural surveillance forms the framework's core, linking clear sightlines from pathways and low vegetation directly to heightened safety perceptions. Access control emerges through lighting-guided routes, while territorial reinforcement and maintenance signal institutional care via trimmed landscapes. This model integrates SDG 11's safe public spaces with SDG 15's ecosystem balance.

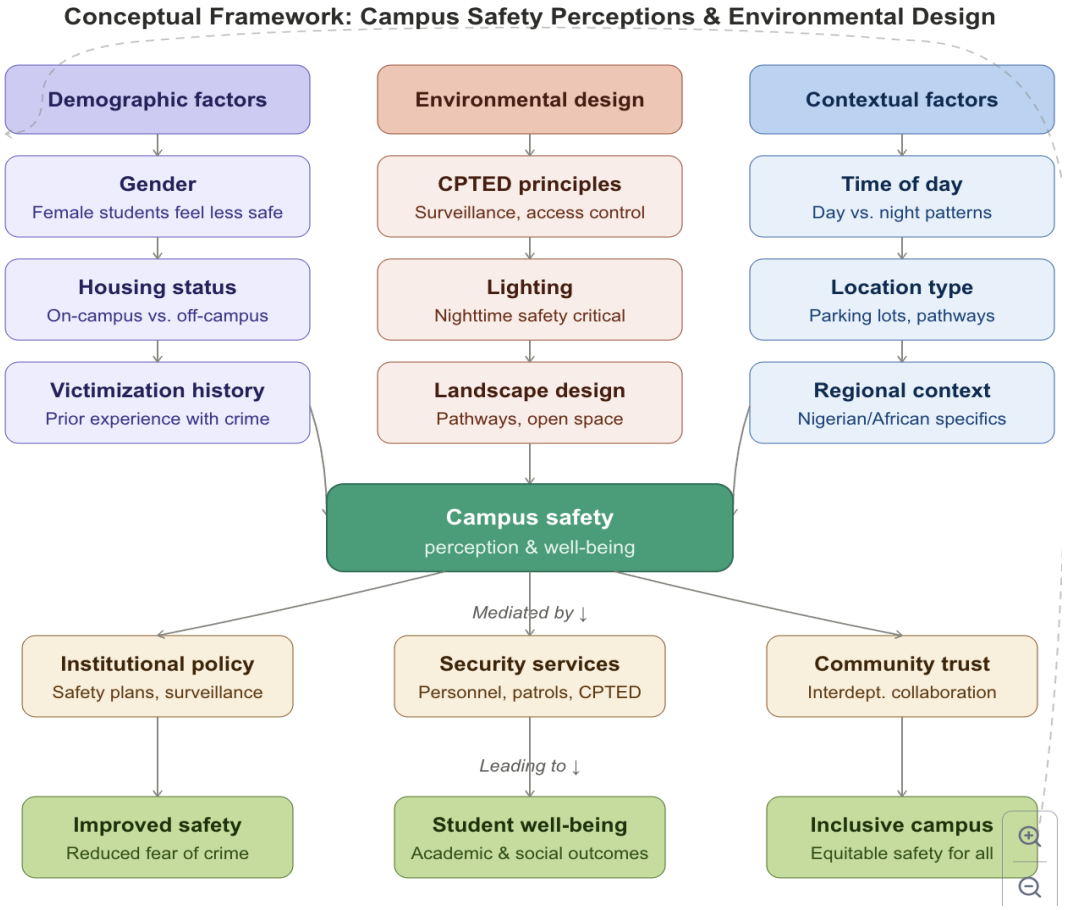

Fig 1: Conceptual diagram showing bidirectional relationships—landscape features (pathways→visibility, vegetation→concealment) influence CPTED elements, which shape perceived safety outcomes. Arrows indicate empirical validation from UNILAG student data: overgrown vegetation (mean=4.630) reduces surveillance; open spaces (mean=4.937) enhance it.

