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DIGITAL PAYMENT SYSTEMS AND THE SPEED OF PUBLIC SECTOR EMPLOYEE PENSION PAYOUT IN SOUTH AFRICA.

Research Report

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ABSTRACT

The study seeks to investigate factors affecting pension fund payout delays in the Gauteng Province with a view to exploring the effect of digitalisation as a possible solution. The study focuses on pensions related to government employees in South Africa, specifically pension fund administration by the Government Employee Pension Fund (GEPF). The processing of pension claims by GEPF utilises a semi-digitised pension case management system to process pension payouts. The system was introduced as an intervention to complaints raised by members regarding delays in pension payouts.

The objective of the study was to investigate various aspects of the GEPF payment process to determine the factors responsible for payout delays and the possible implications of digitalisation. The study explores frameworks related to digitalisation through a qualitative research approach. Data was collected using a semi-structured questionnaire from employees in the administrative sector of the GEPF.

The data derived from employee responses was analysed for common emerging themes using content analysis. Key findings show that delays in pension pay-outs were caused by errors or inaccuracies from the GEPF members or their employers, which digitalisation has the potential to mitigate. These key findings are supported by the global 2030 Sustainable Development Agenda, which advocates for broad-scale digital transformation in order to promulgate the worldwide Sustainable Development Goals. The majority of the respondents concurred that digitalisation of the GEPF system appears to satisfy all these constructs and in so doing provides a framework for alleviating the problem of pension payout delays.

Declaration

I, Mafolelo Masipa, declare that this research report is my own unaided work. It is being submitted for the Master of Business Administration degree at the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination at any other University.

Mafolelo Masipa _____ _____

Name of candidate Signature of candidate

01 day of October 2024 in Pretoria

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Chapter One – Background and Introduction

1.1. Introduction

Pension funds are deemed as the foundation of financial security in retirement and thus play a pivotal role in all economies, globally (Acheampong & Kofi, 2018). The significance of pension funds extends beyond individual retirees, translating to national economic growth through higher savings rates, which boosts domestic investment with reduced reliance on foreign capital, thereby stimulating economic stability (Bayar et al., 2022). In addition, capital accumulation from pension funds contributes to increased institutional capital, thus strengthening domestic capital markets and the financing of account deficits, thereby enhancing the development of financial sectors. This in turn enables a coherent regulatory framework between investors, organisations and authorities in the pension market (Hu, 2012) which ensures efficient administration, management and disbursement of retirement savings to provide a stable source of income for retirees during their post-employment years (Clark et al., 2006).

In terms of economic significance, pension funds represent vast sums of capital, constituting a substantial segment of global financial assets, thus influencing financial markets extensively as well as investment strategies (Acheampong & Kofi, 2018). The magnitude of assets managed by pension funds accentuates their systemic consequences in that they provide social protection and insurance to the elderly, thus redistributing income among generations and thereby serving to reduce burden on national welfare systems (Juergens & Galvani, 2020). Public pension funds are therefore regarded as the most common form of social protection worldwide. Social protection is regarded as one of the pivotal criteria for the 2030 Agenda for Sustainable Development, a blueprint established through global partnership of all United Nations member countries to achieve specific Sustainable Development Goals (SDGs) that recognize the eradication of poverty together with strategies that improve health and education, reduce inequality, and spur economic growth in a manner which coincides with digital transformation in the current Fourth

Industrial Revolution (4IR) era as well as the prevailing climate change transition (Durán-Valverde et al., 2019; ILO 2021).

The administration and investment decisions of public pension funds, therefore, encompasses profound overall implications for national and global financial stability, economic growth, and sustainable development, given the increasing interest in societal advancement through global interconnectedness and the targets outlined in the Sustainable Development Goals (SDGs). In this context, the digitalisation of pension fund administration, particularly in developing countries such as South Africa, is a transformative journey (Acheampong & Kofi, 2018). This evolution presents opportunities such as streamlined operations, timeous payouts, enhanced user experience and real-time data analytics. This is consistent with the Digital Economy and Society Index (DESI) purpose statement on the role of digitalisation to reduce the percentages of population groups at risk of poverty or social exclusion (per SDGs), by enabling access to economic opportunities and data availability for decision-making on policy development or regulatory functions (Bjornskov et al., 2020).

However, digitalisation also presents important challenges such as cyber security threats, data privacy concerns and resistance to change, amongst others (Breytenbach, 2019). These factors must be taken into consideration when designing business processes and models for public pension fund digitalisation, as mismanagement and operational inefficiencies could negatively affect economic well-being, not only for individual pension beneficiaries, but national economic growth and sustainable development as a whole (Cheng, 2017).

This study therefore seeks to delve deeper into the topic of a particular operational inefficiency related to public pension fund administration, namely the issue of payout delays on Government Employee Pension Funds (GEPF) in South Africa. This will be explored in terms of the intricacies of the problem and the implications of potentially seeking a solution through digital transformation for future GEPF trajectories in line with the 2030 Agenda for Sustainable Development (Chirau & Jali, 2018).

1.2. Problem Statement

The core business of the Government Employees Pension Fund (GEPF) is to manage and administer pensions and benefits for government employees in South Africa. Members include all individuals whose conditions of service fall under the South African Public Service Act (Bohnert & Klieve, 2017). Established in May 1996 through the consolidation of various public sector funds, the GEPF is a “defined benefit arrangement where the pension payable on retirement is calculated according to the number of years of service and final pensionable salary” (Parliamentary Monitoring Group, 2018).

Regulation of GEPF’s is defined by the Government Employee Pension Law (GEP Law) and its related rules, the Pension Funds Act 24 (RSA 1956, as amended) and the Public Finance Management Act 1 (PFMA) (RSA, 1999), which prescribe that government employees should be paid within 60 days after exiting government employment (Bohnert & Klieve, 2017). However, this is currently not the case as delineated by the Public Service Commission (PSC) which is tasked with monitoring efficient public sector service delivery (Collins, 2017). Key areas of concern related to GEPF’s were identified by the PSC as “continuous delays in pay-outs, incorrect documentation information, client care inefficiencies, technological challenges and a lack of education and outreach within the relevant pension fund departments” (Parliamentary Monitoring Group, 2018).

In an attempt to rectify the delays in pay outs, the GEPF appointed the Government Pensions Administration Agency (GPAA) to administer benefits on behalf of the Fund and overseeing entity, National Treasury (De Wet, 2020). To this end, the GPAA implemented various reforms over the last decade including measures towards decentralisation, outsourcing of non-core activities, and greater reliance on systems. However, despite these measures the average timeline for pay-outs currently prevails at 90 days, with interest payable to members in respect of late payment on an accrual basis after 60 days (De Wet, 2020). In this context, data obtained from annual reports of the GEPF for the period 2021 – 2024 indicates significant increases per annum in the value of unclaimed benefits, along with interest paid on late payments amounting to approximately ZAR 5-6 billion annually (Collins, 2017).

Therefore, the delay in public GEPFs pay-outs has a net negative effect on both the GEPF and their beneficiaries, ultimately hindering South Africa's Sustainable Development Goals (SDGs). In addition, it is regarded as a critical governance and management issue of non-compliance and is thus explicitly prescribed in the applicable regulatory framework (Collins, 2017). As a result, this study seeks to explore the concept of digitalisation of public sector GEPF's as a possible means to mitigate pay-out delays, thereby facilitating regulatory compliance, cost savings and efficiency improvements across the sector (De Wet, 2021). The study therefore seeks to determine the perceptions and opinions of key individuals in the pension fund administration environment regarding digital transformation of GEPF administration.

1.3. Research Purpose and Objectives

1.3.1 Research Purpose

The aim of the study was to investigate GEPF pay-out delays, with the intent to determine what impact digital transformation of the GEPF administration system could have on reducing delays and creating greater operational efficiency.

1.3.2. Objectives

The objectives of the study are outlined below:

1. To investigate the causative factors and challenges involved in GEPF pay-out delays.
2. To explore what systems and processes are currently implemented for GEPF pay-outs.
3. To assess the impact of digital transformation on GEPF pay-out delays.

1.4 Research Questions

Following on from the above objectives, the following research questions are applicable to the study:

1.What are the causative factors and challenges involved in GEPF payout delays?

2.What digital transformation, if any, is currently implemented for GEPF?

3.What is the impact of digital transformation on GEPF pay-out delays?

1.5 Study Significance

The results of the study are anticipated to provide insight into the benefits and challenges associated with the digitalisation of GEPFs as well as digital tools and platforms for automated administrative processes and how this could be applied to streamline current GEPF operations (Fernando & Haskel, 2016). Given the significance of pension funds to the South African economy and their role in social protection to safeguard the retirement security of public government employees as well as the influence of GEPF's on South African capital markets, the outcomes of the study may also provide perspectives on future trajectories for digitalisation and the required shifts in GEPF administrative business models alongside the applicable regulatory or policy reforms (De Wet, 2021).

