

## Implementation of electronic government at Zambia Police Service Headquarters: Measures and constraints

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### ABSTRACT

Historically the Zambia Police Service (ZPS) provided police services using a traditional manual-based approach, with little use of technology. In 2021, it launched reforms which, among others, called for the adoption of e-Government in order to improve its performance and service delivery. Therefore, guided by the Technology Organization Environment (TOE) framework, this study investigated the measures and constraints in implementing e-Government at the Zambia Police Service Headquarters (ZPSHQ) between 2021 and 2024. The study was descriptive-exploratory in nature, adopting a qualitative approach and case study design. It used both primary and secondary sources of data. Primary data was sourced from a sample of 11 officials from the Ministry of Home Affairs and Internal Security (MHAIS), SMART Zambia Institute (SZI), and ZPSHQ. These were sampled purposively, with data collected using interviews aided by semi-structured interview guides. The data was analysed thematically. Secondary data from documents accessed from the internet, SZI and ZPS, was analysed using document analysis. Validity and reliability were ensured through content validity and internal consistency, respectively. The study found that the main administrative measures put in place were collaboration with stakeholders like SZI and MHAIS and acquiring Information Communication Technology [ICT] infrastructure like Closed Circuit Television [CCTV] cameras, databases, biometric systems and computers. However, these measures were constrained by a rigid bureaucratic hierarchy, inadequate funding, a shortage of qualified ICT personnel, resistance to technological change and inadequate training. The main legal measures were the Electronic Government Act No. 41 of 2021, the Data Protection Act No. 3 of 2021, the Electronic Communication and Transaction Act No. 4 of 2021 and the Cyber Security and Cyber Crimes Act No. 2 of 2021. These laws provided a framework for digital transformation, data protection and cybersecurity within the law enforcement processes. However, their enforcement was weakened by inadequate institutional capacity, overlapping mandates and the absence of provisions for handling digital evidence. Overall, the study concluded that despite the constraints, the administrative and legal measures have helped to implement e-government at ZPSHQ. To further improve implementation, the study recommends the inclusion of ICT training in police curricula, increased funding for ICT infrastructure and strengthening enforcement mechanisms for existing digital laws.

**Key Words:** Constraints, Electronic Government, Measures, Zambia Police Service

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### I. INTRODUCTION

The Zambia Police Service (ZPS) is the principal institution responsible for maintaining law and order, as well as ensuring internal security in Zambia. This mandate is outlined in the Constitution of Zambia (Amendment) Act No. 2 of 2016 and the Zambia Police Act, Chapter 107 of the laws of Zambia. The key functions of the ZPS include the protection of life and property, preservation of peace, maintenance of law and order, ensuring public security, crime detection and prevention, and upholding the Bill of Rights (Republic of Zambia, 2016). Given the critical nature of these functions, it is essential that the ZPS performs its duties with maximum efficiency and effectiveness. Failure to do so would present serious constraints to public safety and security

However, before 1994, the ZPS, like many other Police organisations world over, was using a traditional approach to provision of Police services. This approach was based on a bureaucratic manual way of policing, with little use of technology (Njase & Tembo, 2016). It involved police officers answering phone calls and patrolling their communities looking for crimes that had occurred. In addition, members of the public had to physically report cases or access police services from the small number of police posts available. As a result, the traditional approach was ineffective and inefficient in enabling the ZPS to perform the aforementioned functions (Musonda, 2002).

In 1994, the Zambia Police launched the Police Reform Programme which, among others, called for the adoption of e-Government as a way of improving the performance of its functions as well as delivery of services to public. This was based on the understanding and appreciation of the contribution of e-Government to improve the delivery of public

services (Musonda, 2002). However, the actual road map to the implementation of e-Government in Zambia began with the adoption of Zambia's National Information and Communication Technology Policy in 2006 (Mzyece, 2012). Implementation of e-Government was then included in the Fifth National Development Plan of 2006-2010 (Republic of Zambia, 2006a), the National Information and Communication Technology Policy of 2006 (Republic of Zambia, 2006b), and the Sixth National Development Plan (SNDP) of 2011-2015 (Republic of Zambia, 2011).

Initially, Zambia was grappling with introducing e-Government due to poor Information Communication and Technology (ICT) infrastructure. Nevertheless, the Government had made progress in computerising a few institutions such as the Zambia Revenue Authority (ZRA) and major hospitals countrywide (Weerakkody et al, 2007; Bwalya, 2009). In addition, the Government required all Government institutions to establish websites where citizens could access information and services. Further, the Government lowered excise duty on computers and related accessories in order to improve access to the internet. Plans were also made to establish a rural ICT fund with awareness programmes being undertaken to reach the citizens through the media and educational institutions. And the Zambia Information and Communications Technology Authority (ZICTA) was established under the Information and Communication Technologies Act No. 15 of 2009 to regulate the Information and Communication Technology (ICT) sector (Republic of Zambia, 2009).

However, by 2014, implementation of e-Government in Zambia was still low due to a number of issues. According to Bwalya et al. (2014) the full-scale implementation of e-Government was not easy due to constraints of bringing all the staff on board due to limitations such as computer illiteracy, poor mind set (attitude problems towards computers) and lack of linkage between institutions charged with service delivery and ZICTA. In addition, there was inadequate physical ICT infrastructure in the country to facilitate speedy processing of applications and the efficient handling of services. There was also limited confidence levels among staff and members of the public in the new IT systems, rendering the newly introduced e-Government platforms unreliable. Additionally, majority of people were not aware of e-Government implementation in Zambia (Chipeta, 2018; Bwalya et al., 2014).

The Government responded by establishing the Electronic Government Division (Smart Zambia Institute -SZI) on 22<sup>nd</sup> October 2015 (under the Office of the President), formalised by Government Gazette notice No 836 of 2016 and becoming operational in March 2016. In 2021, the Electronic Government Act 41 of 2021 was enacted giving SZI legal powers and functions aimed at enhancing the management and promotion of e-Government services and processes. SZI's main function is to facilitate access to e-Government services to improve service delivery, administrative functions and productivity in order to enhance citizens' access to government services and information (Republic of Zambia, 2021e). SZI became responsible for overseeing the implementation of the national e-Government strategy, which aims to achieve a fully integrated and interconnected e-Government environment by 2030. This involved the development of digital platforms and systems for the delivery of public services, including online portals, mobile applications, and other ICT tools (Republic of Zambia, 2021a; Republic of Zambia, 2018). Additionally, the organisation is responsible for promoting the use of ICTs among Government officials and stakeholders to enhance their capacity to deliver quality services to citizens in a timely and transparent manner (Republic of Zambia, 2021e).

Other important legal provisions for e-Government include the Electronic Communications and Transactions Act No. 4 of 2021, Data Protection Act No. 3 of 2021 and The Cyber Security and Cyber Crime Act No. 2 of 2021. These laws provides for a safe and effective environment for electronic transactions, an effective system for the use and protection of personal data, protection of persons against cybercrimes, protection of critical information infrastructure as well as the establishment of the Zambia Computer Incidence Response Team and National Cyber Security Advisory and Coordinating Council (Republic of Zambia, 2021b; Republic of Zambia, 2021c; Republic of Zambia, 2021d). In addition, the Eighth National Development Plan of 2022-2026 promotes facilitation of investments in information and communication technology. This is in order to support digital transformation and innovation as key enablers of development (Republic of Zambia, 2022a). The National Electronic Government Plan (NeGP) 2023-2026 provides strategic focus towards transforming the public sector through the adoption and application of digital technologies. Zambia's advancements in the digital transformation agenda so far have translated into the country improving its ranking on the Electronic Government Development Index (EGDI) from 148 to 131 out of 193 countries assessed in 2020 and 2022 respectively. Further, country's e-Government agenda embraces full digitalization of vital Government systems, processes, procedures, and services by 2026 (Republic of Zambia, 2023a).

The ZPS started the e-Government implementation some years back and joined the Government e-Services Portal in 2021 with a range of digital public services. Members of the public are able to apply online for services like Police Clearance Certificate (Fingerprints), Interpol Motor Vehicle Clearance, Cross-Border Permit, Permanent De-Registration, Firearm Certificate as well as electronic payments of fines and fees (Republic of Zambia, 2021a). Based on the efforts that have been put in place to implement e-Government in ZPS, especially with the interlinking of various Acts and setting up of institutions like SZI, up to 2021, there is need to access the measures and constraints in the implementation of e-Government in the ZPS, especially at ZPSHQ.

### 1.1 Statement of the Problem

In 2021, the ZPS adopted E-government with the aim of modernizing policing using ICTs. In the same year, it announced plans to join the Government e-Services Portal, promising to offer a range of digital police services. E-government was to begin at ZPSHQ before being rolled out to other divisions and police stations. Members of the public would be able to report cases and have their statements recorded electronically (Republic of Zambia, 2024a). They would also be able to access various police services like police clearance certificates (fingerprints), cross-border permits, firearm certificates and pay fines and fees online (Republic of Zambia, 2021a). The police would also carry out investigations and other operations with the aid of ICTs. This was expected to improve efficiency and curb corruption practices since members of the public and police officers would have reduced physical interactions (Zambia Police Service Commission, 2023).

