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Research Article

# An Assessment of the Influence of Insecurity on Recreational Activities in Kaduna Metropolis, Nigeria

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**ABSTRACT**

This study investigated the influence of insecurity on recreationists' participation and recreational activities in Kaduna Metropolis, Nigeria. Specifically, it empirically assessed how insecurity affects recreationists' participation patterns and analyzed its implications for recreational activities within the metropolis. A quantitative research design was adopted, and data were collected from 354 respondents using structured questionnaires administered across major recreational centers in Kaduna Metropolis. Multiple regression analysis was employed for data analysis. The findings reveal that insecurity has a negative and statistically significant influence on recreationists' participation patterns, with the regression model explaining 20.3% ($R^2$ = 0.203) of the variation in participation. Results further show that insecurity has significant implications for the functionality of recreational activities, with the second model accounting for 27.0% ($R^2$ = 0.270) of the variation in recreational activities. Therefore, insecurity undermines the operational efficiency of recreational facilities, reduces visitor turnout, and weakens the viability of leisure and tourism-related activities in the metropolis. Consequently, recreational and hospitality businesses experience declining revenues, increased security-related expenditures, and reduced patronage. Based on these findings and conclusions, the study recommends that the Kaduna State Government designate recreational areas as security priority zones by deploying permanent or scheduled patrol teams to parks, leisure centers, and event venues, especially during peak periods and weekends. Additionally, facility managers should be mandated to implement effective access control and visitor monitoring systems to enhance early detection and response to potential security threats.

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## 1 Introduction

Urban recreational activities serve multiple functions beyond entertainment, contributing to physical health, mental well-being, social cohesion, and local economic development (Iso-Ahola, 2020; UNWTO, 2022). However, persistent insecurity in many developing regions, particularly in Sub-Saharan Africa, including Nigeria, threatens these benefits by discouraging participation, limiting mobility, and undermining the economic viability of leisure-based businesses (Akinwale & Umar, 2022; Okoli & Orinya, 2023). In Kaduna metropolis, northwestern Nigeria, the relationship between insecurity and recreational activities presents a particularly compelling case. The city, once known for vibrant cultural festivals and bustling leisure spaces, has experienced notable declines in recreational participation following escalating security challenges, including armed banditry, kidnapping, theft, and communal violence (CLEEN Foundation, 2023).

These challenges have not only altered individual behaviors but also created ripple effects throughout the local tourism and hospitality economy. Recent studies have documented how insecurity shapes tourism demand and recreational participation globally. Akamavi et al. (2023) found that security threat indices negatively impact tourism receipts, while Suleiman (2023) observed that banditry in Katsina State disrupted recreational events and festivals. However, most research focuses either on macroeconomic tourism impacts or on general perceptions of safety, with limited attention to the specific behavioral adaptations of residents and visitors made in response to insecurity, or to the comprehensive economic and social implications for recreational facilities themselves.

Kaduna metropolis faces a complex security environment that has fundamentally altered its recreational landscape. Popular venues have reported reduced patronage during periods of heightened violence (Musa, 2023). The annual Kaduna Carnival, which once attracted tens of thousands of participants, experienced attendance drops exceeding 50% between 2019 and 2023 (CLEEN Foundation, 2023).

Beyond attendance figures, insecurity has triggered behavioral changes among residents and visitors: families avoid evening outings, businesses implement costly security measures, and potential tourists cancel visits based on media reports of violence. These adaptive behaviors, while protective, undermine the social and economic functions that recreational activities serve in urban communities.

The economic implications extend throughout the

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recreational value chain. Facility operators face declining revenues while incurring increased security costs. Small vendors dependent on event traffic lose income—investment in new recreational infrastructure stalls due to perceived risks. Meanwhile, the social implications include weakened community bonds, reduced cross-cultural interaction, and elevated psychological stress among residents who feel confined to their homes.

Despite these observable impacts, systematic empirical investigation of how insecurity shapes behavioral patterns and what specific implications emerge for Kaduna's recreational sector remains limited. This study addresses this gap by examining both the behavioral responses to insecurity and the multifaceted consequences for recreational activities and associated economic systems.

This study assessed the behavioral impacts and economic implications of insecurity on recreational activities in Kaduna metropolis. Specifically, the study aimed to;

i. Assess how insecurity influences recreationists' participation in the Kaduna metropolis.
ii. Analyze the implications of insecurity on recreational activities in the Kaduna metropolis.

### 1.1 Literature Review

Leisure is generally conceptualized as the discretionary time individuals have after fulfilling work, family, and social obligations, enabling them to engage in self-selected activities that provide satisfaction and personal fulfillment (Robinson, 2021). Recreation, on the other hand, refers to purposeful involvement in activities such as sports, tourism, cultural festivals, and social gatherings that promote relaxation, enjoyment, and personal development (Iso-Ahola, 2020). In contemporary societies, leisure and recreational activities are increasingly recognized as essential components of healthy living, contributing significantly to physical well-being, stress reduction, psychological balance, and social integration (Edwards & Corte, 2021).