1.6 Delimitations and Assumptions

The focus of this study was on GEPF in South Africa at a provincial level, being conducted in one province only, namely the Gauteng province due to the limited scope, time and resource constraints. The data utilised in the study was collected only from administrators of the GEPF who are authorised to operate the GEPF management system. The concept and principle of digitalisation is integral to the development of a GEPF system that will enhance effective and efficient service delivery, therefore the assumption is that digitalisation is a form of sustainable administration.

1.7 Study Outline

The study will be structured as follows:

- **Chapter 1 Introduction:** provides background to the study and outlines objectives, research questions, problem statement.
- **Chapter 2 Literature Review:** provides existing literature on digitalisation of payment systems and pension fund administration, details the relevant conceptual and theoretical framework.
- **Chapter 3 Methodology:** describes the design, research approach, sampling, data collection methods, and analysis used in the study.
- **Chapter 4 Results:** presents the findings of content analysis on interview responses
- **Chapter 5 Discussion:** provides analysis of findings
- **Chapter 6 Conclusion:** draws overall conclusions of the findings and makes recommendations

Chapter Two - Literature Review

2.1 Introduction

This chapter discusses and provides an overview of the literature pertaining to GEPF and the South African Pension System (De Wet, 2021), including governance and regulatory frameworks. The literature also highlights and discusses key concepts relevant to the study, including digitalisation, global trends and applicability to pension fund administration.

2.2 South African Pension Funds

Digitalisation in the pension funds sector in South Africa cannot be understood without context for its historical background. Pension was introduced to South Africa during the Apartheid era in the 1920s (Goodman & Rousseau, 2024). The system was primarily aimed at the ageing white population for the purpose of providing income after retirement in instances where private occupational pension schemes were insufficient (Jali & Chirau, 2018). The system incorporated non whites in the 1940s, however pay-outs continued to be determined on the basis of race (Muchiri & Garen 2018:56).

The most notable reform occurred in the 1950s, with the promulgation of the Pension Funds Act No. 24 (RSA, 1956), which established a regulatory framework to support the development of the country's pension system and capital markets. This legislative structure has persisted to the present day and despite the historic exclusion of a large majority of the population during Apartheid, South Africa has nevertheless developed a pension system post democracy, which is significantly integrated with global capital markets (Gwanyanya & Njaya, 2021).

The country's pension fund assets have contributed extensively towards the provision of domestic capital in financial market development resulting in one of the largest retirement fund industries in the world (Jali & Chirau, 2018). The pension fund oversight body, National Treasury, states that: "the total assets of private sector

pension funds exceed ZAR 1 trillion and totals about ZAR 2.4 trillion, relative to GDP.” (National Treasury, 2022).

The South African Pension system comprises three pillars, for which government and private institutions are responsible to manage (National Treasury, 2022). The first pillar involves non-contributory redistribution, where individuals receive state support financed by taxes and managed by the public sector as a means to eradicate poverty (Jali & Chirau, 2018). These are accessible from 60 years of age as a form of social security grant. The second pillar is contributory, occupational and mandatory, where retirement benefits are derived from personal savings and contributions gained from salaries as a means to encourage worker savings towards retirement (Gwanyanya & Njaya, 2021). The third pillar is voluntary providing lump sum benefits or retirement annuities which can be managed privately or by the state (Goodman & Rousseau, 2024). The focus of the current study is the second pillar which is applicable to government employees, who are required to make mandatory contributions towards the Government Employees Pension Fund (GEPF).

2.3 Government Employees Pension Fund (GEPF)

The GEPF was established in 1996 through consolidation of various public sector funds. The mandate of the GEPF is to administer payment of pensions and other employee benefits to individuals in the employment of government on behalf of National Treasury, in compliance with legislation governing GEPFs, namely Government Employee Pension Law (GEP Law) (RSA, 1996b), the Public Finance Management Act (PFMA) (RSA, 1999), the Income Tax Act, and the Financial Sector Regulation Act, amongst others (Haines et al., 2018). However, the Pension Funds Act is the primary legislation governing the South African pension system, which sets out the legal framework for regulation and administration of GEPF’s (Van Der Merwe & Rossouw, 2016).

The GEPF was segregated in 2010 from its administrative division known as the Government Pension Administration Agency (GPAA). The GPAA is therefore a component of GEPF whose mandate is to administer pension funds on behalf of

GEPF and National Treasury. To this end the GPAA operates pension administration centres across all South African provinces (Goodman & Rousseau, 2024).

2.4 Pension Fund Administration

Pension fund administration is a critical function in managing pension funds. It involves a range of activities, including record-keeping, benefits processing, communication with members, and investment management (Jokonya, et al., 2021). Pension fund administration is crucial for ensuring the smooth operation of pension funds and the timely provision of retirement benefits to members (KPMG, 2018). Effective pension fund administration is essential for ensuring that members receive benefits accurately and without delay. The general process of payout administration can be divided into government employee actions, employer actions and administrator actions as follows:

a) Government Employee

The employee notifies their particular institution of intention towards retirement and termination of service. A notice period of 3 months ensues and during this period, the employer begins the exit and payout process via an online portal on the GEPF web platform (KPMG, 2018).

b) Employer

The employee information and supporting documentation (Certified ID Copy, Beneficiary Nomination Form, Bank Form, Debt Clearance, Exit Approval) is uploaded to the GEPF web platform by the employer and once submitted, the GEPF system sends an automated notification to the employee that the exit process has been initiated and the 60-day mandatory processing period commences (De Wet, 2021).

c) GPAA Actions

During the 60 days, the task of the administrator (GPAA) involves verification of the employee information and submitted documentation (De Wet, 2021). This is typically a manual process as third-party functions are activated through Home Affairs (validation of ID and marital status), SARS (tax directives), banks or external funds and National Treasury (for amounts greater than R1m) as well as legal counsel (divorce settlements or court maintenance orders) and past employers if applicable (Lee & Kim, 2017). All documentation is required to be manually bar-coded, linked, scanned and indexed by each third party involved in the verification process. If the verification is successful and the application is approved, benefits are calculated in accordance with GEP Law and funds are transferred to the approved external funds or personal bank account of the employee (Makgati & Van Belle, 2019). Should the process exceed the mandated time frame of 60 days, this will automatically accrue interest on the payout amount for each additional day.

Should the application be rejected, the GPAA forwards notification to the employer and employee, along with reason for rejection (Makhubela & Pillay, 2020). The process then reverts to the initial stage and the 60-day period ceases. The process can be repeated indefinitely, resulting in delay, if errors are detected in the submission process, or if supporting documentation has been omitted or cannot be verified (Makgati & Van Belle, 2019).

2.5 Digitisation of Pension Fund Administration

In light of the above, the need for greater efficiency in pension administration prompted the GPAA to take the initial steps towards digitalisation through implementation of Pension Case Management (PCM) software for the automation of some pension administration processes and procedures, specifically bulk and repetitive tasks (Mhaka & Zuva, 2020). While GPAA was geared at promoting greater pay-out efficiency through PCM , the technology presented new challenges arising from information and communication system (ICT) complexities, most notably, ease of access, skills and training required to operate the system and the

associated time and cost investment (Muthinja & Nzuve, 2019). In addition, challenges were encountered in terms of operational flow where existing paper based manual processes and procedures (i.e. completion of client documentation) could not be aligned with electronic PCM automation.

Nevertheless, the introduction of Pension Case Management (PCM) highlighted the value of integration of digital systems within the pension sector to open up avenues for technological innovation and thereby improve operational efficiency and facilities management (Mobayo et al., 2021). However, the prevailing challenges have led to low levels of penetration. Given the potential beneficial impact of digitalisation on GEPF administration to mitigate pay out delays, this is an area of importance that requires further in-depth exploration, particularly as it relates to the broader global sustainable development agenda and the shift towards technological innovation in the current Fourth Industrial Revolution (4IR) era.

2.6 Technological Innovation for Sustainable Development

The demand for digital fintech services has increased significantly since the advent of the 2020 global Covid-19 pandemic, following the profound adverse effects of lockdown restrictions on worldwide businesses. As a result, all finance related industries are undergoing profound transformation in which digital technologies are reshaping financial administration at an accelerated rate (KPMG, 2018).

