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Research Article

An Assessment of the Impact of Security Challenges and Recreationist Perceptions in Kaduna Metropolis, Nigeria

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ABSTRACT

Recreational activities play a crucial role in promoting physical, social, and psychological well-being, but insecurity can significantly limit public engagement in leisure spaces. This study examined the relationship between security challenges and recreationists' perceptions in Kaduna Metropolis, Nigeria. Specifically, the study identified the major security challenges affecting Kaduna Metropolis and examined the knowledge, attitudes, and perceptions of recreationists regarding insecurity. A cross-sectional survey design was employed, with data collected from 354 respondents using structured questionnaires administered across major recreational centers. Data were analyzed using Analysis of Variance (ANOVA). The results revealed a statistically significant difference across the five security groups, with an F-value of 3.45 and a p-value of 0.009, indicating that recreational development varies depending on the type of security challenge experienced. Post-hoc analysis further showed that respondents exposed to theft reported higher levels of recreational development compared to those experiencing more severe threats, such as armed robbery, banditry, and kidnapping. Also, One-Way ANOVA examining recreationists' knowledge, attitudes, and perceptions produced an F-value of 13.72 and a p-value of 0.000, confirming that differences in awareness and attitudes significantly influence recreational choices. These findings suggest that insecurity in Kaduna Metropolis poses significant challenges to recreational activities, consistent with the Risk Perception Theory, which explains behavioral changes among residents and visitors. Perceptions of risk associated with theft and armed robbery influence decisions to avoid public spaces and reduce engagement in leisure activities. Based on these findings, it is recommended that the government, in collaboration with security agencies, intensify efforts to address the root causes of insecurity, including unemployment and poverty, while enhancing surveillance, rapid response mechanisms, and community policing initiatives.

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1 Introduction

Recreational activities are essential for enhancing physical health, psychological well-being, and social cohesion within urban communities (Robinson, 2021; Edwards & Corte, 2021). Yet, in many Sub-Saharan African cities, persistent insecurity increasingly limits residents' ability to participate freely in leisure activities. Kaduna metropolis in northwestern Nigeria is a notable example, where repeated incidents of armed banditry, kidnapping, theft, and episodic communal clashes have disrupted everyday social and economic life (Akinwale & Umar, 2022; CLEEN Foundation, 2023).

Although insecurity affects numerous sectors, its influence on recreation has become an important area of urban inquiry. Globally, security threats, whether terrorism, armed conflicts, or violent crimes, have demonstrated significant consequences for the travel and leisure industries. For instance, the Global Terrorism Index 2024 reports a 22% rise in terrorism-related deaths, reaching 8,352 in 2023, underscoring how insecurity reshapes public behaviour and mobility patterns (Global Terrorism Index, 2024). While Nigeria's situation does not always fit neatly into classical global terrorism trends, the country's wider insecurity, ranging from insurgency in the northeast, to cascading banditry and kidnapping in the northwest create similar constraints for tourism and recreation (Kim et al., 2020). In Kaduna, these localized threats manifest in ways that directly influence how residents perceive and use recreational spaces (Jeremiah, 2020).

Despite the importance of leisure and recreation for community development, existing studies in Nigeria have largely concentrated on the broader economic and political impacts of insecurity. Far fewer have examined how everyday safety concerns shape recreationist perceptions and participation within specific urban environments (Akinwale & Umar, 2022; Oche & Salihu, 2023). This study fills that gap by assessing how security challenges affect recreational behaviour in Kaduna metropolis.

Once known for its vibrant cultural festivals, public gatherings, and diverse leisure attractions, Kaduna has witnessed declining attendance in social and recreational spaces. Residents increasingly express reluctance to visit parks, entertainment centres, and open community spaces due to heightened safety concerns (CLEEN Foundation, 2023). Events such as the annual Kaduna Carnival and

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community sports tournaments have been reported to have significantly reduced turnout, reflecting how insecurity disrupts the city's recreational landscape (Daily Times, 2024).

At the community level, these shifts are even more visible. Families avoid evening outings, recreationists alter their routes or cancel visits entirely based on perceived risk, and several leisure businesses report reduced patronage, rising security expenditures, and frequent operational uncertainties (Oche & Salihu, 2023). Therefore, insecurity in the Kaduna metropolis limits not only the cultural and social vibrancy of urban life but also the psychological and economic benefits associated with recreation impacts that this study seeks to examine in detail.

The study aimed to examine the impact of security challenges and recreationist perceptions in Kaduna metropolis. Specifically, the study seeks to (i) identify the major security challenges affecting the Kaduna metropolis, and (ii) examine the knowledge, attitudes, and perceptions of recreationists regarding insecurity in the Kaduna metropolis.

