

# The Impact of Property Crime on Public Infrastructure Development in the Nigerian Cities

Aro Shittu Oluwakayode<sup>1</sup>, Azmi Fatin Afiqah<sup>2</sup>, Samsudin Salfarina<sup>3</sup>

<sup>1,2,3</sup>Universiti Teknologi Malaysia

DOI : <https://dx.doi.org/10.47772/IJRISS.2024.808087>

Received: 13 August 2024; Accepted: 23 August 2024; Published: 31 August 2024

## ABSTRACT

Property crime in Nigeria incurs billions of Naira in annual rehabilitation costs, significantly straining government budgets and hindering resource allocation for sustainable urban development. This study investigates how public infrastructure development in Nigerian cities is impacted by property crime focusing on the Lagos metropolis. Utilising both primary and secondary data, including in-depth interviews with five building industry professionals and government records analysis. The research adopts parallel data analysis to assess the financial impact of property crime, its relationship with environmental decay, economic losses, social consequences, and its effect on project delivery timelines. It exemplifies the use of triangulation as a methodological metaphor for drawing inferences from qualitative and quantitative findings. The findings demonstrate that property crime severely hampers public infrastructure development, resulting in increased government expenditure, environmental degradation, economic setbacks, public suffering, and delays in project completion. The study underscores the need for comprehensive strategies to mitigate property crime and ensure sustainable infrastructure development. Effective measures, including enhanced security partnerships and community engagement, are crucial for protecting public assets and informing policymakers in the development of effective policies for managing and maintaining the nation's public infrastructure.

**Keywords:** Property crime, public infrastructure, government expenditure, sustainable urban development, comprehensive strategies, effective policies.

## INTRODUCTION

### Background of the Study

Public spending, through a variety of means, is essential to both social and economic development. Investments in the social and industrial infrastructure, for example, establish reciprocal relationships that result in job opportunities. Public spending can be broadly divided into two categories: developmental spending and non-developmental spending. Costs for upholding law and order, defence, and other general government services are classified as non-developmental expenditures while spending specifically targeted at improving economic and social services is referred to as developmental expenditure (Simanti & Harsahib, 2023).

Despite being capital-intensive, infrastructure investment is essential to the expansion and development of a country's economy. To obtain loans for the development of their infrastructure, many third-world nations rely on international organisations like the World Bank and the International Monetary Fund (IMF). According to the Global Infrastructure Facility, Africa's infrastructure financing gap ranges between USD 68 billion to USD 108 billion per annum. To fill this gap, an annual investment of USD 130 billion to USD 170 billion is needed, primarily in the energy, transport, and telecommunication sectors (African Development Bank, 2018). However, demographic growth, urbanisation, and aspirations for economic opportunities will likely strain existing amenities. Factors like vandalism (property crime) contribute to the decay of public infrastructure, necessitating urgent attention.

Vandalism has multiple definitions and forms, varying across disciplines such as sociology, law, urban

planning, and environmental studies. It typically involves property ownership,

destructiveness, and intentionality (McGuire, 2004; Millie, 2008). Understanding vandalism requires examining community and individual norms. S. Cohen's influential 1973 study defines vandalism as "a term associated with particular behaviours in particular contexts"(Ward, 1973). National identity also plays a role, with Heller (1979)suggesting that vandalism reflects a misalignment with a dominant sociocultural image.

Vandalism (property crime) is defined by the FBI as "any deliberate or intentional damage, harm, defacement, or disfigurement of any real or personal property, whether public or private."(Federal Bureau of Investigation, 1985). In Nigeria, the Criminal Code Act and Petroleum Production and Distribution (Anti-Sabotage) Act describe property crime as an act of sabotage involving the willful or unlawful destruction of public property, including petroleum products, buildings, structures, vehicles, electrical cables, telecommunication cables, and related facilities(Petroleum Production and Distribution (Anti-Sabotage) Act and Miscellaneous Offences Act, 1975; Criminal Code Act Chapter 77, Laws of the Federation of Nigeria 1990, 1990). Vandalism is generally considered a "property crime" entailing the purposeful damage of either private or public property(Alley et al., 2015). Global trends indicate that property crime rates are rising, posing a significant threat to businesses in both developed and developing nations(UN-HABITAT, 2018).

Various studies have identified vandalism (property crime) as a major hindrance to sustainable infrastructure development, productivity, and socio-economic growth in cities of developing countries(Almasri & Ababneh, 2021; Hashim et al., 2019; Iaiani et al., 2021; Ikejemba & Schuur, 2018; Khalilikhah & Heaslip, 2018; Kumar, 2021; Motta, 2017; Oludayo & Ayodele, 2019; Shackleton & Njwaxu, 2021). Additionally, inadequate budget allocation and poor fund management contribute to the poor maintenance of public facilities(Adamu & Shakantu, 2016; Lee & Scott, 2009). Buys & Mavasa (2007) noted that grants for public facility maintenance are often given low priority. The financial costs of property crime are extensive and multifaceted, yet research in this area is scarce. Understanding the financial burden of property crime is crucial for comprehending its full impact on communities and economies, and for aiding policymakers in developing comprehensive strategies to prevent property crime and allocate budgets for public infrastructure maintenance. Therefore, this study aims to investigate the effects of property crime on the development of public infrastructure in Nigerian cities.

### **Statement of Research Problem**

Nigeria incurs billions of Naira annually on rehabilitating public assets due to property crime, significantly impacting government expenditure and ultimately affecting budgetary allocation and resource distribution for sustainable urban development. Repairing or replacing vandalised property consumes taxpayer money that otherwise could have been used for communal needs like education, healthcare, and other physical development(National Orientation Agency Nigeria, 2024). The financial burden of property crime is substantial and increases yearly. For example, in London, an estimated £10 million is spent a year on graffiti removal on public transit, money that could have been better spent on enhancing offerings or lowering costs. Similarly, American research discovered that vandalism costs schools some \$600 million a year, taking funds away from instructional initiatives and student support services (Faster Capita, 2024). In Cape Town, South Africa, persistent vandalism and theft interfere with the provision of water and sanitation, resulting in millions of Rands' worth of losses and serious operational difficulties(Newsroom, 2024).

Property crime is still a problem since it not only interferes with critical services but also costs unneeded money, taking resources away from other projects that may increase access to sanitary facilities and clean water (Harriet et al., 1992; Newsroom, 2024). Funds used for rehabilitating vandalised public infrastructure are enormous, significantly draining public resources and straining government budgets, leading to the diversion of financial support from critical projects and harming businesses (Addeh, 2022; Hamid, 2022; Misheck & Kwashirai, 2021; Unini, 2021). The financial implications of removing damage caused by vandalism, such as graffiti, can be exorbitant (Offler et al., 2009; Thompson et al., 2012), reducing funds available for other essential tasks and contributing to increased costs for public infrastructure development. For instance, the Federal Government of Nigeria spends N60 billion annually to fix vandalised pipelines (Dyepkazah, 2021),

while the Federal Capital Territory of Nigeria requires N2.6 billion to fix 25,462 damaged public utilities (Hamid, 2022).

Nigeria faces a significant infrastructure deficit, requiring up to \$3 trillion over the next 30 years to bridge this gap, for substantial investment to address them (Amata, 2023; Udi, 2023). However, government revenue is declining, and ongoing borrowing is a major concern. Issues such as corruption, vandalism, bureaucratic bottlenecks, delays, and poor maintenance have contributed to the poor state of infrastructure. Traditionally, the Nigerian government has relied on budgetary allocations funded by revenue from taxes, fees, and other sources, supplemented by borrowing (Amata, 2023). Vandalism of public infrastructure is a severe issue in Nigeria. Critical structures like bridge railings, power cables, and streetlights are often stolen or damaged, resulting in a rise in accidents and criminality. The National Bureau of Statistics reports that power supply issues, exacerbated by vandalism, hinder Nigeria's GDP growth (George, 2024).

