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## Physical Infrastructure Projects Under Threat: The Impact of Violence and Extortion on South African Construction Sites

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### Abstract

*Purpose* – Studies have shown that organised crime groups are fast increasing on construction sites, especially in many developing countries, with agitation that has culminated in violence, disruptions, and criminal extortion. This may threaten physical infrastructure project delivery in low-income countries. There is a paucity of extant literature concerning the impact of violence and extortion on South African construction sites. Thus, this research investigates the perceived impact and suggests collaborative efforts to mitigate the impact of violence and extortion on South African construction sites and, by extension, achieve physical infrastructure project delivery. *Design/methodology/approach* – The research adopted a qualitative research design. The investigators collected primary data via semi-structured interviews with participants. The interviewees were knowledgeable about violence and extortion on South African construction sites and achieved saturation. This research also employed a thematic technique to analyse the data manually. *Findings* – Findings reveal that the physical infrastructure projects are worse hit by the consequences of violence and extortion on South African construction sites and identified murder, worker intimidation, cost overruns, project disruption, increased security expenses, abandonment, job cut, economic downturns, broader economic repercussions, and threats of lives as impact of violence and extortion on South African construction sites and their aftermath to physical infrastructure projects. *Originality/value* – Besides all-inclusive mechanisms to mitigate the impact of violence and extortion on South African construction sites, this study emphasises collaborative efforts to mitigate the social threat to physical infrastructure development. This includes collaborations with law enforcement, community-based security models, and integration with private security.

**Keywords:** Construction Sites, Extortion, Mafia, Organised Crime Groups, South Africa, Violence.

### Introduction

Violence and extortion are sources of getting illegitimate financial proceeds by vehemently imposing a ransom. Koseli et al. (2021) and Clarke (2015) opined that it can enhance kidnapping for ransom. For example, Koseli et al. (2021) reported that groups associated with Al-Qaeda in the Islamic Maghreb received USD15 million annually from the abducted victims. Violence and extortion may be severe in developing countries because of the lax security architecture. In Venezuela, Antillano et al. (2020) reported that the Attorney General stated that violence led to 70 homicides per 100,000. Antillano et al. (2020) emphasised that Other adjoining political and geographical locations such as Brazil, Colombia, Mexico, Jamaica, and Central America are not

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exempted from violence. The construction sites are not exempted from violence. Global criminal violence is critical as Nicaragua (Rodgers, 2006), Mexico (Trejo and Ley, 2018), and Brazil (Arias, 2017) face criminal violence, growing political contention based on brutal militarised policing, and paramilitary violence. Organised crime groups are treated interchangeably with the construction mafia for this research. Shaw (2022) and Bueger and Edmunds (2020) asserted that organised crime groups are predominant in geographical locations with lax legal systems and law enforcement. In Japan, Paoli's work, as cited in Koseli et al. (2021), reported how the partnership between the organised crime groups, construction firms, and nationalist politicians was generated from fear of labour strife during the years after the First World War. The expansion of violence and extortion may threaten developing countries' infrastructure development. In Nigeria, Koseli et al. (2021) affirmed that besides the Boko Haran and bandits in northern Nigeria, in the southern part, the Movement for the Emancipation of the Niger Delta poses a risk to oil exploration in the country. In the Philippines, Koseli et al. (2021) asserted that in 2007, the Popular Revolutionary Army extorted Pemex oil.

The extortion of construction contracting firms may impact the final outcome of products. This includes the impact on physical infrastructure, which is critical for growing developing countries' economies, rise in labour costs, insurance costs, security and travel costs, and the cost of business production (Koseli et al., 2021; Ogunyemi, 2014). In Colombia the organised crime groups have infiltrated many sectors, including the construction. The extortion is more pronounced in violence-affected zones of Colombia (Moncada 2021). Globally, the construction industry constitutes over 50% of the national capital and a projected GDP of over 10% (Amoah et al., 2021; Coffie and Novieto, 2023). The sector contributes about 7% to the world job creation (Djokoto et al., 2014). The sector is a significant player in the socioeconomic development. It provides physical infrastructure for the development and growth of other sectors (Ahadzie, 2019). Hence, to keep up its performance and influence, issues of violence and extortion, especially in developing countries cannot be downgraded to the background. Corruption cannot be totally separated from violence and extortion on construction sites. Transparency International (2016) reported that the sector is one of the top rank corrupt sectors in the world with dubious and fraudulent practices. Violence and extortion are components of corruption (unethical practices) because they are dishonest or illegal behaviour (Kang and Shahary, 2013). This aligns with the Transparency International (2009) definition of corruption. This social issue severely impacts developing countries (Coffie and Novieto, 2023). It is an organised crime (Marine, 2006) with lax penalties in many developing countries.