Innovation is essential to this pursuit as it includes a digitalisation agenda that is part and parcel of the collective business strategy for the financial services industry as a whole with a view to ‘futureproofing’ of business models for sustainability. The effective implementation of innovation is however slow in certain segments of the sector, and the industry is poorly rated for its technological intensity in keeping with the Fourth Industrial Revolution (4IR) (KPMG, 2018).

The fourth industrial revolution (4IR) is broadly described as the era of rapid technological advancement in the 21st century (Oluremi & Elsaigh, 2023). It is characterised by the emergence of technologies that combine hardware, software,

and the physical realms. During this era fundamental shifts are taking place with regard to how industries operate due to ongoing innovation and automation of traditional administrative or management practices (de Korte, 2016). The business buzzword of the era is “industry 4.0” which defines how industries will reinvent their business models for the integration of technological advancement (Vasumathi et al., 2018).

While it is recognised that technological transformation is poised as the key driver of greater productivity and operational efficiency, by enabling greater execution of operational strategies and business models, the processes towards such interventions must be informed by currently utilised technologies or techno-economic transitions that would be practical in the 4IR era, with insight into how these technologies affect all levels of the applicable value chain (KPMG, 2018; Nanghonga & Gwanyanya, 2020).

Digitalisation and technological transformation have the potential to diversify financial services and economies, enabling the landscape to become more competitive, efficient, and inclusive, however the digital conversion may also increase market concentration with new risks emerging, which have the potential to disrupt a range of key public policies and goals, particularly in terms of GEPF. The regulatory environment and its adaptation towards a digital revolution therefore plays a crucial role (National Treasury of South Africa, 2023).

In this context, the South African National Development Plan 2030 was formulated with the aim to implement the transformative vision embodied within the global 2030 Agenda for Sustainable Development, which espouses the potential for digital transformation to support the achievement of local, national, regional, and global development priorities (National Treasury of South Africa, 2023). As economic development is the cornerstone of the 2030 Agenda and achievement of the Sustainable Development Goals, digital technologies have fundamental developmental impacts, serving as a core channel for public service delivery. Such a ‘digital economy’ can “facilitate connection, collaboration, and engagement between people and government institutions” (Ngwenya, 2018).

Digital tools also have the potential to provide actionable data and insights that allow for improved services. In addition, digital technologies provide the foundation for developing further skills and innovations towards achievement of developmental aspirations. These aspects are especially relevant to the South African pension sector and in particular the GEPF (Pensions Alliance Limited, 2018).

2.7 GEPF Digital Transformation for Sustainable Development

The uptake of digital technologies in the pension sector aims to enhance efficiency, administration and accessibility in pension fund management, thereby reducing the time to payout through several avenues (Pensions Alliance Limited, 2018).

The adoption of digital technologies has the potential to streamline the pay-out processes, improve data management, and provide real-time access to information for pensioners (Rutherford, 2020). The use of digital payment systems in pension fund administration can significantly improve the efficiency of fund management processes and pension payouts as automated record-keeping, benefit processing, and member communication can reduce the time and resources required to perform these functions. In this manner, digitalisation not only has the potential to increase the speed at which benefits are processed and paid out to members but can also facilitate reduction in operational costs and improved productivity (Cheng, 2017).

In addition, the introduction of technological systems may improve the accuracy of the pension fund administration processes as automation can reduce the risk of errors in record-keeping and the potential for fraud and other types of misconduct. Digitalisation also has the potential to ensure compliance with regulatory obligations, reducing the risk of fines and other types of legal liability (Breytenbach, 2019). The transparency of the administration processes could in turn be enhanced, thus enabling members to be provided with access to real-time information about their retirement benefits, investment options, and other relevant information. This could facilitate sustainability though member engagement and satisfaction along with greater trust and confidence in pension fund administration (Cheng, 2017).

Furthermore, digital payment systems can streamline services through provision of online resources, which reduces the need for members to engage the pension fund administrator directly (Breytenbach, 2019). Therefore, digitalisation is likely to position the pension funds sector as a key driver of sustainable development goals with the capacity to meet the evolving needs of members and stakeholders. However, despite the numerous benefits of technology in pension fund administration, its adoption is not without challenges (Rutherford, 2020).

2.8 Challenges of Pension Fund Digitalisation

One of the key limitations of technology in pension fund administration is the potential for it to exacerbate existing inequalities in pension provision (SAIA, 2019). This is because not all pension fund members may have equal access to technology or are equally comfortable using it, as pension fund members may be less knowledgeable about digital platforms, having been more familiar with traditional approaches such as face-to-face consultation, post services and telephone platforms (Bjornskov et al., 2020). Other potential challenges and pitfalls of pension fund digitalisation include cybersecurity threats and issues of technological complexity as explicated below:

- **Cyber Security:** The use of technology in pension fund administration poses a significant risk of cyber threats (South African Journal of Business Management, n.d). Pension funds hold sensitive personal and financial data, which can be targeted by cybercriminals. These attacks can lead to data breaches, fraud, and other types of financial crime, potentially leading to significant financial losses for both pension funds and their members (KPMG, 2018). As a result, digitalized pension funds must invest in robust cybersecurity measures, which incorporates regular testing and training, to protect both the administrative process and members from cyber threats (Stovall, 2019).

- **Complexity:** The use of technology in pension fund administration can also add to the complexity of the administration process as technology systems

require ongoing maintenance and support and may be subject to frequent updates and changes (Statistics South Africa, (2021). As a result, pension funds may need to invest in additional resources to ensure that technology systems are properly maintained and kept up to date. This can add to the overall cost of pension fund administration and may be a challenging factor for smaller pension funds (Stovall, 2019).

In light of the above, regulatory transformation is required to accompany a technological transformation in order to ensure rigorous control in overcoming challenges of pension fund digitalisation and aspects related to other limiting factors such as low penetration and non-compliance (Sanusi and Kapingura (2021). To this end, it is imperative to consider the theorems and concepts related to practical implementation of digital systems (Statistics South Africa, 2021).

2.9 Theoretical Framework

Various management theories can offer useful insights into implementing and applying digital payment systems to enhance the efficiency and pay-out time of public sector pension disbursements (Van Der Merwe & Rossouw, 2016). These will be explored further below:

2.9.1 Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM) was developed by Davis (1989) and has since become a popular theoretical construct used to forecast the adoption and application of emerging technologies. This model is generally accepted to provide an idea of predictability of a technological solution's acceptability and the requisite refinements to make the solution more desirable and attractive to consumers (Venkatesh & Bala, 2008).

The TAM's application is dictated by perceived utility that is a behavioural feature of the consumer and perceived ease of use which drives motivation and purpose towards acceptance. Perceived usefulness is characterised as the degree to which a

consumer feels their satisfaction will be elevated by using a specific technology (in this case digitalised GEPF) (Hu, et al.,1999). Perceived ease of use refers to the degree to which a consumer feels that it will be effortless to use a specific electronic platform or device (Davis et al., 1989). Perceived utility applies to how and what specifically impacts the desire of the individual to use something, whereas perceived ease of use has an indirect impact of perceived usefulness and attitude towards the behavioural intention (Zhang & Liu, 2020). In terms of GEPF, perceived utility and perceived ease of use are denoted by the motivation of the employees to accept digitalisation for the purpose of reducing time to payout combined with convenience of process (Van Der Merwe & Rossouw, 2016).

2.9.2 Resource-Based View (RBV)

The Resource-Based View (RBV) of strategy is an approach that concentrates on the resources and capabilities of an organisation as the primary sources of competitive advantage (Assensoh-Kodua, 2019). This contrasts with traditional views of strategy which emphasize market and industry structures. As it relates to GEPF payments, the RBV emphasizes the use of resources and capabilities to develop strategies that will enable administrators to make more efficient and effective payments to beneficiaries (Nagano, 2019). This could include financial management practices such as forecasting future liabilities, development of appropriate investment strategies, or leveraging of digital systems to streamline the payment process (Nagano, 2019). In addition, digitalised GEPF resources could form a benchmark for resources and capabilities of other industries in the pension fund value chain, such as Home Affairs or SARS, amongst others. GEPF resources could also be maximised, through mergers and acquisitions, to ensure that the necessary capabilities for digitalisation are sustainable (Nagano, 2019; Zhang & Liu, 2020).

2.9.3 Innovation Diffusion Theory (IDT)

Rogers proposed the Innovation Diffusion Theory (IDT) in 1962 to analyse the spread of breakthrough technology. According to IDT, the traits of an innovation, the individuals who adopt it, and the social setting in which it is introduced all play a role

in the rate at which it is implemented (Teece, 2017). In the context of pension fund management, IDT can be used to investigate the ongoing influences regarding adoption of technologically based solutions from the perspectives of administrators and beneficiaries, with a view to determining the elements that affect the spread of digitalisation (Rutherford, 2020). Several factors can affect diffusion such as the particular characteristics of the technology or systems, the characteristics of the adopters, the communication models for dissemination of information about the technology, and the social context in which the technology is introduced (Mertens & Driessen, 2019). Solutions that are user-friendly, accurate and streamlined are more likely to be adopted. In addition, diffusion is dependent on compatibility with existing systems and regulatory processes (Rogers, 1962).