According to estimates from the Nigerian Society of Engineers, infrastructure vandalism costs Nigeria some N76 billion (\$200 million) a year in lost revenue from repairs and replacements as well as the wider effects of service interruptions on the country's economy (George, 2024). Similarly, the Lagos State Government projected spending up to N1 trillion to fix public infrastructure damaged during the 2020 civil unrest, a cost exceeding the state's N920.5 billion revised 2020 budget (Financial Nigeria magazine, 2020). Meanwhile, these expenses are borne by businesses, residential areas, and public facilities, which has a significant negative financial impact on local governments and communities (Harriet et al., 1992). These problems highlight the necessity of this study, which aims to investigate the effects of property crime on the development of public infrastructure in Nigerian cities.

## Research Questions

Understanding the interrelationship among research components is crucial in determining the appropriate methodology for the study. Therefore, five research questions were derived from the problem statement. By answering these questions, five relevant and reliable objectives were established, guiding the choice of the research approach. Thus, this study will provide answers to the following research questions:

1. How does property crime impact government expenditure on public infrastructure in Lagos Metropolis?
2. What is the relationship between property crime and environmental decay in Lagos Metropolis?
3. What economic losses are attributed to property crime in Lagos Metropolis?
4. How does property crime affect the well-being of the masses in Lagos Metropolis?
5. In what ways does property crime cause delays in the delivery of public infrastructure projects in Lagos Metropolis?

## Objectives of the Study

The study's particular goals are to:

1. evaluate the financial impact of property crime on government expenditure,
2. examine the relationship between property crime and environmental decay,
3. assess the economic losses attributed to property crime,
4. investigate the social consequences of property crime, particularly its impact on the well-being of the masses, and
5. determine how property crime affects the timeliness of public infrastructure project delivery.

## Statement of Hypotheses

1. Property crime increases government expenditure.
2. Property crime causes environmental decay.
3. Property crime causes economic loss.
4. Property crime inflicts suffering on the masses.

5. Property crime delays project delivery periods.

## Scope of the Study

This study investigates the impact of property crime on the development of public infrastructure in Nigeria, focusing particularly on the Lagos metropolis. It evaluates the financial impact of property crime on government expenditure, explores the correlation between property crime and environmental degradation, assesses the economic losses attributed to property crime, investigates the social consequences of property crime, particularly on public well-being, and determines how property crime affects the timeliness of public infrastructure project delivery. Using both primary and secondary data, and employing quantitative and qualitative methods, the study aims to provide a comprehensive understanding of the economic, environmental, and social implications of property crime on public assets.

## Theoretical Concept

The "Broken Windows" theory has profoundly influenced our understanding of neighbourhood crime and urban decline. The hypothesis posits that minor physical disorders, such as an unrepaired broken window, can lead to more significant social disorders, including robberies, violent crimes, and street violence, as well as further physical deterioration (Wilson & Kelling, 1982). The theory, as discussed by Thompson et al. (2012) and Wilson & Kelling (1982), underscores the importance of early detection and swift rectification of minor issues like litter, graffiti, and vandalism. Skogan's analysis of the theory across over 40 cities found that "social disturbance" is the first step in a downward spiral of urban decay (Skogan, 1990). The theory suggests that unaddressed disorder triggers a cascade of negative effects, leading to urban deterioration. As such, neighbourhood crimes like vandalism can significantly impact sustainable urban development. This theory can serve as the theoretical framework for examining the relationship between property crime and public infrastructure development in the study area.

## LITERATURE REVIEWS

Previous studies on the incidence of property crime and its implications are presented in this section. Anyieni (2013) in his study on infrastructure policy in Kenya highlights the critical role that infrastructure plays in the country's economic development. It addresses various aspects of the transportation sector, including road, rail, air, and marine transport, and emphasises Kenya's challenges due to poor maintenance, inadequate funding, and inefficient management of these systems. The study underscores the significance of transport infrastructure in facilitating economic activities, reducing poverty, and enhancing the country's competitiveness. Specific issues such as congestion, supply deficits, and corruption in procurement processes are noted as major barriers to effective infrastructure development. However, the study primarily focuses on transport infrastructure (roads, railways, air, and marine transport). Future research could explore the status and challenges of other crucial infrastructure sectors such as electricity, water supply, and telecommunications, which are also vital for economic growth and business competitiveness. Besides, the study was conducted in Kenya and the result may have different implications in the Nigerian context due to the geographical differences. Moreover, property crime was not identified in the study as one of the barriers to effective infrastructure development in the study area.

(Motta, 2017) study examines how crime (theft, vandalism, robbery, and arson) affects the effectiveness of small and medium-sized businesses (SMEs) in Latin America's service and hospitality industries. The findings reveal that crime significantly reduces labour productivity and firm performance, especially in hospitality SMEs, with higher losses observed in nations with lesser levels of institutional development and GDP per capita; however, the study's scope is limited as it only focuses on property crime effects on private enterprises and does not explore its effect on public infrastructure. Alike, Ikejamba & Schuur (2018) study explores the effect that theft and vandalism have on sub-Saharan Africa's renewable energy (RE) installations' ability to last, revealing that poverty, government inequality, and lack of awareness are significant drivers of these crimes. The study recommends involving local communities, breaking down projects into smaller subsets, and implementing effective security measures to ensure the sustainability of RE development. However, it focused

on the causes of property crime without considering its consequences or implications.

Moreover, Khalilikhah & Heaslip (2018) study identifies arrow signs as the most vandalized, followed by text signs, while symbol and combination signs are less affected. The study reveals that the height of traffic signs above the road is a critical factor in vandalism, which reduces sign legibility and visibility, potentially increasing road accidents and maintenance costs, but it lacks a schedule of maintenance costs. Also, Oludayo & Ayodele (2019) study on oil pipeline vandalism in Arepo, Southwest Nigeria, reveals that wealthy individuals, top government personnel, and security agencies are complicit in financing and facilitating property crime, with community youths also participating. The study suggests creating community policing and implementing severe policies and modern security technology to reduce property crime, but the study did not consider any impact of infrastructure vandalism in the study area. Similarly, Onyiba & Onwo, (2019) argue that oil losses from the Niger Delta significantly impacted Nigeria's economic growth between 2000 and 2017, with embezzlement and pipeline vandalism being major contributors. They recommended burying pipelines deeper, hiring host communities for security, and integrating them into the oil economy. The study focuses exclusively on the period from 2000 to 2017. While this is a significant time frame, it does not consider the trends and impacts of oil embezzlement and vandalism beyond 2017. A broader temporal analysis could provide a more comprehensive understanding of the issue and its long-term effects on economic development. Besides, the study focused on oil pipeline vandalism which findings may not apply to other sectors of the Nigerian economy infrastructure vandalism.

Furthermore, Misheck & Kwashirai (2021) study on infrastructure vandalism in Zimbabwe reveals that vandalism leads to revenue loss, high repair costs, service interruptions, and scarcity, driven primarily by a broken socioeconomic system, unemployment, poverty, and lack of social value. The study identifies copper conductors and network elements as key targets due to their illicit market value and recommends digitization and legally binding regulations to protect public infrastructure. However, the study findings are specific to Zimbabwe's socioeconomic conditions and may not apply to Nigeria. In addition, Lebek et al. (2021) explored how vandalism of public standpipes in KwaZulu-Natal, South Africa, exacerbates household water insecurity and impedes water infrastructure development. The study was limited as it only highlighted the impact of vandalism on water security, which may not be relevant to other infrastructure development. Additionally, its findings might differ in the Nigerian context since vandalism is local. Moreover, Iaiani et al. (2021) analysed incidents where hazardous materials are purposefully released from industrial installations, focusing on physical and cybersecurity-related incidents at chemical and petrochemical sites. The study found sabotage and conspiracy to be the primary causes of property crime, leading to significant property damage and economic loss, with strong correlations between vandalism and the transportation of hazardous substances and theft from pipelines. However, the study findings were limited, restricting the effects of property crime to economic loss and property damage only, making it less explorative.

More so, Edun et al. (2023) found that the main reason for oil spills in Nigeria's Niger Delta is oil pipeline vandalism., with inadequate regional security and militant economic sabotage as key contributors. The study highlights the resulting instability, massive oil revenue losses, environmental pollution, fuel shortages, and economic setbacks. However, the study focus was mainly on Niger Delta oil pipeline vandalism, and its findings may be contrary to other public infrastructure destruction or damage. Additionally, Henry & Mohammed (2023) analysed oil pipeline vandalism and theft in Nigeria, identifying inadequate security, poor implementation of the Oil Pipelines Act, environmental degradation, and government complicity as key causes of the issue. They recommend enhanced surveillance, structural reorganization, a special court for prosecuting vandals, and internal investigations to address the problem. The study focuses exclusively on the oil sector, specifically factors contributing to pipeline vandalism and theft. It does not explore whether similar issues of vandalism or theft occur in other critical sectors of the Nigerian economy, such as telecommunications or power infrastructure, nor does it consider the broader implications of these issues on national security and social stability.

