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Research article

TOURISM ACTIVITY NIGHT-TIME EXPOSURE AND SPATIALLY CLUSTERED CRIME IN CALABAR NIGERIA

Violet Bassey Eneyo¹

¹ Department of Geography and Environmental Science, University of Calabar, Calabar, Nigeria

*Corresponding author: violeteneyo@unical.edu.ng

ABSTRACT

The study examines temporal and spatial patterns of crime associated with tourism activity in Calabar, Nigeria. 423 returned questionnaires, police and tourism records for 2009–2023, Global Positioning System observations and ArcGIS hotspot analysis. Descriptive results and inferential outputs were used for the study. Records contained 7,502 offences, with theft and other stealing accounting for 34.7% and assault for 31%. Recorded offences were most frequent between midnight and 5:59 a.m. (35%) and between 6:01 p.m. and midnight (30.5%). Respondents identified poor street lighting as the leading hotspot characteristic (60.3%), while 60% of women and 48% of men reported crime experience. The nearest-neighbour index of 0.5 indicated clustered incident locations. A correlation table reported a modest positive association between tourist arrivals and crime, $r = .31$, $p = .05$, rather than proving tourism caused crime. Implications: Event security should use place- and time-specific lighting, transport, reporting and hotspot policing. Contribution: The study integrates visitor, temporal and spatial evidence while maintaining the distinction between correlation, exposure and causation in destination risk management.

KEYWORDS

tourism safety; crime hotspots; night-time exposure; GIS; Calabar; event security; nearest-neighbour analysis; destination risk management

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Introduction

Tourism concentrates unfamiliar people, cash transactions, mobility and night-time activity in particular places and periods. These conditions can increase exposure to opportunistic crime, but the relationship is not deterministic. Crime can be driven by population, poverty, policing, lighting, land use and reporting practice, while tourist arrivals can increase at the same time for unrelated reasons. Destination-security research must therefore distinguish crimes experienced by visitors, crimes occurring near tourism activity and wider urban crime that happens during a period of tourism growth.

Calabar developed a strong festival and leisure identity through carnival, music, cultural events, attractions and entertainment spaces. The study examined tourist arrivals, offences recorded from 2009 to 2023, tourism preferences, crime hotspots and perceived vulnerability. It combined tourism and police records, questionnaires, interviews, GPS observations and ArcGIS analysis across fifteen zones. The source provides an unusually rich historical archive for examining how risk varies by offence, time and place.

The source's title alternates between the effect of crime on tourism and the effect of tourism activities on crime. These are different questions. Crime may influence destination choice, while tourism activity may alter exposure and opportunity. The research design primarily tests association between arrivals and recorded offences and maps concentration near entertainment locations. It cannot establish a one-way causal effect. The present article therefore uses the neutral formulation tourism activity, exposure and spatially clustered crime (Eneyo et al., 2022).

Defensible terminology is critical because destination research can stigmatise communities or imply that visitors cause crime. An incident hotspot is a place with a concentration of recorded events under the data and boundary used; it is not a permanent characteristic of residents. A positive correlation does not show that each visitor increases crime. Respondent experience is not the same as verified victimisation in police records. These distinctions guide the reanalysis.

The objectives are to reconstruct the offence profile, examine annual and time-of-day patterns, assess respondent vulnerability and perceived hotspot characteristics, interpret spatial clustering and review the relationship between arrivals and crime. Policy implications focus on lighting, night transport, event deployment, reporting and data governance. The article contributes a place- and time-specific risk framework rather than a general narrative of destination insecurity.

Literature review

Tourism and crime research reports mixed relationships because studies use different scales, offence types and models. Total crime may not respond to tourism in the same way as theft, violence or fraud. Recent evidence shows that violent crime can affect inbound tourism even where total crime does not, reinforcing the need for disaggregation. Destination managers should therefore avoid a single crime index when risks and preventive measures differ by offence (Ogbaji et al., 2025; Onnoghen, Unimtiang, Onnoghen, et al., 2024; Unimtiang, Onnoghen, Ogbaji, et al., 2025).