In line with the objectives of the study, the following null hypotheses were formulated;

- $H0_1$: There is no significant difference between security challenges in Kaduna metropolis and recreational development.
- $H0_2$: There is no significant difference between the knowledge, attitude, and perception of recreationists in recreational choice in Kaduna metropolis.

1.1 Literature Review

1.1.1 Insecurity

The concept of insecurity connotes different meanings, such as: absence of safety; danger; hazard; uncertainty; lack of protection, and lack of safety. Insecurity refers to the state of being vulnerable to danger, threats, or risks that affect the safety, stability, and well-being of individuals or communities. According to Onifade et al. (2022), insecurity encompasses criminal activities such as armed robbery, terrorism, kidnapping, and insurgency, which undermine public safety and hinder socio-economic development. In the Nigerian context, insecurity has become a pervasive issue, driven by ethno-religious conflicts, banditry, and terrorism, especially in Northern Nigeria (Eze, 2023).

Achumba et al. (2013) define insecurity from two perspectives. Firstly, insecurity is the state of being open or subject to danger or threat of danger, where danger is the condition of being susceptible to harm or injury. Secondly, insecurity is the state of being exposed to risk or anxiety, where anxiety is a vague, unpleasant emotion that is experienced in anticipation of some misfortune. From the exposition above, the phenomenon of security or insecurity implies both physical occurrence and psychological state of mind that constitutes a challenge to peace and development of both the individuals and the societies.

According to Gjørv (2014), insecurity refers to the state of fear or anxiety stemming from a concrete or alleged lack of protection. It refers to a lack or inadequate freedom from danger. Insecurity is the condition of being threatened by danger, harm, or loss in the context of national or international affairs. It encompasses threats to sovereignty, territorial integrity, and the well-being of a state's population (Buzan et al., 1998). Economic insecurity is the anxiety produced by the possible exposure to adverse economic events and by the anticipation of the difficulty in recovering from them (Bossert, 2013). Insecurity in the context of human security refers to threats to human life, health, livelihood, personal safety, and human dignity that have severe and widespread consequences. It encompasses freedom from want, freedom from fear, and freedom to live in dignity (United Nations Development Programme, 1994)

The concept of insecurity spans multiple dimensions: physical, psychological, economic, and social. Scholars view it as the absence of safety or protection (Béland, 2005; Gjørv, 2014), a state of vulnerability to danger or threats (Achumba et al., 2013; Onifade et al., 2022), and a condition of fear or anxiety about potential harm (Schroeder, 2010). Insecurity is not limited to violent acts such as terrorism, kidnapping, and banditry but also includes socio-political instability, economic uncertainty, and risks to community well-being (Bossert, 2013; Buzan et al., 1998). Within tourism and recreation, insecurity manifests as a lack of safety from crime, violence, or instability that discourages participation and undermines sustainable development (Pizam & Mansfeld, 2006; George, 2003). In Nigeria, particularly in Northern states like Kaduna, ethno-religious conflicts, terrorism, and banditry have intensified these dynamics, threatening recreational activities (Eze, 2023).

This study adopted the definition of Achumba et al. (2013), who view insecurity as the state of being open or subject to danger or threat of danger, being susceptible to harm or injury, or being exposed to risk or anxiety, which creates fear and uncertainty that challenges the peace and development of individuals and societies. This definition is adopted as it captures both the physical exposure to harm and the psychological anxiety that characterize insecurity in the Kaduna metropolis. Recreational activities depend heavily on individuals' perceptions of safety and freedom from threat.

1.1.2 Forms of Insecurity

Research identifies several key forms of insecurity affecting recreational activities:

Terrorism: Pizam and Fleischer (2002) demonstrated that terrorism leads to immediate and prolonged declines in tourist arrivals. In Nigeria, the Boko Haram insurgency and rise of extremist groups have targeted transport routes and community events, generating widespread fear (Onifade et al., 2022). The March 2022 Abuja-Kaduna train attack exemplifies how such incidents heighten perceptions of risk and disrupt recreational activities (Al Jazeera, 2022).

Crime: High crime rates, particularly theft, armed robbery, and kidnapping, deter tourism and recreational participation. George (2003) emphasizes that fear of crime powerfully influences destination choice. In Kaduna metropolis, recurrent kidnapping incidents on major routes and within suburban districts have heightened fears among residents and visitors (Onifade et al., 2022).

Ethnic and Religious Conflicts: These conflicts create climates of fear that discourage public events and recreational facility use. Recent incidents in Kaduna, such as the March 2023 attacks in Zangon Kataf (Daily Post, 2023) and the 2019 Kajuru crisis, have had lasting implications for mobility and cultural events.

