

Digitalising Infrastructure Protection: Curtailing Vandalism and Bolstering Revenue Inflows

*¹Dr. Misheck Chingozha P

*¹Lecturer, Department of Business Studies, SARPCCO Centre of Excellence, Associate College of the University of Zimbabwe.

Abstract

Infrastructure vandalism in Zimbabwe is currently so apparent. Many institutions are facing or have faced challenges related to vandalism induced down time, cost of cable or equipment replacement/repair as a result of vandalism. Resultantly citizens have been maimed, killed by naked wires exposed by vandals and denied sustainable livelihoods because of vandalised electrical and network connectivity. The study adopted the qualitative approach in addressing the demands of this study. A sample of risk and security officers and public relations officers from Zimbabwe Electricity supply Authority (ZESA), Telone (Telecommunications) and National Railways of Zimbabwe was used for this study. The study used interviews and document analysis to gather the required data for this study. The study found out that infrastructure vandalism is being caused by non-performance of the economy, corruption and the absence of mores and values among communities. In view of these conclusions the study recommends that all stakeholders must contribute towards the protection of all infrastructure, the institutions must digitalise the protection of their infrastructure, the government must promulgate appropriate legislation and consider deterrent sentences.

Keywords: Infrastructure vandalism, vandals, cable theft, digitalize, Zimbabwe

Introduction

The extent of infrastructure vandalism in Zimbabwe is so apparent and has seriously impacted the economy. Many institutions have been affected to the extent that they had to incur a lot of costs in repairing or replacing the damaged equipment or cables. Some industries have faced vandalism induced blackouts. From the documents accessed by this researcher, the National Railways of Zimbabwe had a very sound rail infrastructure in the 1980s into the 90s but this was soon vandalised in the years that followed the Economic Structural Adjustment Programme (ESAP). The status of the rail network promoted a lot of trade within the SADC region and was a marvel within the region and beyond.

Cases of vandalism of the infrastructure are said to have now reached alarming levels as suggested by some respondents from the NRZ. This led to the Public Relations Office to provide a comment to the media that, 'replacing the vandalised equipment would require about US\$10million.' The replacement cost quoted indicates that the vandals have paralysed the economy. In view of this reality a Security Officer (Eastern Region) revealed that the vandalism of infrastructure has been so pronounced in the following routes: Harare to Shamva, Harare to Lionsden, Harare to Mutare, and Harare to Munyati. Within these routes the vandals are said to be getting away with copper cables, rail clippers, ballasts, rail slippers and signal poles.

Cable theft and vandalism has affected many utilities to the extent that utilities such as Eskom and Transnet declared a loss of up to R1.2 billion between 2006 and 2012 (Michael, 2012) [6] This is quite a massive loss that has serious financial implications on institutions. These figures also agree with what has happened at Telkom, a South African

Telecommunications Company, which indicated that the entity lost R1.9 million in repairs and replacement cost between 2006-2011 (Michael, 2014) while Namibian Telecom Report (2012) suggests that Namibian Telecoms suffered losses amounting to N\$760 000 in 2012 due to theft and vandalism of copper cables.

Methodology

The qualitative approach was adopted for this study. The respondents were drawn from loss control and public relations officers drawn from Zesa, Telone and the National Railways of Zimbabwe from Harare, Mashonal and West and Midlands Province. The non-probability sampling technique (Judgmental and convenience) was considered to select the appropriate sample. The three provinces chosen presented the characteristics that the researcher intended to explore. The interviews and documentary analysis were used to gather the data that was necessary in addressing the research questions.

Infrastructure Vandalism Matrix in Zimbabwe

The study established the various aspects related to infrastructure vandalism in Zimbabwe. The analysis of the responses generated in this study helped develop the infrastructure vandalism matrix represented by figure 1. These aspects as shown by figure 1 include

- The causes of the theft and vandalism
- The items, components or equipment vandalised
- What needs to be done to curtail vandalism
- Benefits of a sound infrastructure
- Who to blame for theft and vandalism of infrastructure
- Effects of infrastructure vandalism