In the above studies reviewed, there was no previous work that gives an account of the holistic implications of property crime on the development of public infrastructure in any of the study areas covered by the research,

which is a gap that the current study will fill. Therefore, the current study aims to investigate the effects of property crime on the development of public infrastructure in Nigerian cities.

## METHODOLOGY

This study employs both primary and secondary data sources. Primary data were gathered through in-depth interviews with building industry professionals in Lagos State, while secondary data were obtained from newspapers, government gazettes, and previous research. The quantitative and qualitative data were analysed separately, with findings only integrated at the interpretation and conclusion stages, following established guidance in the literature (Erzberger & Kelle, 2003; O’Cathain et al., 2008; Onwuegbuzie & Teddlie, 2003; Östlund et al., 2011). The research exemplifies triangulation by combining qualitative and quantitative approaches, leveraging their complementary strengths to account for both the physical world and human experience. Secondary data, including government gazettes and daily newspapers, were analysed using descriptive statistical tools to assess the financial impact of property crime on government expenditure in Nigeria from 2018 to 2024 (see Table 1). Qualitative analysis was applied to address objectives one through five. The in-depth interviews were conducted online via Google Meet, with participants’ consent obtained beforehand. These interviews were recorded, and the transcripts were anonymised before analysis. A topic guide, informed by prior studies and theoretical literature, was used to pose open-ended questions, with the sequence tailored to the natural flow of each interview. Each session began with demographic information and included discussions on the impact of property crime on public infrastructure development.

**Table 1:** Statistics of the financial impact of property crime on government expenditure in Nigeria between 2018 and 2024.

Year	Location	Type of Infrastructure Vandalised	Description	Amount Incurred to Repair/Replace	Supporting References
2018	Third Mainland Bridge, Lagos	Road/Transport	Rehabilitation and maintenance of Third Mainland Bridge due to vandalism and theft of metal components	N18.87 billion	[2]
2020	Across Nigeria	Oil pipeline	Pipeline repairs and replacement due to vandalism	N53.36 billion	[5]
2021	Third Mainland Bridge, Lagos	Road/Transport	Rehabilitation and maintenance of the Third Mainland Bridge due to vandalism and theft of metal components	N4.8 billion (\$12 million)	[2]
2021	Chinese-built light railway network, Abuja	Rail/Transport	Costs of replacing vandalised railway equipment	N5 billion	[7]
2022	Across Nigeria	Oil pipeline	Pipeline repairs and replacement due to vandalism	N471.493 billion	[4]
2022	Across Nigerian Cities	Rail/Transport	Rehabilitation and repairs of rail track due to vandalism	N1.1 billion	[7]
2022	Makurdi-Jos-Kaduna Rail line	Rail/Transport	Cost of repairs	N200 million	[7]
2022	Across Nigerian	Rail/Transport	Procurement and	N200 million	[6], [7]

	Cities		rehabilitation of rolling stock (narrow gauge) for railways		
2023	Across Nigeria	Electricity Transmission	To repair over 117 electricity towers vandalised between 2022 and 2023	N12.8 billion	[3]
2023	TCN infrastructure Aba sub-region, Delta State	Electricity Transmission	Cost of repair and replacement of power transmission towers	N23 million	[2]
2024	Third Mainland Bridge, Lagos	Road/Transport	To replace 10 LED road stud lights stolen	N150,000	[2]
2024	The Niger Bridge, Onitsha, Anambra State	Road/Transport	Rehabilitation and maintenance of Niger Bridge due to vandalism and theft of metal components	N5 billion (\$13 million)	[1], [2]

**Note:** [1] Akanimo and Ihegwuruike(2024); [2] George (2024); [3] Guardian Nigeria (2024); [4] Majorwavesen (2023).; [5] Punch Editorial Board (2023); [6] Ramalan (2023); [7] Salifu (2021).

**Source:** Authors’ Concept (2024).

The researchers manually transcribed each interview immediately after playback, noting inflexions, pauses, tones, and other nuances(Braun and Clarke, 2013). After transcription, we reviewed and cleaned the transcripts, removing all identifiable information, assigning each participant a unique identifier (P1, P2, etc.), and anonymising responses. This prepared the data for analysis and uploaded it into NVivo. The demographic data of the participants was entered into an Excel spreadsheet and uploaded into NVivo software for data analysis. Each of the research questions was labelled with a phrase or short statement to avoid uploading a long statement of the research question into the NVivo software.

The researchers employed a thematic analysis, guided by the research questions, making it a theoretical thematic analysis. This approach involves reviewing transcripts to identify significant information and creating codes that align with the research questions. Thematic analysis is practical and flexible, providing a comprehensive account of the data (Boyatzis, 1998). we used description-focused coding, aiming to describe and directly report participants' information on the impacts of property crime on the development of public infrastructure.

The coding process began by creating containers for the research questions and analysing the data with the research questions in mind. Only relevant data segments were coded. Description-focused coding was used, where codes were developed and modified as the dataset was reviewed. Significant information, highlighted in yellow, was coded and organised into respective containers. If new significant information didn't fit the existing codes, additional containers were created. This process was iterated resulting in 32 codes (see Table 2).

**Table 2:** Coding Model

Name	Case Count	Code Count	Code Sum
RQ1: How does property crime impact government expenditure?	5.00		
Increase Government Expenditure	5.00	5	5.00

Increase Project and Maintenance Costs	3	3	3
Subtotal of Codes		8	
RQ2: What is the relationship between property crime and environmental decay?	5		
Environment Deterioration	2	3	3
Infrastructure Damage	4	4	4
Devalue Property	1	1	1
Subtotal of Codes		8	
RQ3: What economic losses are attributed to property crime?	5		
Economic Loss	3	3	3
Public Infrastructure Shortage	1	1	1
Discourage Investment	1	1	1
Abandon Project	2	2	2
Subtotal of Codes		7	
RQ4: How does property crime affect the well-being of the masses?	5		
Impact People's Mobility	1	1	1
Complicate Masses Suffering	2	2	2
Live Losses	1	1	1
Subtotal of Codes		4	
RQ5: In what ways does property crime cause delays in infrastructure delivery?	5		
Project Delay	3	3	3
Infrastructure Scarcity	2	2	2
Subtotal of Codes		5	
Total Number of Codes Developed			32

The focus then shifted from interpreting individual data items to interpreting aggregated meanings across the dataset. This involved categorising the codes based on their similarities to develop themes. Sometimes, a single code could represent an overarching narrative and be elevated to a theme (Braun and Clarke, 2012). These themes were designed to address the study's research questions. The categorisation started with the dominant code and proceeded with other codes, organising them into clusters to develop themes that addressed the research questions (see Table3).

**Table 3:** Categorisation of Codes

Cluster	Codes
Cluster 1: Increase Government Budget	- Increase Government Expenditure - Increase Project and Maintenance Costs
Cluster 2: Environmental Decay	- Environment Deterioration

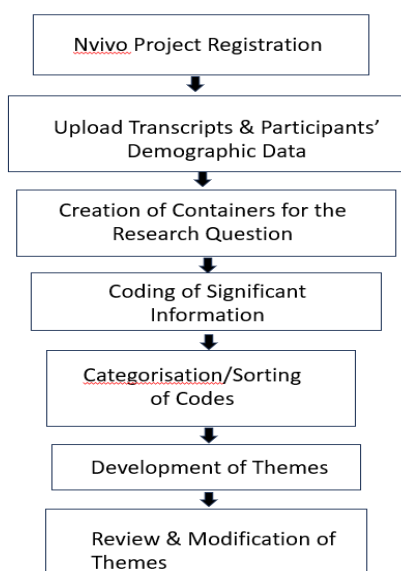


	- Infrastructure Damage - Devalue Property
Cluster 3: Economic Sabotage	- Economic Loss - Abandon Project - Discourage Investment - Public Infrastructure Shortage
Cluster 4: Masses Suffering	- Complicate Masses Suffering - Impact People's Mobility - Live Losses
Cluster 5: Delay Project Delivery	- Project Delay - Infrastructure Scarcity

The researchers reviewed, modified, and developed the preliminary themes, then, assigned the codes to their appropriate themes. The final coding and sorting results (codes and themes for the research questions) are shown in Table 4 and were exported to MS Excel for presentation. This procedure of NVivo data analysis is illustrated in Figure 1.