The characteristics of the adopters can also impact the diffusion of technology-based solutions in pension administration. In the context of pension administration, the attitudes and beliefs of pension administrators and beneficiaries towards technology-based solutions can influence their adoption and diffusion (Mertens & Driessen, 2019). For example, individuals who are more innovative and open to new technologies are more likely to adopt and diffuse technology-based solutions (Rogers, 1962).

The communication methods used to disseminate information about the technology can also influence the diffusion of technology-based solutions in pension administration (Makhubela & Pillay, 2020). In the context of pension administration, effective communication channels, such as training programs and workshops, can help to educate pension administrators and beneficiaries about the benefits and use of technology-based solutions (Rogers, 1962).

The social context in which the technology is introduced can also influence the diffusion of technology-based solutions in pension administration (Mertens & Driessen, 2019). In terms of pension administration, economic, the political and cultural factors that shape the pension administration system can influence the adoption and diffusion of technology-based solutions (Rogers, 1962).

Chapter Three - METHODOLOGY

3.1 Introduction

This chapter presents the procedures used to perform the research and illustrates aspects related to the data, research design and approach, the population and methods of sampling, as well as procedures for data analysis.

3.2 Research Design

As the study seeks to explore perceptions of stakeholders as it relates to timeous GEPF payout, exploratory and positivist research philosophies were deemed most appropriate (Mavhura & Mudavanhu, 2021). The primary goal of the positivist paradigm is to study patterns and relationships of social based factors to make predictions and forecasts about change. This is deemed appropriate as the adoption of digitalisation for GEPF within the paradigm of the South African 2030 National Development Plan can be regarded as a fundamentally social construct, which the study seeks to investigate further though exploratory research (Makgati & Van Belle, 2019).

The deductive and descriptive approach is relevant since the data derived from the study will be used to identify and describe variables linked to stakeholder perceptions versus digitalisation theorems in existing literature (Marshall& Rossman, 2006).

As the study will be conducted over a single point in time, a cross-sectional time frame is applicable since the objective is not to monitor change over a period of time, but rather to collect data from respondents regarding their perceptions at a specified time via a qualitative strategy using a semi structured interviews, and then to interpret the data in terms of its impact for the development of GEPF digitalisation. Therefore, interpretivism philosophy is a suitable approach as it involves interpreting elements arising from the study (Mavhura & Mudavanhu, 2021).

The interpretivist philosophy is also appropriately applied to the current research through its definition in which a particular event is analysed based on the beliefs, values and opinions of the culture or society in which it takes place, enabling understanding of perceptions through the individual experience of that particular reality. Given that the intent of the current research is to establish the views and perceptions regarding the role of digitalisation to improve pay-out delays in the specific context of GEPF, at a specific time, a qualitative interpretivist approach is deemed most suitable (Makgati & Van Belle, 2019).

3.3 Research Approach

A qualitative research approach was employed for this study to gain understanding and insights into the topic. This approach was regarded as suitable to investigate the aim of the study as qualitative data is deemed useful when exploring human insights and social experiences (Saunders & Lewis, 2018). In this instance, the participants of the study had lived experiences of pension fund administration and the potential impact of digitalisation. To this end, semi-structured interviews were considered a suitable qualitative strategy, where the purpose was to gain understanding about the subject of GEPF digitalisation and payout time, in a specific contextual setting from data which could provide in depth information.

3.4 Population

The population for this study included individuals involved in the administrative or management processes of public sector GEPF's. However, these operations of the GEPF span a vast nationwide area across 9 provinces, which was beyond the scope of population for the current study. Therefore, as all national GEPF administration has the same observable and measurable characteristics and operations, the Gauteng region GEPF was selected as the specific study population, to which results of the study could be broadly generalised.

3.5 Sample Population

The sample population of the study comprised of individuals involved in the administrative or management processes of the public sector GEPFs situated in one singular branch of the GEPF Gauteng offices, specifically the Gauteng Head Office which constitutes the major branch of operation in the Gauteng region.

3.5.1 Sample Size

The sample size consisted of individuals selected from within the sample population group. In terms of sample size this included a total of 10 individuals who had existing knowledge and experience of the concepts under study (digitalisation of pension fund administration) at a strategic level. Therefore, for the purpose of the study, these individuals were purposively selected according to categorization of their role to be representative of the overall GEPF administrative structure to obtain rich information from diverse perspectives.

Table 1.1 below depicts the participant selection for the sample:

Participant role	**Number of individuals**
Executive	3
Senior Manager	2
Functional Manager	3
Assistant Manager	1
Pension Fund Administrator	1
Total sample	10

Table 3. 1 Sample Selection

3.5.2 Sampling

The sampling method was purposive and non-probability (Saunders &Lewis, 2018) using the researcher's judgement to specifically select a small representative segment from the sample population. The type of sampling was regarded as strategic as the researcher has a background within the pension funds sector, which facilitated identification from the researcher's own professional network of appropriate participants who meet the aforementioned inclusion criteria (Makgati & Van Belle, 2019).

3.6 Research Instrument

A semi-structured interview schedule was used as the research instrument for the study which consisted of a series of open-ended questions that link the theoretical paradigm to the aim, objectives and research questions of the study (Appendix A). Semi structured interviews assist in structuring data collection while simultaneously being sufficiently broad in focus to allow themes to emerge (Varvasovszky & Brugha, 2000) whilst also providing for a guideline to conduct interviews consistently among all participants, thus limiting bias. In accordance with the general protocol for semi-structured interviews, identical phrasing of the open-ended questions was used in each interview whilst also allowing for flexibility and flow for the respondent to answer the questions unencumbered to enable a rich data set to be obtained.

Three additional pilot interviews were conducted in the same setting, from three more participants to test effectiveness of the interview schedule and make amendments on interview questions where necessary (Jung et al., 2015).

3.7 Data Gathering

Once participants were identified, they were informed of the study and invited to participate via email.

If the participants agreed to participate in the study, a suitable date and time was arranged for the interview to take place, which was conducted either face-to-face, by telephone, or an internet-mediated platform such as Zoom, Skype, or Microsoft Teams, among others, dependant on the participant's particular preferences. Explicit consent and permission to conduct the interview and for participation in the research study was obtained from each participant prior to commencing the interview via an informed consent form (Appendix B).

All interviews were recorded, which all participants were notified of and their permission to record was obtained prior to proceeding with the interview. Appropriate notation was taken by the researcher during the interviews to document visual cues as additional data to supplement the recordings. The recorded interviews were transcribed verbatim using professional transcribing services. Recordings, notations and transcriptions from all interviews were securely and confidentially maintained according to Protection of Personal Information Act, 2013 POPIA requirements in password protected data storage, which was accessible only to the researcher.

3.8 Data Analysis

The analysis of qualitative data required accurate description of participant responses. The data analysis was therefore performed by means of manual content analysis, in which the transcribed text was classified into categories of coding frames to convey meaning. This involved sorting responses of the interviews into broad themes and categories. The categories of coding frames were then further divided into common emerging sub-categories, and points of comparison were extracted to draw conclusions from the data of participant responses. The reliability of the coding frames was assessed by checking for consistency between different coding points (Jung et al., 2015).

3.9 Validity and Reliability

In qualitative research validity refers to the extent to which the data is credible and trustworthy. The concept of credibility is viewed as a means of reflecting whether the methods utilised actually measure what is intended, whilst trustworthiness espouses authenticity and genuineness (Jung et al., 2015).

Reliability is expressed as a measure of consistency and predictability and thus represents the quality of the research. Quality in turn is related to the level of generalisation of the outcome, thereby confirming the trustworthiness (validity) of the research (Jung et al., 2015).

Reliability and validity were articulated by the fact that the questions posed in the interviews were specifically tailored to assess the research questions in accordance with previously studies frameworks and tested criteria as outlined in the theoretical framework and literature (Jung et al., 2015). In addition, all participants were required to answer the same interview questions. The descriptions of the sample, procedure and design were also sufficiently comprehensive to allow for transferability to other settings in a similar context (Jung et al., 2015). These aspects served to ensure a degree of congruence between the sample participant responses and their explanations of the phenomena under study and the realities of the broader context and population.