Insecurity manifesting through violent crimes, terrorism, kidnapping, armed robbery, and communal clashes creates environments characterized by fear, uncertainty, and disrupted social order. Such conditions directly affect the use of public spaces and participation in leisure activities. One of the most immediate consequences is the restriction of freedom of movement, as individuals become reluctant to visit parks, sports centers, cultural venues, and other recreational areas due to fear of potential attacks (Ojo & Salihu, 2022). Reduced mobility not only limits personal participation but also weakens community engagement and social bonding, thereby undermining the integrative function of recreation within urban environments.

Furthermore, insecurity frequently results in the forced closure of recreational centers, reduced patronage of leisure facilities, and broader negative spillover effects on the hospitality and tourism sectors (Okafor & Musa, 2023). In Kaduna Metropolis in particular, recurrent security threats have led to the temporary shutdown of several leisure spaces, while cultural festivals and community events have experienced significant declines in attendance (CLEEN Foundation, 2023).

Empirical research also suggests that insecurity significantly shapes how individuals engage with recreational activities and how leisure spaces operate within urban environments. International evidence from Rio de Janeiro demonstrates this pattern clearly. Gabriel (2020), analyzing recreationist arrivals from 51 countries, found that violent deaths in the city had a substantial negative effect on tourist and recreationist inflows. The study showed that visitors from developed countries were more sensitive to violence compared to those from developing nations, with several recreationists avoiding the city following spikes in violent crime. This indicates that both actual violence and the psychological perception of danger can suppress participation in major recreational destinations, although the study is situated in a South American megacity and does not reflect local leisure dynamics within Nigerian urban settings.

Similar patterns emerge within African contexts. In Lagos, Nigeria, Adeyemi and Musa (2021) found that urban residents' perceptions of insecurity strongly influenced leisure behaviors across parks and waterfronts. Approximately two-thirds of respondents avoided specific recreational venues perceived as unsafe, while many shifted their leisure activities to daytime hours to minimize personal risk. Their findings highlight how perceived crime, fear, and situational vulnerability jointly determine recreational decisions. However, Lagos's coastal and densely populated urban structure differs from the inland urban environment of Kaduna Metropolis, indicating a contextual gap in understanding how insecurity affects leisure within northern Nigerian cities.

Comparable insights also arise from the Middle East. In Riyadh, Saudi Arabia, Al-Mutairi and Saleh (2021) reported that fear of insecurity reduced participation in public recreational events and altered visitation patterns in major leisure centers. Their study further emphasized that perceived threats, not only actual incidents, drive behavioral avoidance and reduced social interaction in public spaces. Despite offering valuable global evidence, Riyadh's highly regulated recreational environment is structurally different from the more informal leisure landscapes found in many Nigerian cities, leaving a limited understanding of how insecurity shapes everyday leisure use in Kaduna.

In Delhi, India, Kumar and Rani (2022) found that safety concerns significantly altered students' engagement in recreational activities, with 58% avoiding evening jogging or park visits and 40% reducing participation in outdoor sports. Their descriptive survey showed that behavioural adjustments were closely tied to perceived personal risk, reinforcing the view that fear of insecurity can constrain even routine leisure activities. However, by focusing solely on university campuses, the study did not account for broader urban recreational environments or explore qualitative insights into why individuals modify their behaviour.

Similarly, in Ibadan, Nigeria, Adeola et al. (2023) examined feelings of insecurity within hotels and surrounding host communities. Their findings revealed high levels of concern about crimes such as theft, robbery, burglary, fraud, and sexual abuse, with factor analysis showing that mechanical/personal, human, economic, and environmental conditions jointly shaped fear levels among both hotel staff and residents. These results underscore the complex and multidimensional nature of insecurity in leisure-oriented settings. However, the study remained limited to hotel environments and did not extend its analysis to public recreational spaces such as parks, sports grounds, or cultural venues, which may experience different forms of insecurity and user responses.

On a broader scale, Umeakuka (2022) explored how insecurity affects tourism development in Nigeria. The study identified a series of insecurity indicators, including kidnapping, religious extremism, armed robbery, urban violence, touting, ethnic clashes, and ritual killings that undermine tourism growth and public confidence in leisure-related economic activities. By highlighting regional variation in these threats, the study demonstrates how pervasive insecurity can impede both recreational participation and the viability of leisure and tourism sectors. However, while comprehensive, the study discussed tourism impacts at a macro level and did not focus on everyday recreational spaces or user experiences, leaving a gap in understanding how insecurity affects specific recreational environments within local communities.