South Africa's industry is significant to economic, social, and capital growth (Osunsanmi et al., 2018). From 2005 to 2018, the average contribution of the sector to gross fixed capital development was about 43% (CIDB, 2019). This aligns with studies (Olanrewaju and Abdul-Aziz, 2015; Duan and Chen, 2020), who opined that the industry creates about 50% of the gross fixed capital development expenditure in developing countries. The construction sector is dealing with rising manufacturing costs, inadequately qualified employees, labour shortages and efficiency, cost overruns, and declining profit margins (Keogh and Smallwood, 2021). In the last quarter of 2018, the sector's turnover fell by 8.6% yearly (Wood, 2020). However, the real production growth increased to 1.1%, down from 2.3% the past quarter. Keogh and Smallwood's (2021) submission corroborates Mfebe (2019), who affirmed that the South African construction sector is gradually declining. Harinarain (2020) identified possible contributing factors to the ongoing economic recession, including decreased rates of government expenditure. Adebowale and Agumba (2023) and Harinarain (2020) discovered that the

industry's weakening was worsened by increased land invasions and extortion on construction sites by the construction mafia. A few studies have researched organised crime but none regarding the impact of violence and extortion on South African construction sites using qualitative research design. This study will address the research methodology gap.

Geldenhuis (2023) reported that the South African construction mafia was born in 2014/2015 in Umlazi, Durban, KwaZulu-Natal. It was created after some persons established the Delangokubona Business Forum (Irish-Qhobosheane, 2022). In 2016, the first invasions of construction sites in KwaZulu-Natal by local business forums took place and was influenced by the Delangokubona Business Forum (Geldenhuis, 2023). Irish-Qhobosheane (2022) found that the agitators do carry machetes, handguns, and automatic and assault rifles to construction sites, demanding that developers pay them a percentage of the construction contract. They also include other conditions that must be fulfilled by the developers such as the specific people to be engaged on their sites. This group later developed into Radical Economic Transformation (FFRET) (In Moneyweb's work as cited in Geldenhuis, 2023). The FFRET was rebranded in 2020 to the Black Business Federation (BBF) to dissociate itself from the name 'mafia.' Studies show that the industry still faces threats from the construction mafia, compounded by a recession since the commencement of illicit activities, leading to job losses for employees and project cancellations (Watermeyer and Phillips, 2020). This study's preliminary findings reveal underreporting of the impact of violence and extortion on South African construction sites and their aftermath to physical infrastructure projects. There is a paucity of studies regarding the impact of violence and extortion on South African construction sites and their aftermath on physical infrastructure projects. Thus, this study investigates the perceived impact of violence and extortion on South African construction sites and their aftermath to physical infrastructure projects through the subsequent objectives:

- i. To investigate the perceived impact of violence and extortion on South African construction sites and their aftermath on physical infrastructure projects.
- ii. To suggest collaborative efforts to mitigate the impact of violence and extortion on South African construction sites and, by extension, achieve physical infrastructure project delivery.

## **Theoretical Framework**

Violence and extortion studies are components of criminology theories. Criminology (2018) opined that criminology studies are about how persons commit crimes and behave in certain circumstances. Understanding the impact of violence and extortion and possible measures from collaborative efforts to mitigate them cannot be over-emphasised. Thus, this study adopted the Social Disorganisation Theory, a type of Criminology Theory that strengthens the proposed framework, as presented in Figure 1. Other Criminology Theories include trait, strain, social learning, social control, routine activity, rational choice, life cycle, critical, conflict, classical, choice, labelling, and positivism (Criminology, 2018). Social Disorganisation Theory underscores that crime occurs in societies that experience a breakdown in social values and opportunities (Criminology, 2018). This includes low-income communities such as South Africa. The social disorganisation theory grew from the work of a group of University of Chicago academics in the 1920s and 30s who are credited with discovering the Chicago School of Sociology. Bursik and Grasmick (1993) defined social disorganisation theory as "*neighbourhood life is shaped by a network of formal and informal community associations*" that form the essence of social firm. The outcome of violence and disruption in the society leads

to social disorganisation. Conventional and cultural social bonds weaken social disorganisation (Bursik and Grasmick, 1993). These social bonds that might be weakened include religious, community, and family connections connections (Faris, 1955). This theory supports the proposed framework. It allows an understanding of the perceived impact of violence and extortion on South African construction sites and their aftermath to physical infrastructure projects. This study also proffers collaborative efforts to mitigate the impact of violence and extortion on South African construction sites and, by extension, achieve physical infrastructure project delivery, as presented in Figure 1.