Routine activity theory suggests that crime opportunity emerges when a motivated offender, suitable target and insufficient guardianship converge. Tourism can change target availability and guardianship through crowds, valuables, unfamiliarity and extended opening hours. The theory does not claim that tourists or events cause offending. It directs attention to modifiable conditions such as lighting, surveillance, transport, venue design and capable guardianship.

Hotspot research consistently shows that crime is concentrated at a small number of places and times. GIS allows incident points to be related to roads, venues, police posts and environmental characteristics. Ristea et al. (2020) demonstrate the utility and limitations of GIS-based urban crime analysis where data availability is difficult. Spatial concentration supports targeted prevention, but global indices should be complemented by local methods and exposure denominators (Igelle et al., 2023; Inah et al., 2022; Onnoghen, Adeniyi, et al., 2024; Onnoghen, Anabaraonye, et al., 2024; Onnoghen, Anabaraonye, Owoh, et al., 2025; Onnoghen, Nwobu, et al., 2024; Onnoghen, Olisah, et al., 2024; Onnoghen, Onwuzurike, & Anabaraonye, 2025; Onnoghen, Unachukwu, et al., 2024).

Nearest-neighbour analysis compares observed point spacing with an expected random pattern. A ratio below one indicates closer spacing than expected, but significance depends on boundary and assumptions. Crime incidents may repeat at the same address, follow street networks and reflect reporting zones, violating simple spatial-randomness assumptions. The ratio remains useful as an overall concentration signal, not as a complete hotspot diagnosis.

Temporal concentration is equally important. Tourism events may extend activity into evening and early morning when public transport, lighting and formal guardianship decline. Risk should be measured per visitor-hour where possible because more incidents during a crowded period can coexist with a lower individual rate. The source presents counts and time shares but lacks exposure denominators. Results therefore identify workload and concentration, not personal probability.

Gender differences in reported victimisation may reflect activity patterns, offence type, reporting, harassment or perceptions of safety. A higher percentage among women should not be explained without offence-specific and exposure data. Gender-responsive safety includes lighting, safe transport, reporting, trained personnel and attention to sexual harassment, while also recognising that men may face other risks. The survey supports a disparity in reported experience, not a complete mechanism (Agbor et al., 2026; Eneyo et al., 2026; Onnoghen, 2026a, 2026b; Onnoghen, Inyang, et al., 2025; Onnoghen, Unimtiang, Nwagbara, et al., 2024; Unimtiang, Onnoghen, Efut, et al., 2025).

Tourism development literature emphasises the economic and social value of events, hospitality and enterprise. Eneyo and Archibong (2024) and Eneyo et al. (2023) show why visitor activity matters to regional livelihoods, while Eneyo's studies of Uyo services and Calabar eateries link tourism to spatial service systems. Safety is part of that system. Visitors encounter the destination through routes, venues, food outlets and accommodation; risk management must follow the visitor journey rather than focus only inside attractions (Eneyo & Ekpenyong, 2018; Eyo et al., 2026; Onnoghen, Kujoh, et al., 2025; Onnoghen, Sylvanus, et al., 2023).

The key literature gap is integration. Annual correlations can show co-movement but not where or when intervention is needed. Maps can show concentration but not the size of the visitor population. Surveys can show experience and perception but may not match police recording. This article brings the evidence streams together and specifies the inference appropriate to each.

Conceptual and analytical framework

The framework links tourism activity, exposure setting, guardianship, recorded incident and destination response. Tourism activity changes the number, timing and movement of people. Exposure setting includes entertainment nodes, transport routes, lighting and public-space design. Guardianship includes police, private security, staff, surveillance and informal presence. Recorded incidents are filtered by victim reporting and police classification. Destination response includes prevention, communication and recovery. The archive measures parts of each stage but not a causal chain.

Three analytical distinctions are maintained. Counts describe service burden; rates describe risk relative to exposure and perceptions describe experience or belief. Spatial clustering describes the arrangement of recorded locations. Correlation describes linear co-movement between annual series. No single measure is allowed to substitute for the others.