In Katsina State, Northern Nigeria, Suleiman (2023) examined the impacts of insecurity on recreation and tourism using field observations and focus group discussions across eight local government areas. The study identified several recreational assets, including historical sites, parks, waterfronts, geomorphic features, and cultural festivals such as durbar celebrations. However, findings revealed that banditry has remained the dominant form of insecurity affecting the state, leading to severe consequences such as loss of lives, occupation of recreational sites, destruction of tourism infrastructure, cancellation of cultural festivals, and restriction of movement. These disruptions significantly undermined recreational and tourism activities across the state. However, the study did not examine urban recreational infrastructure or consider how environmental planning and facility design could mitigate the effects of insecurity on recreational engagement.

Akamavi et al. (2023) investigated the effects of security threats on global tourism industry performance using panel data analysis across multiple countries, including Malaysia. The study applied fixed and random effects models using international security indices such as terrorism, crime, and violent crime to assess their impact on tourism performance indicators, including recreationist arrivals, receipts, employment, and leisure expenditure. The findings revealed mixed outcomes, where security threats negatively affected tourism receipts but showed context-dependent or insignificant effects on other tourism variables. The study further suggested that destinations may remain attractive despite perceived insecurity due to persistent demand factors. However, the research was limited by its macro-level focus, as it did not examine site-specific recreational participation or how urban environmental conditions influence local recreationist behavior.

Within the Nigerian context, Oche and Salihu (2023) examined the relationship between rising insecurity and the decline of urban recreational economies in Northern Nigeria. Using a cross-sectional survey of 310 leisure-service businesses combined with qualitative interviews, the study employed regression analysis to assess the impact of insecurity on business performance. Findings indicated that frequent insecurity incidents, including theft, kidnapping, and communal clashes, were associated with significant revenue declines of approximately 35%, reduced operating hours, and the discontinuation of evening recreational programs. Business owners also attributed declining patronage to fear of insecurity and rising security costs. However, the study did not consider how environmental design, facility layout, or safety infrastructure could mitigate insecurity effects or support continued recreational participation in urban settings.

This study employs Risk Perception Theory (Slovic, 1987) to understand subjective assessments of how danger shapes behavioral choices regarding recreational participation. The theory posits that perceived risks, influenced by media coverage, personal experiences, and social narratives, often outweigh objective risk probabilities in determining behavior. In recreational contexts, this means individuals may avoid leisure activities not solely based on the statistical likelihood of harm, but on their psychological interpretation of threat levels.

The key assumptions of the theory relevant to this

study are that behavioural changes are largely driven by perceived risk rather than actual risk alone; that cultural and social factors can either intensify or reduce individuals' perception of threat; that media representations play a significant role in shaping how security risks are assessed and interpreted; and that effective policy responses must therefore address not only the reality of insecurity but also public perceptions of safety to restore confidence and encourage participation.

The primary focus of this study is on the effects of insecurity on recreational activities (how fear, risk perception, and insecurity shape people's willingness to participate in recreation and leisure activities), therefore, Risk Perception Theory (RPT) is the stronger and more relevant framework to this study. RAT highlights structural crime risks, but RPT better explains how fear and perception of insecurity drive behavior in Kaduna Metropolis.

## 2 Materials and Methods

### 2.1 Study Area

Kaduna Metropolis is situated in the north-western region of Nigeria and lies between latitudes 10°25′00″N and 10°35′30″N and longitudes 7°22′30″E and 7°30′30″E. The metropolis extends approximately 50 kilometres from the city centre and occupies the central portion of Kaduna State. Administratively, it encompasses the entirety of Kaduna North and Kaduna South Local Government Areas and parts of Igabi and Chikun Local Government Areas. Due to its strategic location, Kaduna serves as one of the most important urban centres in northern Nigeria, functioning as a major administrative, commercial, industrial, and transportation hub (Abubakar et al., 2025).

The metropolis experiences a tropical continental climate characterized by two distinct seasons: the wet season and the dry season. Climatic conditions are influenced by the interaction of the tropical maritime (mT) air mass from the Atlantic Ocean and the tropical continental (cT) air mass from the Sahara Desert. The rainy season typically begins in April, reaches its peak in August, and gradually declines until October, while the dry season extends from November to March. Average annual rainfall ranges between 1,100 mm and 1,300 mm, with most precipitation occurring between April and September (Bello et al., 2025). Temperatures are generally high throughout the year, with maximum temperatures reaching about 38°C during March and April and minimum temperatures falling below 22°C during the cooler months of December and January (Ahmad et al., 2025; Haruna et al., 2025).