3.10 Ethical Considerations

The interviews only took place once ethical clearance was granted by Wits Business School. Participants entered the study voluntarily and were free to withdraw at any time. Informed consent was obtained from each respondent regarding their participation in the study. However, for the purposes of the study, the act of completing the interview was automatically regarded as consent from participants. Information required to recruit subjects to participate in the survey, such as names or email addresses, was handled in accordance with POPI Act requirements. Although participants were not anonymous, confidentiality was maintained by omitting participants' names from the final report and replacing each name with a number.

Only aggregated information, per participant grouping, was provided in this study, so the data was collated on a number of individuals for the purposes of identifying patterns. All data derived from the study, was saved in a password protected file and securely stored on a password-protected and access-controlled Google Drive platform administered by the researcher.

3.11 Limitations

- The study was only relevant to public GEPF and omitted private pension funds which may reveal disparate results.
- The study was only conducted within one regional Gauteng office; therefore, results may not be representative of the entire province or extrapolated across all provincial departments across South Africa.
- Due to the limited scope and time frame available, the study sought to obtain only the perspectives of GEPF administrators and omitted the beneficiaries, which may reflect dissimilar results.

Chapter Four – Results

4.1 Introduction

In order to achieve the stated aims and objectives of the study, data analysis was performed on interview responses received from participants. Although the interviews were administered to an intended sample of fifteen (15) participants, only ten (10) participants consented. Therefore, in the interest of trustworthiness, the actual sample size consisted of only those participants from whom a completed and recorded interview could be obtained (n=10), constituting an 85% response rate. In the process of qualitative and inductive analysis, participant responses were coded according to major emerging themes that coincided with the research questions of the study. As a result, the qualitative presentation of the data analysis of participants' perceptions corresponds to the research questions, segmented into four major parts. (Annexure A). In addition, the demographic information of participants was assessed using SPSS analytical tools and the relevant descriptive data has also been presented in tabular format for ease of reference.

4.2 Demographic Information

The demographic data of participants comprises frequency tables for gender and professional role with regard to GEPF administration. These aspects are presented as follows:

4.2.1 Participant Gender

The study sample (n=12) comprised of eight (8) males and four (4) females as illustrated in Table 4.1 below:

Gender	Number of Participants (n=10)
Male	8
Female	4

Table 4. 1 Percentage of Participant Gender Selection

4.2.2 Role in GEPF Administration

The participants' professional roles in terms of GEPF administration is shown in Table 4.2 below:

Role	Number of Participants (n=10)
Executive	3
Senior Manager	2
Functional Manager	3
Assistant Manager	1
Pension Fund Administrator	1

Table 4. 2 Participant Percentage of Professional Role within the GEPF Administration

4.3 Challenges and Causative Factors of GEPF Payout Delays

As per the first research question below, this section explored the challenges, limitations and causative factors associated with GEPF payout delays.

RQ1: What are the causative factors and challenges involved in GEPF pay out delays?

4.3.1 Challenges of Existing System

Part One: Q4 of the interviews posed the question: What are the main challenges or limitations you have encountered with the existing pension payment system?

The participant responses were coded and categorised into the predominant themes as depicted in Table 4.3 as follows:

Response Category	Number of Participants (n)
Issues on collection and verification of information	7
Inefficient processes	7
Resistance to digital change	6
Improper recording of data by employers	3

Table 4. 3 Challenges of Existing GEPF Payout System

Seven participants respectively, felt that the main challenges currently involve inefficient processes (n=7) and issues regarding collection or verification of information (n=7). Six participants (n=6) indicated that resistance to digital change was the primary factor, stating “where will I fit in if the system does this process and what is the impact on the overtime that will be taken away.” Three participants (n=3) identified data issues relating to incorrect recording of member details by employers

4.4 Current Pension Payout Process

As per the second research question below, this section explored the current processes of GEPF pension payouts, and the impact of the minor digital changes already initiated:

RQ2: What systems are currently implemented for GEPF payouts?

4.4.1 GEPF Payout Delay

Part One: Q1 of the interviews posed the question: Can you describe the current pension payout process?

Response category	Number of Participants (n)
Payout delays due to data entry issues	10
More digital systems are needed	10

Table 4. 4 GEPF Payout Delay

All participants (N=10) answered this question with a focus on payout delay, rather than describing the actual payout process. According to all the participants, payout delays emanated from data entry issues such as errors or inconstancies in information submitted from employer departments or government employees. Of the ten participants, one (n=1) specifically added that “the employer database must be digitized to deal with data inconsistencies and streamline processes”, another (n=1) suggested “the current administration processes are inefficient due to outdated verification and manual reconciliations, emphasising the need for process re-engineering”, while one (n=1) concluded that “when the members have the power to initiate the exit process, it will be in their best interest to ensure that they attend to any query swiftly to enable payments to be processed faster.” Responses were unanimous from all participants (n=10) indicating that in their opinion, more digital systems could be incorporated to facilitate the pension pay-out process.

4.4.2 Specific Areas of Improvement

Part Four: Q1 of the interviews posed the question: What specific areas of the current payment process need improvement to enhance payout time and operational efficiency?

The participant responses were coded and categorised into the predominant themes as depicted in Table 4.5 as follows.

Response category	**Number of Participants (n)**
Digitalisation	10
Training and education	10
Robust security measures	10
Systems Integration	5
Input validation	5

Table 4. 5 Specific Areas of GEPF System Requiring Improvement

All participants (n=10) indicated that the current payment process required improvement through the specific areas of digitalisation, training and education as well as more robust security measures. Half the participants (n=5) respectively highlighted the need for systems integration and input validation, stating that: “systems should be integrated and synchronized to provide a single point of verification” and that: “systems should have input validation which does not allow the case to be submitted if mandatory requirements are not met.”

4.5 Impact of Digital Transformation

As per the third research question below, the questions posed in this segment were aimed at investigating participants’ perceptions on specific factors related to the impact of digitalisation on GEPF payouts.

RQ3: What is the impact of digital transformation on GEPF pay-out delays?

4.5.1 Digital Improvement of GEPF Operational Efficiency

Part One: Q2 of the interviews posed the question: What specific improvements in operational efficiency have been observed since the implementation of digital payment systems?

Participant responses were coded and categorised into the predominant themes as depicted in Table 4.6 below:

Response Category	**Number of Participants (n=10)**
Significantly improved operational efficiency	10
Improved speed of pension payouts	8
Automation has made pension payouts more accessible	6
More improvement required	6
Instant services which enhance social welfare	2
Convenient access to information	2

Table 4. 6 Percentage of Traditional and Digital Differences

Table 4.6 above shows that all participants (n=10) perceived that digital payment systems significantly improved the overall operational efficiency of pension administration, with one participant stating: “Digital payments have made a huge improvement in improving pension service delivery compared to 25 years of manual processes such as payment through cheques and the post office.” Eight participants (n=8) felt that improved efficiency related directly to improved speed of payout, where two participants (n=2) emphasized that digitalisation offered the “ability to deliver instant services to those in need,” thereby enhancing social welfare.

Six (n=6) participants indicated that automation has made the payout administrative process more accessible with one participant stating, “members receive payouts in the bank although the process build up to payment is still semi-automated.”
Six participants (n=6) felt that more improvement was required stipulating that “the administrator must adopt continuous improvements of technology based on the needs of members.”

4.5.2 Effect of Digital Systems on Pay-out Time

Part One: Q3 of the interviews posed the question: How has the timeliness of pension payouts changed with the introduction of digital payment systems?

The participant responses were coded and categorised into the predominant themes as depicted in Table 4.7 as follows:

Response Category	**Number of Participants (n)**
Quicker turnaround times	10
Faster Service delivery	8
Self-service options save time	8
Improved social welfare services	2

Table 4. 7 **Digital Systems Effect on Pay-out Time**

The majority of participant responses (n=10) indicated that digital payment systems resulted in quicker turnaround times of pension payouts. Eight participants (n=8) stipulated that digital platform offered faster service delivery overall, which resulted in saving time (n=8) and overall improved social welfare services (n=2).

4.5.3 Digital Literacy

Part Four: Q2 of the interviews posed the question: How can digital literacy among public sector employees and retirees be improved to facilitate the use of digital payment systems?

The participant responses were coded and categorised into the predominant themes as depicted in Table 4.8 as follows:

Response Category	Number of Participants (n=10)
Educate members on pension products, digital forms & self-service technology	10
Implement awareness programs using various channels (roadshows, SMS, app push notifications)	6
Offer incentives	1
Ensure consistent communication with members	1

Table 4. 8 **Digital Literacy**

Eight participants (n=8) proposed that education drives would be the most appropriate method of promulgating digital literacy amongst government retirees and their employers, so that “members become comfortable using technology such as self-service apps to complete forms and submission of cases digitally.” Six participants (n=6) suggested awareness programs could be implemented using channels such as public road shows, SMS platforms or app push notifications. One participant respectively suggested that consistent communication with members (n=1) and incentive offers to members (n=1) would facilitate digital literacy.