Methodology

The research adopted a mixed-method spatial design covering Calabar Metropolis. The city was divided into fifteen zones for questionnaire administration and incident mapping. The source reported 480 questionnaires distributed and 423 returned, yielding an 88.1% response rate. Respondents included tourists or users of tourism and entertainment environments, while police and tourism records supplied annual series. Interviews and inventories provided contextual evidence. Crime records for 2009–2023 were summarised by offence category, year and time of occurrence. Tourism records provided annual arrivals and attraction information. GPS was used to locate incident or hotspot points and security facilities, and ArcGIS 10.2 supported mapping, nearest-neighbour analysis and buffering.

Descriptive analysis used counts and percentages. One-way ANOVA assessed annual variation in crime counts. Nearest-neighbour analysis assessed whether mapped crime locations were clustered relative to spatial randomness. Pearson correlation examined annual tourist arrivals and crime. The archive contains different correlation values in the abstract and detailed table; the present article uses $r = .31$, $p = .05$ from the detailed output and discloses the discrepancy.

Crime categories were retained from police classifications. The five-table presentation consolidates categories to avoid an unwieldy reproduction of dozens of source tables. Time bands are morning, afternoon, evening and midnight to 5:59 a.m. Reported victimisation is summarised by gender from the questionnaire. Hotspot characteristics and promoting factors are perceptions, not direct environmental audits.

Reproducibility is supported by reporting totals and denominators. The offence total is 7,502. Gender-experience percentages use 15 of 248 women and 84 of 175 men. Annual counts reproduce the official series displayed in the archive. The nearest-neighbour ratio and inferential statistics are marked as outputs. A future researcher would need the point layer and full questionnaire dataset to reproduce every analysis.

The design has limitations. Police records measure recorded rather than all crime, and reporting may change. Tourist-arrival series may include inconsistent definitions. Counts are not normalised by visitor-hours or population exposure. Spatial points may represent incidents, clusters or selected locations, and boundary choices affect nearest-neighbour results. Correlation is vulnerable to common trends. These constraints require cautious causal interpretation but do not invalidate the identified temporal and spatial concentrations.

Ethically, crime maps can harm residents or businesses if exact points identify victims or label neighbourhoods. The article reports aggregate zones and patterns and does not reproduce personal identifiers. Operational maps for policing can be more detailed under secure access, while public maps should use aggregation and uncertainty. Research instruments and record linkage should receive formal ethics and data-protection review.

Results and discussion

The offence profile was dominated by theft and other stealing, which accounted for 2,595 incidents or 34.7%, and assault, with 2,326 or 31%. Other offences contributed 18.2%, grievous harm and wounding 7.3%, while burglary and robbery each contributed under 3%. This composition indicates that destination security cannot focus only on high-severity events. Property and interpersonal offences create most of the recorded workload and directly affect visitor confidence.

Table 1. Data sources and analytical use

Source	Coverage	Use
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Questionnaire	480 distributed; 423 returned	Experience, perceptions and tourism activity
Police records	2009–2023	Offence, annual and time patterns
Tourism records	Annual arrivals and sites	Temporal association
GPS/ArcGIS	Fifteen zones and security locations	Hotspot and proximity analysis

Note. Spatial layers were not available for independent recalculation.

The offence categories are not all tourism-specific. Police records cover the city, and the source related them to tourism periods and locations. The defensible conclusion is that these offences formed the urban risk environment within which tourism operated. Attributing the full 7,502 incidents to tourists or festivals would be incorrect. Event security should use the citywide profile while identifying event-linked incidents separately in future data.

Table 2. Recorded offence profile

Offence group	Count	Share (%)
Theft/other stealing	2,595	34.7
Assault	2,326	31
Other offences	1,364	18.2
Grievous harm/wounding	548	7.3
Burglary	215	2.9
Robbery	204	2.7
Other specified serious offences	250	3.3
Total	7,502	100.0

Annual crime counts varied from 321 to 718. The highest values were recorded in 2018, 2023 and 2009, while the lowest were in 2010 and 2016. The ANOVA reported a statistically significant annual difference, with an F value around 6.64 and $p < .001$. This supports temporal variation, but it does not identify a trend or cause. Changes in population, reporting and police activity may contribute.