1.2 Empirical Review

1.2.1 Security challenges and recreational activities

Empirical research also suggests that perceptions of insecurity significantly influence recreational participation and the operational and environmental conditions of leisure spaces. In Lagos, Nigeria, Odufuwa et al. (2019) found that urban residents' perceptions of personal safety strongly shaped how they engaged with recreational facilities, with avoidance behaviors particularly pronounced during evening hours. The study further highlighted that environmental features such as lighting and accessibility significantly affected feelings of safety, reinforcing the view that both physical environment and perceived risk jointly determine recreational behavior.

Similarly, in Durban, South Africa, Nkosi and Gumede (2020) observed that residents in high-crime neighborhoods curtailed their use of parks and sports fields, especially during perceived high-risk periods. Older adults reported a notable reduction in habitual leisure activity, while the study recommended improved lighting, surveillance, and community engagement to enhance confidence in public recreational spaces.

On an international scale, Müller and Schmidt (2020) reported that terrorism-related security alerts in Berlin led to an 18% decline in attendance at major cultural festivals and increased operational costs due to enhanced security measures. Kousis and Kanellopoulos (2014) similarly noted that political protests and civil unrest in Athens coincided with reduced participation in outdoor concerts, cafes, and sports events, while businesses incurred additional security-related expenses. These studies demonstrate that psychological perceptions of insecurity can suppress leisure participation and impose operational burdens, although they did not explore the long-term environmental impacts of insecurity on recreational spaces.

Within Nigeria, Peace (2022) highlighted the broader societal impacts of insecurity, showing how violence disrupts education, religion, and the economy and emphasizing the role of social cohesion and religious institutions in mitigating insecurity. Odinka (2023) provided qualitative evidence from nightclubs in Calabar, showing that armed robbery and gang violence led to declines in patronage and revenue, with patrons avoiding nighttime leisure or relocating to safer areas.

Other African and international studies support these patterns. Abebe and Tadesse (2020) in Addis Ababa found that 70% of residents avoided night-time recreational events due to fear of theft and harassment, while inadequate policing further discouraged participation. Nguyen and Carter (2021) in Prague showed that awareness of past security incidents led to a 28% reduction in attendance at large-scale outdoor concerts and nightlife events. Similarly, Oliver (2021) reported that insecurity-related risks at the US–Mexico border influenced hotel marketing strategies and occupancy patterns. Rahman and Sultana (2021) in Cox's Bazar observed that 64% of beachgoers limited their activities due to fear of theft or harassment, particularly after sunset. Simon et al. (2022) reviewed tourism in Kenya and found an inverse relationship between insecurity and tourism trends, recommending diversification and proactive security strategies to restore participation. Tichaawa et al. (2023) in Zimbabwe highlighted that while residents generally supported tourism development, concerns over negative social impacts and cultural disruption influenced perceptions of leisure spaces.

Collectively, these studies show three main effects of insecurity on recreational activities: behavioral changes, with reduced participation and avoidance of perceived risky periods; operational and economic pressures on facility managers due to declining patronage and security costs; and environmental consequences, including neglect and deterioration of leisure spaces. However, most studies are context-specific or focused on short-term behavioral and economic outcomes, leaving a clear gap in understanding how insecurity in Kaduna Metropolis affects a broad range of recreational facilities, recreationist

perceptions, behavioral responses, and the environmental sustainability of urban leisure spaces, a gap that this study seeks to address.

1.2.2 Knowledge, attitude, and perception of insecurity on recreational activities

Empirical research also indicates that insecurity significantly influences recreationists' behavior, operational strategies, and the environmental conditions of leisure spaces. In Addis Ababa, Ethiopia, Abebe and Tadesse (2020) demonstrate that fear of theft and harassment leads a substantial proportion of residents to avoid night-time community sports and festivals, while perceptions of inadequate policing further suppress participation. Their mixed-method approach highlights that community engagement and visible security measures are critical for restoring confidence in recreational activities.

In Prague, Czech Republic, Nguyen and Carter (2021) show that knowledge of past security incidents strongly shapes recreationists' risk perception and leisure behavior, with a 28% reduction in attendance at large-scale outdoor events. The study emphasizes that transparent communication and targeted safety measures can help mitigate exaggerated fears and sustain participation in recreational activities.

Oliver (2021) investigates how hotels near the US–Mexico border adapt marketing strategies in response to insecurity linked to drug cartel violence. By identifying internal factors such as ownership and investment, and external factors such as tourism promotion and media coverage, the study underscores that insecurity affects operational strategies and economic performance in hospitality settings.

In Bangladesh, Rahman and Sultana (2021) find that recreationists' perceptions of insecurity significantly reduce participation in beach activities, with 64% of beachgoers avoiding certain activities, particularly after sunset. The study highlights that visible security measures and community policing enhance confidence and encourage engagement in leisure spaces.