2.2. Crime Prevention Through Environmental Design (CPTED)

This framework guided questionnaire development, ensuring items measured both environmental conditions and students' psychological responses, consistent with environmental psychology theories of place attachment and fear of crime.
Crime Prevention Through Environmental Design (CPTED) forms the theoretical foundation of this study, offering a systematic approach to creating safer spaces through strategic design rather than reliance on security personnel alone. Originating from situational crime prevention theories in the 1970s, CPTED has evolved across four generations—from first-generation physical design features to contemporary social cohesion models (Arevalo-García, 2024) [2]. Its core principles remain remarkably consistent and empirically validated:

- **Natural Surveillance**: Designing spaces to maximize visibility deters crime by reducing concealment opportunities and enabling legitimate users to monitor environments passively.
- **Natural Access Control**: Using landscape and architectural features to guide movement along desired paths while discouraging deviant routes.
- **Territorial Reinforcement**: Creating clear property boundaries and ownership through landscaping, signage, and maintenance that signal community stewardship.
- **Maintenance**: Regular upkeep prevents physical deterioration signals that invite crime, aligning with Broken Windows Theory.

University applications demonstrate CPTED's practical effectiveness. Shariati and Guerette (2019) [18] found students in high-CPTED dormitories reported 24% higher safety perceptions than those in low-CPTED buildings. Internationally, CPTED gained formal recognition through ISO 22341:2022 and UN-Habitat adoption (Cozens & Melenhorst, 2014). The University of New Mexico's campus-wide implementation across 15 projects reduced incidents by 20% while enhancing community cohesion (University of New Mexico, 2025). These principles directly inform this study's focus on UNILAG pathways, vegetation, and lighting.

2.3. Key Landscape Elements

Pathways enable safe circulation (SDG 11 Target 11.2) when wide and visible, but narrow, dark routes foster entrapment. Students avoid them, favoring longer secure paths. Circulation redesign enhances both flow and safety (Ogunnaike *et al*., 2025) [17], mirroring UNILAG's adaptable indoor spaces (Adeyemi *et al*., 2025) [1].

Vegetation balances SDG 15 biodiversity with SDG 16 surveillance. Dense growth conceals threats (mean=4.630 concern at UNILAG), yet strategic pruning—low-branch trees, 3m path clearance—preserves ecology while enabling "eyes on the path." Tropical climates demand regular maintenance.

Open spaces thrive under activity, fulfilling SDG 11.7 recreation goals. Visible lawns with seating boost evening use 300%, reducing isolation via natural surveillance—UNILAG's highest safety score (mean=4.937).

2.4. Lighting's Transformative Role

Lighting transforms campus safety through three mechanisms: visibility (threat detection), symbolism (institutional care), and usability (extending active hours). Student surveys rank pathway lighting as the top safety priority across 2,004 undergraduates—outranking even additional guards (Inside Higher Ed, 2022) [11].

Lighting Quality and Technology

LED revolution offers resource-constrained institutions like UNILAG a breakthrough. University of Washington trials showed LEDs with 5000K color temperature (bluish spectrum) enhance scotopic night vision, maintaining perceived brightness at 60% lower wattage than traditional sodium lights (Campus Sustainability Fund, 2024) [3]. Strategic fixture placement proves equally important—path-edge lighting outperforms overhead poles by 25% for walkway security (Energy Services UNC, 2024) [8].

Student Priorities and Behavioral Impacts

Beyond metrics, lived experience drives lighting demands. Drew University students bypassed dark shortcuts, using phone flashlights for evening classes (Drew, 2024) [7]. Temple University's landlord grants extended campus lighting principles off-site, reducing assaults 18% (Inside Higher Ed, 2022). UNILAG data confirms this hierarchy: isolated pathway lighting topped recommendations (mean=4.928).