The annual pattern did not rise smoothly with tourist arrivals. Some years with increased arrivals had lower crime counts than earlier years. This reinforces the limitations of a simple causal narrative. A long-term common upward movement can produce correlation even when year-to-year relationships vary. A rate based on arrivals, residents and event exposure would be more informative than raw counts alone.

Table 3. Annual recorded crime counts

Year	Count
2009	372
2010	321
2011	53
2012	462
2013	573
2014	464
2015	589
2016	349
2017	545
2018	718
2019	383
2020	452
2021	442

2022	656
2023	703
Total	7,502

Time-of-day concentration was pronounced. Midnight to 5:59 a.m. accounted for 2,607 incidents or 35%, and evening accounted for 2,285 or 30.5%. Together, evening and overnight periods represented 65.3% of recorded offences. Afternoon contributed 18.8% and morning 16.0%. This distribution provides a strong operational basis for night-time deployment and safe-transport planning.

Counts by time do not reveal whether the individual rate is higher at night because the number of people exposed is unknown. Nevertheless, they identify when police, medical and transport systems face the greatest incident burden. Peak events and entertainment activity may keep more people outside at night while formal transport and lighting are limited. Prevention should therefore combine demand management with environmental design.

Table 4. Time of recorded offences

Time band	Count	Share (%)
Morning	1,201	16.0
Afternoon	1,409	18.8
Evening	2,285	30.5
Midnight–5:59 a.m.	2,607	35
Total	7,502	100.0

Respondent experience differed by gender. Fifty-nine-point-three percent of women reported experiencing crime compared with 48% of men. The eleven-point-three percentage-point difference is important but cannot be attributed to gender alone. Exposure locations, offence type, age and reporting were not controlled. Policy should respond with gender-sensitive measures while collecting better disaggregated data.

Poor street lighting was the most frequently reported hotspot characteristic, selected by 60.3% of respondents. Other factors included weak security and the display of expensive items. Perception does not prove that lighting caused incidents, but lighting is a plausible and modifiable environmental factor. An audit should compare lamp functionality, illumination, pedestrian routes and incident timing before and after upgrades.

Studies revealed that 33.8% identified display of expensive materials as a factor attracting crime. This should not be framed as victim blame. Visitors have a right to safety, and responsibility rests with offenders and protective systems. Practical communication can advise on valuables without implying culpability. Venue design, secure payment, lockers and trained staff can reduce target exposure.

Table 5. Vulnerability, environment and inferential summary

Indicator	Result	Interpretation
Women reporting crime experience	15/248 (60%)	Higher reported prevalence than men
Men reporting crime experience	84/175 (48%)	Questionnaire experience, not police rate
Poor street lighting	255/423 (60.3%)	Leading perceived hotspot characteristic
Nearest-neighbour ratio	0.5	global clustering indicator
Arrivals-crime correlation	$r = .31, p = .05$	Modest association; no causal inference

Note. The source abstract reported a different correlation coefficient; the detailed table is used.

The nearest-neighbour ratio of 0.5 indicates that incident locations were closer together than expected under the reference random pattern. The source located concentration particularly in southern and central Calabar around entertainment environments. This supports hotspot-oriented deployment. However, a global ratio does not identify local statistical significance or account for street-network opportunity. Kernel density, local clustering and repeat-location analysis would improve targeting.