Simon et al. (2022) provide evidence from Kenya that insecurity directly suppresses tourism trends, showing that past incidents and prevailing fears reduce visitation and negatively affect hospitality operations. The review recommends strategies such as product diversification, proactive security measures, and promotion of domestic tourism to mitigate these effects.

In Zimbabwe, Tichaawa et al. (2023) demonstrate that while urban residents generally support tourism development, concerns about negative social and cultural impacts persist. Their structured survey approach captures how demographic and socioeconomic factors shape resident perceptions, illustrating the complexity of urban stakeholder attitudes toward leisure activities.

Therefore, these studies collectively suggest that insecurity reduces participation in recreational activities, influences operational strategies, and may lead to neglect or deterioration of leisure spaces. However, most studies are context-specific or narrowly focused, leaving gaps in understanding the relationship between insecurity, recreationists' perceptions and behaviours, and the environmental and operational state of recreational facilities in Kaduna Metropolis.

1.3 Theoretical Review

1.3.1 Risk Perception Theory

This study is anchored in Risk Perception Theory (Slovic, 1987), which explains how individuals perceive, interpret, and respond to risks in their environment. The theory posits that people's actions are shaped not only by objective risk levels but by subjective perceptions influenced by cultural, social, and psychological factors.

Risk Perception Theory is based on several key assumptions that explain how individuals interpret and respond to risk in their environment. One fundamental assumption is that perceived risk often outweighs actual risk. This means that people tend to base their decisions and actions more on how risky they believe a situation to be rather than on the objective or statistical probability of harm. As a result, even environments with relatively low actual risk may be avoided if they are perceived as unsafe.

Another important assumption of the theory is that social and cultural factors strongly shape risk perceptions. Media reports, shared community experiences, social narratives, and cultural values all influence how individuals understand and interpret insecurity. Frequent exposure to crime-related news or negative stories within a community can heighten fear and amplify perceived risk, regardless of the true level of danger.

Risk Perception Theory also assumes that perceived risk directly influences behavior. When individuals feel unsafe, they tend to adjust their daily routines, leisure activities, and recreational choices to reduce exposure to perceived threats. This may include avoiding certain places, limiting travel, or changing social and entertainment patterns based on their sense of security or insecurity.

Finally, the theory emphasizes that the effectiveness of policies and security interventions depends largely on public perception. Even when governments or security agencies implement measures to improve safety, these efforts may have a limited impact if the public does not perceive them as effective or trustworthy. In such cases, behavioral change remains minimal, highlighting the importance of public confidence in risk management and security policies.

In the context of the Kaduna metropolis, Risk Perception Theory helps explain how fear of kidnapping,

robbery, or terrorism discourages recreational participation even when the actual probability of harm may be relatively low. The theory provides a framework for understanding the psychological dimension of insecurity and its impact on recreational behavior.

2 Materials and Methods

2.1 Study Area

Kaduna metropolis is bordered from the north, north-east and north-west by the rest of Igabi Local Government Area, and from the south, south-east and southwest by the rest of Chikun Local Government Area, see Figure 1 (Ibrahim et al., 2025).

The study area experiences a tropical continental climate that is influenced by the inter-tropical discontinuity because of the seasonal winds that blow from the Northeast-Tropical Continental (cT) and from the southwest tropical Maritime (mT). The variation in the onset of rainfall is attributable to the fluctuation of the boundary between these two air masses. The rainy season normally starts from April, increasing gradually to its peak in August, then declines by September and ceases by the end of October (Haruna et al., 2025). The monthly average rainfall is about 361mm, usually recorded between April and September. During the rainy season, the MT from the south influences the area.