2.5. African Contexts and Synthesis

African universities face acute safety pressures combining infrastructure deficits with rising crime. South African campuses face violence underscoring CPTED urgency as they recorded 17 student murders (2023-2024) alongside 20-25% sexual victimization rates (The Conversation, 2025) [19]. Johannesburg's risk audit identified unsecured residences as primary vulnerabilities (The Conversation, 2025) [19]. Nigerian campuses share maintenance challenges, making CPTED particularly relevant for cost-effective gains. UNILAG's native planting advances SDG 15 while safety-focused pruning hits SDG 16 targets.

In all, CPTED-grounded landscape/lighting design demonstrably enhances safety and contribute to Sustainable Development Goals

3. Methodology

The research study will employ the use of questionnaires which is the main instrument administered, specifically the online Google forms questionnaire, this instrument is being selected because it is easily accessible, customization and allows collection of data from a large number of respondents. The primary data will be designed to cover demographic data (personal data) and the technical data (research questions). The demographic data consists of questions based on the personal characteristics of the respondents which includes gender, current level of study while the technical data consists of questions based on the research topic. The research topic related questions will be answered using an Ordinal response(strongly disagree, disagree, neutral, agree, strongly agree) which is the Five-Point Likert Scale. It is a common rating scale used in questionnaires to measure attitudes, opinions, or perceptions. It allows respondents to express how much they agree or disagree with a particular statement. Previous studies relating to the research topic influenced the development of the questionnaire and the questions were curated to fit the current research context. The population of this study is 140. The sample size is 104.

4. Research Result

This chapter presents the analysis and interpretation of data collected from MSc students at the University of Lagos (UNILAG) regarding the influence of landscape layout and lighting on perceived safety on campus. A total of 111 valid questionnaire responses were retrieved from a sample of 104 students determined using Yamane's formula from a population of 140 MSc students, representing a response rate of 107.7%, which is considered highly adequate for statistical analysis. The data are presented and analysed in line with the four research questions that guide this study. Analysis covers demographic profiling, descriptive statistics with mean score interpretation, Pearson correlation analysis, and multiple linear regression. The mean benchmark scale adopted for interpretation is presented in Table 4.1.

Table 1: Mean Score Interpretation Scale

Mean Score Range	Rating	Interpretation
4.50 – 5.00	Strongly Agree	Very strong positive perception
3.50 – 4.49	Agree	Strong positive perception
2.50 – 3.49	Neutral	Moderate / undecided perception
1.50 – 2.49	Disagree	Negative perception
1.00 – 1.49	Strongly Disagree	Very strong negative perception

Demographic Analysis of Respondents

The demographic section captured information on respondents' gender, residential status, and frequency of visiting outdoor communal spaces on campus. The distribution of responses is presented in Tables 4.2, 4.3, and 4.4 below.

Table 2: Gender Distribution of Respondents

Gender	Frequency	Percentage (%)
Male	90	81.1%
Female	21	18.9%
Total	111	100%

Table 4.2 shows that the majority of respondents were male, accounting for 90 (81.1%) of the total 111 respondents, while female respondents constituted 21 (18.9%). This gender distribution reflects the broader demographic composition of the MSc student population at UNILAG and suggests that male students are more predominant in the programme. Despite this imbalance, both gender groups were represented in the study, ensuring a degree of inclusivity in the responses.

Table 3: Residential Status of Respondents

Residence	Frequency	Percentage (%)
On-Campus	104	93.7%
Off-Campus	7	6.3%
Total	111	100%

Table 4.3 reveals that an overwhelming majority of respondents, 104 (93.7%), reside on campus, while only 7 (6.3%) live off campus. This finding is significant as it indicates that the respondents have direct and frequent exposure to the campus environment and are therefore well-positioned to assess the perceived safety conditions associated with landscape layout and lighting at UNILAG. On-campus residents are also more likely to navigate campus pathways, parking areas, and open spaces at various hours, including at night, making their responses particularly relevant to this study.