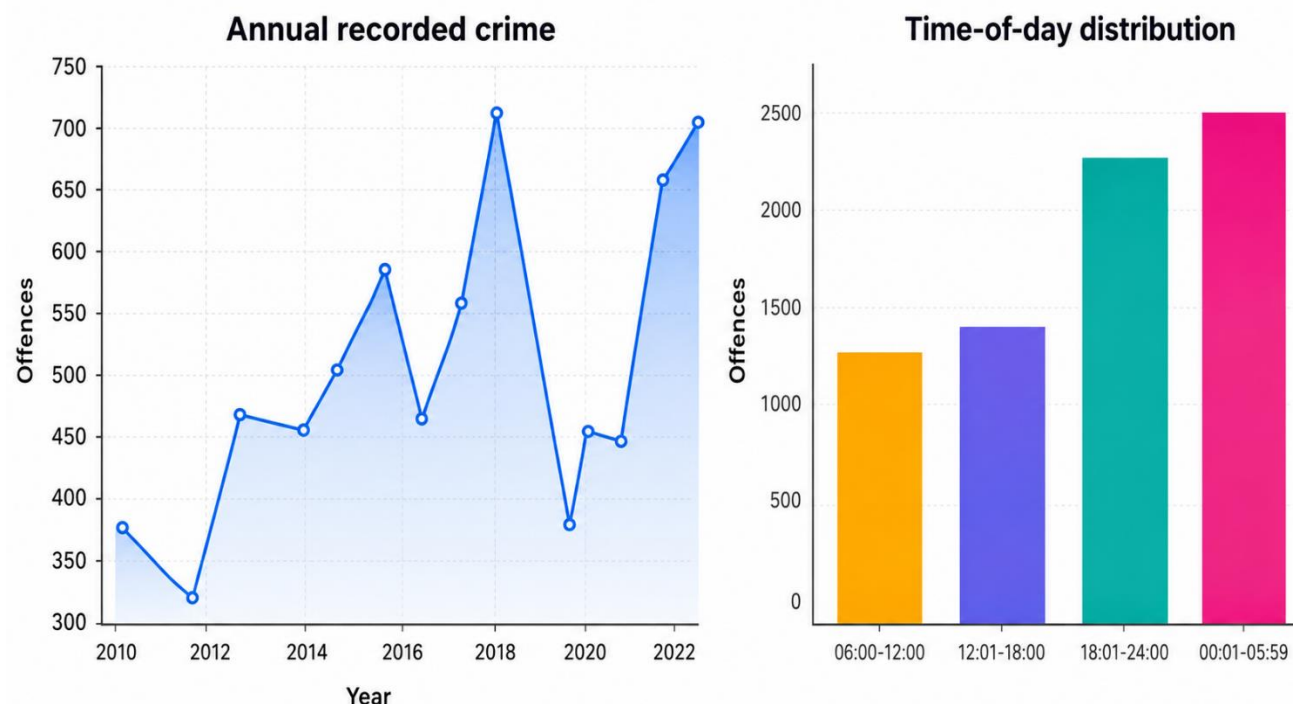


Figure 1. Annual and time-of-day concentration of recorded crime in Calabar

Source: police and tourism records, 2009–2023.

Buffer analysis in the source indicated that offences occurred within 500 metres to one kilometre of some security posts. Proximity alone does not establish that posts were ineffective because staffing, visibility, operating hours and route barriers matter. It does show that presence on a map is not equivalent to guardianship. Deployment should be evaluated through response time, patrol activity and incident displacement.

The detailed correlation table reported $r = .31$ with $p = .05$ between tourist arrivals and crime. This is a modest positive association near the conventional significance threshold. The abstract reported $r = .506$, creating an internal inconsistency. The detailed value is used because it is tied to a table. Neither value establishes that arrivals caused crime; both could reflect urban growth, increased recording or time trend.

A more appropriate future model would separate offence types and include resident population, unemployment, event days, policing, lighting and trend. It should test whether crime rates change during event periods and within event zones relative to comparison periods and places. The current result is useful as a screening association that justifies deeper analysis, not as an effect estimate.

Tourist preferences in the archive concentrated on carnival and music events. These activities generate large crowds and late movement, making event security particularly relevant. The same concentration also enables efficient prevention because organisers know time, route and venue in advance. Event risk plans should be built into permits and rehearsed with transport, health and security agencies.

The findings should be communicated without damaging destination image. Concealing risk can reduce trust, while sensationalising historical counts can deter visitors and stigmatise residents. Transparent communication should state preventive arrangements, reporting channels and verified current conditions. Historical results should be dated clearly. Safety is a component of service quality and should be managed as such.

The integrated evidence supports three strong conclusions. Recorded crime varied by year, was concentrated in evening and overnight periods, and showed spatial clustering. Survey respondents identified lighting and security conditions, and women reported higher experience. The association with tourist arrivals was modest and cannot support a causal claim. This combination directs prevention towards place and time rather than towards tourism growth in general.