However, as of 2024, key police services had not yet been digitised at ZPSHQ, and the entire ZPS. Reporting cases, recording of police statements and opening of case dockets are still done manually and physically. The Arrest and Prisoners Property Books, Occurrence Books, Crime Register Books and Docket Movement Books are all recorded manually and in paper form (Republic of Zambia, 2024a; Republic of Zambia, 2025). For instance, since recording of statements concerning a case is still being done manually, complainants and witnesses have to physically visit police stations. Such a situation leads to corruption and delayed processing of cases. This in turn results in both the victims and alleged perpetrators suffering delayed or miscarriage of justice (Njase & Tembo, 2016).

### 1.2 Research Objectives

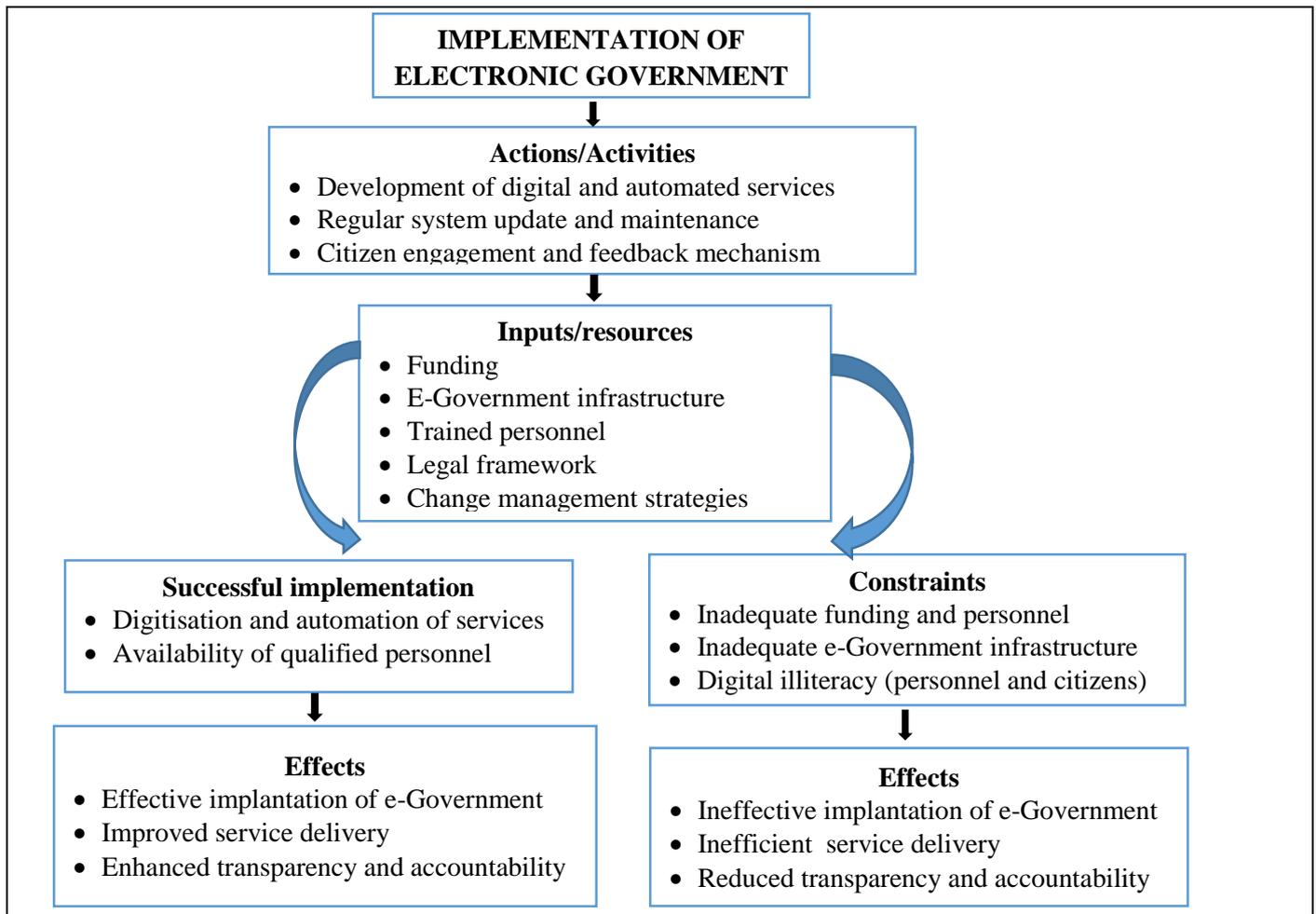
- i. To examine the measures put in place to implement e-Government at Zambia Police Service Headquarters between 2021 and 2024.
- ii. To analyse the constraints faced in implementing e-Government at Zambia Police Service Headquarters between 2021 and 2024.

## II. LITERATURE REVIEW

### 2.1 Theoretical Review

The study utilised the Technology Organization Environment (TOE) framework. Tomatzky and Fleischer (1990) developed the TOE framework to describe the organizational components that affect an organisation's decisions to adopt technology. The TOE framework asserts that three principle components - technology, organization, and environment - influence the measures that an organization uses to adopt and accept a new technology. Technology refers to the characteristics of the technology itself, including its functionality, complexity, compatibility with existing systems, and ease of use (Baker, 2012). Organization refers to the internal context in which the technology is used, including factors such as the organization's size, structure, culture, and resources. Environment refers to the external context in which the organization operates, including factors such as regulatory requirements, and social and cultural norms (Lippert & Govindarajulu, 2006). However, the TOE tends to be overly broad and general, making it difficult to apply in specific contexts. It also may not fully capture the complexity of technology adoption and implementation, particularly in rapidly changing environments where external factors can have a significant impact on technology decisions (Baker, 2012).

Nevertheless, the TOE framework was appropriate for this study. Therefore, based on the TOE framework, this study noted that to successfully implement e-Government, a police service should ensure that the technology relates to policing, is easy to use and not too complex for the police officers and members of the public and is compatible with existing policing systems. The police service itself should be decentralized with police officers accepting of change in addition to having adequate financial, human, physical and other resources. Appropriate regulations should be put in place while ensuring that the social and cultural norms among the members of the public is supportive. Lack of these requirements would pause challenges in the implementation process. This can be visually represented by figure 1 below.



**Figure 1**  
A Model of the Measures and Constraints of Implementing E-Government

According to Figure 1, the process of putting e-Government into practice requires activities and inputs. The *actions* in this case include the development of a system that will be used. This includes development of digital services, automation of services, regular system update and maintenance, and citizen engagement and feedback. These activities transform the inputs, enabling the successful implementation of e-Government. The *inputs* may include funding, e-government infrastructure, trained personnel, legal framework, change management strategies, and digital literacy programs.

*Measures* mean the activities undertaken and resources put to implement e-Government. If all the necessary activities and resources are put in place, then implementation of e-Government will be successful. A successful implementation will be seen through improved efficiency in the way the police will be delivering their services to the public. There will also be enhanced transparency and accountability which will also lead to low rates of corruption in the system. There will also be enhanced crime analysis and prevention capabilities due to the data driven policing and strategic planning. *Constraints* in this model mean hindrances that may prevent or limit successful implementation of e-Government. Constraints may present themselves in terms of inadequate funding, inadequate personnel, inadequate e-Government infrastructure and digital illiteracy among personnel and citizens. These constraints may lead to inadequate implantation of e-Government and thus inefficient service delivery.

## 2.2 Empirical Review

### 2.2.1 Measures Put in Place to Implement e-Government in the Police Service

There are a number of empirical researches conducted on the measures put in place to implement e-government. For instance, Weerakkody et al. (2007) undertook a study entitled *E-Government Implementation in Zambia: Contributing Factors*. The study was conducted in different government ministries in Zambia, focusing on the development stages and key challenges of e-Government from the government’s point of view. Primary data was collected from a sample size of 12 officials from various government ministries and agencies involved in e-Government activities. Secondary data was gathered from documented publications on e-government trends in Zambia and elsewhere. The study found that the e-Government strategy in Zambia’s National ICT Policy was not being enforced.

And that little had been done to embark on e-Government implementation due to inadequate steps taken by Government. It was discovered that what was being referred to as e-Government in the country was the few isolated donor funded computerizations. The programs in place were operating in isolation and the country did not have a national e-Government website. This study, although conducted over decade ago is cardinal to the current study in that it assessed the levels of E-government implementation at the time and set as a basis for future assessment. The major lesson drawn from this study is that even though e-Government implementation was taking place, the level was very low and more was needed. However, major changes have been made in the last twenty years, as will be seen in the proceeding literature.