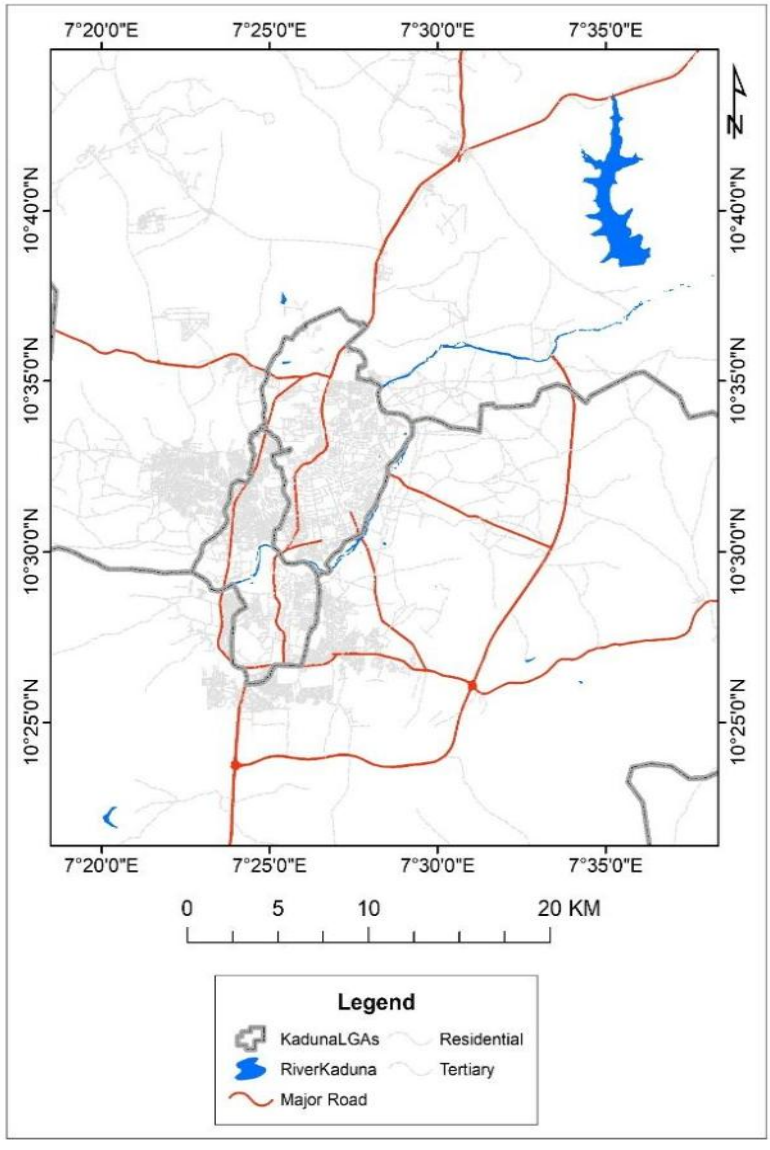


Figure 1: Map of Kaduna Metropolis.
Source: Adopted from GRID 3 Nigeria, 2024

Administratively, Kaduna Metropolis is subdivided into local government areas (LGAs) such as Kaduna North, Kaduna South, Igabi, and Chikun, which collectively form the metropolitan area (Umar et al., 2025). It is one of the major urban centres in the northern part of Nigeria, characterized by high levels of urbanization, a growing population, and an expansion of commercial activities. Economically, Kaduna serves as a major commercial and business hub for the region. This is

reflected in the growth of the hospitality sector, which has expanded alongside increasing tourism activities. The sector is characterized by the presence of recreation centres and other related facilities that cater to both local and international visitors, highlighting the city's importance as a centre for leisure and business travel (Ibrahim et al., 2025).

2.2 Research Design and Sampling Procedure

A descriptive cross-sectional survey design was adopted to investigate insecurity and its implications for recreational activities in Kaduna Metropolis. The design was considered appropriate because it allows for the systematic collection of data from a large and diverse sample, enabling the assessment of perceptions, attitudes, and behaviors of recreationists, residents, business owners, and security personnel across the metropolis.

A multi-stage sampling technique was employed. Initially, Kaduna Metropolis was stratified into its four local government areas (LGAs): Kaduna North, Kaduna South, Chikun, and Igabi. Subsequently, ten key recreational centers were selected using a purposive sampling technique based on the following criteria:

i. Facility size and patronage levels,
ii. Accessibility and willingness to participate in the study,
iii. Existence of structured management systems, and
iv. Relevance of the center in terms of active involvement in recreational service delivery.

Using Yamane's (1967) formula with a 5% margin of error, a sample size of 400 was determined from the projected population. Systematic random sampling was then applied to select 40 respondents from each of the ten recreational centers. Although purposive sampling may introduce bias, it is justified in this context where access to relevant information and active engagement in recreation are critical. The distribution of respondents across the selected centers is shown in Table 1.

Table 1: Sample size of the Study

S/n	Centres	Sample allocation
1	Kaduna Golf Club	40
2	Bambinos Shindig	40
3	Barnawa Paradise Park	40
4	Centenary Park	40
5	Kaduna Polo Club	40
6	Leasure and Sundland Recreation	40
7	Kabir Gymnasium	40
8	Hotel Seventeen	40
9	Ploutous Club House	40
10	Zakariyya Prestigious Hotel	40

2.3 Data Collection Instrument and Validation

Data were collected using a self-designed structured questionnaire tailored to capture:

- Major security challenges affecting the Kaduna metropolis.
- Respondents' knowledge, attitudes, and perceptions of recreationists regarding insecurity in the Kaduna metropolis.
- Impact of insecurity on recreational participation.