Policy implications

Calabar should adopt an event-specific safety plan based on route, venue, crowd and time. Deployment should cover arrival and departure, not only the main programme. Lighting, temporary crossings, visible help points, medical support and transport pickup areas should be inspected before opening. Responsibilities and escalation procedures should be documented.

Hotspot policing should use current incident data and repeated review. Historical hotspot zones provide a starting point, but deployment should not be frozen around decade-old patterns. Police, venue and health records should share compatible place and time identifiers. Public reporting should aggregate sensitive data while operational analysts retain secure detail.

Night transport is a safety intervention. Regulated pickup points, predictable fares, driver identification and late services can reduce walking and waiting exposure after events. Venue operators and transport providers should coordinate closing times and crowd dispersal. Accessibility and affordability should be included so safety is not limited to visitors who can pay premium prices.

Gender-responsive safety should include trained reporting personnel, harassment protocols, safe waiting areas and referral pathways. Data should record offence type, location and relationship without exposing victims. Women's higher reported experience in the archive justifies targeted consultation, but measures should address risks faced by all groups.

Environmental design should be evaluated rather than assumed. Lighting repairs, surveillance, vendor layout and patrol changes should have before-and-after incident and perception measures. Displacement to nearby streets should be checked. An intervention is successful when it reduces harm without shifting it or creating excessive surveillance and exclusion.

Conclusion

The historical Calabar archive shows that the recorded risk environment was concentrated by offence, time and place. Theft and assault dominated, evening and overnight periods carried most incidents, and the global spatial statistic indicated clustering. Women reported a higher prevalence of crime experience, while poor lighting was the leading perceived hotspot characteristic. These findings support targeted destination-risk management.

The positive arrival-crime correlation was modest and internally inconsistent across the source, so it cannot sustain a claim that tourism caused crime. The evidence supports an exposure interpretation: tourism and entertainment activity occur within places and periods where opportunity and guardianship vary. Current policy should update the data, target night-time journeys and hotspots, and evaluate prevention with rates and current spatial methods.

Analytical scope and robustness

The historical nature of the crime series means that present-day safety cannot be inferred directly. Calabar's population, transport technologies, policing, entertainment geography and reporting systems have changed since 2023. The archive should be treated as a baseline demonstrating the usefulness of integrated data, not as a current travel advisory. A contemporary replication should retain comparable offence and time categories while documenting any classification changes so that long-term trends can be interpreted responsibly.

Recorded crime is shaped by reporting and administrative practice. Visitors may report theft to a hotel, event organiser or embassy rather than the police, while residents may not report minor incidents. Police recording may change with staffing, digitisation or classification rules. The 7,502 count is therefore a record of known events under the system operating at the time. It is neither a complete victimisation estimate nor a measure of offender prevalence.

A visitor-exposure denominator could be constructed from event attendance, hotel nights, attraction entries and transport counts. Crime per 10,000 visitor-hours would be more meaningful than incidents divided by annual arrivals because tourism activity is concentrated in particular months and times. Resident exposure should also be represented so that crimes near tourism sites are not attributed solely to tourists. The dataset did not provide the temporal detail needed for such a rate.

The time bands are broad and can conceal important peaks. Midnight to 5:59 a.m. includes both late-night dispersal and early-morning activity, while the evening category spans several hours. Hourly or two-hour bins would allow deployment around closing times, transport scarcity and venue changeovers. Event calendars should be linked to timestamps

so that ordinary nights, weekends and festival nights can be compared. This would translate the archival concentration into a more precise operational plan.

Spatial analysis should follow the street network and public-space structure. Euclidean buffers may show that an incident lies within 500 metres of a police post even when walls, rivers, one-way roads or visibility reduce practical access. Network distance and estimated response time would better represent guardianship. Venue entrances, taxi ranks, pedestrian routes and informal gathering points should be geocoded because risk may concentrate along journeys rather than inside named attractions.