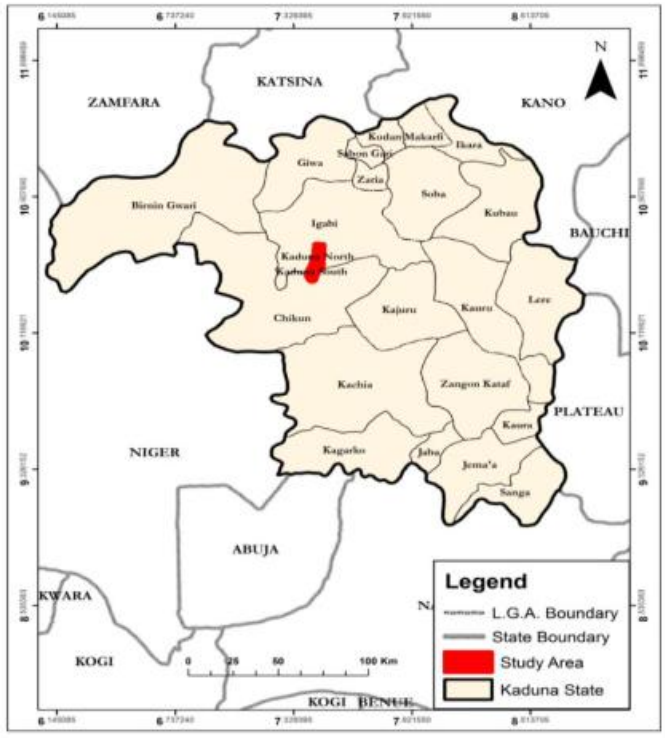



*Figure 1: Study area*
*Source: Modified from GRID3 – Nigeria, 2025*

Kaduna Metropolis has an estimated population of approximately 3.36 million people as of 2025, making it one of the most densely populated urban areas in northern Nigeria. The population is predominantly youthful, with a substantial proportion engaged in economic activities such as commerce, civil service, transportation, manufacturing, agriculture-related trade, and small-scale entrepreneurship. Income levels range from low- to middle-income groups, reflecting the socioeconomic diversity of the metropolis (Abubakar et al., 2025; Umar et al., 2025). The population is ethnically heterogeneous, comprising groups such as Hausa, Fulani, Gbagyi, Atyap, Adara, Bajju, Ham, Kagoma, Koro, Kurama, and several other indigenous communities. The city also hosts sizeable populations of Yoruba, Igbo, and other ethnic groups who migrated from different parts of Nigeria. Islam and Christianity are the dominant religions, while traditional beliefs continue to exist among a small proportion of the population (Michael et al., 2021; Adamu et al., 2025).

Kaduna Metropolis contains a wide range of recreational facilities that cater to the leisure and social needs of residents and visitors. These include public parks, sports complexes, recreational clubs, cinemas, amusement centres, hotel-based leisure facilities, cultural centres, event grounds, and open spaces used for social gatherings and festivals. Recreational activities commonly undertaken within the metropolis include sporting events, fitness exercises, cultural celebrations, tourism-related

visits, family outings, picnics, and entertainment programmes. These facilities are distributed across major residential and commercial districts such as Kawo, Unguwan Dosa, Malali, Barnawa, Sabon Tasha, Television, Rigasa, Unguwan Rimi, Narayi, and Gonin Gora, among others (Ruma et al., 2020).

### 2.2 Research Design

The study adopted a quantitative research design using a structured questionnaire as the primary instrument for data collection. The questionnaire was designed in a Likert-scale format and was divided into sections covering respondents' socio-demographic characteristics, perceptions of insecurity, and participation in recreational activities within Kaduna Metropolis.

The target population comprised a mixture of recreation centre owners, employees, and customers (recreationists) within Kaduna Metropolis. This approach was adopted to obtain a balanced perspective from both service providers and users of recreational facilities. Using Yamane's (1967) formula at a 5% margin of error, a sample size of 400 respondents was determined. A multi-stage sampling technique combined with systematic random sampling was employed to select respondents across identified recreation centres, with approximately 40 respondents drawn from each selected centre.

### 2.3 Data Analysis

To achieve the objectives of the study, both descriptive and inferential statistical techniques were employed. The data collected from the structured questionnaires administered to recreationists, facility workers, and facility owners/operators in Kaduna Metropolis were first coded and entered into the Statistical Package for Social Sciences (SPSS) version 25 for data cleaning, validation, and analysis. Descriptive statistics such as frequency counts and percentages were used to summarize respondents' demographic characteristics, categories of respondents, perceived level of insecurity, and participation patterns in recreational activities. Mean and standard deviation were further used to describe the central tendency and dispersion of responses on Likert-scale items measuring recreationists' participation behaviour.

For the inferential analysis, the regression technique was used to determine the extent to which insecurity influences recreational participation patterns and recreational activities in Kaduna Metropolis. In the regression model, insecurity served as the independent variable (predictor variable), while two dependent variables were examined separately: recreationists' participation patterns (Model 1) and recreational activities (Model 2). Insecurity was operationalised using respondents' perceived levels of safety and exposure to crime-related threats in recreational environments, while participation patterns captured frequency of participation, avoidance behaviour, and location-based recreational choices. Recreational activities, on the other hand, reflected the overall intensity, accessibility, and functionality of recreational engagement across the study area.