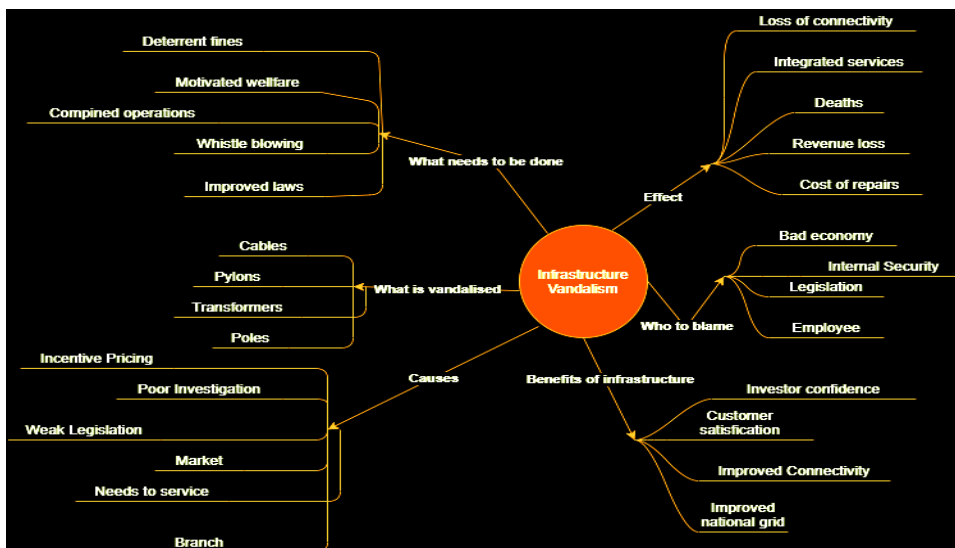


Fig 1: Chingozha 2021: Thesis

Infrastructure Vandalism Matrix

The study revealed that the preservation of networks and infrastructure is not the responsibility of the police alone but all citizens. In this vein those interviewed from Zesa indicated that the company is on a drive to conscientise citizens that the infrastructure that ZESA is responsible for is not Zesa property but it is our property. (This is the Zesa mantra for promoting protection of the infrastructure). The import of this mantra is that all citizens have a role to play in safeguarding the infrastructure. When the infrastructure is vandalised the citizens are the losers and this is what needs to be understood by all and sundry. This view was shared by the NRZ respondents who advised that the equipment and accessories at NRZ belonged to all citizens and not this organisation alone while a risk and loss control officer in response to this view point said,

They (communities) don't involve themselves in safeguarding the infrastructure. They don't report in cases where they witness the crime of vandalism being committed. They don't supply information even when they know the criminals.

In this regard it was the considered view of virtually all the respondents that the various stakeholders and communities have an obligation to ensure the security of the infrastructure. This finding agrees with Tsokota *et al.* (2013) who also found out that, 'everyone should take part in safeguarding sovereignty and property, which contribute immensely to the growth of the economy.' The matrix below (Figure 36) clearly shows the various issues raised by the various respondents. According to the study infrastructure vandalism achieved through community participation. The involvement of citizens would amount to *target hardening* (ability to make it difficult for criminals to commit crime) because of their visibility. The study revealed that this had proved to work within the low density areas when compared with the high density areas but confirmed that this was not sufficient. In view of this thinking, respondent HP 021 currently serving a 10-year mandatory sentence at the Harare Central Prisons, indicated that he was actually arrested by the local residents as he tried to bring down the copper that was hanging loose within the Borrowdale area in Harare. However, Ikejemba and Schuur (2017) [5] asserted that as long as there are government inequalities within a polity, citizens would continue to engage

in infrastructure vandalism and theft for the purpose of economic survival.

Adding his voice to this thinking the Public Relations Officer from NRZ said, 'replacing vandalized equipment requires all stakeholders affected...we need to address the issue of theft and vandalism before we replace the equipment because once someone is used to vandalism then they would do the same to the newly installed wires...' (Press Statement, 27th September 2018). The same thinking was advanced by the loss control officers from Telone and Zesa. They all concurred that the national infrastructure can only be secure when all citizens work together and share the national vision that deplores crime and criminality complimented by digitalising the protection mechanisms for the circuits and networks. These respondents stated that

- Bad relations disrupt or prohibit flow of information from the communities.
- Criminals are not terrestrial monsters but reside within the communities.
- Communities are undisputedly consumers of the proceeds of crime.
- Communities are victims of the vandalised infrastructure.

This agrees with the findings of a study by Ikejemba and Schuur (2017) [5] who found out that people tend to express their frustration by vandalising infrastructures and engaging in illicit activities that could provide them with resources to survive on a day-to-day basis. Technology would however help to these perpetrators at bay. As the people share a common vision, they will safeguard their infrastructure consistent with the findings of a study by Tsokota *et al.* who found that dealing with the vandalism scourge requires a multifaceted approach that is complimented by appropriate technologies.