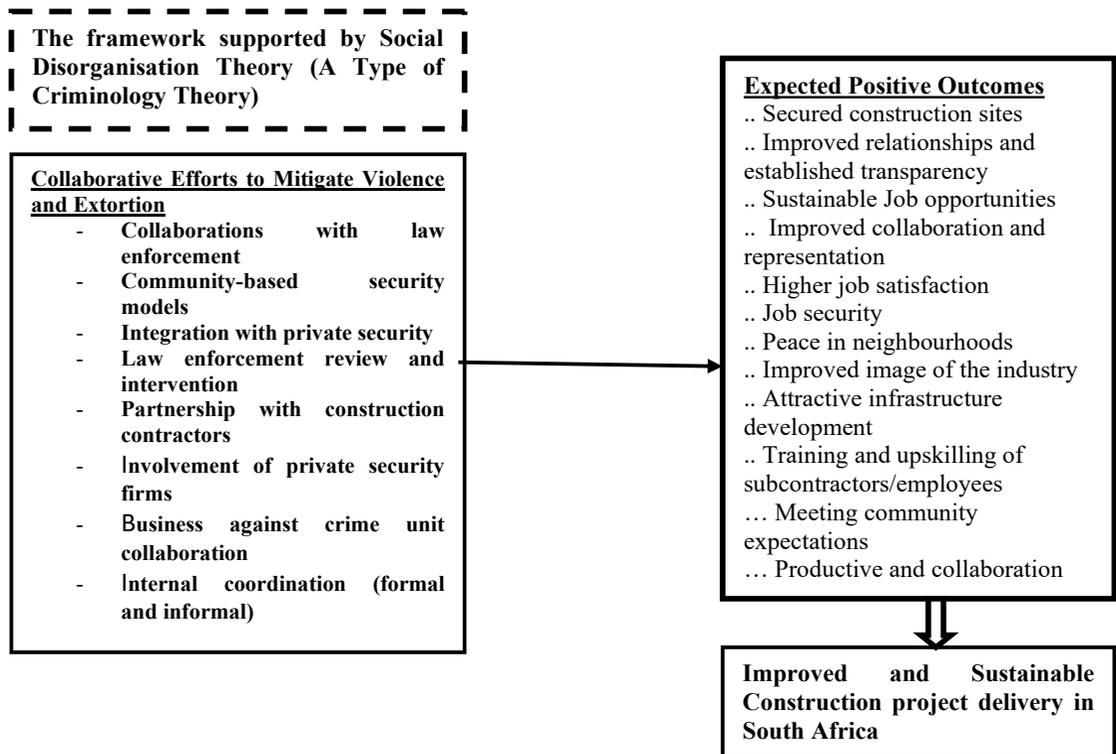


Figure 1: Proposed Framework to Suggest Collaborative Efforts to Mitigate the Impact of Violence and Extortion on South African Construction Sites

Source: Authors work

Figure 1 shows that measures emerging from collaborative efforts to mitigate the impact of violence and extortion on South African construction sites and, by extension, achieve physical infrastructure project delivery cannot be over-emphasised. Thus, Social Disorganisation Theory strengthens the proposed framework. It reflects how major parties are engaged to proffer measures to mitigate the impact from violence and extortion using collaborative efforts. Possible

positive outcomes include productivity and collaboration, job opportunities, job security, secured construction sites, building relationships and establishing transparency, improved collaboration and representation, and higher job satisfaction. Others are meeting community expectations, training and upskilling subcontractors and employees, attractive infrastructure development, peace in neighbourhoods, and improving the image of the industry. Identifying and understanding the perceived impact of violence and extortion on South African construction sites and their aftermath on physical infrastructure projects cannot be overstated.

## **Research Method**

This study adopted a phenomenology approach. It is a type of qualitative research design and aligns with Nyangiwe et al. (2023) and Koseli et al. (2021). Nyangiwe et al. (2023) employed an open-ended interview question through a qualitative research design to collect primary data to address the implications of the South African construction Mafias. Similarly, Koseli et al. (2021) adopted a qualitative approach to explore how extortion and kidnapping are engaged as sources of financing terrorism by the Kurdistan Workers Party. Ebekoziem et al. (2025), Ibrahim et al. (2022), and Jaafar et al. (2021) affirmed that qualitative research discourses the complexity of the sizable scale of research. Mason (2018) and Creswell and Poth (2018) asserted that qualitative study is a form of investigatory research that focuses on the emergence of theory in a study. This study adopted the phenomenology approach because it focuses on describing a lived experience of a phenomenon by collecting data from interviewees (Ebekoziem et al., 2023; Ebekoziem and Aigbavboa, 2021). This study adopted a convenient sampling technique. It is a non-probability sampling technique where interviewees/units are chosen for inclusion in the sample (Ebekoziem et al., 2025; Creswell and Creswell, 2018). This research utilised a semi-structured face-to-face interview to permit the investigators to explore responses from the interviewees further based on their experience, as illustrated in Figure 2. Figure 2 also shows the researchers' research design approach. This research participants' background is presented in Table 1. The researchers engaged six participants, and saturation was achieved. Table 1 presents the participant's ranks, academic qualifications, and years of experience. This study's main research questions were: what is the perceived impact of violence and extortion on South African construction sites? What is the aftermath of the impact on physical infrastructure projects in South Africa? How can stakeholders use collaborative efforts to mitigate the impact of violence and extortion on South African construction sites? How can these measures improve physical infrastructure project delivery in South Africa? This research conducted a pilot interview with two participants. The questions were slightly modified. This paper is a portion of the study.