4.5.4 Infrastructure Upgrades

Part Four: Q3 of the interviews posed the question: What infrastructural upgrades are necessary to support digitalisation?

The participant responses were coded and categorised into the predominant themes as depicted in Table 4.9 as follows:

Response category	Number of Participants (n=10)
Enhanced cybersecurity	10
Innovative payout methods	8
Diversified access channels	8
Improved network, server and desktop infrastructure	8
Real-time integration of verification databases	8
Privacy protection	8

Table 4. 9 Infrastructure Upgrades for Digitalisation

All participants (n=10) cited a need for enhanced cyber security to support digital transformation. Eight participants respectively stated that factors such as innovative payout methods (n=8), diversified access channels (n=8), real-time integration (n=8), systems to protect privacy (n=8) and improved networks, server, and desktop infrastructure (n=8) were all essential for digitalisation.

4.5.5. Regulatory Amendments

Part Four: Q4 of the interviews posed the question: How can regulatory frameworks be adjusted to better support the implementation of digitalisation?

The participant responses were coded and categorised into the predominant themes as depicted in Table 4.10 as follows:

Response category	Number of Participants (n)
Stricter privacy protection policies to safeguard members' information	10
Cyber security regulations	10

Table 4. 10 Regulatory Amendments for GEPF Digitalisation

All participants unanimously indicated that regulatory frameworks required more effective cyber security stipulations (n=10) along with stringent privacy protection policies (n=10) to safeguard members' information.

4.5.6 Technological Barriers

Part Two: Q1 of the interviews posed the question: What technological barriers have you encountered during the implementation of digital payment systems?

The participant responses were coded and categorised into the predominant themes as depicted in Table 4.11 as follows:

Response category	Number of Participants (n)
Cyber security risks	10
Fraud	8
High cost of technology	6
Data issues	5
Lack of information systems at employer departments	3

Table 4. 11 Technological Barriers to GEPF Payout

All participants (n=10) perceived cyber security risks as the most significant technological barrier to digitalisation, with eight participants (n=8) specifying concerns regarding online fraud, with one stating that: “syndicates can access or make changes to the member’s account unauthorised.” Six participants (n=6) cited the cost of technology as a barrier, both in terms of administrative infrastructure and operational requirements as well as cost to the employee for smart phones which enable use of self-service digital platforms. Other barriers were perceived as data issues (n=5) such as incorrect member input and processing errors which all result in rejected or delayed payouts.

Three participants (n=3) believed these issues were exacerbated by a lack of information systems at employer departments, stating: “there is no information technology (IT) infrastructure to run employer self-service platforms” and “system challenges impacts payment speed.”

4.5.7 Infrastructure Challenges

Part Two: Q2 of the interviews posed the question: Are there any infrastructural challenges that affect the rollout of digital payment systems?

The participant responses were coded and categorised into the predominant themes as depicted in Table 4.12 as follows:

Response category	**Number of Participants (n)**
Infrastructure issues from poor administration	10
Inadequate IT infrastructure	8

Table 4. 12 Infrastructure Challenges to GEPF Payout

The results show that all participants (n=10) believed that poor administration was the cause of infrastructure challenges, with eight participants (n=8) highlighting the need for adequate IT infrastructure, stating: “the availability of information technology systems at the employer departments impacts the process of submitting exit cases through the employer self-service portals, which results in delays in pension payouts.”

4.5.8 Regulatory and Policy Challenges

Part Two: Q3 of the interviews posed the question: Do regulatory or policy-related issues impact the digitalisation process?

The participant responses were coded and categorised into the predominant themes as depicted in Table 4.13 as follows:

Response category	**Number of Participants (n)**
Digital systems must comply with privacy and IT regulations of POPIA, ECT, SITA	10
Regulations too rigid	8
Over compliance, red tape	7

Table 4. 13 Regulatory and Policy Challenges

Whilst the majority of participants (n=10) were extremely knowledgeable on regulatory and policy requirements and indicated that digital systems would reasonably be required to comply with several relevant legislated regulations, namely the Protection of Personal Information Act (POPI), Electronic Communication Technology Act (ECT) and the State Information Technology Agency Act (SITA), eight participants (n=8) stipulated that some regulations were too rigid with over-compliance leading to red tape (n=7) and bureaucracy, which ultimately resulted in payout delays.

4.5.9 GEPF Member Concerns on Digitalisation

Part Two: Q4 of the interviews posed the question: What are the common concerns raised by public sector members regarding GEPF digital payment systems?

The participant responses were coded and categorised into the predominant themes as depicted in Table 4.14 as follows:

Response category	Number of Participants (n)
Access to digital platforms	10
Availability of data bundles	9

Table 4. 14 Member Concerns on Digitalisation

Participants indicated that the predominant concerns of pension fund beneficiaries included access to digital platforms (n=10) and availability of the data required to do so (n=9).

4.5.10 Traditional and Digital Differences

Part Three: Q1 of the interviews posed the question: What are the main differences in processing time between traditional and digital methods of pension payout?

The participant responses were coded and categorised into the predominant themes as depicted in Table 4.15 as follows:

Response category	Number of Participants (n)
Significant improvement in pay out time using digital methods	10
Digital payments bring efficiency and convenience	9
Digital streamlines the processes	9
Traditional can be faster with correctly completed forms	2

Table 4. 15 Percentage of Traditional and Digital Differences

The comparison between traditional and digital systems reveals that all participants (N=10) believe that digital methods result in significant improvements in pay out time, as this method streamlines the administrative process (n=9) for greater efficiency

and convenience (n=9). Two participants (n=2) stated that the rate of payout using traditional methods may be enhanced by minimising errors such as incorrectly completed forms.

4.5.11 Traditional Vs Digital Security

Part Three: Q2 of the interviews posed the question: How does the security of digital payment systems compare to that of traditional methods?

The participant responses were coded and categorised into the predominant themes as depicted in Table 4.16 as follows:

Response category	**Number of Participants (n)**
Cyber security, fraud, identity theft and privacy risk with digital	10
Digital is more reliable	7
Need for appropriate controls	7
Need to consider tech adoption levels among different age groups	4

Table 4. 16 Security of Digital Systems

All participants (n=10) stated that digital systems pose a significant cyber security and fraud risk with issues of privacy or identity theft, requiring appropriate controls (n=7) when compared to traditional methods. However, whilst the security challenges of digital were acknowledged, seven participants indicated that digital platforms nevertheless had the potential to be more reliable in terms of security, stating that “money transferred to the bank is better versus the cheque or cash that can be stolen” and “the reliable channels are digital as all banks have adopted digital.” Four participants indicated that awareness of tech adoption levels among different age groups was essential for security, stipulating that; “we need to be sensitive to age groups of beneficiaries as the older people become (i.e. the 60 year old versus the

80 year old), the less they might be able to use technology" and "when the grandmother requests help to use the apps from the grandchild or other people, they can use the opportunity to change the banking details or nomination so it must be checked that the payment is going to the right person."

4.5.12 Traditional Vs Digital Cost Differences

Part Three: Q3 of the interviews posed the question: What are the cost implications of using digital payment systems versus traditional methods?

The participant responses were coded and categorised into the predominant themes as depicted in Table 4.17 as follows:

Response category	**Number of Participants (n)**
Instantaneous accessibility lowers cost	10
Reduced travel cost	5
Lower costs of cash handling	4
Lower costs of administrative processes	4
Higher costs of smartphones and data bundles	3

Table 4. 17 Cost Implications of Digitalisation

All participants (n=10) indicated that cost savings from digital transformation could occur through enhanced accessibility for members, with reduced need for travel, thereby saving on travel cost (n=5). Other cost savings were believed to emanate from omitting cash handling fees (n=4) and eliminating the expense of extraneous manual administrative processes (i.e. printing costs). Some participants (n=3) highlighted a cost disadvantage arising from the expense of smartphones or data bundles required to enable access to digital platforms, which could deter members' acceptance of digitalisation.

Chapter Five – Discussion

5.1 Introduction

The results of the qualitative content analyses of the responses received during interviews will be analysed and evaluated further in this chapter.