Accordingly, the Chief Security Officer (NRZ) added that infrastructure vandalism should never be allowed because it is not health for any well-meaning community that is concerned about sustainable livelihoods and implored the government to work on the economic fundamentals' This view was confirmed by Ikejemba and Schuur (2017) [5] who said, 'the ineffectiveness and failure of government to create jobs, social security and other basic necessities arouses the anger within the people and as such leads to the vandalization of infrastructure.'

The majority of these respondents went on to suggest that engaging in crime and criminality was motivated by the status of the economy, level of corruption and the absences of mores among citizens.

The study also revealed that the artisanal miners have been acting as 'loose cannons' and caused untold damage to infrastructure at NRZ. The Chief Security Officer (NRZ) indicated that their statistics show that the artisanal miners have been vandalising the rail clippers that they then use for the crafting of chisels. The chisels are very important tools for their trade because of the durability and strength of the material. They have also been seen to loot the ballasts (quarry stones that stabilize the rail) which they process for gold particularly in the gold rich areas such as Shamva which then fuel derailments. This finding agrees with Ikejemba and Schuur (2017) ^[5] who proffered *crime to survive as the reason* which seem to suggest that as long as the economy does not perform it would be difficult to contain these *loose cannons*.

The study revealed that the involvement of staff cannot be ruled out. The extent to which some operations fail clearly shows that information would have been leaked from within. In an interview at Telone, it was established that there was a time when it was discovered that an employee deployed in the control room in which alarms that protect various networks would be monitored was actually a part to the syndicate. Instead of advising the security when alarms had been triggered, the employee would conceal the information so that the perpetrators execute their operation without any hindrance. One such employee was however discovered but after the organisation had lost significantly in terms of replacement cost of infrastructure, customer confidence and revenue in flows. The losses can be as high as over R5billion (about half a billion US dollars) a year in revenue losses (Hi Tec Solutions, South Africa. Some respondents from the Prison revealed that the main copper dealers incentivise the officers who then find it very difficult to resist the offers extended to them for various roles that would aid the theft and vandalism of infrastructure. This was confirmed by the CENTLEC Case Management Report, 2012; CENTLEC Financial and Asset Loss Report, 2012 (South Africa) which found out investigations into infrastructure vandalism and theft in some jurisdictions has led to a discovery of the involvement of the company employees. This is very unfortunate because ideally company employees should jealously guard the resources for their company so that they will have guaranteed employment into the future (Densai *et al.*, 2014).

What is equally amazing as generated by the study is how the perpetrators brave high voltages like 11kv, 33kv and get away with transformer coils, transformer oil and copper conductors at ZESA. This cannot be an easy task for persons who have no knowledge of electrical generation, transmission or distribution. Ordinarily those who work on and with such high voltages need to possess a respectable level of competencies. Without these competencies, the individuals working on and with such levels of voltages would be treading on a dangerous path yet casualties for those who vandalise the infrastructure have been marginal. In terms of the Institute of Electrical Engineers regulations or Central African Standards (CAS), those without the requisite skills are not allowed to work on or with such high voltages. The role of current and former staff may actually be the catalyst to this vandalism as advanced by some of those who responded to the instruments administered. One of the Loss Control Officers (LCO 1) said, 'at times the manner in which the thefts are conducted is just

smart, which is an indication that this cannot be the work of mere criminals but individuals with competencies in electrical engineering. The perpetrators should surely be electricians or engineers within or outside ZESA because there are times when as Zesa we employ contract workers. At the expiry of their contracts these workers go with their knowledge of the system and could be the ones who because of the high levels of unemployment or mere mischief return to steal from the former employer.'

The findings of this study seem to agree with the study by Mazikana (2019) who found out that vandalism and theft of infrastructure is caused by unemployed people to a significant extent since this study found the involvement of the Zesa staff within the infrastructure vandalism matrix.

In a separate interview with LCO 04 from Telone the study noted that the manner the offence is committed at times is reflective of the possibility of inside information having been passed to the perpetrators. LCO 04 said, 'ordinarily there is no way an ordinary citizen would know the exact location of a cable that is buried underground. At times, some of the cables are buried at a depth of 3 to 5 meters and protected by alarms but what becomes disturbing is how the perpetrators know that the alarm is down and then pounce. This surely is reflective of inside involvement.'