According to Republic of Zambia (2023a) in the *National Electronic Government Plan 2023-2026*, the Zambian Government undertook an assessment of the country's current state of Government digital services, infrastructure, human capital, information security, innovation, policy and legal frameworks supportive to the country's transformation towards a digital economy. The assessment indicated that Zambia had made significant strides in advancing the digital transformation agenda. The assessment further revealed that investments were made in the development and deployment of Government digital infrastructure and services. Situation analysis of Public Sector Digital Transformation in Zambia as of December 2022 indicated that Zambia had 1,578 gazetted services, of which 280 services were provided online by 26 public institutions. These services were integrated on the Zamportal. Furthermore, an additional 19 public institutions were offering unintegrated e-services. This accounted for only 45 out of 516 gazetted public institutions offering electronic Government services. The assessment also indicated that only 263 out of 15,600 targeted sites were connected to the Government Wide Area Network (GWAN). This assessment is significant to the current study as it espoused the Zambian government efforts in digitally transforming the public sector in the country. It reflects growing policy direction and institutional readiness for a digital economy.

Bwalya and Akakandelwa (2023) conducted a study titled *An Assessment of Government Efforts Towards the Implementation of an Integrated Electronic Records Management System in the Zambian Public Service*. The study used a qualitative methodology, employing a purposive sampling method to draw a sample size of 11 informants from key government ministries and units. The study found that the Government, through the SZI, had begun developing an Integrated Electronic Records Management System (IERMS). Further, the Government had provided a legal framework and server ICT infrastructure to support e-records management in public institutions in Zambia. This study is important in that IERMS is an important aspect in the successful implementation of e-government.

Bwalya and Mulundano (2023) undertook a study titled *The Implementation of e-Government in Local Authorities in Zambia*. The study sought to determine the extent of e-Government implementation at the local level in Zambia by assessing the availability of websites/web portals, online services, and other e-Government systems in local authorities. Data was collected using a questionnaire and observation checklist. The findings showed that only 5 (14.29 %) local authorities had websites/web portals. However, the portals only provided basic information, except for Lusaka City Council's website which furnished some online services, like online payment. However, all the local authorities had Facebook pages where they provided information and engaged with the general public. They also undertook e-procurement using the Zambia Public Procurement Authority's (ZPPA) e-Government Procurement (e-GP) Platform. The majority (70%) of local authorities reported facing several constraints, including inadequate funding, limited ICT infrastructure, lack of skilled IT, intermittent power supply, low ICT literacy and unstable internet connectivity. This implies that e-Government adoption in Zambian local authorities is still at an emerging stage, with limited digital transformation beyond basic information sharing. Importantly, the Lusaka City Council's comparatively advanced online services provide a useful benchmark for other councils, showing that progressive adoption of e-Government is possible despite contextual constraints.

Outside Zambia, Vavoula (2025) conducted a study titled *"The Future of Digitalisation in EU Law Enforcement: Enhanced Exchanges of Personal Data, Privatisation and Algorithmisation."* The study found that most police forces in Europe had digitised law enforcement. The digitised aspects of police operations included record-keeping, crime analysis, citizen engagement, and online reporting. The study further revealed that the majority of these police organizations had integrated e-Government systems for citizen-centric services, such as online reporting of non-emergency incidents and providing a more accessible and convenient means for the public to interact with law enforcement agencies. Additionally, police forces had successfully implemented data analytics tools, enhancing their capacity to analyze crime patterns and allocate resources efficiently. These statistics underscored the significant progress made in leveraging e-Government to enhance the effectiveness and accessibility of policing services in developed European countries.

### 2.2.2 Constraints in the Implementation of e-Government

A number of studies have been undertaken on constraints faced in the implementation of e-Government in public institutions. For instance, a study by Bwalya (2009) on *Factors affecting adoption of e-government in Zambia* investigated use of ICT to support e-government initiatives in Zambia. It assessed, among others, the constraints with

e-Government adoption criteria regarding successful encapsulation of e-government into the Zambian contextual environment. It found that lack of adequate ICT infrastructure, lack of political will, provision of content in English rather than in local languages, lack of proper change management procedures, and non-contextualization of e-Government practices were the main constraints that significantly contributed to the delay in the adoption of e-government in Zambia.

Njase and Tembo (2016) conducted a study titled *E-Policing as a Service: The Way Forward in Zambia*. One of the study's objectives was addressing constraints in electronic communication between the public and the police. The methodology included a mix of qualitative research methods, engineering analysis, unstructured interviews, observations, and focus groups guided by an initial literature review. The study discovered that there was no specific policing strategy to optimize use of technology to enhance cooperation. In addition, there was lack of institutional capacity to deal with matters of change management in the process of digitalizing the ZPS' systems and procedures.

Chipeta (2018) undertook research titled *A Review of e-Government Development in Africa: A case of Zambia*. It evaluated the status of e-government development in Zambia and its readiness for sustaining e-services. The methodology employed both qualitative and quantitative approaches, targeting 25 government ministries and 6 local authorities with survey questionnaires distributed to 85 participants, including ICT managers and operational-level officers. Secondary data from past researchers was also used. The study's main findings indicated that Zambia faced 29% opportunities and 71% constraints in deploying e-services in the public sector. Notably, the research discovered that several constraints hindered e-government development and outweighed the available opportunities. The main ones were deficiencies in ICT infrastructure which hindered e-government development, limited skills development, and poor ICT policies.

Outside Zambia, Nelago et al (2022) undertook a research titled *Leveraging Technology to Enhance Effective Electronic Policing in Developing Countries*. It was conducted in the Namibian Police Force and was aimed at, among others, investigating the constraints faced in implementing e-policing. The research was quantitative and involved the use of open and closed ended questionnaires to collect data from a target population of 82 Police officers and 3 civilians at Okahandja Police Station. From this, the research randomly selected a total sample of 60 police officers, comprised of 6 administrative officers, 6 crime prevention officers, 24 crime investigation officers and 24 charge officers. The research found that the main constraint identified was the lack of appropriate budgetary allocation to the police force. This led to limited access to necessary technology equipment. Lack of IT knowledge and basic computer user skills among police officers also brought about poor compliance in recording information on the e-policing system. In addition, there were no proper laws enacted on how to gather and present digital evidence to prosecute cyber-criminals.

Busagala and Ringo (2013) researched on *Constraints of E-Policing Adoption: A case of Dodoma, Tanzania*. It was conducted in Tanzania's political capital, Dodoma, specifically in Dodoma Municipality, Bahi, Chamwino and Mpwapwa districts. Data was collected using questionnaires, interviews, focused group discussion and document review. A sample size of 238 respondents was drawn from a population of 324,347 people. In addition, 44 key informants, mostly officers in charge of police stations and ICT personnel, were purposively selected. The study revealed that e-policing adoption was at rudimentary level in Tanzania. The study also revealed that e-policing adoption faced a multitude of formidable constraints. These included an alarmingly low level of awareness and acceptance of ICT use among police officers, with just 4.5% acknowledging a good level of awareness and a substantial 56.8% perceiving minimal acceptance. Financial limitations were also a critical issue, as respondents unanimously agreed that funding ICT matters remained a significant bottleneck. Moreover, the majority of police officers lacked computer skills, with 55% having no proficiency in this area, while the absence of structured ICT training programs was reported by all respondents. The scarcity of essential ICT equipment and the lack of internet connectivity at the district and ward levels added to the impediments, as did less developed ICT infrastructure and unreliable electricity supply in certain areas.

A paper by Nchuchuwe and David (2016) examined the *Constraints and Prospects of Implementing e-Governance in Nigeria*. It found that key factors like effective leadership, cyber laws, training, funding, community e-centers, and accessible government websites were crucial elements for the successful implementation of e-Governance in Nigeria. After taking a cursory look at the processes involved, the paper concluded that the major constraints of e-Government implementation in Nigeria was poor internet connectivity, lack of skilled human resource, poor ICT infrastructure, corruption, low levels of ICT literacy, lack of political leadership, epileptic power supply, lack of legal framework and bureaucratic bottlenecks. For success to be achieved, the paper suggested the need to put in effective cyber laws and cafes, making deliberate and concerted plans for training on the effective use of the necessary machineries and equipment, and providing easily accessible websites of government and non-governmental agencies.

Nkohkwo and Islam (2013) assessed *Constraints to the Successful Implementation of e-Government Initiatives in Sub-Saharan Africa: A Literature Review*. The study investigated the constraints to the successful implementation of e-Government initiatives in all the 49 Sub-Sahara African (SSA) countries between 2001 and 2012. Data came from a comprehensive review of the six leading information system (IS) journals contained in the Senior Scholar Basket of the Association for Information Systems and the top ten ICT4D journals. In total, 75 relevant articles and documents

comprising of journal articles, conferences proceedings, as well as reports from governmental and non-governmental organizations, were examined. The results showed that poor ICT infrastructure, inadequate human resources, poor legal framework, limited internet access, and the digital divide were among the most common themes on the constraints to the successful implementation of e-Government initiatives in Sub-Saharan African countries. These themes were further grouped into six different aspects abbreviated as IF-POSH (infrastructural, financial, political, organizational, socio-economic and human). Among these six aspects, infrastructural and human aspects were the most important constraints that the respective governments in SSA needed to address prior to adopting implementation strategies.