The regression model was estimated using a linear specification of the form:

$$PER = \beta_0 + \beta_1 INSEC + \varepsilon$$
$$RA = \beta_0 + \beta_1 INSEC + \varepsilon$$

Where:
PER = Recreationists' Participation Patterns
RA = Recreational Activities
INSEC = Insecurity
$\beta_0$ = Constant term
$\beta_1$ = Regression coefficient
$\varepsilon$ = Error term

Before estimation, the data were checked for missing values, outliers, and normality to ensure the reliability of results. The regression output was interpreted using the coefficient ($\beta$), t-statistics, p-values, $R^2$, adjusted $R^2$, and F-statistics to determine the strength, direction, and significance of relationships between variables.

## 3 Results

A total of 400 copies of questionnaires were distributed to recreationists within Kaduna metropolis; however, 354 were completed and returned satisfactorily.

**Table 1: Categories of Respondents**

| Category of Respondents | Frequency | Percentage (%) |
|---|---|---|
| Recreationists (Visitors/Users) | 250 | 70.6 |
| Facility Workers (Staff/Managers) | 74 | 20.9 |
| Facility Owners/Operators | 30 | 8.5 |
| Total | 354 | 100 |

Table 1 shows the distribution of respondents by category across the sampled recreation centres in Kaduna Metropolis. The results indicate that the majority of respondents (70.6%) were recreationists, meaning the study largely reflects the experiences and perceptions of users of recreational facilities. In addition, 20.9% of the respondents were facility workers, including staff and managers of recreational centres. This proportion ensures

that the study captures operational perspectives on how insecurity affects the management, accessibility, and functioning of recreational spaces. Furthermore, 8.5% of the respondents were facility owners or operators. Although they represent the smallest proportion, their inclusion provides strategic-level insights into how insecurity affects investment decisions, business sustainability, and long-term planning of recreational centres.

**Table 2: Insecurity Level**

| Insecurity Level | Frequency | Percentage (%) |
|---|---|---|
| Low | 78 | 22.0 |
| Moderate | 157 | 44.4 |
| High | 119 | 33.6 |
| Total | 354 | 100 |

Table 2 presents the distribution of insecurity levels as perceived by recreationists in Kaduna metropolis. It shows that 44.4% of recreationists perceive insecurity as moderate, indicating that nearly half of the respondents experience some level of safety concern while engaging in recreational activities. Following this, 33.6% of respondents perceive high insecurity, reflecting that about one-third of recreationists feel significantly threatened in their recreational environments. Only 22.0% of recreationists reported low insecurity, suggesting that a small proportion feel relatively safe.

**Table 3: Participation Patterns**

| S/n | Statement | SD | D | UD | A | SA | Total | Mean | Std. Dev |
|---|---|---|---|---|---|---|---|---|---|
| 1 | I frequently participate in recreational activities in Kaduna metropolis. | 60 | 100 | 30 | 90 | 74 | 354 | 2.80 | 1.35 |
| 2 | My participation in recreational activities has declined due to insecurity. | 15 | 40 | 20 | 140 | 139 | 354 | 3.85 | 1.05 |
| 3 | I participate in recreational activities only in areas I consider safe. | 10 | 35 | 25 | 150 | 134 | 354 | 3.90 | 1.03 |

Table 3 presents respondents' participation patterns in recreational activities within Kaduna Metropolis. The findings show that 2.80 indicates a relatively moderate level of general participation in recreational activities, suggesting that recreation is not highly frequent among respondents across the study area. However, the standard deviation of 1.35 indicates a wide variation in responses, implying that participation levels differ significantly among individuals, likely due to differences in location, security conditions, and access to recreational facilities.

The table further shows a high level of agreement that insecurity has reduced participation in recreational activities, with a mean score of 3.85. This suggests that most respondents perceive insecurity as a major limiting factor affecting their engagement in leisure activities. Similarly, the mean score of 3.90 indicates strong agreement that respondents only participate in recreational activities in areas they consider safe, further highlighting the influence of perceived spatial safety in shaping recreational behaviour.

However, while these findings provide useful insights, they are based on aggregated responses and do not fully capture variations across different recreation centres and local government areas within Kaduna Metropolis. As such, the results should be interpreted as indicative rather than fully representative of all recreational settings in the study area, since differences in spatial security conditions and facility distribution may influence participation patterns differently across locations.

For testing the hypotheses, the study used multiple regression to examine the influence of insecurity on recreationists' participation patterns and its implications for recreational activities. The decision to accept or reject each null hypothesis was based on the significance of the regression coefficients at the 5% level of significance ($p \leq 0.05$). The results are presented and interpreted in line with the stated hypotheses.

### *3.1 Insecurity and Recreationists' Participation*

This section presents the regression analysis examining the relationship between insecurity and recreational activities in Kaduna Metropolis. The analysis was conducted to determine the extent to which insecurity influences participation in recreational activities.