Likert scales ranging from 1 ("strongly disagree") to 5 ("strongly agree") were employed to quantify perceptions and attitudes. To validate the instrument, expert judgment was sought from scholars in security studies and leisure management. Additionally, reliability was assessed using Cronbach's alpha, which yielded a value above the recommended threshold of 0.70, confirming the instrument's internal consistency (Hair et al., 2019).

2.4 Data Analysis

Data were analyzed using Statistical Package for the Social Sciences (SPSS) version 25. Descriptive statistics such as mean, frequency, and standard deviation were used to examine the levels of awareness, perception, and engagement in recreational activities. To explore differences and relationships among variables, a one-way ANOVA was conducted to assess:

- Variations in recreational development across different types of security challenges, and
- Differences in recreational choices based on respondents' knowledge, attitude, and perception of insecurity.

This analytical approach ensured the identification of patterns and relationships between insecurity and recreational behavior, while providing insights into operational and environmental challenges facing leisure spaces in Kaduna Metropolis.

3 Results and Discussion

3.1 Main Security Challenges in Kaduna Metropolis

Table 2 shows the main security challenges confronting the Kaduna metropolis.

Table 2: Common security threats observed in Kaduna metropolis

Types	Frequency	Percent
Theft	140	39.5
Burglary	80	22.6
Armed Robbery	60	16.9
Banditry	44	12.4
Kidnapping	30	8.5
Total	**354**	**100.0**

Table 2 presents the distribution of common security threats observed in the Kaduna metropolis. The data reveal that theft is the most frequently reported security threat, accounting for 39.5% of all responses. This suggests that property-related crimes (phone snatching) pose the greatest challenge to residents, business owners, and recreationists in the area. The second most common threat is burglary at 22.6%, which indicates that, in some instances, property crimes occur alongside. Armed robbery follows with 16.9%, demonstrating that violent theft remains a significant security issue. Banditry accounts for 12.4%, which destabilizes communities. Finally, kidnapping, though comparatively lower at 8.5%, still represents a serious security concern due to its potential for violence and its impact on public fear and mobility.

The prominence of theft and burglary as the leading threat aligns with empirical studies and security reports. For instance, CLEEN Foundation (2022) and Nigeria Security Tracker (NST, 2023) reported that petty theft and property crimes remain the most common forms of insecurity in urban centers like Kaduna, driven by unemployment, poverty, and inadequate policing. Similarly, Okoli and Ugwu (2020) observed that theft-related crimes are a major feature of urban insecurity across Northern Nigeria, often disrupting economic and recreational activities.

3.2 Respondents' perception of the influence of insecurity on recreational development

Table 3 revealed the perception of residents on the influence of insecurity on recreational development in Kaduna Metropolis.

Table 3: Recreational Development

Statement	SD	D	UD	A	SA	Total	Mean	Std. Dev
The presence of security personnel improves my comfort in using the facilities.	25	60	80	120	69	354	3.25	0.85
Lighting in the recreational area is sufficient, especially in the evening.	30	70	90	110	54	354	3.05	0.87
Safety measures (e.g., surveillance cameras, patrols) are clearly visible and effective.	35	75	95	95	54	354	2.95	0.88
I feel safe participating in leisure activities within this recreational center.	40	80	100	85	49	354	2.85	0.90
The center responds promptly to safety or security concerns raised by users.	45	85	95	75	54	354	2.75	0.91

The results in Table 3 present respondents' perceptions of recreational development. The presence of security personnel received the highest rating (Mean = 3.25), indicating that visible security staff provides some comfort to recreationists, though not strongly. Lighting within the recreational facilities was also rated moderately (Mean = 3.05), suggesting that visibility is adequate but still requires improvement, especially during evening hours. Safety measures such as surveillance cameras and patrols were perceived as less effective (Mean = 2.95), indicating uncertainty about the functionality and visibility of such measures. Users' sense of personal safety during recreational activities was even lower (Mean = 2.85), reflecting concerns about prevailing insecurity in the metropolis. The lowest score (Mean = 2.75) was recorded for prompt response to safety

concerns, suggesting dissatisfaction with how recreational centers handle security issues when they arise.

3.3 Knowledge, attitude, and perception of recreationists on security

Table 4 shows the knowledge, attitude, and perception of recreationists on security in Kaduna metropolis.

Table 4: Knowledge, attitude, and perception of recreationists on security

Statement	SD	D	N	A	SA	Total	Mean	Std. Dev
I am aware of recent security challenges in the Kaduna metropolis.	11	21	28	108	186	354	4.23	1.03
Security concerns influence my choice of recreational locations in Kaduna.	62	68	51	90	83	354	3.18	1.43
Fear of insecurity discourages my family from participating in outdoor recreation.	23	23	21	113	174	354	4.11	1.17

The results from Table 4 indicate a high level of awareness among recreationists regarding security challenges in the Kaduna metropolis. The statement *"I am aware of recent security challenges in Kaduna metropolis"* recorded a mean score of 4.23 (SD = 1.03), which falls within the "Agree–Strongly Agree" range. This suggests that most recreationists are well informed about prevailing security issues, such as theft and social conflicts that could impact recreational activities. This high awareness aligns with recent reports emphasizing Kaduna's security concerns as a significant factor shaping public behavior in public spaces.