Outside Africa, Samsor (2021) researched on *Constraints and Prospects of e-Government implementation in Afghanistan*. Data was collected from literature and ICT experts and both public and private officials. The study established that the five main obstacles to e-Government implementation were lack of stakeholder involvement, poor coordination, inadequate information sharing, low levels of ICT literacy and poor e-Government awareness among members of the public. The study also revealed that successful adoption of e-Government in Afghanistan, and other developing countries relied heavily on stakeholder involvement, coordination, information sharing, ICT literacy, and public awareness.

### 2.2.3 Main Lessons Learned from and Gaps Identified in the Reviewed Literature

The literature revealed that the main measures necessary to implement e-Government in the police service include creating ICT infrastructure, institutions and an IERMS. Others are improving digital literacy, developing human capital, information security, and appropriate legal frameworks supportive to a country's transformation towards digital policing. These measures would enable effective offering of digital police services like record keeping and citizen-centric services, such as online reporting of incidents. The main constraints identified include limited awareness and acceptance of ICT among police officers and members of the public, inadequate training programs, limited funding, poor ICT infrastructure, and policies, low internet penetration and reliability, as well as lack of an enabling legal framework. The studies collectively underscore the gradual and multifaceted nature of e-Government implementation, necessitating a coordinated and skill-focused approach to fully realize its potential benefits.

However, the literature was undertaken before 2024, making it less reflective of the current situation. Further, most of the studies, especially on Zambia, do not address implementation of e-Government in the police service. Furthermore, some literature lacked explanation for methodology employed or had weak methodologies.

## III. METHODOLOGY

The study was descriptive-exploratory in nature, which is ideal because of the scarcity of research on e-Government implementation in the ZPS, as established from the literature review (Creswell & Creswell, 2022). It was conducted at the ZPSHQ, located in Lusaka. ZPSHQ, established in 1966, is the administrative headquarters for the entire ZPS and is responsible for the provision of policy guidelines to the entire service. It is headed by the Inspector General of Police and has about 1,205 police officers. ZPSHQ is where e-policing was initiated, with plans to roll out the program to other locations (Republic of Zambia, 2024a)

The study employed the qualitative approach by collecting and analysing non-numerical data in form of words rather than numbers. This provided a holistic and in-depth understanding of the phenomenon under study (Saunders et al., 2019). The study also employed a case study design, with ZPSHQ serving as the case study. Since implementation of e-Government is a complex phenomenon, a case study allowed for a more focused and in-depth exploration of the research topic (Creswell & Creswell, 2022). It incorporated both primary and secondary sources of data. Primary data came from key informants, made up of officials from MHAIS, SZI and ZPSHQ. These were the officials involved in the implementation of e-Government at the ZPSHQ, thus knowledgeable on the subject. Secondary was sourced from documents accessed from the internet, SZI and ZPS. These documents complemented the primary data, filling in gaps and strengthening arguments (Saunders et al., 2019).

Data, collected between November 2024 and January 2025, came from both primary and secondary sources. For primary data, the target population was the 37 police officers under the Technical Directorate, in charge of the e-Government agenda at ZPSHQ (Zambia Police Service, 2024). Others targeted were officials from SZI and MHAIS. Therefore, the sample comprised 11 officials (informants), made up of three (3) from MHAIS, three (3) from SZI, two (2) from ZPS and three (3) police officers from ZPSHQ. Purposive sampling was used to select these officials based on the position they held and role played in implementing e-Government in the ZPS, especially at the ZPSHQ. Data saturation was reached after collecting data from the 11 officials. Data saturation was reached after successive interviews no longer generated new information, themes and perspectives relevant to the study three objectives. As data collection progressed, responses became repetitive and confirmed previously identified patterns regarding the measures and constraints in the implementation of e-Government at the ZPSHQ. At this point, additional interviews were unlikely to

yield significant new insights indicating that sufficient depth of data had been achieved to address the research objectives.

Primary data from officials was collected using semi-structured interviews held with the aid of a semi-structured interview guide. The interview guide was designed using the study objectives to ensure systematic and consistent data collection across participants. It comprised of open-ended questions that focused on participant's experiences in terms of the measures adopted and constraints encountered in the implementation of e-Government at ZPSHQ. This structure allowed participants to provide detailed responses while ensuring alignment with research objectives. This approach facilitated systematic data gathering, enhanced the reliability of responses, and allowed for meaningful comparisons among participants' insights and perspectives. Secondary data was collected using document review, a methodical gathering, structuring and recording of data from documents (Creswell & Creswell, 2022).

Validity was achieved by ensuring that the interview guide contained questions related to the two specific research objectives. Reliability was ensured using internal consistency, achieved by having questions in the interview guide that were logically related and whose responses were equally logically related (Saunders et al, 2019). Only responses not contradicting with the related questions were taken to be reliable and thus analyzed and presented as findings. Primary and secondary data were analyzed using thematic and document analysis, respectively. Both methods focused on identifying, examining, and reporting themes or patterns within the data (Braun & Clarke, 2019). For primary data, interview transcripts were read repeatedly to achieve familiarity with the data, after which meaningful units of information were coded. Similar codes were grouped to form themes that reflected recurring patterns across interviews. The themes were refined by comparing them against the data set to ensure that they accurately represented participant's views thereby enhancing transparency and reproducibility of the analysis process (Creswell & Creswell, 2022).

The study was undertaken in line with the requirement of the University of Zambia Humanities and Social Sciences Research Ethics Committee (HSSREC). The ethics approval certificate number is HSSREC-2025-OCT-044. However, the small sample size of 11 officials is a potential issue limiting the quality of this study. A larger sample size may have provided more diverse perspectives. The study minimized impact of the small sample size by ensuring that the officials were selected using purposive sampling, thus targeting individuals who were knowledgeable about the research topic. The study also conducted in-depth interviews with each official to gather comprehensive information. Nevertheless, while this design was appropriate for gaining in-depth insights into the implementation of e-Government in a specific context, future research could address this limitation by adopting comparative or multi- case studies across different police divisions or Government agencies to enhance validity. Secondly, the study relied largely on self-reported data from senior police officials and key informants. This introduced the possibility of response bias as participants may have overstated progress, emphasized successes or downplayed challenges in the implementation of e-Government. Future studies could mitigate this limitation by triangulating interview data with direct observations, system usage, document analysis or perspectives from service users to provide a more balanced and objective assessment.

## IV. FINDINGS & DISCUSSIONS

### 4.1 Administrative Measures and Associated Constraints in Implementing E-Government at ZPSHQ from 2021 to 2024

#### 4.1.1 E-government Services Provided at ZPSHQ

ZPSHQ had been chosen to pioneer the delivery of police services electronically. The rest of the divisions had very negligible presence of electronic services. However, even in the case of the ZPSHQ, the electronic services provided were limited to Interpol motor vehicle clearance, Interpol motor vehicle certification, firearm certificates, police clearance (fingerprints), cross boarder permits, e-policing, e-thrift management system (for the Zambia Police Thrift and Credit Cooperative Society) and online payments of fines. Applications were submitted online through ZamPortal by logging in with a ZamPass account (Zambia Police Service, 2024). However, while the application could be started online, the process was "operator-assisted," meaning ZPS staff had to physically process it.

The one major component of *e-policing* was the utilization of automated speed and other cameras mounted in public places, under the Safe City program, to investigate crimes. This was done in collaboration with Zhongxing Telecommunications Equipment (ZTE) which operated the Command Centre located in Lilayi. *Interpol motor vehicle clearance and certification* was an electronic service that ensured that all motor vehicles that were imported, exported, or transferred to another person were not stolen or involved in any criminal activity. Motor vehicle details such as chassis number, engine number and registration number were entered into a digital system connected to the Interpol database. The system then automatically checked for any international or local alerts on the vehicle. Once cleared, an electronic certificate was generated, which could be printed or verified online (Republic of Zambia, 2021a).

The *Firearm Certification* was a legal permit allowing individuals to own and use firearms in Zambia. Issuing of this certificate was subject to background checks and compliance with safety regulations. With digitization, applications were made and submitted online. Biometric verification and background checks were conducted using

automated databases. And if approved, a digital firearm certificate was issued and linked to the national security database (Zambia Police Service Commission, 2023). The *Police Clearance (fingerprints)* was a document proving whether an individual had a criminal record or not. They were usually required for employment, visa applications, and business transactions. The research discovered that digital fingerprint scanning was conducted using biometric systems. Fingerprints were then matched with police and criminal records in a national database. If no record was found, an electronic clearance certificate was issued declaring an individual as not having any criminal record (Republic of Zambia, 2021a).

*Cross boarder permits* were permits issued to individuals intending to cross into other countries using a motor vehicle with a Zambian registration number plate. It was a requirement for travelers, commercial transporters, and businesses crossing Zambia's border. Applications were submitted online via an online portal. Verification of identity and vehicle details was conducted using integrated customs and immigration systems. Approved permits were then sent electronically and linked to the border management system. There was a system allowing individuals to *pay fines online*. The fines, mostly traffic fines and penalties, were issued and recorded in a digital database, after which offenders would pay via bank transfers, using Point of Sale (POS) machines or other online payment methods like mobile money transfers. Receipts were then issued electronically with records updated to indicate that the fines have been paid (Republic of Zambia, 2021a).