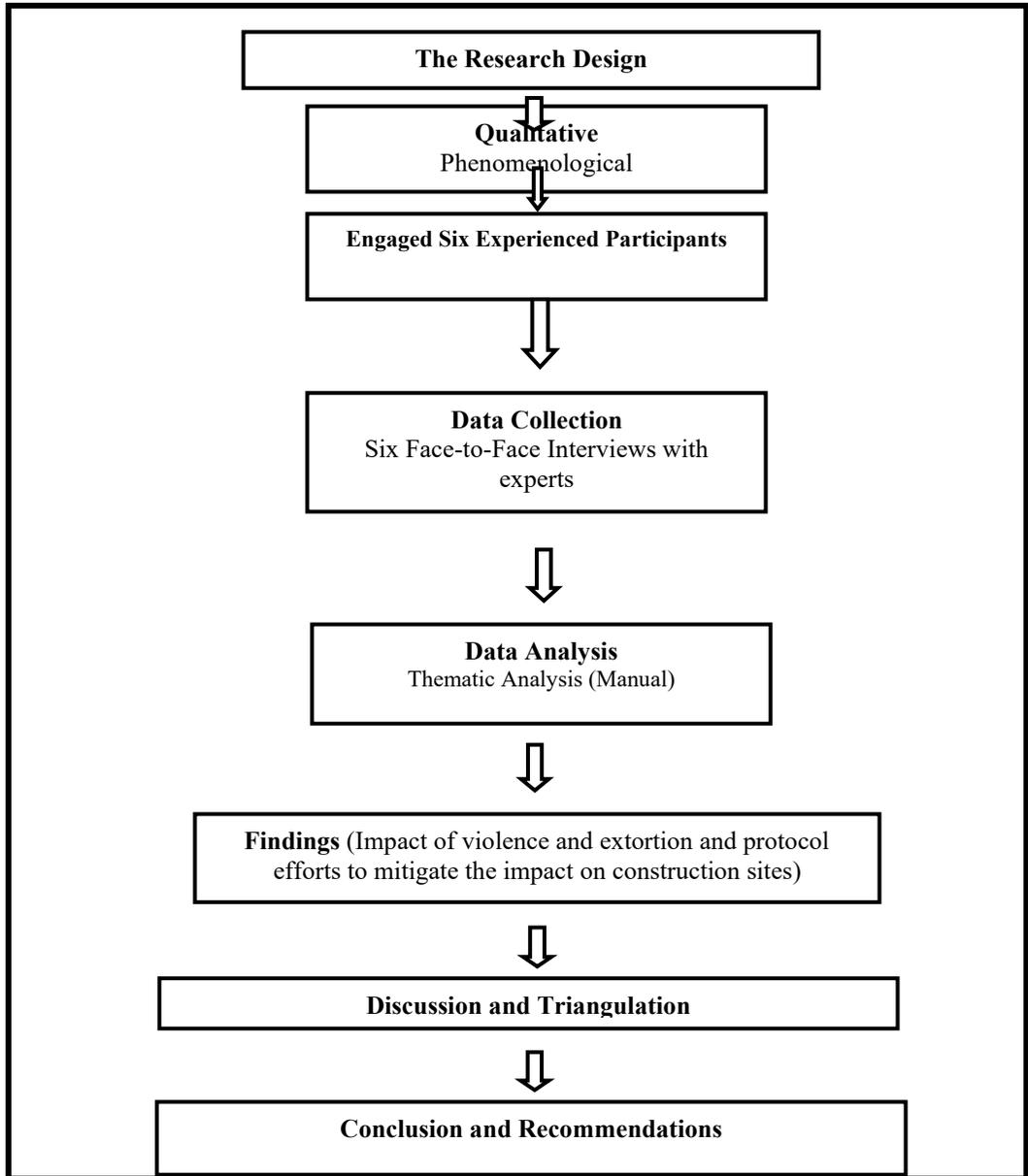


Figure 2: The Study’s Research Design

Source: Modified from Ebekoziem (2019)