Regarding attitudes, the statement *"Security concerns influence my choice of recreational locations in Kaduna"* obtained a moderate mean of 3.18 (SD = 1.43). This indicates that while security is an important factor for many recreationists when selecting recreational venues, a portion of respondents remain neutral or are less influenced by security considerations. This moderate influence may be due to the availability of alternative locations perceived as safer or a general adaptation to the security situation.

On perception, the statement *"Fear of insecurity discourages my family and me from participating in outdoor recreation"* showed a high mean of 4.11 (SD = 1.18). This reveals that insecurity significantly affects family recreational participation, discouraging many from engaging in outdoor leisure activities.

3.4 Test of Hypotheses

To examine the validity of the research hypotheses, the study employed appropriate statistical techniques based on the nature of the variables and the study design. One-Way Analysis of Variance (ANOVA) was used to test for significant differences in recreational development across different categories of security challenges, as well as differences in recreational choices among recreationists with varying levels of knowledge, attitude, and perception regarding security. Descriptive statistics, including means and standard deviations, were also computed to summarize the respondents' knowledge, attitudes, and perceptions. The decision rule for hypothesis testing was that hypotheses would be rejected if the p-value was less than 0.05, indicating a statistically significant difference.

$H0_1$: There is no significant difference between security challenges in Kaduna metropolis and recreational development.

A one-way ANOVA (Table 5) was conducted to determine whether the different forms of security challenges in Kaduna Metropolis, namely theft, burglary, armed robbery, banditry, and kidnapping, have varying effects on recreational development.

Table 5: ANOVA Table

Source of Variation	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	3.245	4	0.811	3.45	0.009
Within Groups	81.350	349	0.233		
Total	84.595	353			

The ANOVA results in Table 5 revealed a statistically significant difference across the five security groups, with an F-value of 3.45 and a p-value of 0.009, which is below the 0.05 significance threshold. This indicates that recreational development is not uniform across the different categories of security challenges. In other words,

the level of recreational development reported by respondents differs depending on the type of insecurity they experience. Based on this result, the null hypothesis (H01) is rejected, confirming that security challenges significantly influence the level of recreational development in Kaduna Metropolis.

To further understand where these differences lie, a Tukey HSD post-hoc test was conducted in Table 6.

Table 6: Tukey Post-Hoc Analysis

(I) Security	(J) Security	Mean Difference (I-J)	Sig.	Interpretation
Theft	Burglary	0.20	0.045	Significant difference
Theft	Armed Robbery	0.30	0.008	Significant difference
Theft	Banditry	0.40	0.001	Significant difference
Theft	Kidnapping	0.50	0.001	Significant difference
Burglary	Armed Robbery	0.10	0.210	Not significant
Burglary	Banditry	0.20	0.060	Not significant
Burglary	Kidnapping	0.30	0.015	Significant difference
Armed Robbery	Banditry	0.10	0.310	Not significant
Armed Robbery	Kidnapping	0.20	0.042	Significant difference
Banditry	Kidnapping	0.10	0.260	Not significant

The post-hoc results from Table 6 showed that respondents exposed to theft reported significantly higher recreational development compared to those experiencing burglary, armed robbery, banditry, and kidnapping. The differences were smallest between theft and burglary, but became progressively larger as the severity of the security threat increased. For example, theft differed significantly from armed robbery ($p = 0.008$), banditry ($p = 0.001$), and kidnapping ($p = 0.001$). This pattern indicates that as the level of security threat becomes more severe, recreational development declines correspondingly. The comparison between burglary and other threats revealed mixed findings. There was no significant difference between burglary and armed robbery or burglary and banditry, suggesting that their impact on recreational development is relatively similar. However, burglary differed significantly from kidnapping ($p = 0.015$), showing the pattern that more severe threats are associated with lower recreational development.

These findings are consistent with the empirical literature. For instance, Odufuwa et al. (2019) in Lagos found that perceptions of insecurity reduced citizens' willingness to use recreational facilities, especially during nighttime, much like how participants in this study reported lower recreational development under more severe threats. Similar patterns emerged in Durban, where Nkosi and Gumede (2020) observed reduced park and sports field use in high-crime neighborhoods. This mirrors the finding that threats such as banditry and kidnapping in Kaduna significantly diminish recreational development.