The *Zambia Police Thrift and Credit Cooperative Society* was established in 1954. It was compulsory to all police officers and the support staff working in the ZPS. It was a credit society which allowed the employees to save money and apply for low interest rate loans. In 2023, ZPS introduced the e-thrift management system which allowed members to check balances of their savings, withdraw their money and apply for loans online.

However, informants noted that most police services were still not provided electronically. Key services not yet digitized included recording of police statements, opening of a docket of case, the Arrest and Prisoners property book, Occurrence book, Crime register book, docket movement books and the found property book. For instance, since recording of statements and other necessary information concerning a case were still being done manually, complainants and witnesses had to go to police stations physically and have a docket of case opened manually (Republic of Zambia, 2021a, Zambia Police Service Commission, 2023).

#### 4.1.2 The Main Stakeholders and Their Roles in Implementing E-Government

Implementation of e-Government in ZPS, including at the ZPSHQ, was being undertaken by a number of stakeholders. The main stakeholders were SZI, Ministry of Home Affairs and Internal Security and ZPS. These key Stakeholders played different roles towards ensuring the successful implementation of e-Government at ZPSHQ. *Smart Zambia Institute* was responsible for overseeing the implementation of the national e-Government strategy, which aimed to achieve a fully integrated and interconnected e-Government environment by 2030 (Republic of Zambia, 2021). For ZPS, this involved the development of digital platforms and systems for the delivery of police services, including online portals, mobile applications and other ICT tools. An official from SZI stated that

*“Collaboration between the two institutions has been very good. It has helped to digitalize some services. Smart Zambia's role extends to standard setting and monitoring, ensuring that digital initiatives within the Zambia Police Service align with the national e-Government strategies and international best practices”* (SZI1, 20<sup>th</sup> November, 2024).

The *Ministry of Home Affairs and Internal Security* housed the ZPS as one of its departments. Therefore, the MHAIS played a strategic and supervisory role in the implementation of e-Government at ZPSHQ. As the parent Ministry, it provided policy direction, oversight and resource allocation necessary for the adoption of digital governance in the ZPS. The Ministry had been participating in developing and enforcing policies to guide the adoption of digital technologies within the ZPS and ensuring that the policies aligned with national ICT policies and frameworks (Republic of Zambia, 2024a). An official from MHAIS added that

*“The Ministry strengthens the capacity of the police service by supporting training and mobilizing resources required for sustainable e-Government implementation. It also ensures that the police adhere to the legal and regulatory frameworks, particularly in areas of data protection, cybersecurity and electronic communication”* (MHAIS2, 17<sup>th</sup> January, 2025).

The *Zambia Police Service*, led by its service headquarters, played a major role in implementing e-Government as the end user of the electronic systems. It also provided advice to SZI and other stakeholders on how electronic systems should be developed in order to suit its needs. It also worked hand in hand with SZI in order to actualize the created electronic service delivery systems. The ZPS also provided feedback on the usage of electronic systems to SZI, so that improvements could be made where necessary. An official from the ZPS stated that

*“We are better placed to understand our needs in terms of e-Government Services. Therefore, we help other stakeholders develop systems that will suit our day-to-day operations. Since we are involved*

*throughout the process, it gives us that sense of ownership of all the e-services developed” (ZP, 4<sup>th</sup> December, 2024).*

The key informants generally agreed that the collaboration among the current stakeholders forms a strong foundation for digital transformation. However, they also argued that the available stakeholders were not sufficient on their own. They noted that lack of active participation of other stakeholders such as members of the public, civil society, the media, and other government institutions, like the judiciary, led to constraints in implementation, sustainability and end-user adoption. They observed that a multi-sectorial approach involving technical experts, end-users, the private sector and international development partners might have been better.

Reviewed literature also showed that implementation of e-Government in most countries’ police services required collaboration among a plethora of stakeholders, each playing a distinct but vital role. For instance, Samsor (2021) revealed that successful adoption of e-Government in Afghanistan and other developing countries relied heavily on the involvement of various stakeholders. They built ICT infrastructure and provided technical support, coordination, information sharing as well as public awareness. The findings also aligned with the recommendations of the TOE framework that successful adoption of technology requires the organization to appropriately interact with stakeholders within its environment (Lippert & Govindarajulu, 2006).

#### **4.1.3 Electronic Infrastructure Put in Place to Implement E-Government**

A number of infrastructures had been put in place to help implement e-Government at the ZPSHQ. For instance, the MHAIS, in collaboration with the Chinese Government, constructed a modern National Command Centre in Sikanze Police Camp with high technology and modern infrastructure. The building housed the monitors for the Safe City closed circuit television (CCTV) cameras that were dotted in major public places and roads within the city of Lusaka (Republic of Zambia, 2023c). The CCTV cameras recorded footage, stored at the National Command Centre, which the ZPS used in aiding their investigations of criminal activities. A number of crimes were investigated, offenders arrested, prosecuted and convicted using evidence from CCTV footage. One popular case solved using CCTV evidence was an abduction reported to Emmasdale Police Station on 16<sup>th</sup> March, 2023. A ten (10) year old boy was abducted from school before being killed and thrown in a nearby maize field. During investigations, officers requested for assistance from the National Command Centre. The Command Centre provided video footage from the CCTV camera near the boy’s school. The video showed the boy and a male walking along great north road on the day he went missing. This led to the positive identification of the abductor and killer. The case was later taken to court and the recorded footage, played in court, helped to secure a conviction in October 2023. A police officer explaining that

*“Previously, solving such cases was difficult and took years. And sometimes they were never solved at all. Therefore, the coming of CCTV cameras and the National Command Centre has changed how we investigate cases that happen on the streets of Lusaka.”* PO2, 19<sup>th</sup> December, 2024.

The officials also revealed that the ZPSHQ had computers with internet connectivity, software, cyber security framework, citizen access points and payment gateways. There was a help desk for both police officers and members of the public to seek clarification and assistance related to e-services. ZPSHQ also had an Information Management System (PIMS). PIMS was a digital database for storing and managing police records, including crime reports, case files, and investigations. It helped in tracking criminals, managing evidence, and enhancing efficiency in law enforcement. The study also discovered the presence of a Biometric Identification System (BIS) used for fingerprint scanning and biometric data storage for criminal identification. This helped in verifying identities and reducing manual errors. There was also a Digital Communication Systems (DCS) which involved the use of radio communication networks for coordinating law enforcement activities. ZPSHQ also had a Cybercrime and Digital Forensics Unit, which is a special department equipped with cybercrime investigation tools to track online fraud, cyber threats, and digital crimes.

However, the study revealed that these ICT infrastructures were insufficient, as most were old, outdated and inadequate. For instance, the network system was not up to date, leading to poor and erratic internet connectivity. Computers were inadequate leading to more than half of the police officers lacking access to work computers (Republic of Zambia, 2023c). In addition, ZPSHQ experienced erratic electricity supply due to loadshedding. There was also the inability of ZPSHQ to keep up with the fast paced changes in technology. An official from SZI lamented that

*“Technology keeps changing every day and the police service is failing to keep up, thereby making most of the ICTs to be outdated. Some computers at service headquarters are old and obsolete, making them incompatible with the systems that have been recently developed”* (SZI, 22<sup>nd</sup> December, 2024).

Additionally, the ZPSHQ building, constructed during the colonial era, was not designed to handle modern ICT installations. As a result, some of the installed ICT equipment, like cables, were not well protected, exposing them to damage by water, rats and the occupants of the building. A police officer noted that

*“At Zambia Police Service Headquarters, installation of electronics requires a lot of improvising and drilling in the walls. Most of the cables have been damaged because they are not well protected”* (PO3, 30<sup>th</sup> December 2024).

Nevertheless, the available ICT infrastructure, though limited, was still able to create an e-Government system that was accessible and secure. It had, for example, enabled the police to solve a number of crimes, including hit-and-run accidents, through the use of the footage recorded by street cameras.

These findings align with those of Bwalya (2009) who discovered that while headway had been made in developing ICT infrastructure in Zambia, more needed to be done. This was because the infrastructure was not adequate to effectively implement e-Government in Government institutions, including the police service. Nkhokwo and Islam (2013) also noted that poor ICT infrastructure, limited internet access, and the digital divide were among the most common themes on the challenges to successful implementation of e-Government initiatives in SSA. Similarly, the TOE framework emphasizes the need for appropriate technological infrastructure that is compatible with the technology being adopted (Baker, 2012).