A global nearest-neighbour ratio summarises the entire pattern and may be influenced by dense central areas. Local Moran's I, Getis-Ord statistics, kernel density and repeat-address analysis can identify specific concentrations and their stability. These methods require attention to bandwidth, multiple testing and exposure. The objective should not be to generate colourful maps, but to identify places where a defined intervention can be implemented and evaluated.

Hotspot policing has the strongest evidence when it is focused, time-limited and combined with problem-solving. A patrol presence may deter visible offending while leaving environmental conditions unchanged. Police and venue managers should diagnose whether a hotspot is associated with lighting failure, alcohol management, transport queues, cash handling or repeat offenders. The response can then combine guardianship with changes to the setting rather than relying solely on arrests.

Lighting intervention should be specified technically. Presence of a lamp does not establish adequate illumination, and excessive glare or poorly placed lighting can create shadows. Audits should record functionality, lux levels, maintenance response, vegetation obstruction and pedestrian perception. Priority routes should connect venues, parking, transit and accommodation. Before-and-after analysis should examine incidents and user confidence while checking whether problems shift to adjacent dark streets.

Private security is part of the destination system but requires standards and coordination. Guards should understand emergency reporting, evidence preservation, de-escalation and safeguarding. Venue incident logs should use common categories and be shared in aggregate with public authorities. Security presence should not create discriminatory screening or harassment. Licensing and training can improve capability while complaint channels protect patrons and staff.

The gender finding warrants qualitative follow-up because a binary question cannot capture harassment, sexual violence, theft, assault or fear. Women may change routes, travel in groups or avoid events, making observed attendance an outcome of safety conditions. Men may underreport some victimisation because of social expectations. Safety assessment should include avoided activity and perceived control, not only incidents. Confidential methods and referral information are essential when asking about sensitive experiences.

Visitor communication should be accurate and proportionate. Advisories can identify official transport, help points, emergency contacts and common precautions without portraying Calabar as uniquely dangerous. Messages should be available through hotels, venues, ticketing and digital channels. Communication should be tested for comprehension and should not shift responsibility for prevention onto visitors. A destination earns trust by showing that systems exist and incidents are handled transparently.

Event organisers should use a safety case before approval. The case can include estimated attendance, crowd profile, venue capacity, route plan, lighting inspection, alcohol management, transport, medical provision, safeguarding and command structure. Approval conditions should be proportionate to event scale. A post-event report should record incidents, near misses, complaints and corrective actions. Repetition across events creates institutional learning rather than beginning each festival cycle without evidence.

The tourist-arrival series should be audited for definition. It may combine attraction entries, overnight visitors, repeat visits or event attendance. The sharp increase in later years can reflect destination growth, improved recording or broader coverage. Correlation with crime is interpretable only when the unit is stable. Future systems should distinguish unique visitors, visits and visitor nights and explain estimation methods.

A common time trend can inflate correlation between annual series. Detrending, differencing or regression with year can test whether arrivals and crime co-vary beyond general growth. Offence-specific models may reveal that theft responds differently from assault. With only fifteen annual observations, model complexity must remain limited. The r value is therefore best viewed as exploratory evidence rather than a stable parameter.

The discrepancy between $r = .31$ in the detailed output and $r = .506$ in the abstract illustrates the importance of statistical provenance. The article uses the value attached to the table and discloses the alternative rather than silently choosing the stronger result.

Annual ANOVA also requires cautious interpretation because each year contains multiple offence categories, and the exact unit entered in the test should be clear. A significant F ratio indicates that displayed group means differ under the model; it does not show a continuous increase or identify which years differ. Time-series plots and offence-specific counts provide the substantive context. The policy conclusion rests on visible temporal variation, not on the F test alone.

Crime prevention can support tourism entrepreneurship by reducing uncertainty for small firms. Eateries, transport operators, vendors and accommodation businesses depend on patrons feeling safe enough to remain after dark. However, security costs can burden small enterprises if public services are weak. Business associations can participate in shared lighting, reporting and staff training while government retains responsibility for public safety and infrastructure.