$H0_2$: There is no significant difference between the knowledge, attitude, and perception of recreationists in recreational choice in Kaduna metropolis

Table 7: Descriptive Statistics

Group	N	Mean	Std. Deviation	Std. Error
Low	78	2.95	0.81	0.092
Medium	115	3.18	0.88	0.082
High	161	3.72	0.76	0.060
Total	**353**			

Table 8: ANOVA

Source of Variation	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	16.423	2	8.211	13.72	0.000
Within Groups	209.717	351	0.597		
Total	**226.140**	**353**			

The One-Way ANOVA results indicate F value = 13.72, and p-value = 0.000. Descriptive statistics show that respondents with high scores reported higher recreational participation (M = 3.72) compared to those with medium (M = 3.18) and low (M = 2.95) scores. Based on this finding, the null hypothesis is rejected, indicating a significant difference in recreational choice among recreationists with varying levels of knowledge, attitude,

and perception. These results suggest that greater awareness and positive attitudes toward security significantly influence recreationists' choices and participation in recreational activities.

This finding aligns with prior research emphasizing the role of perceived safety and awareness in shaping recreational behavior. For example, Odufuwa et al. (2019) found that urban residents in Lagos limited their use of recreational facilities during periods of perceived insecurity, highlighting the importance of knowledge and perception in leisure engagement. Similarly, Abebe and Tadesse (2020) in Addis Ababa reported that fear of theft and harassment significantly reduced participation in community sports and nighttime leisure activities, demonstrating that awareness and attitudes toward security directly impact recreational behavior. Furthermore, CLEEN Foundation (2022) and Okoli and Ugwu (2020) similarly reported that perceptions of safety, environmental conditions, and proactive security measures strongly influenced recreationists' choices and frequency of participation.

3.5 Policy Implications

The findings of this study underscore the need for urgent, targeted interventions to address insecurity and its impact on recreational development in Kaduna Metropolis. For government authorities, particularly law enforcement and local government agencies, the results highlight the importance of enhancing urban security through both preventive and responsive measures. This includes increasing police presence at recreational centers, establishing rapid response units for security incidents, and implementing community policing initiatives that involve residents in monitoring and reporting criminal activities (Odufuwa et al., 2019; Nkosi & Gumede, 2020). Such measures can directly improve recreationists' perceptions of safety and encourage higher engagement in leisure activities.

For recreational facility managers, the study suggests the need to adopt visible and proactive security measures, such as surveillance cameras, well-trained security personnel, effective lighting, and routine patrols. Facility managers can also develop emergency protocols and conduct public awareness campaigns to educate users on safety procedures, as recommended by Abebe and Tadesse (2020) and Rahman and Sultana (2021). These actions not only improve the physical safety of spaces but also enhance recreationists' confidence, increasing patronage and operational sustainability.

For tourism and urban planning authorities, the findings point to the necessity of integrating security considerations into urban leisure planning. This includes selecting locations for recreational centers based on risk assessments, ensuring adequate infrastructure such as lighting and accessibility, and promoting safe event scheduling to minimize exposure during high-risk periods (Nguyen & Carter, 2021; Simon et al., 2022). Policies should also encourage collaboration between government, community groups, and private operators to maintain both security and environmental standards in public spaces.

Prioritization of recommendations is essential: first, immediate enhancements to visible security and lighting; second, community engagement programs to build trust and collective vigilance; third, policy frameworks that integrate safety, operational efficiency, and environmental sustainability in recreational planning. Feasibility is supported by leveraging existing law enforcement structures, local government resources, and partnerships with private recreational operators, ensuring interventions are practical and context-specific (CLEEN Foundation, 2022; Okoli & Ugwu, 2020).

4 Conclusion

The findings of this study demonstrate that insecurity in Kaduna metropolis poses significant challenges to recreational activities, confirming the relevance of Risk Perception Theory in explaining behavioral changes among residents and visitors. The pervasive threats of theft and armed robbery generate heightened perceptions of risk, which in turn influence individuals' decisions to avoid public spaces and limit engagement in recreational and leisure activities. This theoretical lens helps to understand why fear and safety concerns drive behavioral modifications, highlighting the psychological processes that underpin avoidance and restricted participation in urban leisure spaces.

Based on the findings and conclusions, the study recommends that;

i. The government, in collaboration with security agencies, should intensify efforts to address the root causes of insecurity, such as unemployment and poverty, while enhancing surveillance and rapid response in high-risk neighborhoods. Community policing initiatives can also help build trust between residents and law enforcement, ensuring that local intelligence is used to prevent crime and improve safety around leisure and recreational facilities.

ii. Local authorities and recreational facility managers should collaborate to improve visible security measures, such as deploying trained security personnel and installing surveillance systems at popular recreational sites.

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