1D	Organisation of Participant	Position	Highest Academic Qualification	Years of Experience	Location
1	SANRAL	Regional Manager	Master of Engineering	21 years	Gauteng

2	Umgeni Water	Acting Executive: Operations	Master of Engineering	10 years	Kwa-Zulu Natal
3	City of Tshwane	Head of Infrastructure	Masters	27 years	Gauteng
4	Department of Public Works and Infrastructure	Deputy Director General	B.Tech in Const Mgt	22 years	
5	Vukani Visserye	Group Financial Manager	Masters	40 years	Free State
6	Department of Transport	Social Facilitation	Masters	20 years	

Table 1: Interviewee's Background Information

Source: Authors work

The interview sessions lasted one hour on average. Regarding ethical considerations, the interviewees were informed of this study's aim and willingly agreed to participate without intimidation. This agrees with the global best practices. The participants' identities were hidden in the reporting in line with the ethical consideration. It agrees with Aigbavboa et al. (2023a) and Ebekoziem (2019), who affirmed that participants; identified should be concealed for ethical reasons. This study allotted codes to the analysed data and adopted an open coding method for the six documents. The researchers employed emotion, narrative, invivo, and themeing coding techniques. It aligns with Ebekoziem et al. (2020; 2023) and Corbin and Strauss (2015). This study generated 75 codes and re-grouped them based on frequency, occurrence, and reference. Seven sub-themes were developed from the 75 codes and were regrouped into two themes. This study triangulated the collected data to reduce the fear of the findings' validity (Aigbavboa et al., 2023b; Ebekoziem, 2020). This study enhanced the research validation, as illustrated in Table 2. Table 2 reveals the approach utilised, assessment approaches, and the research stages from the data collection to the post-data analysis. This study employed triangulation and researcher reflexivity as the validity techniques. This study adopted a manual technique via a thematic analysis, and findings were based on the perspectives of the interviewees.

Method	Assessment Strategies	The Phase of Research
Reliability	Participants' well-guided (consistent)	Data collection
Validity	The adoption of a recognised approach (semi-structured face-to-face interviews)	Data collection
Generalisability	Recognition of limitation due to sample size potential participant bias	Data analysis
Transferability	Compare the study's implications against reviewed literature.	Post data analysis
Credibility	Theme approach to establish a pattern from the data	Data analysis
Dependability	Developing semi-structured interview guidelines.	Research design

Table 2: The Study's Quality Evaluation Strategies

## Findings

### ***Theme One: Impact of violence and extortion on South African construction sites***

Theme One addresses the research question regarding the impact of violence and extortion on South African construction sites and their aftermath to physical infrastructure projects. The findings reveal that violence and extortion affect construction projects in terms of delay in construction project timeline, cost overruns, operational adjustments and, by extension, the South African economy (majority). Regarding construction project delay, findings show that projects experience extensive delays because violence and extortion create an unstable environment where workers feel unsafe. For example, one of their projects faced delays of up to six months due to site invasions and armed conflicts (Participant P1). Participant P2 says, "... projects suffer from massive cost overruns. A project in the Northwest incurred over ZAR 10 million in unplanned costs, primarily for enhanced security measures...." Participant P 6 corroborates P2 submission that even minor disruptions lead to unbudgeted variations and increased security expenses. For operational adjustments, Participant P3 describes the extensive operational adjustments required, such as hiring armed security, relocating employees to safer areas, and sourcing subcontractors from different regions to meet quality standards.

Thus, findings identify construction project abandonment and financial losses resulting from violence and extortion. This includes security costs, project re-advertisement, and lost investment (majority). Regarding security costs, Participant P3 says, ".... spending over ZAR 3 million on armed security for a single project due to ongoing threats is excessive on the project...." Participant P4 says, "..... security protocols often include appointing armed response teams and increasing patrols. Even with these measures, staff often feel unsafe, contributing to further costs as operations are slowed or suspended...." For project re-advertisement, Participant P3 says, ".... a project had to be re-tendered after a contractor withdrew due to threats. The re-tendered contract cost double the initial ZAR 230 million, demonstrating the financial burden of delays and changes in contractor arrangements...." There are instances where clients withdrew from projects entirely, causing a complete halt in progress and subsequent financial losses (Participant P6). This is a component of lost investment due to violence and extortion consequences. Findings show that because of the significance of construction sector to the economy, any negative impact, such as violence and extortion, will impact negatively on the economy, including GDP, job creation, and economic stability. Participant P6 opines that disruption from violence and extortion will directly suppress GDP as infrastructure development delivery slows down. The consequence of this is job cut and economic downturns. Participant P1 says, "..... frequent interruptions result in missed opportunities for labour-intensive projects to employ low-skilled workers...." Participant P5 says, "..... extortion has led to poorer project outcomes, leaving communities underserved and businesses reluctant to re-engage in affected regions...." Findings conclude that violence and extortion on South Africa's construction sites have caused significant delays, increased costs, reduced investor confidence, highly skilled technical personnel left the country, broader economic repercussions, and threats to lives. Addressing these issues is long overdue.