**Table 4:** Final Product (Research Questions, Developed Themes, and Code Counts)

Labelled Research Questions	Identified Themes	Code Counts
RQ1: How does property crime impact government expenditure?	Increase Government Budget	8
RQ2: What is the relationship between property crime and environmental decay?	Environmental Decay	8
RQ3: What economic losses are attributed to property crime?	Economic Sabotage	7
RQ4: How does property crime affect the well-being of the masses?	Masses Suffering	4
RQ5: In what ways does property crime cause delays in infrastructure delivery?	Delay Project Delivery	5
Total		32



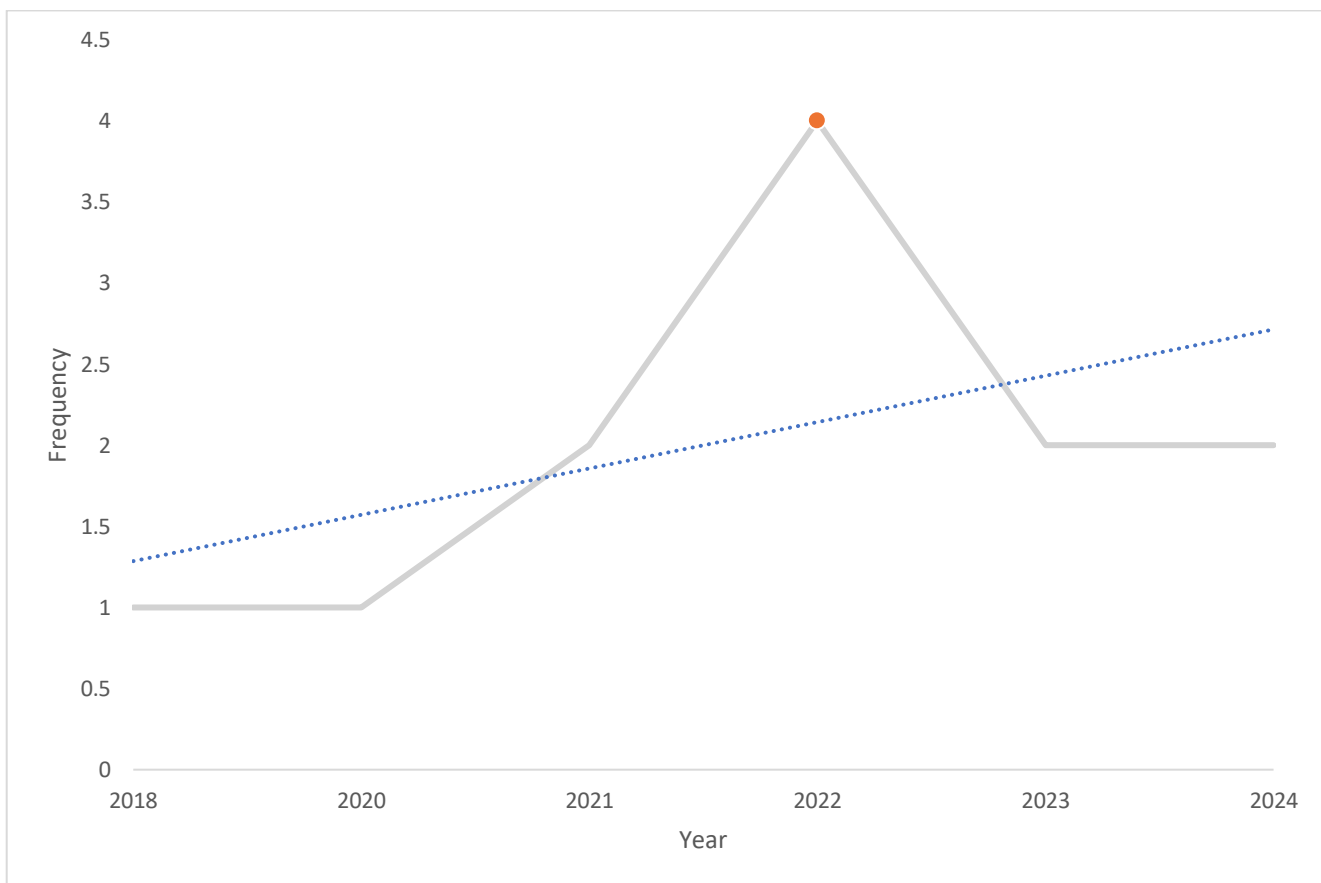
**Figure 1:** NVivo data analysis procedure

Source: Authors' Concept (2024)

## RESULTS AND DISCUSSION

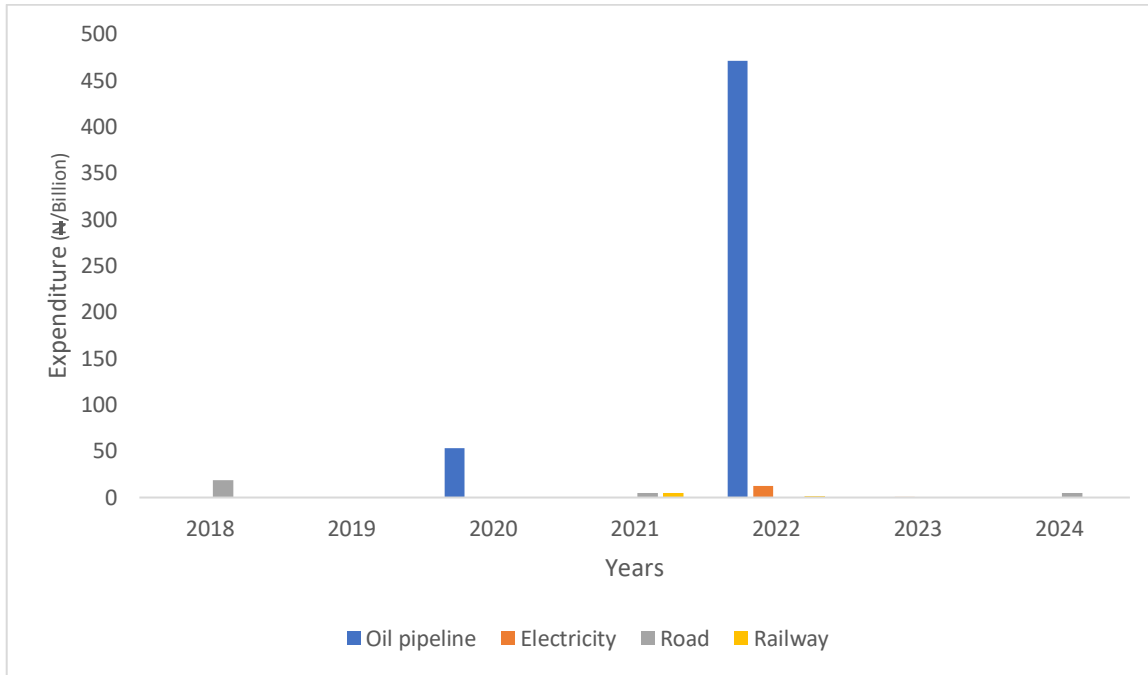
### Quantitative Analysis of the Effects of Property Crime on the Development of Public Infrastructure in Nigerian Cities

Figure 2 shows the financial impact of property crime on government expenditure on repairing and replacing vandalised public infrastructure in Nigeria between 2018 and 2024. The graph indicates a consistent increase in spending due to rising incidents of property crime, with 2022 recording the highest expenditure. This spike is attributed to rebuilding and repairing damage from the EndSARS protest in October 2020, which significantly impacted years of development and public investment (Financial Nigeria magazine, 2020).