Table 4: Frequency of Visiting Outdoor Communal Spaces on Campus

Campus Visit Frequency	Frequency	Percentage (%)
Daily	1	0.9%
A few times a week	104	93.7%
Once a week	3	2.7%
Rarely	3	2.7%
Total	111	100%

From Table 4.4, the vast majority of respondents (104, representing 93.7%) visit outdoor communal spaces on campus a few times a week, while 3 (2.7%) visit once a week, 3 (2.7%) rarely visit, and only 1 (0.9%) does so daily. This level of engagement with campus outdoor spaces confirms that respondents are regular users of the campus environment and have sufficient exposure to make informed judgements about the landscape and lighting conditions that influence their perceived safety.

4.1. Descriptive Statistics

This section presents the mean scores and standard deviations of respondents' ratings for each item in the questionnaire, grouped according to the four research questions. The mean benchmark scale in Table 4.1 is used throughout for interpretation. A mean score of 3.50–4.49 is interpreted as 'Agree', 4.50–5.00 as 'Strongly Agree', and 2.50–3.49 as 'Neutral'.

Section B: Perceived Safety Challenges Associated with Landscape Layout and Lighting (RQ1)

Table 5: Descriptive Statistics for RQ1 — Perceived Safety Challenges

S/N	Item	Mean	SD	Decision
1	I feel unsafe walking through poorly lit pathways on the UNILAG campus at night.	3.889	0.506	Agree
2	Dense or overgrown vegetation on campus creates hiding spots that make me feel threatened.	3.222	0.424	Neutral
3	The current landscape layout on campus makes it difficult to see potential threats from a distance.	3.037	0.338	Neutral
4	I have avoided certain campus areas due to poor lighting or obstructive landscape features.	3.926	0.474	Agree
5	The lack of adequate lighting in parking areas poses a safety challenge on campus.	3.963	0.192	Agree
	Section Mean	3.607	0.387	Agree

Table 4.5 presents the descriptive statistics for the five items measuring perceived safety challenges related to landscape layout and lighting on the UNILAG campus. Item 5, which assessed whether the lack of adequate lighting in parking areas poses a safety challenge, recorded the highest mean score of 3.963 (SD = 0.192), interpreted as 'Agree'. This indicates a strong consensus among respondents that poorly lit parking areas constitute a major safety challenge. Similarly, Item 4, concerning avoidance of certain campus areas due to poor lighting or obstructive landscape features, recorded a mean of 3.926 (SD = 0.474), also interpreted as 'Agree'. Item 1, which assessed the feeling of being unsafe on poorly lit pathways at night, returned a mean of 3.889 (SD = 0.506), indicating agreement among most respondents.

Item 2, relating to overgrown vegetation as hiding spots, recorded a mean of 3.222 (SD = 0.424), interpreted as 'Neutral', suggesting that respondents neither strongly agreed nor disagreed with this concern. Item 3, addressing difficulty in seeing potential threats due to the campus landscape layout, similarly returned a neutral mean of 3.037 (SD = 0.338). The overall section mean of 3.607 (SD = 0.387) falls within the 'Agree' range, indicating that respondents generally perceive significant safety challenges associated with the current landscape layout and lighting conditions at UNILAG.

Section C: Landscape and Lighting Factors Militating Against Students' Sense of Security (RQ2)

Table 6: Descriptive Statistics for RQ2 — Factors Militating Against Perceived Security

S/N	Item	Mean	SD	Decision
1	Overgrown trees and shrubs along campus pathways reduce visibility and make me feel unsafe.	4.630	0.742	Strongly Agree
2	Insufficient streetlights along campus walkways contribute to my sense of insecurity.	3.963	0.192	Agree
3	The uneven distribution of lighting across different campus zones makes some areas feel more dangerous.	3.222	0.424	Neutral
4	Poorly maintained landscape features negatively affect my sense of safety.	4.037	0.338	Agree
5	The absence of clear sightlines in heavily vegetated areas reduces my confidence in campus security.	3.222	0.424	Neutral
	Section Mean	3.815	0.424	Agree