### ***Theme Two: Measures to mitigate the impact of violence and extortion***

This theme presents collaborative efforts to mitigate violence and extortion on South African construction sites. Findings reveal that addressing these issues will require coordinated efforts,

including stronger law enforcement, robust social facilitation, and improved stakeholder engagement (majority). The collaborative efforts include collaborations with law enforcement, community-based security models, and integration with private security (majority). Regarding collaborations with law enforcement, Participant P6 shares the example of the Delft site, where SAPS intervention following the murder of Wendy Kloppers helped restore order. The presence of police patrols deterred further violence and disruptions. Participant P4 says, “.....*involving local community members as security personnel has fostered a sense of ownership, which deters external disruptions....*” To strengthen the community-based security model, Participant P6 highlights a project in KZN where upskilling local subcontractors and transparent engagement with communities prevented violence, even during the politically tense period of riots. Participant 6 also describes how a hostage situation in Blackheath was mitigated through additional security measures, resulting in the successful completion of the project, albeit with financial losses. For the integration with private security, Participant P6 says, “..... *armed security teams, combined with local law enforcement patrols, were effective at securing high-risk sites in Cape Town....*”

Findings also cluster law enforcement intervention into increased police presence and patrols, court interdicts and arrests, and LEAP division engagement. For the increased police presence and patrols, Participant P6 says, “... *in some high-risk areas, law enforcement has increased its visibility through regular patrols. For example, in the Durban High Court Project, quick police intervention prevented further disruptions after an initial violent incident....*” P1 also mention collaborations with local police stations to monitor and secure construction sites. Participant P3 opines that court interdicts have been used to deter invasions, but these legal tools can work against individuals who are somewhat law-abiding. However, P4 emphasised that their impact is limited against groups engaging in organised criminal activities. In Cape Town, the LEAP law enforcement division was engaged to patrol high-risk sites and added a layer of security but did not fully alleviate staff fears after incidents of violence (Participant P6). In collaborations between law enforcement and private sector stakeholders to address violence and extortion on construction sites, findings cluster them into partnership with construction contractors, involvement of private security firms, business against crime unit collaboration, and internal coordination (majority). Regarding partnership with construction contractors Participant P6 highlights how private contractors like Power Construction developed working relationships with law enforcement. For instance, before projects commence, police are alerted to ensure preparedness for potential disruptions. For the involvement of private security firms, findings reveal that companies such as Power Construction hired armed private security to complement law enforcement efforts. Participant P6 says, “..... *this approach was used to secure their Symphony Way Project site after multiple incidents of violence....*” Participant P4 also opines that while formal partnerships between police and private stakeholders are rare, informal coordination, such as regular briefings with police, has helped deter invasions in certain regions.

## **Discussion of Findings**

Findings show that the physical infrastructure projects are worse hit by the consequences of violence and extortion on South African construction sites. These have negative implications for society and humanity, particularly threatening Sustainable Development Goals (SDGs) associated with physical infrastructure growth. Regarding construction project abandonment and financial losses resulting from violence and extortion as a result of associated with violence and extortion, findings agree with Geldenhuys (2023), who found that in Pretoria’s local community construction sites, a group of between ten and 12 people arrived twice at a building site to make

demand from the developer (monthly ransom as high as Rand 10,000) and intimidate employees. Findings also corroborated Geldenhuys (2023), who reported how a Germany-based Strabag International terminated a Rand 1.5 billion Mtentu Bridge project in the Eastern Cape, South Africa after the construction mafia members threatened staff and made the site inaccessible for almost three months. Similarly, in 2019, as reported in Donnelly's work as cited in Geldenhuys (2023), it was found that around 183 infrastructure and construction projects to the value of more than Rand 63 billion were hampered by entities claiming to be the local community, demanding a share of 30% in projects, leading to high construction costs. Kaziboni et al. (2022) reported that more than 110 engineers and other highly skilled technical personnel left South Africa because of crises. In counting the construction costs losses, results align with Geldenhuys (2023), who stated that despite the sector's contribution to the South African GDP, the invasion of the construction mafia at construction sites has often led to the closure of several sites. This includes a site shutdown in a R700 million shopping mall in Pretoria because of intimidation and threats by the construction mafia and causing a potential loss of between R50 and R60 million. Also affected is the R180 million project to develop a technical vocational education and training college in Cape Town, R4 billion development in north of Durban, a R250 million housing project in Cape Town, and construction projects in two Durban townships worth R140 million. These infrastructure projects were abandoned.