#### 4.1.4 Administrative Structure Put in Place to Implement e-Government

ZPSHQ had a Technical Services Directorate responsible for ICT development and maintenance in the ZPS. The Directorate was headed by a Deputy Commissioner of Police. It also had a Senior Commissioner of Police as Deputy Director and two Assistant Directors at the rank of Assistant Commissioner of Police. There were also other superior police officers and subordinates who held various positions. These included programmers, network administrators, systems analysts and data entry operators. Most of the personnel occupying key positions had the required qualifications. For instance, the officer in charge of technical services was a qualified telecommunications engineer. Having this administrative structure helped the ZPS to implement e-policing (Republic of Zambia, 2025). An official from ZPS stated that

*“The institution has skilled officers who are responsible for the implementation of e-services. And since they take part in the development of these services, they have developed a sense of ownership, making it easy for them to provide support services in case of system failure”* (ZPS1, 17<sup>th</sup> December, 2024).

However, the effectiveness of the administrative structures was limited by the rigid bureaucratic hierarchy, weak interdepartmental coordination, human resource gaps as well as procurement and resource bottlenecks. A police officer stated that

*“Despite the administrative structure being in place, all decisions are still made through the chain of command. This slows and compromises decision making. The chain of command is not conversant with ICTs”* (PO1, 12<sup>th</sup> November, 2024).

There were also behavioral barriers such as accountability issues and resistance to change. This was compounded by the inadequate skilled ICT personnel. An official from ZPI stated that

*“The institution needs additional qualified ICT personnel to help maintain, upgrade and develop electronic systems. Most police officers are mere grade 12s. Only a few have upgraded themselves with tertiary education, mostly in law and other police related courses”* (ZPS2, 4<sup>th</sup> December, 2024).

Furthermore, the police training curriculum did not incorporate ICTs. As a result, most police officers did not get basic knowledge of ICTs during training. They were thus not prepared to work with the latest technology after graduating. Most police officers, as end users themselves, struggled to operate or use the systems effectively due to lack of knowledge and expertise. This led to a general preference for manual processes.

Nevertheless, despite these constraints, the available structure was capable of supporting successful e-Government implementation at ZPSHQ. With capacity building through ICT focused training, decentralizing technical decision making and fostering a digital culture across all ranks, ZPSHQ was capable of being the driver of digital transformation within ZPS.

These findings were similar to the reviewed literature. For instance, Al-Shboul, et al (2014) noted the importance of an appropriate administrative structure for successful implementation of e-Government. Busagala and Ringo (2013) also revealed that a poor administrative structure can be a major hindrance to the successful implementation of e-Government. Nkhokwo & Islam (2013) equally noted that the main constraints impeding the digital transformation in most SSA countries included inadequate computer skills among police officers and inadequate infrastructure. Therefore, the situation at ZPSHQ contradicted the TOE frameworks call for the presence of an appropriate and decentralized administrative structure capable of guiding the adoption of technology (Lippert & Govindarajulu, 2006).

#### 4.1.5 Funding Towards the Implementation of E-Government

Management and provision of electronic police services is expensive and requires sufficient funding. However, in 2021, only about US\$56,896,732 was allocated towards expenditure on e-Government at ZPSHQ. In 2022, the allocation increased to US\$57,136,364 only. In 2023 and 2024, the budget was US\$77,072,374 and US\$94,708,524, respectively (Republic of Zambia, 2021d, Republic of Zambia, 2022b, Republic of Zambia, 2023b, Republic of Zambia, 2024b). The ZPSHQ also received donations from foreign institutions. An official from ZPS stated that

*“The Canadian Government, through the Elsie Initiative Fund, donated 80 desktop computers, 27 laptops, 19 printers and a number of walkie talkie radios and wireless internet modems to the Zambia Police Service Headquarters in 2022. These are among the most modern ICT equipment the service has currently”* (ZPS1, 17<sup>th</sup> December, 2024).

However, the funding was acutely inadequate. The allocations between 2021 and 2024 was less than 35% of what was needed to implement e-Government at the institution. In addition, there was no funding specifically allocated towards training programs for police officers who were expected to implement e-police services. According to an official from ZPS,

*“Funding for training programs is released under the Training Department, which is responsible for designing all training programs in the Zambia Police Service. There is no specific amount allocated to e-Government training. And the Training Department emphasises training related to police work, rather than ICT”* (ZPS1, 17<sup>th</sup> December, 2024).

This was equally the case with funding for procuring ICT infrastructure. Funding was allocated to a department responsible for procuring all equipment without specifying how much should be used on procuring ICT infrastructure. The inadequate funding negatively affected the implementation of e-Government at ZPSHQ. It made it difficult for the institution to procure up to date technological infrastructure. This led to ZPSHQ resorting to using out-dated computers, software’s and servers. A police officer complained, stating that

*“Procurement funding is allocated to the Quarter Masters Stores, a department responsible for the procurement of all equipment’s in the Zambia Police Service. In most cases, the priority is given to procuring police uniforms and equipment, not ICT infrastructure”* (ZPS2, 4<sup>th</sup> December, 2024).

Nevertheless, despite being insufficient, the available funding still made it possible to implement a number of e-services. For instance, electronic Interpol motor vehicle clearance and certification had been implemented and accessible to the public. The ZPSHQ was also able to use the funds to procure some ICT infrastructure, like computers and printers. However, more could have been done had the funding been adequate.

The findings above are similar to those from the reviewed literature. For instance, Busagala and Ringo (2013) discovered that in Tanzania’s Dodoma region, funding had played a crucial role in implementing e-policing by enabling the purchase of ICT equipment and training police officers. However, even in Dodoma, the funding was inadequate, thus remaining a significant bottleneck. Similarly, Nelago et al (2022) stated that lack of appropriate budgetary allocation to police organizations led to limited access to necessary technology equipment. This shows the importance of funding to the successful implementation of e-government. The situation at ZPSHQ contradicts the TOE frameworks call for the presence of adequate financial and other resources necessary to meet the costs of adopting technology (Lippert & Govindarajulu, 2006).

## **4.2 Legal Measures and Associated Constraints in Implementing E-Government at Zambia Police Service Headquarters from 2021 To 2024**

### **4.2.1 Legislation Put in Place to Implement E-Government**

There were four main legislations that had been enacted to guide and support the implementation of e-Government in Zambia, including in the ZPS. These were the Electronic Government Act No. 41 of 2021, the Data Protection Act No. 3 of 2021, the Electronic Communication and Transaction Act No. 4 of 2021 and the Cyber Security and Cyber Crime Act No. 2 of 2021.

#### **4.2.1.1 The Electronic Government Act No. 41 of 2021**

The Electronic Government Act No. 41 of 2021 was an important legislation that established SZI and provided for its powers and functions. SZI, in turn, took a leading role in providing technical assistance to ZPHQ. This Act also provided guidance on areas such as data privacy and security, interoperability, service delivery, and digital inclusion. It also outlined the objectives, principles, and strategies for implementing e-government initiatives. These initiatives included improving public service delivery using ICTs as well as promoting efficient, secure, and transparent administrative processes (Republic of Zambia, 2021e). The e-Government Act provided the legal framework that mandates public institution, including the Police to adopt electronic systems for service delivery, data management and internal operations. An official from SZI noted that

*“At Zambia Police Service Headquarters, this law has empowered us to standardize ICT systems, promote interoperability and ensure accountability in digital processes. It has removed ambiguity, enabling clear roles and responsibilities for ICT governance, which is crucial for effective and secure law enforcement in the digital era”* (SZI3, the 27<sup>th</sup> December, 2024).

#### 4.2.1.2 The Data Protection Act No. 3 of 2021

The Data Protection Act No. 3 of 2021 regulated the collection, processing, storage, and sharing of personal data. It created the Office of the Data Protection Commissioner, responsible for overseeing all issues concerning data processing in addition to the registration of Data Controllers and licensing of Data Auditors. It also regulated the collection, use, transmission, storage, and processing of personal data. The Act aimed at protecting individuals' personal data rights as well as promoting responsible data use. For instance, Section 13 provided that a Data Controller was required to have the express written permission of a Data Subject for the collection, processing, or disclosure of any information of the Data Subject. A Data Controller was further required to keep a record of any third party to whom personal information is disclosed, the date of disclosure, and the purpose for which it was disclosed (Republic of Zambia, 2021c).

Key informants noted that the Data Protection Act, No. 3 of 2021 was very important in the implementation of e-Government in the police service as it protected citizens and businesses from having their privacy violated by the police in the guise of conducting investigations. Official from ZPHQ also claimed that police officers complied with the provisions of the Act. For instance, police officers sought consent from subjects and/or the courts before accessing confidential information during investigations. They also ensured that information was collected with integrity and kept confidential (unless in cases where it was used as evidence in court during prosecution).

Officials also noted that the provisions of the Act did not impede their investigations. They appreciate its provisions noting that without the provisions, there was a chance that some police officers could infringe on citizens' privacy. And that this infringement could potentially risk prosecutions as some judges may take exceptions. According to an official from ZPS,

*“The Data Protection Act helps to address the growing need for privacy in the digital age. Therefore, the Zambia Police Service Headquarters follows the provisions of the Act to the latter. And so far, our investigations have not been impeded due to the provisions of this Act, to the contrary”* (ZPS2, 4<sup>th</sup> December, 2024).