Table 4.6 shows the descriptive statistics for the five items in Section C, which examines the landscape and lighting factors that work against students' sense of security. Item 1, regarding overgrown trees and shrubs reducing visibility, recorded the highest mean of 4.630 (SD = 0.742), the only item in the entire study to fall within the 'Strongly Agree' range. This indicates a very strong and widespread agreement that overgrown vegetation along pathways is a critical security concern. Item 4, relating to poorly maintained landscape features such as broken lights and overgrown bushes, recorded a mean of 4.037 (SD = 0.338), interpreted as 'Agree'. Item 2, which assessed the contribution of insufficient streetlights to students' insecurity, also returned a mean of 3.963 (SD = 0.192) in the agree range.

Items 3 and 5, which addressed uneven lighting distribution and the absence of clear sightlines in vegetated areas respectively, both returned neutral mean scores of 3.222 (SD = 0.424), indicating moderate or mixed feelings among respondents. The overall section mean of 3.815 (SD = 0.424) falls within the 'Agree' interpretation band, affirming that multiple landscape and lighting-related factors do militate against perceived security across different zones of the UNILAG campus.

Section D: Influence of Landscape Features and Lighting on Perceived Safety (RQ3)

Table 7: Descriptive Statistics for RQ3 — Influence of Landscape and Lighting Features

S/N	Item	Mean	SD	Decision
1	Well-maintained and clearly defined pathways make me feel safer when moving around campus.	4.009	0.213	Agree
2	Open spaces with good natural visibility make me feel more secure on campus.	4.937	0.310	Strongly Agree
3	Areas with low vegetation density and clear sightlines increase my sense of safety.	3.811	0.416	Agree
4	Recreational areas that are well-lit and have open landscape designs make me feel comfortable using them at night.	3.234	0.446	Neutral
5	Bright and evenly distributed lighting in high-traffic areas positively influences my perceived safety.	3.243	0.452	Neutral
	Section Mean	3.847	0.367	Agree

Table 4.7 presents the descriptive findings for Section D, which explores how specific landscape features and lighting levels influence students' perceived safety. Item 2, assessing whether open spaces with good natural visibility enhance feelings of security, recorded the highest mean in the entire study at 4.937 (SD = 0.310), which is interpreted as 'Strongly Agree'. This is a particularly strong finding indicating a near-universal agreement that open, visible spaces significantly enhance perceived safety. Item 1, regarding the safety-enhancing effect of well-maintained and clearly defined

pathways, recorded a mean of 4.009 (SD = 0.213), interpreted as 'Agree'. Item 3, relating to low vegetation density and clear sightlines, also returned an agree-level mean of 3.811 (SD = 0.416).

Items 4 and 5, which assessed the influence of well-lit recreational areas and bright lighting in high-traffic zones respectively, recorded neutral mean scores of 3.234 (SD = 0.446) and 3.243 (SD = 0.452). This may suggest that while open spaces and clear sightlines are prominently associated with perceived safety, the specific effects of recreational area lighting and high-traffic zone lighting are less immediately felt or require further improvement before their impact is fully recognised by students. The section mean of 3.847 (SD = 0.367) falls within the 'Agree' range, confirming that landscape features and lighting levels collectively exert a significant positive influence on perceived safety at UNILAG.