**Table 4: Regression**

| Variable | Coefficient (β) | Std. Error | t-value | p-Value |
|---|---|---|---|---|
| Constant | 4.20 | 0.11 | 38.18 | 0.000 |
| Participation | -0.60 | 0.08 | -7.38 | 0.000 |
| $R^2$ | 0.203 | | | |
| Adjusted $R^2$ | 0.200 | | | |
| F-statistic | 54.53 | | | 0.000 |

Table 4 presents the regression results examining the effect of insecurity on recreationists' participation patterns in Kaduna Metropolis. The result shows that insecurity has a statistically significant negative effect on participation (β = –0.60, t = –7.38, p = 0.000). This indicates that an increase in insecurity leads to a corresponding reduction in recreationists' participation in recreational activities, meaning that higher levels of insecurity discourage engagement in leisure and recreational spaces. The coefficient of determination ($R^2$ = 0.203) shows that approximately 20.3% of the variation in recreationists' participation patterns is explained by insecurity, while the remaining 79.7% is accounted for by other factors not captured in the model. The F-statistic value of 54.53 (p = 0.000) further confirms that the overall regression model is statistically significant and provides a good fit for the data.

It should be noted that the expectation of a negative relationship is theoretically consistent, as existing literature suggests that insecurity discourages movement, reduces public space usage, and limits participation in recreational activities due to fear of victimization. Therefore, the result is not contrary to expectations but rather aligns with established empirical and theoretical evidence.

### *3.2 Insecurity and Recreational Activities*

This study examined the influence of insecurity on recreational activities in Kaduna Metropolis. The result is shown in Table 5.

**Table 5: Regression**

| Variable | Coefficient (β) | Std. Error | t-value | p-Value |
|---|---|---|---|---|
| Constant | 4.05 | 0.10 | 40.50 | 0.000 |
| Recreation | -0.61 | 0.06 | -10.90 | 0.000 |
| $R^2$ | 0.270 | | | |
| Adjusted $R^2$ | 0.267 | | | |
| F-statistic | 118.91 | | | 0.000 |

Table 5 presents the regression results assessing the implications of insecurity on recreational activities in Kaduna Metropolis. The result shows that insecurity has a statistically significant negative effect on recreational activities (β = –0.61, t = –10.90, p = 0.000). This indicates that an increase in insecurity leads to a corresponding decline in the quality, intensity, and overall level of recreational activities, implying that insecurity discourages active engagement in leisure spaces and limits the use of recreational facilities. The coefficient of determination ($R^2$ = 0.270) shows that approximately 27.0% of the variation in recreational activities is explained by insecurity, while 73.0% is accounted for by other factors not included in the model. The F-statistic value of 118.91 (p = 0.000) further confirms that the overall regression model is statistically significant and provides a good fit for the data.

It is also important to note that this result is theoretically consistent, as existing literature suggests that insecurity reduces public space utilization, discourages outdoor leisure engagement, and alters the operational viability of recreational centres. Therefore, the finding reflects expected behavioural outcomes rather than a contradictory result.

## 4 Discussion of findings

The findings of this study establish that insecurity has a statistically significant and negative influence on recreationists' participation patterns in Kaduna Metropolis. The negative coefficient from the regression analysis indicates that increasing levels of insecurity systematically reduce the likelihood and frequency of participation in recreational activities. This relationship is theoretically grounded in Risk Perception Theory, which explains that individuals' behavioural responses in public spaces are largely shaped by perceived threats to personal safety rather than actual crime occurrences alone. In the context of Kaduna Metropolis, the perception of insecurity appears sufficient to alter mobility decisions, restrict spatial movement, and discourage engagement in leisure

activities, even when recreational facilities are available.

A more critical interpretation of this finding suggests that insecurity does not merely reduce participation but actively restructures how and where recreation occurs. Residents tend to concentrate their activities in limited "perceived safe zones," often avoiding open public parks, evening events, and high-density recreational centres. This behavioural shift indicates a form of spatial behavioural adaptation, where leisure participation becomes conditional on security perception. This aligns with Adeyemi and Musa (2021), who found that urban residents in Lagos modified their recreational schedules and avoided facilities perceived as unsafe. Similarly, Kumar and Rani (2022) reported that perceived insecurity significantly reduced participation in outdoor recreational sports, particularly in environments associated with higher perceived risk. These studies reinforce the argument that insecurity reshapes not only participation levels but also the temporal and spatial patterns of leisure engagement.

Furthermore, the implication of the $R^2$ value suggests that while insecurity is a significant determinant of recreational participation, a substantial proportion of variation is explained by other contextual factors such as income level, availability of recreational infrastructure, transportation accessibility, and social lifestyle preferences. This indicates that insecurity operates alongside structural and socio-economic constraints rather than in isolation, making recreational participation a multi-dimensional outcome influenced by both safety perception and urban development conditions.