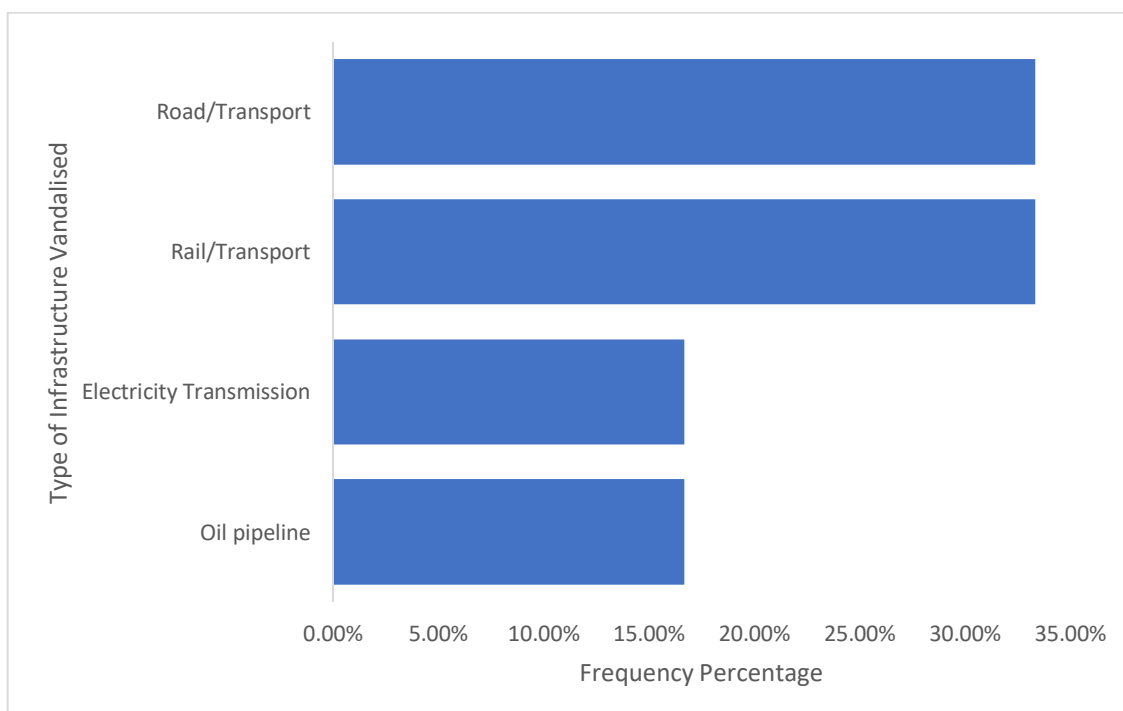
**Figure 2:** Trend of Government Expenditure on Public Infrastructure Rehabilitation in Nigeria from 2018-2024.

Figure 3 shows the cost distribution of maintenance for four major types of public infrastructure affected by property crime in the study area. Oil pipeline infrastructure incurred the highest costs, with N53.36 billion in 2020 and N471.493 billion in 2022, followed by road infrastructure with N18.87 billion in 2018 and N4.8 billion in 2021. Electricity transmission infrastructure costs were N12.8 billion in 2020 and N23 million in 2021, while railway infrastructure recorded the lowest maintenance costs, totalling N6.5 billion between 2021 and 2022. These findings confirm the statement by Alhaji Lai Mohammed, a former Nigerian minister of information and culture, that the Federal Government spends N60 billion annually on fixing vandalised pipelines (Dyepkazah, 2021) and align with the findings of Omorogbe and Ordor (2018) that Nigerian cities rank first globally in power infrastructure vandalism.



**Figure 3:** Distribution of cost incurred on rehabilitation/Infrastructure Types from 2018-2024

Figure 4 displays the percentage distribution of vandalised public infrastructure types during the study period in the study area. The graph shows that transport infrastructure, specifically rail and road, was the most frequently vandalised, each at 33.33%. In contrast, electricity transmission and oil pipeline infrastructure were less frequently vandalised, each at 16.67%. The reduced vandalism of oil pipelines may be due to a recent partnership between the Federal Government of Nigeria and private security experts for pipeline surveillance, which has been effective (Ogunyemi, 2024).



**Figure 4:** Percentage distribution of 'Type of Infrastructure Vandalised'

## Qualitative Analysis of the Effects of Property Crime on the Development of Public Infrastructure in Nigerian Cities

### Participants' Demography

Five participants completed the open-ended survey. The number of participants was justified using the "rule of 5 users" in qualitative research (Nielsen, 2000; Nielsen & Landauer, 1993). The majority of the participants were male (n = 3, 60%), with participants P1 and P2, who are estate surveyors and valuers by profession, dominating the survey population (see Table 5). Most participants had more than 10 years of experience (n = 4, 80%), with participant P3 having the highest at 23 years.

**Table 5:** Participants' demographic information

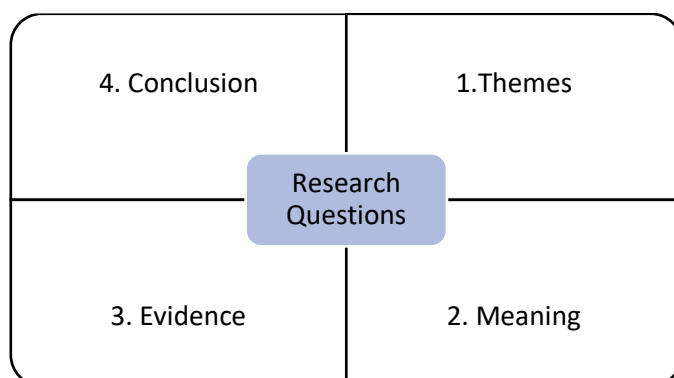
Participant's ID	Gender	Educational Qualification	Professional Qualification	Years of Experience
P1	Male	HND	Electrical/Building Contractor	15
P2	Male	BSc	Estate Survey and Valuer	12
P3	Male	MSc	Architect	23
P4	Female	BSc	Quantity Surveyor	16
P5	Female	MSc	Estate Survey and Valuer	6

### Sample Size

Unlike quantitative research, qualitative studies use a small number of samples. The aim is to gather information that helps understand the complexity, diversity, or context of a phenomenon, rather than to represent numerical data as in quantitative research. This necessitates smaller sample sizes. The recruitment of five participants in this study is justified by studies suggesting the "rule of 5 users" in qualitative research (Nielsen, 2000; Nielsen & Landauer, 1993). According to these studies, testing more than five people yields fewer new insights and incurs higher costs. After testing five people, the same issues are likely to be mentioned repeatedly, with little significant new information gained. The general standard for qualitative research is to collect data until reaching saturation (Charmaz, 2006; Merriam, 2009).

### Theme-driven Format Presentation

Theme-driven Format was adopted in writing the report of this NVivo data analysis. This is illustrated in Figure 5 for visualising and understanding purposes.



**Figure 5:** Theme-driven Format Presentation. Source: A modification of Adu (2019)

## Research Question

RQ1. How does property crime impact government expenditure on public infrastructure in Lagos Metropolis?

RQ2. What is the relationship between property crime and environmental decay in Lagos Metropolis?

RQ3. What economic losses are attributed to property crime in Lagos Metropolis?

RQ4. How does property crime affect the well-being of the masses in Lagos Metropolis?

RQ5. In what ways does property crime cause delays in the delivery of public infrastructure projects in Lagos Metropolis?

The themes addressing these research questions are five in number: delay of project delivery, economic sabotage, environmental decay, increased government budget, and masses suffering.

## Themes

A theme, as defined earlier, is a combination of codes with shared characteristics. The researcher developed a total of 5 themes rooted in 32 codes under research questions 1 to 5.

### Themes Addressing Research Questions 1 to 5

The researcher identified five themes, one theme under each research question. The themes are increased government budget, environmental decay, economic sabotage, masses suffering, and delay of project delivery answering research questions 1 to 5 respectively. "Increased government budget" and "Environmental decay" were the dominant themes, each with eight codes. "Economic sabotage," "masses suffering," and "delay of project delivery" had seven, four, and five codes, respectively.