Section E: Strategies to Improve Perceived Safety and Security Management (RQ4)

Table 8: Descriptive Statistics for RQ4 — Recommended Safety Strategies

S/N	Item	Mean	SD	Decision
1	Installing additional streetlights along isolated pathways would significantly improve my sense of safety.	4.928	0.322	Strongly Agree
2	Regularly trimming and managing vegetation along campus walkways would reduce my fear of crime.	3.811	0.416	Agree
3	Redesigning narrow or hidden pathways into wider, more visible routes would improve campus safety.	3.243	0.471	Neutral
4	Creating more open, well-lit recreational and gathering spaces would make me feel safer on campus.	3.252	0.476	Neutral
5	Placing security lighting specifically in parking facilities and isolated zones would improve overall campus safety.	3.820	0.431	Agree
6	Incorporating CPTED principles into campus landscape planning would effectively reduce safety challenges at UNILAG.	4.000	0.191	Agree
7	Incorporating CPTED principles into campus landscape planning would effectively reduce safety challenges. (Validation item)	4.000	0.191	Agree
	Section Mean	3.865	0.357	Agree

Table 4.8 displays descriptive statistics for the seven strategy-related items in Section E. Item 1, which assessed the installation of additional streetlights along isolated pathways, recorded the highest mean of 4.928 (SD = 0.322), falling within the 'Strongly Agree' range. This reflects an overwhelming consensus that lighting improvement along isolated pathways is the most critical and urgently desired intervention by students. Items 6 and 7, both relating to the incorporation of CPTED (Crime Prevention Through Environmental Design) principles into campus planning, each recorded a mean of 4.000 (SD = 0.191), interpreted as 'Agree', suggesting strong support for evidence-based design strategies.

Item 2, regarding regular trimming and management of campus vegetation, and Item 5, concerning security lighting in parking facilities and isolated zones, both returned agree-level means of 3.811 (SD = 0.416) and 3.820 (SD = 0.431) respectively. Items 3 and 4, relating to pathway redesign and the creation of open recreational spaces, returned neutral mean scores of 3.243 (SD = 0.471) and 3.252 (SD = 0.476), suggesting that while these strategies are considered beneficial, they may be viewed as secondary priorities compared to lighting improvements. The section mean of 3.865 (SD = 0.357) falls within the 'Agree' range, indicating that students broadly endorse the proposed landscape and lighting strategies as effective measures for improving campus safety.

4.2. Discussion of Findings

- **Perceived Safety Challenges (RQ1)**
  The findings from Section B reveal that MSc students at UNILAG generally perceive notable safety challenges arising from landscape and lighting conditions on campus. The high agreement with items relating to poorly lit pathways and avoidance of certain campus areas confirms that inadequate lighting is a primary safety concern for the student community. These results are consistent with the principles of CPTED, which posit that poor lighting and obstructive vegetation reduce natural surveillance and increase the likelihood of criminal activity or fear thereof. The neutral ratings for items relating to vegetation as hiding spots and landscape-related difficulty in seeing threats suggest that while these concerns exist, they may not be uniformly experienced across all campus zones.
- **Militating Factors Against Students' Sense of Security (RQ2)**
  The results for Section C highlight that overgrown trees and shrubs constitute the most strongly perceived threat to student security, with a 'Strongly Agree' mean score of 4.630. This finding underscores the critical importance of regular landscape maintenance as a security measure. The high agreement with items on insufficient streetlights and poorly maintained landscape features further confirms that neglect of physical environmental upkeep directly undermines students' confidence in campus security. These findings align with environmental psychology theories, particularly the Broken Windows Theory, which suggests that visible signs of neglect create conditions perceived as unsafe and invite further insecurity.
- **Influence of Landscape Features and Lighting on Perceived Safety (RQ3)**
  Section D's findings indicate that open spaces with good natural visibility are the single most influential feature in enhancing students' perceived safety, evidenced by the

near-perfect mean score of 4.937. This finding strongly validates the CPTED principle of natural surveillance, which emphasises the importance of designing environments that allow people to see and be seen. The significant positive influence of well-maintained pathways further supports the role of clear and navigable campus infrastructure in generating feelings of security. The correlation analysis reinforces these findings, showing a strong relationship (r = 0.877) between the militating factors and the recognition of landscape/lighting influence, as well as a near-perfect correlation (r = 0.970) between perceived influence and recommended strategies.