At a broader level, the findings also reflect how insecurity undermines the attractiveness and functionality of urban recreational systems. Reduced patronage of recreational facilities leads to lower economic viability for operators, reduced service hours, and, in some cases, partial or complete closure of leisure spaces. This pattern is consistent with Gabriel (2020), who observed significant declines in tourism inflows in violence-prone destinations, and Akinwale and Umar (2022), who reported similar reductions in recreational participation and tourism activity in Nigerian cities affected by insecurity. However, unlike these studies that focused primarily on tourism-level outcomes, the present study provides a more localized behavioural explanation, demonstrating how insecurity translates into everyday recreational avoidance at the urban level.

Therefore, the findings suggest that insecurity in Kaduna Metropolis functions as both a psychological deterrent and a structural constraint on recreational engagement. It not only reduces participation rates but also reshapes spatial usage patterns, weakens the viability of recreational facilities, and limits the overall contribution of leisure activities to urban well-being and social cohesion.

### 4.1 Practical Implication

The findings of this study have important practical implications for urban planning, security management, and the development of recreational infrastructure in Kaduna Metropolis. The results clearly show that insecurity significantly reduces participation in recreational activities and limits the effective use of recreational facilities. This implies that without improved safety conditions, investments in parks, sports centres, event venues, and other leisure infrastructures may not yield their intended social and economic benefits. Therefore, stakeholders involved in urban development must consider security as a core component of recreational planning rather than treating it as an external issue.

For government and security agencies, the findings highlight the need for a strengthened security presence in and around recreational centres. Regular patrols, surveillance systems, improved lighting, and rapid response mechanisms are essential to restoring public confidence in these spaces. Since perceived insecurity strongly influences behaviour, improving actual security conditions alone may not be sufficient unless it is matched with visible and consistent security measures that reassure the public and encourage the resumption of recreational activities.

For operators and managers of recreational facilities, the study suggests the need to integrate safety design into facility management. This includes controlled access points, private security arrangements, emergency response systems, and collaboration with local security agencies. Such measures can help reduce fear of victimization and increase patronage. In addition, managers may need to adjust operating hours, programming, and pricing strategies to align with user safety concerns and changing participation patterns.

Finally, the broader implication is that insecurity not only affects recreation but also undermines social cohesion, public health, and local economic activities linked to leisure industries. Reduced participation in recreational activities limits opportunities for physical exercise, stress relief, and social interaction, while also affecting businesses that depend on recreational traffic. Addressing insecurity, therefore, is essential not only for improving leisure participation but also for enhancing overall urban well-being and sustainable economic development in Kaduna Metropolis.

## 5 Conclusion

This study concludes that insecurity is a significant determinant of recreational participation patterns in Kaduna Metropolis. The findings show that insecurity,

both in its actual presence and perceived form, it discourages frequent participation in recreational activities, restricts mobility, and influences the choice of safer locations for leisure engagement. As a result, recreationists tend to avoid or limit their use of public recreational spaces, which weakens the social and functional relevance of these facilities within the metropolis.

The study further concludes that insecurity has direct implications for the effectiveness and sustainability of recreational activities in the study area. It disrupts the smooth operation of recreational centres, reduces patronage, and negatively affects the viability of leisure-related services. These outcomes collectively reduce the contribution of recreational activities to social interaction, well-being, and urban lifestyle quality in Kaduna Metropolis.

Based on these findings, it is recommended that stakeholders responsible for recreational facilities in Kaduna Metropolis prioritize safety within and around recreational spaces. Managers of recreational centres should strengthen basic security measures such as adequate lighting, controlled entry points, and the presence of trained security personnel to reduce perceived risk and improve user confidence. In addition, closer collaboration with local security providers is necessary to ensure that recreational environments remain safe and accessible, thereby encouraging sustained participation in leisure activities within the scope of the study area.

## References


Abubakar, M., Dogo, B., & Abubakar, A. J. (2025). Socioeconomic Determinants and Patterns of Charcoal Utilization Among Urban Dwellers in Kaduna Metropolis, Nigeria. FUDMA Journal of Sciences, 9(12), 94-103. https://doi.org/10.33003/fjs-2025-0912-4417

Adamu, A., Yusuf, M., Ibrahim, S., & Bala, H. (2025). Religious diversity and socio-cultural dynamics in Kaduna State, Nigeria. Kaduna Journal of Social Sciences, 11(2), 45–59.

Adeola, O. A., Gbenga, A. O., & Adeleke, B. T. (2023). Factors influencing feelings of insecurity in hotels and host communities in Ibadan, Nigeria. Journal of Hospitality, Tourism and Leisure Studies, 9(2), 45–62.

Adeyemi, A. O., & Musa, S. A. (2021). Perceptions of insecurity and leisure participation in urban recreational centres in Lagos, Nigeria. African Journal of Leisure and Tourism Studies, 6(1), 23–38.