### Increased Government Budget:

Property crime leads to additional financial burdens on the government, necessitating repairs and reconstruction that strain budgets. The in-depth interviews emphasised how these unexpected expenses disrupt planned budgets and require the government to allocate extra resources to fix damaged infrastructure. Participant P5 emphasised that "reconstructing or taking repairs again is another finance on the government's part, affecting their budget because these repairs are often not planned for." This finding conforms with the findings derived from the quantitative analysis in objective one where independent data were used to evaluate the financial impact of property crime on government expenditure in Nigeria between 2018 and 2024.

### Environmental Decay:

Property crime contributes to significant environmental degradation, including urban decay and damage to infrastructure, which reduces the quality of life and impedes sustainable development. This theme was prominent with participants highlighting how property crime makes environments uncondusive for the public and devalues properties. For example, participant P2 mentioned that "the public is deprived of enjoying the social infrastructure provided by the government due to vandalism. It makes the environment uncondusive for the public." This theme aligns with the Broken Window Hypothesis that highlights the significance of addressing minor disorders like litter and graffiti to prevent urban decay (Skogan, 1990; Thompson et al., 2012; Wilson & Kelling, 1982).

### Economic Sabotage:

Property crime hinders economic growth by causing project abandonment, discouraging investment, and resulting in economic losses. Participants noted that vandalism often forces the government to halt public projects, which negatively impacts economic development and sets back progress. Participant P4 noted that

"vandalism often leads to the abandonment of public projects, resulting in economic loss and discouraging investments."

### **Masses Suffering:**

The public suffers directly from property crime through reduced access to essential infrastructure, increased costs of living, and even loss of life. Participants provided examples of how vandalism, such as the destruction of transformers or pipelines, directly affects the quality of life for ordinary citizens, leading to hardships and increased financial burdens. Participant P1 provided an example: "Vandalism reduces the availability of public infrastructure, leading to increased suffering and, in some cases, loss of life, such as when a bus fell into the lagoon due to a removed bridge barricade."

### **Delay of Project Delivery:**

Property crime disrupts the timely completion of public projects, leading to delays that exacerbate issues like housing shortages and other infrastructural deficits. This theme was specifically highlighted in the in-depth interviews, where participants discussed how theft and destruction of materials on-site cause significant project setbacks. For instance, Participant P1 mentioned, "As contractors, we face theft of materials on-site, especially electrical components and wires, which causes delays and disruptions."

## **TRIANGULATION OF FINDINGS**

The study's findings demonstrate a convergence between the quantitative and qualitative analyses, confirming the theoretical propositions. Quantitative analysis, focused on objective one, revealed a significant and consistent rise in government expenditure on repairing and replacing vandalized public infrastructure from 2018 to 2024, with a peak in 2022 following the End SARS protest in October 2020. This data supports the hypothesis that vandalism drives up government spending. The maintenance costs varied across infrastructure types, with oil pipelines incurring the highest costs, followed by roads, electricity transmission, and railways.

Qualitative analysis, addressing research questions one through five, further reinforced these findings. Thematic analysis of interview data showed that vandalism imposes substantial financial burdens on the government, necessitating repairs and reconstruction that strain budgets. Interview participants consistently highlighted how property crime escalates government expenditure, project costs, and maintenance expenses, confirming the hypothesis that vandalism increases government expenditure.

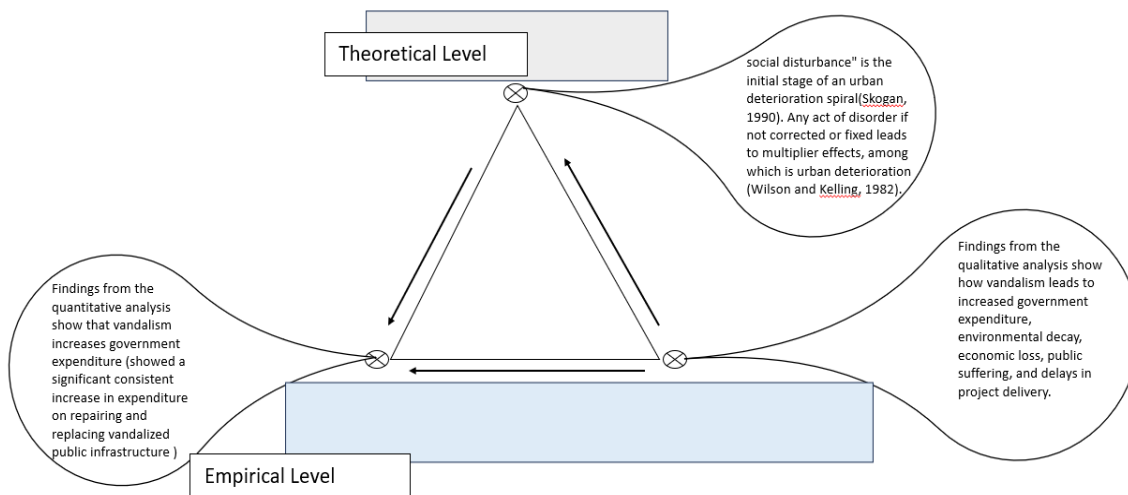
For research question two, qualitative findings indicated that property crime leads to significant environmental damage and urban decay. Participants emphasised that vandalism makes environments unsuitable for public use and hampers sustainable development, aligning with the Broken Windows Theory (Wilson & Kelling, 1982). This theory stresses the importance of addressing minor disorders, such as litter and graffiti, to prevent urban decay, and supports the idea that social disturbances are the initial stage of urban deterioration (Skogan, 1990).

Research question three found that property crime is a barrier to economic development, leading to project abandonment, economic losses, and discouraging investment. Participants noted that vandalism often results in the abandonment of public projects, validating the hypothesis that property crime causes economic loss.

Research question four revealed that property crime reduces access to public infrastructure, leading to public hardship, increased congestion, and even loss of life. Participants provided examples of the suffering caused by vandalism, such as accidents and fatalities from damaged bridge barricades, supporting the hypothesis that vandalism inflicts suffering on the public.

Finally, research question five showed that property crime causes delays and disruptions in public project delivery, leading to housing scarcity and setbacks in project timelines. Interview data indicated that theft of materials on-site due to vandalism leads to significant delays, corroborating the hypothesis that vandalism delays project completion.

Overall, the theoretical propositions were supported by both empirical quantitative and qualitative findings. Quantitative data demonstrated a significant increase in government expenditure on public infrastructure repairs due to property crime, while qualitative data illustrated the broader impact of property crime on infrastructure development, including increased costs, urban decay, economic losses, congestion, loss of life, and project delays. Figure 6 visualises the convergence of these findings, where the triangle points represent theoretical propositions and empirical data from both qualitative and quantitative analyses, and the sides illustrate the convergent relationships between the theoretical framework and the findings (see Figure 6).



**Figure 6:** Illustrating the triangulation of quantitative and qualitative analysis findings for the study

## CONCLUSION

This study aimed to investigate the impact of property crime on public infrastructure development in Lagos, Nigeria, by addressing the research questions, the study derived five research objectives and tested five related hypotheses. Using both primary and secondary data sources, including in-depth interviews and analysis of government records, the study employed parallel data analysis and a triangulation methodology. The findings from both quantitative and qualitative analyses consistently demonstrate that property crime significantly hinders public infrastructure development. It leads to increased government expenditure, environmental degradation, economic losses, public hardship, and delays in project delivery. To address these challenges, comprehensive strategies are needed to mitigate the effects of property crime and ensure sustainable infrastructure development. Effective measures, such as enhanced security partnerships and community engagement, are crucial to curbing vandalism and protecting public assets. The insights from this study can assist policymakers in formulating effective policies for managing and maintaining the nation's public infrastructure to enhance its value.

## RECOMMENDATIONS

1. Based on the findings and analysis from the study, the following recommendations could make it possible to mitigate the negative impacts of property crime on public infrastructure, improve economic stability, enhance environmental sustainability, and ensure the overall well-being of the masses in Nigerian cities:
2. **Strengthen Surveillance and Security:** Implement advanced surveillance systems and increase security patrols around vulnerable public infrastructure. Collaboration between the government and private security experts has shown effectiveness in reducing vandalism, particularly in the protection of oil pipelines.
3. **Community Policing and Engagement:** Foster community involvement in monitoring and protecting public infrastructure. Educating the community on the adverse impacts of property crime and encouraging public reporting of suspicious activities can enhance security efforts.