#### 4.2.1.3 The Electronic Communication and Transaction Act No. 4 of 2021

The Electronic Communication and Transaction No. 4 of 2021 repealed and replaced the Electronic Communications and Transactions Act, 2009. The Act provided the legal foundation for secure, reliable and legally recognized digital transactions. It validated the use of electronic records, digital signatures and online communications, essential for digitalizing policing operations, such as case documentation, internal memos and citizen reporting systems. It ensured that electronic documents carry the same weight as paper records, thereby reducing dependence on manual processes and enhancing operational efficiency. In essence, the Act created the legal confidence needed to transition key police services into the digital space with integrity and trust (Republic of Zambia, 2021b).

#### 4.2.1.4 The Cyber Security and Cyber Crime Act No. 2 of 2021

The Act established a legal framework to address cybercrime, ensure cyber security, and regulate digital interactions. It provided for cyber security in Zambia by establishing the Zambia Computer Incidence Response Team and National Cyber Security Advisory and Coordinating Council. The functions of these institutions included the protection of persons against cyber-crime, child online protection and facilitation of identification, declaration and protection of critical information infrastructure. The Act also provided for the collection of and preservation of evidence of computer and network related crime, for the admission in criminal matters, of electronic evidence and for registration of cyber-security service providers (Republic of Zambia, 2021d).

Officials identified this law as one of the most important Acts for ZPS as it criminalised the publication of personal information. This empowered the ZPS to effect arrests and persecute any person or institution going against its provisions. It covered offenses committed within Zambia and outside the country, provided the victim or perpetrator is linked to Zambia. Some of the offenses covered were unauthorized access, data interference, system interference, identity theft and impersonation, cyber-bullying, child pornography, phishing, fraud and cyber terrorism (Republic of Zambia, 2021d).

#### 4.2.1.5 Effectiveness of the Legislations

The officials were of the view that Zambia's legislative framework for e-Government implementation is notably progressive. The legislations provided a clear legal mandate that promoted digital transformation across public institutions, including in the police service. Laws such as the Electronic Government Act No. 41 of 2021 and Electronic Communications and Transaction Act No. 4 of 2021 provided a solid foundation for digitalizing police processes by recognizing the legal validity of electronic records, signatures and transactions. These provisions facilitated the transition from manual to digital systems, enhancing administrative efficiency and service delivery.

Furthermore, the legislations demonstrated a strong emphasis on cyber security and data protection. For instance, the Cyber Security and Cyber Crimes Act No. 2 of 2021 and the Data Protection Act No. 3 of 2021 established regulatory mechanisms to safeguard information systems, protect critical infrastructure, and uphold citizen's data privacy, thereby fostering trust in e-Government platforms. The establishment of regulatory bodies such as SZI and the Data Protection Authority also reflected an institutional commitment to coordinated digital governance. However, there was still need to modernize some of the legislations, due, for example, to some legal ambiguity with regards to how to temper proof electronic evidence and thus make it easily admissible in court. A police officer said that

*"While Zambia has enacted several Acts, the enforcement mechanisms still remain underdeveloped. Moreover, there are uncertainties about data sharing, ownership and the right to access information within and outside the police service"* (ZPS2, 4th December, 2024).

Another constraint was the lack of a specific law guiding the operations of the National Command Centre. A police officer informed that

*"The National Command Centre has been operating without a law put in place. This makes its activities to be legally ambiguous. However, a Bill was just recently introduced in parliament and is still being debated on"* (PO3, 30<sup>th</sup> December, 2024).

The current legal framework aligns with the TOE framework's recommendation for an organisation's environment to have regulatory requirements that support the adoption of technology (Lippert & Govindarajulu, 2006). However, unlike in Zambia, literature indicates that most countries, especially in southern Africa lacked robust legislations aimed at guiding and improving the implementation of e-Government in the police service. For instance, Nchuchuwe and David (2016) found that lack of a robust legal framework contributed to poor implementation of e-Governance in the Nigerian Police Force. Nelago, et al (2022) also discovered that the Namibian Police Service had no proper laws adopted on how to gather and present digital evidence to prosecute cyber-crimes. This limited the powers of the police and prosecutors to investigate and prosecute crimes committed in the cyber space.

#### **4.2.2 Strategies and Policies to Implement E-Government**

Aided by the legislations above, ZPS adopted institutional specific plans and strategies in addition to borrowing others from stakeholders, especially SZI. ZPS institutionalized the Smart Zambia Agenda, launched by the Zambian Government in September 2015. The goal of the Smart Zambia Agenda was to achieve social and economic transformation by adopting a paradigm shift from traditional approaches of service delivery. For the police, the paradigm shift entailed leveraging ICTs to modernize and simplify the governance and service delivery systems in policing (Republic of Zambia, 2023c). This agenda led to the development of the SMART Zambia Electronic Government Master Plan (2018- 2030). The goal of the Master Plan was to transform the country into an information and knowledge-based society and economy supported by consistent development of, and pervasive access to ICTs by all citizens by 2030 (Republic of Zambia, 2018).

In 2023, the National Digital Transformation Strategy, anchored on the National Information and Communication Technology Policy of 2023, was adopted. It was premised on Government's aspiration to transform Zambia into a digital economy by leading the way to an increase in digital services at all levels of the economy, including those of policing. The Strategy's five pillars were Digital Infrastructure, Digital Platforms, Digital Services, Digital Literacy and Skills, and Digital Innovation and Entrepreneurship. This Strategy had interventions that cut across different sectors (Republic of Zambia, 2023c). Therefore, through these pillars, ZPS was able to focus on creating digital police infrastructure, digital platforms for delivering and accessing police services, offer digital police services, train police officers and support staff in digital literacy and skills, and undertake digital innovation.

The Government also adopted the National e-Government Plan 2023-2026 which noted the importance of public sector digital technologies to Zambia's overall socioeconomic transformation agenda. This is evidenced by the continued inclusion of ICT programmes in national development plans, Government policy and strategic frameworks. For instance, ICTs had been recognized as enablers of socio-economic development in the country's 8<sup>th</sup> National Development Plan (2022-2026). Therefore, mainstreaming ICTs in Government institutions, such as the ZPS, had been prioritized for full public sector digital transformation (Republic of Zambia, 2022a).

In line with the above strategies and plans, the ZPS adopted the Zambia Police Strategic Plan 2023-2026. The Plan highlighted the road map that the ZPS needed to follow for it to achieve its objectives effectively and efficiently. Among others, it noted the need to roll out ICT infrastructure in order to enhance delivery of police services electronically. To this effect, ZPS identified the need to establish a Crime Intelligence Analysis Centre at its headquarters. It was expected to use modern technology to analyze crime (Republic of Zambia, 2023c). However, at the time of data collection, this had not been actualized. An official from ZPS noted that

*"The Police Strategic Plan has served as a roadmap and guidelines for the successful implementation of e-Government as it brings out the targets that should be meet. However, most of the targets in the strategic plan have not been met due to financial constraints face by the institution"* (ZPS1, 17<sup>th</sup> December, 2024).

ZPS developed a training policy that provided guidance on how the police officers were trained and equipped with the necessary skills needed to effectively manage the e-policing introduced in the institution. ZPS also empowered police training schools so that they built capacity of police officers and support staff in ICT skill. Lilayi Police College in Lusaka and the School of Public Order Maintenance (SPOM) in Kamfinsa, Kitwe, had functional computer labs. However, each school only had 40 computers, which were significantly insufficient to accommodate the over 1000 officers that trained at each school. The schools also lacked qualified personnel to manage these Computer Labs and train recruits. Other key training schools, like Geoffrey Mukuma Paramilitary Police Training College, commonly known as Sondela, had no computer labs (Republic of Zambia, 2024a). Nevertheless, at the time of data collection, the Canadian Government, through the Elsie Project and the United Nations Development Programme (UNDP), was assisting ZPS to establish a computer lab and other training facilities at Sondela.

Both the Zambia Police Strategic Plan 2023-2026 and the training policy provided the guidelines on the development and implementation of an e-record management system to be used for managing all the electronic records in the ZPS. There can never be effective implementation of e-Government without laid down guidelines.

The key informants noted that the strategies adopted by the ZPSHQ provided a framework for e-Government implementation. For instance, the development of ICT infrastructure, digitization of police operations and integration with national platforms demonstrated commitment. These strategies also ensured, not only continuity of digital reforms, but also alignment with broader national development goals and international e-Governance standards.

These findings differ from those of Chipeta (2018) and Weerakkody et al (2007). For instance, Chipeta (2018) found that Zambia lacked proper strategies and policies relating to the implementation of e-Government. And that there was a digital divide and low government readiness. Weerakkody et al (2007) finds that the e-Government strategy was not being enforced in Zambia. And that little has been done to embark on e-Government implementation due to inadequate steps taken by government. However, this implied that, in line with this study's findings, the Zambian government had made significant strides in developing and enforcing strategies and policies to implement e-Government. Once again, this aligns with the TOE framework's recommendation for an organisation's environment to have regulatory requirements that support the adoption of technology (Lippert & Govindarajulu, 2006).