Ahmad, M., Ariko, J. D., Abdulkadir, H., & Mohammed, H. I. (2025). Trend and Variability of Rainfall in Kaduna Using Innovative Trend Analysis: Implications For Climate Resilience and Livelihood Sustainability. Science World Journal, 20(2), 492-499. https://doi.org/10.33003/fjs-2025-0911-3983

Akamavi, R. K., Ibrahim, A., & Swaray, R. (2023). Security threats and performance of the global travel and tourism industry: Evidence from panel data analysis. Tourism Economics, 29(4), 987–1005. https://doi.org/10.1177/13548166221123456

Akinwale, A. A., & Umar, M. B. (2022). Insecurity and urban leisure participation in selected Nigerian cities: A mixed-methods approach. Nigerian Journal of Sociology and Development, 14(1), 61–80.

Al-Mutairi, H. A., & Saleh, M. A. (2021). Public perceptions of insecurity and participation in recreational activities in Riyadh, Saudi Arabia. Journal of Urban Affairs and Public Safety, 13(2), 156–172.

Bello, N., Garba, H., & Ako, A. A. (2025). Rainfall and Temperature Trends in Kaduna North and Their Implications for Water Resources. UMYU Scientifica, 4(2), 285-297. https://doi.org/10.56919/usci.2542.028

CLEEN Foundation. (2023). Annual crime victimization and safety report. CLEEN Foundation Publications.

Edwards, M., & Corte, U. (2021). Recreation and leisure in contemporary society: Health, well-being, and community building. Leisure Sciences, 43(3–4), 245–262.

Gabriel, L. F. (2020). Violence and tourism demand: Evidence from Rio de Janeiro. Tourism Management, 79, 104089. https://doi.org/10.1016/j.tourman.2020.104089

Haruna, M., Muhammad, R. Z., & Abubakar, M. L. (2025). Assessment of climate variability and meteorological drought in Lere, Kaduna State, Nigeria. Science World Journal, 20(1), 78–88. https://doi.org/10.4314/swj.v20i1.11

Iso-Ahola, S. E. (2020). The psychology of leisure and recreation. Sagamore-Venture.

Kumar, R., & Rani, S. (2022). Perceived insecurity and recreational participation among university students in Delhi, India. International Journal of Social and Behavioural Sciences, 10(1), 112–128.

Michael, J. D., Yusuf, A. M., & Haruna, S. A. (2021). Ethnic composition and demographic characteristics of Kaduna State, Nigeria. African Journal of Social and Cultural Studies, 8(1), 77–89.

Musa, I. (2023). Insecurity and declining patronage of leisure spaces in Kaduna Metropolis. Kaduna Journal of Social Sciences, 9(1), 32–48.

Oche, J. A., & Salihu, M. S. (2023). Rising insecurity and the decline of urban recreational economies in Northern Nigeria. Journal of Urban Studies and Development Policy, 8(2), 74–93.

Ojo, B., & Salihu, M. (2022). Insecurity and its implications for recreation and social life in urban Nigeria. African Journal of Urban Studies, 7(2), 94–110.

Okafor, F., & Musa, A. (2023). Leisure under threat: The effect of insecurity on Nigeria's hospitality sector. Journal of Hospitality and Tourism Research, 47(6), 1150–1168.

Okoli, A., & Orinya, E. (2023). Persistent insecurity and social participation in Nigeria's urban centers. African Journal of Social Sciences, 18(4), 33–52.

Robinson, D. (2021). Leisure and recreation: Concepts, theory, and practice. Routledge.

Ruma, A. B., Suleiman, U. M., & Garba, A. A. (2020). Residential land-use patterns and urban development in Kaduna Metropolis, Nigeria. Journal of Urban and Regional Planning, 12(3), 91–105.

Slovic, P. (1987). Perception of risk. Science, 236(4799), 280–285.

Suleiman, A. Y. (2023). Impacts of insecurity on recreation and tourism development in Katsina State, Nigeria. African Journal of Tourism and Environmental Studies, 7(1), 33–52.

Suleiman, I. (2023). Banditry and its effects on recreation and tourism in Katsina State, Nigeria. Northern Nigerian Journal of Leisure and Tourism, 5(1), 50–68.

Umar, A., Mukhtar, A. A., Abubakar, M. L., & Abdussalam, A. F. (2025). Assessing Sustainable Environmental Practices and Carbon Footprint Awareness Among Urban Dwellers in Kaduna Metropolis. Science World Journal, 20(2), 639–646. https://doi.org/10.4314/swj.v20i2.27

Umeakuka, M. E. (2022). Insecurity and tourism development in Nigeria: Issues, challenges and prospects. Journal of Sustainable Tourism Development in Africa, 4(2), 101–118.

UNWTO. (2022). Tourism and sustainable development: 2022 global report. Madrid, Spain: Author.

Yamane, T. (1967). Statistics: An introductory analysis (2nd ed.). Harper and Row.