4. Comprehensive Anti-Vandalism Policies: Develop and enforce stringent policies aimed at deterring property crime. This includes imposing stricter penalties for vandalism-related offences to act as a deterrent.
5. Infrastructure Maintenance and Management: Establish robust frameworks for the maintenance and management of public infrastructure. Ensure regular inspections and prompt repairs to mitigate the long-term effects of property crime.
6. Cost-Benefit Analysis of Preventive Measures: Conduct thorough cost-benefit analyses to compare the costs of preventive measures versus the recurring expenses of repairs and rehabilitation. This can help in better allocation of financial resources.
7. Budget Allocations for Emergency Repairs: Ensure that government budgets include provisions for emergency repairs and maintenance of vandalized infrastructure. This will enable timely and efficient responses to vandalism incidents without disrupting planned projects.
8. Awareness Campaigns: Launch public awareness campaigns to educate citizens on the negative impacts of property crime on the economy, environment, and public welfare. Highlight the benefits of preserving public infrastructure for community well-being.
9. Educational Programs: Implement educational programs in schools and communities to instil a sense of responsibility and ownership among citizens, particularly the youth. Emphasise the importance of respecting and maintaining public property.
10. Ongoing Research: Encourage continuous research on the causes, impacts, and preventive measures of property crime. This will provide updated data and insights to refine strategies and policies.
11. Technology Integration: Explore the use of innovative technologies such as drones, artificial intelligence, and big data analytics to monitor and predict vandalism activities. This can improve the efficiency of preventive measures.
12. Risk Management Strategies: Develop comprehensive risk management plans for public infrastructure projects. Include measures to mitigate risks associated with property crime, such as securing construction sites and using vandal-resistant materials.
13. Timely Project Completion: Prioritize the timely completion of infrastructure projects to minimize exposure to property crime. Efficient project management and resource allocation can reduce delays and disruptions caused by vandalism.

## ACKNOWLEDGEMENT

The authors would like to express their gratitude for the funding provided by the Malaysian Ministry of Education through the Fundamental Research Grant Scheme (FRGS)(FRGS/1/2022/SSI13/UTM/02/12).

## REFERENCES

1. Adamu, A. D., & W. Shakantu, W. M. (2016). Strategic Maintenance Management of Built Facilities in Organisation. *Engineering and Technology International Journal of Economics and Management Engineering*, 10(4), 1091–1094.
2. Addeh, E. (2022). Massive Oil Theft, High Pipeline Repairs Cost, Bleeding Nigeria's Economy. *Thisday Newspapers Limited*.
3. Adu, P. (2019). *A Step-by-Step Guide to Qualitative Data Coding* (1st ed.). Routledge. <https://www.routledge.com/A-Step-by-Step-Guide-to-Qualitative-Data-Coding/Adu/p/book/9781138486874>
4. African Development Bank. (2018). Africa's Infrastructure: Great Potential but Little Impact on Inclusive Growth. *African Economic Outlook 2018*, 63–94.
5. Alley, I. A., Ayodele, M. and Yinka, A. (2015). Oil price shocks and Nigerian economic growth. *European Scientific Journal of Business and Economics*, 8(2), 21–34.
6. Almasri, R., & Ababneh, A. (2021). Heritage Management : Analytical Study of Tourism Impacts on the Heritage Management : Analytical Study of Tourism Impacts on the Archaeological Site of Umm Qais — Jordan. *Heritage*, 4(September), 2449–2469. <https://doi.org/10.3390/heritage4030138>



7. Amata, D. (2023). All eyes on Tinubu to close Nigeria's \$2 trillion infrastructure gap. (n.d.). Dataphyte. <https://www.dataphyte.com/latest-reports/all-eyes-on-tinubu-to-close-nigerias-2-3-trillion-infrastructure-gap/>
8. Anyieni, A. (2013). The Role of Infrastructure in Business: A Kenyan Scenario. © International Journal of Professional Management ISSN, 8(1). [www.ipmajournal.com](http://www.ipmajournal.com)
9. Boyatzis, R. E. (1998). *Transforming Qualitative Information: Thematic Analysis and Code Development*. Sage.
10. Braun, V., Clarke, V. (2012). Thematic analysis. In K. J. Cooper, H., Camic, P.M., Long, D.L., Panter, A.T., Rindskopf, D., Sher (Ed.), *APA Handbook of Research Methods in Psychology, Research Designs* (2nd ed., pp. 57–71). American Psychological Association.
11. Braun, V., Clarke, V. (2013). *Successful Qualitative Research: A Practical Guide for Beginners*. SAGE Publications.
12. Buys, F., & Mavasa, T. (2007). The management of government immovable assets. *Acta Structilia*, 14(1), 81–92.
13. C. Ward, E. (1973). 'Vandalism' (ed. E. C. Ward (ed.)). H.E..Warne London and St. Austell.
14. Charmaz, K. C. (2006). *Constructing Grounded Theory: A Practical Guide through Qualitative Analysis*. Sage.
15. Christensen, Harriet H., Darryll R. Johnson, and M. H. B. (1992). "Vandalism Research, Prevention, and Social Policy." General Technical Report PNW-GTR-293. Portland.
16. Dyepkazah, S. (2021). Lai\_ FG spends N60bn annually to repair vandalised pipelines. *The Cable news*. <https://www.thecable.ng/>
17. Edun, S. A., Olaniyi, T. K., & Lawani, K. (2023). Modelling the Implications of Oil Pipeline Vandalism on the Nigeria Economy: A Case Study of Niger Delta Region. *International Journal of Innovative Business Strategies*, 9(2), 592–602. <https://doi.org/10.20533/ijibs.2046.3626.2023.0075>
18. Erzberger, C., Kelle, U. (2003). Making inferences in mixed methods: The rules of integration. In C. (Eds. Tashakkori, A., Teddlie (Ed.), *Handbook of Mixed Methods in Social & Behavioural Research* (pp. 457–488). Sage,
19. FasterCapita. (2024). Vandalism: Defacing Society: Crime 1873's Epidemic of Vandalism. FasterCapita. <https://fastercapital.com/content/Vandalism--Defacing-Society--Crime-1873-s-Epidemic-of-Vandalism.html#Counting-the-Cost-of-Vandalism.html>
20. Federal Bureau of Investigation. (1985). National Crime Information Center (NCIC) Code Manual, 1985. Federal Bureau of Investigation. <https://archive.org/details/NCICCodeManual1985>
21. Petroleum Production and Distribution (Anti-Sabotage) Act and Miscellaneous Offences Act, Pub. L. No. 35 (1975).
22. Criminal Code Act chapter 77, Laws of the Federation of Nigeria 1990, 3143 (1990). [https://www.ilo.org/dyn/natlex/natlex4.detail?p\\_lang=en&p\\_isn=52862&p\\_country=NGA&p\\_count=255](https://www.ilo.org/dyn/natlex/natlex4.detail?p_lang=en&p_isn=52862&p_country=NGA&p_count=255)
23. Financial Nigeria magazine. (2020, November). Assessing the economic and human costs of #EndSARS protests. *Financial Nigeria Magazine*. <https://www.financialnigeria.com/assessing-the-economic-and-human-costs-of-endsars-protests-blog-591.html>
24. George, G. (2024, June 23). Multimillion public assets under attack as vandals plunder bridge railings, steal power cables, others. *The Punch Newspaper Limited*. <https://punchng.com/multimillion-public-assets-under-attack-as-vandals-plunder-bridge-railings-steal-power-cables-other/>
25. Hamid, F. (2022). Vandals steal, destroy public facilities amid weak laws, enforcement. *The Punch Newspaper Limited*.
26. Hashim, Abdul Talib; Azli, Ariffin; Abdul Rahim, Razalli; Arlena, M. (2019). Contributing Factors to Vandalism in a Primary School. *International Journal of Advanced Science and Technology*, 28(8), 764–771.
27. Heller, G. (1979). *Propre en ordre*. Editions d'en Bas.
28. Henry, Awodezi & Mohammed, S. U. (2023). Oil Pipelines Vandalism and Oil Theft: Security Threat to Nigerian Economy and Environment. *Journal of Environmental Law and Policy*, 3(1), 181–188. <https://doi.org/https://doi.org/10.33002/jelp03.01.05>