Built-environment planning should avoid creating isolated activity nodes with poor pedestrian access. Mixed land use and legitimate late-evening activity can provide natural surveillance, but uncontrolled roadside commerce and parking can also reduce visibility and emergency access. Design review for entertainment corridors should consider frontage, lighting, crossings, vehicle speed and pickup areas. These measures link crime prevention with urban planning rather than treating safety as a policing issue alone.

Data governance must protect victims. Public maps should suppress exact locations where disclosure could identify sexual offences, children or private residences. Analysts need role-based access, secure storage and deletion schedules. Data-sharing agreements should define purpose and prohibit unrelated enforcement or commercial use. Ethical safeguards improve reporting because people are more likely to share information when confidentiality and response are credible.

Evaluation should assess unintended effects. Intensive policing can displace crime, deter legitimate informal activity or create negative interactions with young people. Cameras can raise privacy concerns. Lighting can affect residents and ecosystems. Each intervention should have indicators for harm, complaints and equity alongside incident reduction. Destination safety is sustainable only when prevention improves security without undermining rights, livelihoods or the character of public space.

The article's conclusion is intentionally narrower than the thesis title. Evidence supports spatial clustering and a modest temporal association, but not a causal 'effect' of tourism on crime. This terminology does not diminish the practical value of the study. It directs attention to the settings where tourism and urban activity overlap and where prevention can be targeted, while avoiding an unsupported claim that visitor growth is inherently criminogenic.

Current monitoring should create a joint tourism-safety observatory involving police, tourism authorities, health services, transport, venues and community representatives. A compact quarterly dashboard can report incidents by offence, time and zone, response time, lighting defects, transport complaints and event exposure. Analysts should publish methods and revise estimates transparently. This arrangement would institutionalise the integrated approach pioneered by the archive while updating it for present conditions.

Health-service data can complement police records because injuries may be treated without a formal complaint. Emergency departments and ambulance services can report anonymised time, location and injury type using compatible categories. Differences between health and police trends may identify underreporting or classification gaps. Such linkage requires privacy safeguards and should not include identifiable clinical details in tourism reports. The aim is to understand service burden and prevention opportunities, not to create a surveillance profile of individuals.

Alcohol availability may interact with some night-time risks, but the archive did not measure consumption or venue practice. Future studies can examine responsible-service policies, closing times, staff training and transport availability without assuming that every entertainment venue creates harm. Venue-level incident rates should be adjusted for patron volume. Prevention may include water access, refusal protocols, safe dispersal and coordination with transport rather than blanket restrictions that undermine legitimate nightlife.

Informal vendors and workers should be included in safety planning because they remain in public spaces during setup, peak activity and clean-up. Their knowledge of recurring problems can improve hotspot diagnosis, yet enforcement-led approaches may displace their livelihoods. Consultation can identify safe vending locations, lighting needs, waste arrangements and reporting channels. This supports inclusive destination management and avoids defining safety solely from the perspective of formal businesses or visitors.

Seasonal analysis would strengthen interpretation because Calabar's visitor economy peaks around year-end events. Monthly offence counts can be compared with ordinary months over multiple years, controlling for days and population. A consistent event-period excess would be more persuasive than annual correlation. The source contains some monthly and festival information, but the published tables do not provide a complete reproducible event-control design. The article therefore recommends rather than claims seasonal effects.

Perception data should be treated as an early-warning system rather than dismissed when they differ from recorded crime. Fear and avoidance can reduce participation even without a reported incident, while high confidence can coexist with underreporting. Repeated visitor and resident surveys should measure perceived safety by place and time, avoided journeys, trust in reporting and satisfaction with response. Comparing these indicators with incidents can reveal where communication, design or service quality requires attention.

The publication-quality figure combines annual counts with time-of-day concentration to emphasise two different scales of risk. It should not be read as demonstrating that the annual series is generated by night-time tourism. Rather, the two panels show that management requires both strategic trend monitoring and operational scheduling. This visual separation mirrors the article's broader methodological principle: related evidence should be integrated without collapsing distinct measures into one causal story.

Declarations

Funding

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Ethics statement

The source used questionnaires, interviews and official from the filed

Conflict of interest

The author declares no conflict of interest.

Author contribution

Violet Eneyo conducted the study

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