Findings show that an unstable environment where workers feel unsafe is critical and agrees with Irish-Qhobosheane (2022). Irish-Qhobosheane (2022) found that the agitators do carry machetes, handguns, and automatic and assault rifles to construction sites, demanding that developers pay them a percentage of the construction contract. They also include other conditions that must be fulfilled by the developers, such as the specific people engaged in their sites. Regarding the severe negative impact on the social, environmental, and economic, findings agree with Marine (2006) and Fernandez (2022). Marine (2006) discovered that organised crime, particularly the American Mafia, posed "a new threat to the American economic system. This includes the construction industry and other businesses and services. The illegality, especially extortion, almost became entrenched in legitimate businesses such as contracting firms' financial settlement of mafias before and during construction activities. Findings reveal that the construction mafia are not afraid to use violence to get their demand. Findings agree with (Irish-Qhobosheane, 2022), who discovered that construction mafias are not afraid to use violence during the invasion of construction sites to ensure compliance to their demand. Donnelly (2019) reported how a Durban construction firm chief executive officer was shot and killed in 2016 because of the refusal to share the tender for the contract award. They are deadly to that level. Fernandez (2022) argued that organised wrongdoing interferes in the material practices of the urban poor, making coping techniques difficult in the face of vulnerability and uncertainty.

An all-inclusive approach and multitasking techniques via collaborative efforts are required to mitigate the activities of the construction mafia on South African construction sites. This includes collaborations with law enforcement, community-based security models, private security integration, and law enforcement review and intervention, and partnerships with construction contractors. Others are the involvement of private security firms, business against crime unit collaboration, and internal coordination (formal and informal). Regarding government roles in law enforcement review and intervention via special squad, results align with Geldenhuys (2023), who reported South Africa's President (Mr Cyril Ramaphosa) State of the Nation address in 2020. Geldenhuys (2023) reported how Mr President promised to establish a specialised unit in response to the growing concern about criminal groups that extort money

from construction firms. This will bring the National Prosecuting Authority and SAPS together to combat these crimes of economic disruption. Geldenhuys (2023) also reported how Mr President plans to establish “*specialised multi-disciplinary units to address economic sabotage, extortion at construction sites and vandalism of infrastructure.*”

The law enforcement approach of prosecuting construction mafia should be reviewed. Findings agree with Nyide (2022), who found lax approach law enforcement agencies use to manage cases involving construction mafia members or business forums. Even when there is evidence of a 30% demand for the infrastructure project value, investigation and prosecuting are weak. This should be addressed to encourage developers to run to the police for protection against the ‘cobra effect’ (a decision to worsen the problem unknowingly). Regarding law enforcement review and intervention via a special executive bill to be passed into law, findings agree with Marine (2006), who acknowledged how the Racketeer Influenced and Corrupt Organisations Act (RICO) changed the narrative and combat the mafias. RICO was a histrionic legislative ingenuity because it permitted several crimes to be charged in a single indictment. The role of the private sector cannot be over-emphasised. Results align with Geldenhuys (2023), who acknowledged that the private sector has a critical role in mitigating the impact of violence and extortion on South African construction sites. Geldenhuys (2023) affirmed that South Africa's civil engineers joined the battle against the construction mafia through partnerships with the Bargaining Council for the Civil Engineering Industry. The council appoints practitioners to coordinate input from construction project stakeholders, contractors, clients, employees, and communities. Such an action has assisted developers based on guidance when sites are disrupted by the "construction mafia" or communities.