#### **4.2.3 The Overall Quality of Electronic Services Provided at Zambia Police Service Headquarters**

The study found that the above mentioned stakeholders, infrastructure, administrative structures, funding, legislations and strategies made it possible for the ZPS to succeed in providing some e-services at its headquarters. However, as earlier mentioned in section 5.2, the only electronic services ZPSHQ provided were e-policing, Interpol motor vehicle clearance, Interpol motor vehicle certification, firearm certificates, police clearance (fingerprints), cross boarder permits, e-thrift management system (for the Zambia Police Thrift and Credit Cooperative Society) and online payments of fines (Zambia Police Service, 2024). The quality of these services was mixed. It is important to note that the process for these services was operator-assisted. ZPS staff had to physically process applications. Therefore, some results were available online in as little as 48 hours while others took longer, depending on the specific service (Republic of Zambia, 2021a).

For instance, officials noted that with regards to e-policing, the use of automated speed cameras and CCTV mounted in public places under the Safe City program had improved prevention and investigation of crime in Lusaka. For example, the police at ZPSHQ managed to recover 24 stolen motor vehicles using footage recorded by the CCTV cameras. PO2 added that the quality of the electronic Interpol motor vehicle clearance and certification was equally good. It had helped to speed up the verification process thereby reducing both the clearance time and chances of fraud and accidental registration of stolen vehicles. The system's integration with Interpol's global system also improved accuracy in the investigation of motor vehicle thefts. However, the full potential of this system was still curtailed by high maintenance costs and limited coverage beyond Lusaka.

The digitized Firearm Certification system was able to allow applications and verification to be made online. And if approved, a digital firearm certificate was easily issued and linked to the national security database (Republic of Zambia, 2021a). This digital system proved to be quicker compared to manual applications. It also enhanced record-keeping and tracking of firearm ownership. Nevertheless, it was still affected by occasional system downtimes and limited user awareness.

The study also found that the Interpol Motor Vehicle clearance notably improved turnaround times, accuracy and transparency. The platform also reduced the risks of fraud, duplication and manual errors. Similarly, digitizing cross boarder permits reduced border delays as digital permits are processed faster. This improved regional trade, transport efficiency and enhanced security through better tracking of movements across borders. However, it faced inconsistency connectivity and limited interoperability with border management systems in other jurisdictions (Zambia Police Service Commission, 2023)

Officials admitted that digitizing the Police Clearance (fingerprints) system had led to faster turnaround times as compared to the manual processing used before. It also reduced forgery and duplication of certificates and created

better tracking of criminal records, both within and across different regions. Allowing individuals to pay fines online proved to be convenient and helped reduce corruption, especially through bribery. It also improved revenue collection as the money paid is directly deposited in the Government accounts without the need for physical interactions with law enforcement officers.

Before the e-thrift management system was created, clients used to travel from all provinces to Lusaka to withdraw their savings or apply for loans. This was very expensive, especially for those coming from far off places. The e-thrift management system allowed members to check balances of their savings, withdraw their money and apply for loans online. It now took less than 48 hours for members to receive their payment from the comfort of their homes. Nevertheless, PO1 noted that some users in remote areas experienced challenges accessing the online platform due to inadequate internet connectivity.

Generally, key informants noted that while success had been recorded with regards to the above services, most police services were still not provided electronically. These included recording of police statements, opening of a docket of case, the arrest and prisoners property book, occurrence book, crime register book, docket movement books and the found property book. Consequently, these services continued being provided ineffectively and inefficiently. For instance, since recording of statements was still being done manually, complainants and witnesses had to go to police stations physically and have a docket of case opened manually. This was slow and inconveniencing.

These findings were similar to those in the reviewed literature. For instance, Republic of Zambia (2023a) indicated that Zambia had made significant strides in advancing the digital transformation agenda. As of December 2022, the country had 1,578 gazetted services. However, only 280 services were provided online by 26 public institutions. Nevertheless, these services were integrated on the Zamportal. Furthermore, an additional 19 public institutions, were offering unintegrated e-services. Vavoula (2025) also found that the majority of the police forces in Europe have implemented e-Government practices to various extents.

The overall quality of electronic services provided at the ZPSHQ could be better understood by situating the findings within the TOE framework. Technologically, the presence of basic platforms indicated foundational capacity but gaps in system integration and reliability reduced service quality. Organizationally, constraints related to limited skills, resistance to change and insufficient training undermined efficient utilisation of existing systems. Environmentally, although a comprehensive legal framework existed, weakness in enforcement and coordination limited the extent to which electronic services were fully embedded in routine policing operations. This imbalance mirrored findings in broader Government literature which emphasized that service quality depended not only on system availability but also on institutional readiness and sustained user adoption.

While accessibility had improved for selected services through online platforms, reliability and responsiveness remained constrained by incomplete digitalization and dependence on manual procedures. Consequently, the quality of the electronic services at ZPSHQ reflected an intermediate stage of e-Government maturity, characterized by incremental improvements, rather than full digital transformation. This discussion reinforced the argument that advancing service quality requires synchronized processes in technology, organizational capacity and the environment, consistent with the TOE framework and broader empirical evidence from e-Government studies.

## V. CONCLUSION & RECOMMENDATIONS

### 5.1 Conclusion

This study established that the implementation of e-Government at the ZPSHQ is shaped by the interaction of technological capacity, organization readiness and the broader legal and policy environment. Stakeholders, like SZI, MHAIS and ZPS, have been at the heart of implementing e-Government at ZPSHQ. They managed and promoted e-Government services and processes, enforced ICT policies and were users of e-Government services. However, the limited involvement of key stakeholders, like members of the public, civil society and the private sector, constrained sustainability and end-user adoption. Nevertheless, ICT infrastructure, including the National Command Centre, the Cybercrime and Digital Forensic Unit and e-policing platform, improved efficiency in crime monitoring and investigations. However, they remained inadequate, outdated and poorly maintained. Despite the existence of the Technical Services Directorate, ZPSHQ still had inadequate ICT skilled personnel, resulting in work overload, slow system maintenance and delayed implementation of new digital initiatives. The institution also faced resource and budgetary constraints. Despite seeing a 105% increase in the budget allocation for ICTs between 2021 and 2024, the funding is still less than 35% of what ZPSHQ needed. This prevented the acquisition of latest ICT equipment and infrastructure. Nevertheless, despite the constraints, the administrative measures did help to implement e-Government at ZPSHQ.

The four main legislations support e-Government implementation – the Electronic Government Act No. 41 of 2021, Data Protection Act No. 3 of 2021, Electronic Communication and Transaction Act No. 4 of 2021 and Cyber Security and Cyber Crimes Act No. 2 of 2021 – helped to provide a framework for digital transformation, data protection

and cyber security within the law enforcement process. This was despite their enforcement being weakened by inadequate funding and institutional capacity, overlapping mandates and the absence of provisions for handling digital evidence. ZPS also adopted a range of policies and strategies, including the Smart Zambia Agenda, the Smart Zambia Government Master Plan (2018 - 2030), the National Digital Transformation Strategy (2023), the National e-Government Plan (2023 – 2026), the Zambia Police Strategic Plan (2023 – 2026) and a dedicated training policy for ICT skills development. These policies and strategies have provided guidelines for developing ICT infrastructure, digitizing police operations, establishing e-record management system and building digital literacy among officers. This is despite their implementation facing significant financial constraints, insufficient ICT infrastructure and a shortage of qualified personnel.

Overall, despite the constraints, the administrative and legal measures helped to implement e-Government at ZPSHQ. This could even be seen from the respectable quality of e-services like police clearance, Interpol motor vehicle clearance, firearm certificate as well as electronic payments of fines and fees. Nevertheless, more needs to be done so that the quality of these services improves further and other essential police services like reporting of cases, taking of statements, case dockets, the arrest and prisoners property books, occurrence books, crime register books and docket movement books, equally go online. Beyond the ZPS, these findings provide practical insights for Zambia's national digital transformation agenda by highlighting the importance of aligning legal reforms with institutional capacity and investing in human capacity alongside infrastructure and embedding change management within public sector digital initiatives. The study therefore informs national strategies by demonstrating that sustainable digital transformation requires coordinated action across ministries, consistent enforcement of digital laws and a focus on user adoption within public institutions.

## 5.2 Recommendations

The study is of the view that e-Government cannot be implemented without the presence of qualified human resource. Therefore, to ensure that implementation is a success, ZPS needs to include ICTs in its curriculum so that police officers are taught ICT skills while they are still at training schools. Additionally, police officers who are serving should be trained as an in service course. This will help to equip them with the skills to manage and use e-police services.

Since the current funding allocated for ICT is inadequate for a proper e-Government implementation, there is need for the Government of Zambia to increase the budget allocated for ICT initiatives. It is time ZPS stopped depending on donated ICT infrastructure, as most of them may not be compatible with its needs. The four main Acts relating to ICTs were enacted in 2021. Therefore, there is need to revise these Acts, policies, strategies and plan in order to meet the very changing conditions surrounding ICTs.

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