5.2 Demographic Information

5.2.1 Participant Expertise of GEPF Administration

Most of the sample were executives or held management roles in GEPF administration. The implication of this is that the majority of responses were received from individuals with extensive expertise and experience regarding GEPF administration. The respondents came from the various business units within GEPF administration specialising in digital payment solutions. This variety ensured a rich, multifaceted understanding of the pension payment ecosystem, reflecting both the public sector challenges and innovations. Their roles ranged from Pension Fund Administrators and IT Specialists to Senior Managers and Directors, indicating a wide spectrum of expertise and responsibilities. The respondents' varied backgrounds provided unique perspectives on the adoption of digital payment systems. From the technical challenges of integrating new technologies into existing infrastructures to the operational adjustments required to accommodate digital payments, their insights painted a detailed picture of the current state and future possibilities for digitalisation of GEPF how this affects pay-out time.

5.3 Challenges and Causative Factors of GEPF Payout Delays

Results regarding the GEPF payment processes indicated that respondents advocated for digitalisation to address errors or inconsistencies and thereby streamline the pay-out processes, thus mitigating delays. The respondents also indicated that self-service options from digitalisation would ultimately result in time

and cost savings whilst simultaneously enhancing a broader spectrum of social welfare services allied with pension payouts.

The current GEPF administration processes were regarded as inefficient largely due to outdated verification systems and manual methods, therefore digital improvements were suggested as a means to enhance processes, accessibility and operational efficiency, thereby improving overall service delivery. To achieve this, emphasis must be placed on process engineering for holistic change management utilising the tenets of innovation diffusion and the resource-based view, as well as the particular needs of members, rather than focusing solely on specific technological solutions (Jung et al., 2015).

The challenges for automated processes and systems, requires further participation in the technology acceptance model, for seamless member experiences and timely pay-outs (Klein & Knight, 2015). Resistance to digital change was considered the primary inhibitory factor, both from the employees due to unfamiliar territory and from administrators owing to concerns on occupational stability. The aspects raised by the respondents appear to be consistent with prevailing research on digital technologies for the sustainable development agenda, which highlights digital transformation as the most significant constituting element (Kshetri, 2018).

According to Klein & Knight, (2015) similar to the results of the current study, digitalisation is believed to serve as a core channel for basic service delivery and can serve as a conduit to facilitate collaboration and engagement between members and administrators to ensure timely payouts (Kshetri, 2018). Digital tools can also provide further data and insights that would allow for improvements in the digitalisation process to be implemented in terms of the resource-based view and innovation diffusion theory. Digital technologies may also provide the foundation for developing further skills and innovations that can alleviate concerns of occupational stability for administrators as well as aspects related to ease of use for employees, per the technology acceptance model (KPMG, 2018).

5.4 Current Pension Payout Process

All participants indicated that the current GEPF payout process required improvement through digitalisation, as well as the applicable training, education, awareness programs and infrastructure requirements to enhance pay out times.
A need for systems integration and input validation was also stipulated. These aspects relate to the technology acceptance model in terms of making refinements for the digital solution to become more desirable and attractive.

Furthermore, adapting to an evolving technological landscape in the paradigm of the resource-based view requires that particular institutional prerequisites must be in place such as accessibility, adequate skills, training and education, infrastructure and systems that allow for innovation (Journal of Pension Economics and Finance, n.d). Participants also espoused factors related to innovation diffusion such as innovative payout methods, diversified access channels and amendments to the exiting regulatory framework to allow for policies that would cater to a digital scope, which currently has no defined structure for the digital landscape and thus appears to be a hurdle which hampers the evolution of digital advancement (Collins, 2017).

5.5 Impact of Digital Transformation

According to participant responses, the barriers to digitalisation were cited as cyber security risks and online fraud issues. While there is considerable potential for positive outcomes, the prevailing research has indeed shown that digital transformation is not inherently devoid of risk, posing security threats both to employees (due to unlawful access to private information) and to data systems as a result of hacking or software manipulation (KPMG, 2018). To address such challenges, privacy and security safeguards as stipulated in the sustainable development framework are of paramount importance.

The cost of technology was also stipulated as a barrier, both in terms of infrastructure and operational requirements as well as cost to the employee for smart phones which enable use of self-service digital platforms. While expenditure is

inevitably required for a multitude of aspects in digitalisation, it must be placed into the perspective of return on investment. As stated by (Jokonya et al., 2021), the cost barriers to digitalisation can be mitigated by phasing in changes incrementally to enable to cost to be spread over time.

A lack of information systems and information technology (IT) infrastructure emanated as another barrier. This is an especially pertinent aspect relating to higher level barriers in acquiring resources. In terms of the sustainable development goals related to data infrastructure, the resource-based view can be applied towards incrementally acquiring cloud computing or high-performance servers (Jali & Chirau, 2020). The sustainable development goals highlighted the importance of technological systems that allow for continuous innovation (SDG 9), however, at a practical level, a lack of interoperability between such systems and the relevant legislation, regulations and codes of conduct that govern pension administration, can hamper the potential to foster innovation (Gwanyanya & Njaya, 2021). This was reiterated by the participants, who stipulated that some regulations were too rigid with over-compliance leading to red tape and bureaucracy, which ultimately resulted in payout delays.

In addition, participants expressed the related concerns of lack of access to data or digital platforms, therefore the implementation of a digital transformation hinges on certain key infrastructure requirements rooted in the resource-based view paradigm as well as the technology acceptance model (Gwanyanya & Njaya, 2021).

Responses denote that a vast disparity exists in pension administration when comparing traditional methods to digital methods, where digitalisation was believed to significantly enhance payout time (in some cases to a two-day period), efficiency, convenience and streamline the processes. These perceptions articulate the aspects of perceived utility and perceived ease of use of the technology acceptance model where the participants appeared to favourably advocate for both aspects (Goodman & Rousseau, 2024). However, concerns about cyber security, fraud and a need for greater control of threats, was a highlighted aspect. Similarly, these concerns were identified in various studies conducted on different aspects of digital transformation systems (De Wet, 2021). To address these challenges, privacy and security

safeguards, as stipulated in the sustainable development goals, are of supreme importance. In terms of the diffusion of innovation, the manner in which the cyber security is managed is the determining element that would affect the spread of digitalisation in the GEPF (De Wet, 2021).

Digitalisation was also believed to reduce cost overall through enhanced accessibility, and through quick and convenient access to information thereby reducing travel costs and cash handling. In addition, the expense of extraneous manual administrative processes could be eliminated. This aligns favourably with the resource-based view in terms of use of resources and capabilities to develop strategies that will enable greater operational efficiency (Collins, 2017). In this regard, whilst the initial costs of digitalisation may be significant, the long-term return on investment can be substantial where overall operating cost is appreciably reduced as echoed by the participant responses (Collins, 2017).

Chapter Six – Conclusion

6.1 Introduction

The current study set out to investigate the influence of digitalisation in reducing pension pay out delays within the GEPF. This involved exploring the causative factors and challenges involved in GEPF pay-out delays, as well as the systems which are currently implemented and how these could be improved for greater operational efficiency through digital transformation.

The current GEPF administration processes were regarded as inefficient largely due to outdated verification systems and manual methods, with payout delays emanating from data entry issues, errors or inconstancies in information received from employer departments or GEPF members. The results of the study advocated for digitalisation to address these errors or inconsistencies and thereby streamline the pay-out processes, thus mitigating delays. Digital improvements were suggested as a means to enhance processes, accessibility and operational efficiency, thereby improving overall service delivery. The results also indicated that self-service options from digitalisation would ultimately result in time and cost savings whilst simultaneously enhancing a broader spectrum of social welfare services allied with pension payouts (Jung et al., 2015).

To achieve these objectives, holistic change management was proposed utilising the tenets of innovation diffusion, the resource-based view and the technology acceptance model to address the particular needs of members, rather than focusing solely on specific technological solutions. According to Stovall (2019), investment in technology is an essential best practice in technology-enabled pension fund administration (Zhang, 2020). The result of the current study appears to concur, in that participants indicated the need for GEPF to invest in appropriate holistic technology solutions, including record-keeping and data management systems, benefit processing systems, member communication platforms, and investment management systems (Stovall, 2019).

The aspects raised by the respondents appear to be consistent with prevailing research on digital technologies for the 2030 sustainable development agenda (Zhang, 2020).

Digitalisation of the pension fund sector therefore denotes a significant evolutionary milestone in the way pension systems operate and service beneficiaries. This transformation, driven by technological advancements and changing socio-economic dynamics which are emblematic of the 4IR era, has significant implications for the future of GEPF administration and regulation (Rutherford, 2020).

Therefore, the results of the current study appear to be consistent with the National Treasury Report (2021) and Fernando & Haskel (2016) which state that the primary future focus of the regulatory landscape for pension fund administration in South Africa relates to the challenge of GEPF digitalisation and the associated complexities. Overall, the results of the study demonstrate that although the pension pay-out process is currently well defined, a plethora of aspects relating to digitalisation can resolve the issue of pay-out delays through enhancement of operational efficiency, ranging from regulatory aspects to technical and infrastructural solutions. The study identified the current digital payment systems in use, assessed their impact on the GEPF pay-out times and examined the relationship between these systems and traditional systems, suggesting a need for further digital payment system implementation (Rutherford, 2020).