### **The study's Implications**

The results show threats to physical infrastructure projects because of continuous violence and extortion on South African construction sites. This concerns the stakeholders and may threaten the South African core network of national economic infrastructure, including investment in infrastructure and reviving the construction sector. This is because the sector is the major infrastructure push to support the local manufacturing of inputs and other related sectors across the value chain. Thus, violence and extortion threatens the massive rollout of infrastructure, including unlocking over R1 trillion in new infrastructure investments. Understanding the various impacts of violence and extortion on physical infrastructure projects will enhance stakeholders, including policymakers, construction developers, construction managers, community leaders, relevant law enforcing agencies, and client (private and public), which will go a long way to prevent or mitigate the majority, if not all. Thus, proffering collaborative efforts to mitigate the impact of violence and extortion on South African construction sites and, by extension, achieving physical infrastructure projects delivery is germane for the South Africa's Economic Reconstruction and Recovery Plan. The plan sets out a vision and immediate actions to enable an economic rebound and build the future economy. This has positive implications for society and humanity, especially in improving the achievement of the Sustainable Development Goals (SDGs) related to infrastructure development. Thus, proffering collaborative efforts to mitigate the impact of violence and extortion on South African construction sites and, by extension, achieve physical infrastructure project delivery cannot be over-emphasised. The expected outcome of this study includes improved inclusiveness, reduced poverty (SDG 1), reduced hunger (Goal 2), improved health and well-being (Goal 3), improved clean water supply and hygiene (Goal 6), improved industry innovation and infrastructure (Goal 9), improved sustainable cities and communities (Goal 11), developed capacity within infrastructure

development, and secured construction sites. Others are improved relationships and established transparency, sustainable job opportunities, improved collaboration and representation, higher job satisfaction, job security, peace in neighbourhoods, improved image of the industry, meeting community expectations, and productivity and collaboration.

Concerning the theoretical implications, this study investigated the perceived impact of violence and extortion on South African construction sites and their aftermath on physical infrastructure projects. The study also recommended collaborative efforts to mitigate the impact of violence and extortion on South African construction sites and, by extension, achieve physical infrastructure project delivery through qualitative research design. The findings identified collaborations with law enforcement, community-based security models, integration with private security, law enforcement review and intervention, partnership with construction contractors, involvement of private security firms, business against crime unit collaboration, and internal coordination (formal and informal) as the major collaboration efforts to mitigate violence and extortion on South African construction sites, as shown in Figure 1. Figure 1 reveals that Social Disorganisation Theory was utilised and supports the study. The theory emphasises that wrongdoing happens in communities that experience a failure in social mores and opportunities (Criminology, 2018). Bursik and Grasmick (1993) described the theory as “*neighbourhood life is shaped by a network of formal and informal community associations.*” Thus, this theory strengthens the proposed framework and the main findings, including collaborative efforts to mitigate the impact of violence and extortion on South African construction sites and, by extension, achieve physical infrastructure project delivery.

### **The Study’s Limitations and Areas for Further Studies**

This research using a qualitative method to cover the impact of violence and extortion on construction sites in South Africa. The reviewed literature mitigated challenges linked with qualitative research design and improved the discussion of the findings. Concerning recommended areas for future studies, the adopted research approach could be considered in construction industries in other countries with similar economic and social problems. The study’s developed constructs/dimensions (collaborative efforts) in Figure 1 can be further enhanced and modified in future research as measurement dimensions/items using a quantitative research design.

### **Conclusion and Recommendations**

This research aimed to investigate the perceived impact of violence and extortion and recommend collaborative efforts to mitigate them on South African construction sites and, by extension, achieve physical infrastructure projects delivery. This research has shown evidence of threats to physical infrastructure projects because of continuous violence and extortion on South African construction sites. This research identified delays in construction project timeline, cost overruns, operational adjustments in the South African economy, project disruption, unbudgeted variations, increased security expenses, project abandonment, loss of life, financial losses, staff unsafe, job cut, economic downturns, broader economic repercussions, and threats of lives as the impact of violence and extortion on South African construction sites and their aftermath to physical infrastructure projects. Thus, this research’s high point is to suggest collaborative efforts to mitigate the impact of violence and, by extension, achieve physical infrastructure project delivery and recommend the following:

- i. The government’s role, through an all-inclusive approach and multitasking

techniques via collaborative efforts, is to mitigate the activities of the construction mafia on South African construction sites. Findings suggest collaborations with key stakeholders. This includes law enforcement agencies, youth community leaders, construction developers, government representatives, and policymakers. This is to ensure monitoring and implementation of the signed agreement and, by extension, mitigate violence and extortion on construction sites and improve the achievement of physical infrastructure project delivery.

ii. This research also recommends the establishment of a special law enforcement intervention squad and special court/tribunal to manage construction site-related violence and extortion. Fast-convicted cases will send a signal that it is no longer business as usual for the growing criminal groups that extort money from construction firms and vandalise infrastructure when ransom is not paid.

iii. This research recommends developing a proactive framework that will define the role of major parties in mitigating violence and extortion on South African construction sites. This is critical because the approach to mitigating social menace has to be multitasking and inclusive to yield positive outcomes. The framework should, among other things, address the issue of 30% demand for infrastructure project value from organised crime groups (construction mafia). Law enforcement, through the special intervention squad, should be proactive to prevent occurrences rather than investigating violence and extortion on South African construction sites.

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