The study discovered that there are so many copper cables lying idle from non-operational networks or circuitry. The theft of these cables is very difficult to determine unlike the operating networks which immediately impact on customers when service is discontinued. The majority of those serving at Harare Prison indicated that they were victims of picking up cables that were hanging loose. They totally denied vandalising the infrastructure blaming it on the authorities that failed to recover their cables or repair their circuits. This response was further collaborated by community leaders interviewed at the ZIMDEF Complex in Harare who then directed this researcher to the electricity distribution line next to their office (see in the insert below showing a loosely hanging copper conductor). Some respondents from TM PICK AND PAY (Kamfinsa) also who directed this researcher to an unrecovered copper conductor along Rhodesville avenue.

There was convergence of thought that the authorities at Zesa, Telone should surely have mechanisms that promote prompt response to recover loosely hanging copper conductors to prevent criminals from preying upon them.

Conclusions

- The police are under resourced, poorly remunerated and this leads to corruption.
- The government is not addressing the macroeconomic fundamentals which is resulting in high level of unemployment.
- Traditional leaders are not respected as an important contributor towards a crime free community leading to moral decadence.
- Trading in copper or copper products is not being closely monitored and regulated leading to leakages and a lot of illegal dealings.
- Offenders under the Copper Act are not being appropriately punished.
- Communities are not helping the police in the fight against crime.
- The police and the public are not working together to fight crime within communities.
- The police are not communicating and interacting well

with the public.

- The institutions most affected by vandalism have not adopted smart policing

Recommendations

In View of the Conclusions Drawn in This Study it is recommended that

- Public utilities should restrict the engagement of casual and contract workers so as to safeguard installations hence the clashes between the police and criminals. Where these are engaged they must be vetted thoroughly by the internal security and the National police with the unparalleled view to isolate any likelihood of engaging individuals with a questionable record.
- The police and the people should work together so that they manage to handle crime and criminality, build trust and confidence and promote legitimacy within their communities through creating more channels of communication to facilitate the flow of information from communities through inspiring confidence and trust within the communities.
- The police to adopt smart policing initiatives. Smart policing (emphasizes effectively the use of data and analytics as well as improving analysis, performance and evaluation research, improving efficiency and encouraging innovation). This reduces direct interaction between police and public hence reduce or eliminate unnecessary clashes.
- (This refers to the use of technology that monitors the police officers as they discharge their duties as well as monitoring the activities of citizens as they go about their business. They will be in a position to see a crime being committed from a control room because of the cameras deployed at various sites)
- A regional body needs to be created, for SADC to superintend over cases of copper and promote the use of new technologies within the region to deal with crime and criminality and encouraging centrality in the control of infrastructure and networks. The regional body would then advocate for deterrent sentences for all offenders under the Copper act or any such related act within the regional block. Ultimately this could reduce clashes between the police and citizens over issues of crime and criminality.

All stakeholders, as government, business, private citizens, traditional leader or watchdogs should work together with the police in the fight against crime as the police institute programmes that promote social cohesion and sustainable livelihoods for citizens and institutions. (The stakeholders include the judiciary who must pass deterrent sentences on those convicted, harmonise all pieces of legislation related to copper trading; the business who must also avail resources to the police so that the police are not overwhelmed, the traditional chiefs who must enforce their values, government who must constantly revisit available pieces of legislation, revoke copper licenses from non-institutional holders as well as resources to the police)

References

1. Bolgan & Bilken. Research Methods , New City , Prentice Hall, 1982.
2. Creswell JW, Piano Clark V.C. Designing and conducting mixed methods research. Thousand Oaks, Sage, 2007.

3. Chigozha M.P. Public's perceptions on the conduct and operations of the Police Service and its Implications on Community Policing In Zimbabwe, 2021.
4. Pino, N.W. Community Policing and Social Capital. An international journal on police strategies and management, 2001, 24(2).
5. Ikejamba & Schuur. Analyzing the impact of theft and vandalism in relation to the sustainability of renewable energy development projects in Sub Saharan Africa, 2017.
6. Michael. Vandalism of Infrastructure in Eswatini, 2012.
7. Royal Eswatini Police Service : Newsletter August, 2019.
8. REP Newsletter, 2014.
9. V Jenifer and Ayisha Ashiq Fathima M. A Report on Information Technology in Supply Chain Management. *Int. J Res. Acad. World.* 2022; 1(11):06-08.
10. Address by Ambrose Mandvulo Dlamini during the launch of the National Anti Copper Theft Awareness Campaign at Mavuso Trade Centre, 2019.
11. Address by Monica Mutsvangwa during post cabinet briefing (parliament of Zimbabwe) on vandalism of infrastructure ZESA archives 2018-19.