The findings of the study underscored the potential of digital technologies to improve pension fund administration but highlighted significant hurdles such as resistance to change, technical limitations, and concerns about data quality and security (Nzuve & Muthinja, 2020). The study contributes to understanding the complex dynamics of digitalisation in pension pay-out time, offering practical recommendations for stakeholders to address existing challenges and leverage opportunities for improvement through digitalisation (Ngwenya, 2018).

6.2 Recommendations

The following future research can be conducted:

- The long-term impacts of digital payment systems on pension pay out and financial security, particularly among vulnerable groups, must be examined critically.
- Investigate the scalability of successful digital strategies across different regions and pension systems, considering varying infrastructural and socio-economic contexts.
- Investigate the experiences and outcomes of pension beneficiaries, including access to information and accuracy of pension calculations.
- Investigate new technologies and controls to enhance the security of the pension digital payment systems
- Explore AI and machine learning for real-time threat detection and response in pension digital payment systems.

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APPENDICES

Appendix 1: An Invitation to Take Part in the Research Project



University of the Witwatersrand,
Wits Business School, Master of Business Administration,011 717 3544

Dear [Insert Participant's Name]

Thank you for taking my telephone call earlier today [if relevant].

My name is Mafolelo Paul Masipa. I am presently a student at the Wits Business School of the University of Witwatersrand, where I am completing my research for a portion of my MBA. My supervisor is Dr Oro Oro. I am conducting now on Digital payment systems and the speed of public sector pension payout in South Africa. The study aims to investigate the effect of digital payment systems on pension payments in South Africa. It looks at how the use of digital payment systems might improve the efficiency and accuracy of pension disbursements, as well as the possible benefits that such improvements could offer to South African retirees.

I am inviting you to an interview as part of the managers of pension administrators in South Africa to complete my study. I would be extremely appreciative if you took part in this study.

Please let me know if you are able and willing to participate in the study. I am hoping to conduct individual online interviews from 4 September 2023 to 4 October 2023. The duration of the interview will be between 30-45 minutes.

Please be aware that the interview's content will be confidential, and that all data will be anonymized and used exclusively in the context of the study.
If you are willing to participate and are available for the interview, do let me know so I can plan it in accordance with your availability.

A consent form with my contacts and the supervisor I was assigned is attached. Please be aware that the form must be submitted prior to our scheduled meeting.
I anticipate hearing from you.

Kind Regards

Name of researcher: Mafolelo Paul Masipa, 2492245@students.wits.ac.za , +2782 303 9041

Supervisor: Dr Oro Oro, orooro72@gmail.com , ufuo.oro@wits.ac.za +234 810 995 7665

Appendix 2: Consent Form

Consent Form _Pension Fund Administrators Managers

Title of project: Digital Payment Systems and the Speed of Public Sector Pension Payout in South Africa

Name of researcher: Mafolelo Paul Masipa, 2492245@students.wits.ac.za , +2782 303 9041

Supervisor: Dr Oro Oro , orooro72@gmail.com , ufuo.oro@wits.ac.za , +234 810 995 7665

I, ……., agree to participate in this research project.

I agree to the following:

(Please circle the relevant options below)

The research study was explained to me. I understand what this study is about.	YES	NO
I understand that I can volunteer to take part in the study.	YES	NO
I agree that the interview/focus group/other activity may be audio recorded	YES	NO
I agree that direct quotations from my interview/focus group/other activity may be used by the researcher in their research report.	YES	NO
I agree that my participation will remain anonymous (my name or other identifying data will not be used by the researcher in their research report.	YES	NO
I agree that other researchers may use the information I provide in my interview/ (depending on their own ethics clearance being obtained) but my name and any personal information will not be used or passed on.	YES	NO

…… (signature)
…… (name of participant)
…… (date)

…… (signature)
Mafolelo Masipa …… (name of researcher/person seeking consent)
…… (date)

Appendix 3: Interview Guide

INTERVIEW GUIDE

Interview Guide: **Start Time:**

Name and Surname: **End Time:**

Organisation:

Job Title:

Date:

Introduction and Background

Step 1: Introduce myself as the MBA research proposal in the quest to improve the public pension payout speed.

Step 2: Thank the participant for agreeing to the research and confirm that I have received the signed.

consent letter.

Step 3: Inform the participant that the interview will be recorded and that they have given their approval.

Step 4: Explain the purpose of the interview as follows:

The goal of this interview is to obtain useful ideas and opinions from stakeholders in the South African government sector about the potential benefits and challenges of implementing digital payment systems for pension disbursements. The interview seeks to elicit information about the current pension payment system, its limitations, and its benefits for exploring digital payment methods.

Furthermore, the interview intends to investigate the anticipated benefits of digital payment systems, any concerns or obstacles to their implementation, and the likely reaction of retirees to such a change. In addition, the interview will investigate plans for increasing uptake and usage, any special implementation requirements, and the interviewee's vision for the future of pension payouts in connection to digital payment systems.

The goal of these interviews is to obtain detailed information and insights that will help us evaluate the possible impact and limitations of using digital payment methods for pension disbursements in the South African government sector.

Research Questions (RQ)

Impact of Digital Payment Systems

INTERVIEW GUIDE

Interview Questions:

1. Can you describe the current process of pension payouts using digital payment systems?
2. What specific improvements in efficiency have been observed since the implementation of digital payment systems?
3. How has the timeliness of pension payouts changed with the introduction of digital payment systems?
4. Are there any quantitative data or metrics available to support the observed changes in efficiency and timeliness?
5. What are the main challenges or limitations you have encountered with the existing pension payment system?

Barriers or Challenges

RQ2: What are the potential barriers or challenges in implementing digital payment systems for pension payouts in the South African public sector?

Interview Questions:

1. What technological barriers have you encountered during the implementation of digital payment systems?
2. Are there any infrastructural challenges that affect the rollout of digital payment systems?
3. How do regulatory or policy-related issues impact the implementation process?
4. What are the common concerns raised by public sector employees and retirees regarding digital payment systems?

Comparison Between Traditional and Digital Methods

RQ3: How do traditional methods of pension payout compare to digital payment systems in terms of speed, security, and cost-effectiveness?

Interview Questions:

1. What are the main differences in processing time between traditional and digital methods of pension payout?
2. How does digital payment systems' security compare to traditional methods?
3. What are the cost implications of using digital payment systems versus traditional methods?

4. Can you provide specific examples or case studies that highlight the differences in these methods?

Recommendations for Improvement

RQ4: What recommendations can be made to improve the speed and effectiveness of public sector pension payouts by adopting digital payment systems?

Interview Questions:

1. What areas of the digital payment process need improvement to enhance speed and effectiveness?
2. How can digital literacy among public sector employees and retirees be improved to facilitate the use of digital payment systems?
3. What infrastructural upgrades are necessary to support efficient digital payments?
4. How can regulatory frameworks be adjusted to better support the implementation of digital payment systems?

Benefits to Retirees and Government Agencies

RQ5: What are the potential benefits to retirees and government agencies of transitioning to a more efficient pension payout system through digital payment methods?

Interview Questions:

1. What specific benefits have retirees experienced with the transition to digital payment systems?
2. How have government agencies benefited in terms of operational efficiency and cost savings?
3. What impact has the transition to digital payment systems had on the accuracy and transparency of pension payouts?
4. How do retirees perceive the convenience and reliability of digital payment systems compared to traditional methods?

Closing

- Thank the participant for their time and participation in the interview.
- Propose to them an opportunity to provide any additional comments or insights that they believe are applicable to the research.

Appendix 4: Ethical Clearance

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

Private Bag 3 Wits, 2050
Fax:
Tel:

Reference: Ms Jennifer Mgolodela
E-mail: jennifer.mgolodela@wits.ac.za

30 January 2024
Person No: 2492245
PAG

Mr MP Masipa
2935B THATCHFIELD HILLS ESTATE
6747 Shrike Street
Centurion
0157
South Africa

Dear Mr Mafolelo Masipa

Master of Business Administration: Approval of Title

We have pleasure in advising that your proposal entitled *Digital payment systems and the speed of public sector pension payout in South Africa* has been approved. Please note that any amendments to this title have to be endorsed by the Faculty's higher degrees committee and formally approved.

Yours sincerely

Mrs Marike Bosman
Faculty Registrar
Faculty of Commerce, Law and Management