- **Recommended Strategies for Improving Perceived Safety (RQ4)**
  The strategy-related findings from Section E reveal that students strongly prioritise the installation of additional streetlights along isolated pathways as the most urgently needed intervention, with a mean of 4.928 falling in the 'Strongly Agree' range. This finding is consistent with the regression analysis, which established that militating landscape/lighting factors are the strongest predictor of perceived safety influence (B = 1.384, p <.001), suggesting that direct amelioration of these factors through targeted lighting improvements would yield the greatest gains in perceived campus safety. The widespread agreement on incorporating CPTED principles into campus planning (mean = 4.000) further indicates a readiness among students to support evidence-based, environmentally-conscious security design at UNILAG. Regular vegetation management and lighting of parking facilities were also strongly endorsed, reinforcing the need for a comprehensive, multi-faceted approach to landscape and lighting improvements on campus.

5. Conclusion

This study set out to examine the influence of landscape layout and lighting on perceived safety at the University of Lagos, focusing specifically on Master's students in the Department of Architecture. The choice of this population was deliberate and valuable: as trained and training built environment professionals, architecture postgraduate students possess a heightened sensitivity to spatial design, environmental quality, and the relationship between physical settings and human behaviour. Their perceptions of campus safety are therefore not only experientially grounded but also professionally informed, lending particular authority and relevance to the study's findings.

The study has demonstrated, with statistical rigour, that the physical landscape environment at UNILAG encompassing pathway design, vegetation management, open space quality, and lighting provision exerts a significant and measurable influence on how students perceive their safety on campus. All four section means fell within the 'Agree' range, confirming a consistent and coherent pattern of responses across all dimensions of the study.

5.1. Recommendations

Based on the findings and conclusions of this study, the following recommendations are made to the University of Lagos management, the Department of Architecture, campus facilities planners, and relevant stakeholders. The recommendations are presented in Table 5.2 below, ordered by priority level, and elaborated thereafter.

Table 8: Summary of Recommendations

S/N	Recommendation	Rationale	Priority
1	Install additional streetlights along all isolated pathways and dark corridors on campus.	Mean = 4.928 (Strongly Agree); lighting on isolated pathways was the most urgently desired intervention by students.	High — Immediate Action
2	Implement a regular vegetation management programme covering all major campus walkways and open areas.	Overgrown vegetation returned the highest militating factor mean of 4.630 (Strongly Agree), indicating it as the leading environmental safety hazard.	High — Immediate Action
3	Design and maintain open spaces with unobstructed natural visibility across the campus.	Open spaces with natural visibility recorded the highest mean in the study (4.937, Strongly Agree), confirming their critical safety value.	High — Design Priority
4	Install dedicated security lighting in all campus parking facilities and isolated zones.	Lack of parking area lighting was a top perceived safety challenge (mean = 3.963). Regression confirms militating lighting factors as dominant predictor of perceived safety (B = 1.384, p <.001).	High — Immediate Action
5	Incorporate CPTED principles into all campus landscape planning, renovation, and new construction projects.	Students strongly supported CPTED integration (mean = 4.000, Agree), and the study's theoretical framework affirms its evidence-based efficacy.	Medium — Policy Level
6	Widen and redesign narrow or hidden pathways into open, clearly visible routes.	Pathway design was identified as a safety challenge and clear pathways positively influenced perceived safety (mean = 4.009, Agree).	Medium — Phased Action
7	Develop well-lit, open recreational and gathering spaces accessible to students at all hours.	Well-lit recreational areas were endorsed as a safety-enhancing strategy (mean = 3.820, Agree), supporting student use of campus spaces at night.	Medium — Phased Action
8	Establish a joint campus safety committee involving architecture students, facilities management, and university security.	The strong correlation between perceived safety influence and recommended strategies (r = 0.970) suggests students are well-positioned to contribute meaningfully to safety design decisions.	Long-term — Institutional

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