29. Iaiani, M., Casson, V., Reniers, G., Tugnoli, A., & Cozzani, V. (2021). Analysis of events involving the intentional release of hazardous substances from industrial facilities. *Reliability Engineering and System Safety*, 212(March), 107593. <https://doi.org/10.1016/j.res.2021.107593>
30. Ikejemba, E. C. X., & Schuur, P. C. (2018). Analyzing the impact of theft and vandalism in relation to the sustainability of renewable energy development projects in Sub-Saharan Africa. *Sustainability (Switzerland)*, 10(3). <https://doi.org/10.3390/su10030814>
31. Khalilikhah, M., & Heaslip, K. (2018). Prediction Of Traffic Sign Vandalism That Obstructs Critical Messages To Drivers. *Transport Journal*, 33(2), 399–407. <https://doi.org/10.3846/16484142.2016.1252946>
32. Kumar, T. (2021). Research Study On Vandalism, Graffiti And Passenger Behaviour In Klang Valley Mass Rapid Transit (Kvmrt) And Its Impact To Tourist Satisfaction. [https://www.researchgate.net/publication/350624470\\_research\\_study\\_on\\_vandalism\\_graffiti\\_and\\_passenger\\_behaviour\\_in\\_klang\\_valley\\_mass\\_rapid\\_transit\\_kvmrt\\_and\\_its\\_impact\\_to\\_tourist\\_satisfaction/citation/download](https://www.researchgate.net/publication/350624470_research_study_on_vandalism_graffiti_and_passenger_behaviour_in_klang_valley_mass_rapid_transit_kvmrt_and_its_impact_to_tourist_satisfaction/citation/download)
33. Lebek, K., Twomey, M., & Krueger, T. (2021). Municipal Failure, Unequal Access and Conflicts Over Water: A Hydrosocial Perspective on Water Insecurity of Rural Households in KwaZulu-Natal, South Africa. *Water Alternatives*, 14(1), 271–292.
34. Lee, H. H. Y., & Scott, D. (2009). Overview of maintenance strategy, acceptable maintenance standard and resources from a building maintenance operation perspective. *Journal of Building Appraisal*, 4(4), 269–278. <https://doi.org/10.1057/jba.2008.46>
35. McGuire, J. (2004). *Understanding psychology and crime: Perspectives on theory and action*. Open University Press.
36. Merriam, S. B. (2009). *Qualitative Research: A Guide to Design and Implementation*. Jossey-Bass.
37. Millie, A. (2008). Anti-social behaviour, behavioural expectations and an urban aesthetic. *British Journal of Criminology*, 48(3), 379–394.
38. Misheck, C., & Kwashirai, Z. (2021). Infrastructure Vandalism and Protection in a Vulnerable Zimbabwean Environment: Review of the Structural Materialism Theory. *International Journal of Recent Technology and Engineering*. <https://doi.org/10.35940/ijrte.C6355.0910321>
39. Motta, V. (2017). The impact of crime on the performance of small and medium-sized enterprises: Evidence from the service and hospitality sectors in Latin America. *Tourism Economics*, 23(5), 993–1010. <https://doi.org/10.1177/1354816616657940>
40. National Orientation Agency Nigeria. (2024). Stop Vandalism Campaign. <https://www.noa.gov.ng>
41. Newsroom. (2024). Vandalism and abuse of water infrastructure cost the City over R370m. *The Cape Town Independent*. <https://www.capeindependent.com/article/vandalism-and-abuse-of-water-infrastructure-costs-city-over-r370m>
42. Nielsen, J. (2000). Why You Only Need to Test with 5 Users. <https://www.nngroup.com/articles/why-you-only-need-to-test-with-5-users/>
43. Nielsen, J., & Landauer, T. K. (1993). Mathematical model of the finding of usability problems. *INTERACT'93 and CHI'93 Conference on Human Factors in Computing Systems - Proceedings*, 206–213. <https://doi.org/10.1145/169059.169166>
44. O’Cathain, A., Murphy, E., Nicholl, J. (2008). The quality of mixed methods studies in health services research. *Journal of Health Services Research & Policy*, 13(2), 92–98.
45. Offler, N., Thompson, K., Hirsch, L., Thomas, M., & Dawson, D. (2009). A review of the literature on social, non-technical deterrents for vandalism in the rail industry. *Cooperative Research Centre for Rail Innovation, Brisbane*.
46. Ogunyemi, D. (2024, June 27). Monarch lauds Tantita for curbing oil theft, and environmental degradation in N’Delta. *The Punch Newspaper Limited*. <https://punchng.com/monarch-lauds-tantita-for-curbing-oil-theft-environmental-degradation-in-ndelta/>
47. Oludayo, T., & Ayodele, A. (2019). ‘Bleeding Nigeria through the Pipelines’: Understanding Oil Pipeline Vandalism in Arepo, Southwest Nigeria. *The Nigerian Journal of Sociology and Anthropology*, 17(1), 121–132. [https://doi.org/10.36108/njsa/9102/71\(0180\)](https://doi.org/10.36108/njsa/9102/71(0180))
48. Omorogbe, Y. and Ordor, A. (2018). *Ending Africa’s Energy Deficit and the Law: Achieving Sustainable Energy for All in Africa*. Oxford University Press.

49. Onwuegbuzie, A., Teddlie, C. (2003). A framework for analysing data in mixed methods research. In C. (Eds. Tashakkori, A., Teddlie (Ed.), *Handbook of Mixed Methods in Social & Behavioural Research*. (Pp. 351–383.). Sage.
50. Onyiba, Michael Nonso, & Onwo, D. N. (2019). Oil Embezzlement And Pipeline Vandalism In Niger Delta And. *International Journal In Management And Social Science*, 07(10), 121–135.
51. Östlund, U., Kidd, L., Wengström, Y., & Rowa-Dewar, N. (2011). Combining Qualitative And Quantitative Research Within Mixed Method Research Designs: A methodological review. *International Journal of Nursing Studies*, 48(3), 369–383. <https://doi.org/10.1016/j.ijnurstu.2010.10.005>
52. Shackleton, C. M., & Njwaxu, A. (2021). Does the absence of community involvement underpin the demise of urban neighbourhood parks in the Eastern Cape, South Africa? *Landscape and Urban Planning*, 207. <https://doi.org/10.1016/j.landurbplan.2020.104006>
53. Simanti, Bandyopadhyay and Harsahib, S. (2023). Foundations of public expenditure management: theories and concepts. In K. Dzigbede & W. B. Hildreth (Eds.), *Research Handbook on Public Financial Management* (pp. 238–257). Edward Elgar Publishing. <https://doi.org/10.4337/9781800379718.00026>
54. Skogan, W. G. (1990). *Disorder and Decline: Crime and the Spiral of Decay in American Neighbourhoods*. University of California Press.
55. Thompson, K., Offler, N., Hirsch, L., Every, D., Thomas, M. J., & Dawson, D. (2012). From broken windows to a renovated research agenda: A review of the literature on vandalism and graffiti in the rail industry. *Transportation Research Part A: Policy and Practice*, 46(8), 1280–1290. <https://doi.org/10.1016/j.tra.2012.04.002>
56. Udi, A. (2023). 2024 Budget: FG allocates N1.32 trillion for infrastructure, N2.18 trillion for education. *Nairametrics.Com*. <https://nairametrics.com/2023/11/30/2024-budget-fg-allocates-n1-32-trillion-for-infrastructure-n2-18-trillion-for-education/#:~:text=The federal government has allocated N1.32 trillion for,respectively of the total N27.5 trillion budget proposal>.
57. UN-HABITAT. (2018). *Adequate Housing and Slum Upgrading*. In United Nations Human Settlements Programme.
58. Unini, C. (2021, June). *Vandalism, Destruction Of Public Infrastructure An Act Of Terrorism - FG - TheNigeriaLawyer*. *TheNigeriaLawyer*. <https://thenigerialawyer.com/vandalism-destruction-of-public-infrastructure-an-act-of-terrorism-fg/#>
59. Wilson, J. Q., & Kelling, G. L. (1982, March). Broken windows: The police and neighbourhood safety. *The Atlantic*, 29-38. <https://web.archive.org/web/20210522180623if>

