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**Assessing Digital Technology Adoption in Enhancing Tax Compliance in  
South Africa: A Scoping Review**

**A dissertation submitted in partial fulfilment of the requirements for the  
Masters in Taxation degree at the University of KwaZulu-Natal**


**Supervisor: Dr Charmaine Lathleiff**

**December 2024**

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## **DEDICATION**

I devote this dissertation to the memory of my late sister, Sarah Ruth Goldstone. I gained the strength to persevere through challenging moments from our cherished memories together. Till we meet again.

## ABSTRACT

Tax compliance prior to digital technology advancements in tax was a complex and labour-intensive process, which relied on paper-based systems and extensive manual tax administration. Streamlined processes and faster transactions enabled by digital technology, make it simple for taxpayers to become tax compliant. With a specific focus on understanding how these technologies enhance tax compliance, this research investigated the adoption of digital technologies within tax administration in South Africa. The intent of the study was to provide a comprehensive literature review to assess the determinants influencing the adopting of digital technologies by exploring what drives their successful adoption in tax administration and examining the potential challenges and barriers that may hinder their adoption. The research utilised academic literature from sources like Google Scholar and ResearchGate to map the extent of digital technology adoption and its impact on tax compliance in South Africa by drawing from scoping review methodology that Arksey & O'Malley (2005) endorsed. Selected studies in the review spanned from 2019 to 2024. During this period, the South African tax authority enhanced online tax filing features. These improvements marked a major step forward in using digital technology for tax compliance. The insights gained from the review revealed that digital technology adoption is impactful on taxpayer compliance in South Africa. Among the determinants identified are the availability of robust digital infrastructure like network signal availability and access to a continuous and uninterrupted electrical power, government and tax policy support, taxpayer education and ease of use of digital platforms. The research also identified possible adversities affecting the technology adoption such as taxpayer behaviour, inequality in access to digital technology for example limited availability of digital devices in rural regions and complexity of the tax system. The study recommends that the government implements digital literacy and tax education programs, increases transparency in tax revenue usage and addresses digital technology access inequalities to further enhance the adoption process. Future researchers may explore how specific digital infrastructure components such as internet speed and reliability, mobile network quality, and electricity availability impact the adoption of digital tax technologies by using primary data analysis.

Key Words: taxation, digital tax, tax, tax compliance, electronic tax system, digital technology adoption, South Africa, tax administration, digital infrastructure

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## **LIST OF ACRONYMS**

4IR: Fourth Industrial Revolution

AI: Artificial Intelligence

BEPS: Base Erosion and Profit Shifting

DOI: Diffusion of Innovations

ICT: Information and Communication Technology

ISORA: International Survey on Revenue Administration

KRA: Kenya Revenue Authority

SA: South Africa

SADC: Southern African Development Community

SARS: South African Revenue Service

SBE: Small Business Enterprise

SME: Small and Medium Enterprise

SMME: Small, Medium, and Micro Enterprise

SSA: Sub-Saharan Africa

TPB: Theory of Planned Behaviour

# **CHAPTER 1: INTRODUCTION**

## **1.1 Introduction**

This study sought to execute an assessment of the adoption of digital technology for the enhancement of tax compliance in South Africa (SA). Dealing with tax administration, and the management of the compliance that comes with it, has proved to be a complex task. The research area has underscored its importance by seeking to understand how the adoption of digital technologies, such as online return filing systems, have the potential to enhance tax compliance, make procedures more consistent, and easily identify potential obstacles to non-compliance. Government tax authorities have thus turned to digital technologies to streamline tax administration and improve tax compliance (Akepe, 2023). Although governments have adopted digital technologies in tax collection, the resultant implications for tax compliance are limited (Li, Wang & Wu, 2020). Specifically, the study intended to provide an assessment of these resultant implications. By focusing on tax compliance, the study explored taxpayer behaviour towards the digitalisation of tax compliance.

The study researched the intricate affiliation between taxpayer adoption of digital technology in tax practice and its ability to enhance and contribute to tax adherence procedures for compliance. As societies increasingly shift towards digitalisation, tax administrators worldwide are confronted with both challenges and opportunities in leveraging technological advancements to streamline processes and positively expand tax compliance rates. The findings from this study are anticipated to offer essential insights for tax administrators and policymakers regarding the integration of digital technology to improve tax compliance. By exploring these dynamics, the study aimed to assess the key factors influencing the adoption and implementation of digital technologies in tax administration in South Africa and explore the potential challenges and barriers affecting their adoption.

## **1.2 Background to the Study**

According to Nkambule (2021), tax compliance pertains to the essential practice of comprehending and observing the laws, procedures, and regulations established by governments and tax authorities. Historically, tax compliance has been an intricate and resource-intensive process. Paper-based systems, manual record-keeping, and lengthy

administrative procedures and processes have hindered tax collection (Naape, 2023b). However, advances in digital technology have enabled tax authorities to implement positive changes (Hesami, Jenkins & Jenkins, 2024). The incorporation of digital technologies into the administration of tax has expanded in developing countries in recent years (Bassongui & Hounbédji, 2023) and has opened up new possibilities for easy and simplified tax compliance processes to enhance tax compliance.

When taxpayers show compliance, they actively engage with the principles of tax compliance, which ensures that their financial activities align with legal requirements. Digital technologies are therefore regarded as essential in the realm of tax compliance. When taxpayers embrace tax compliance through their use of digital solutions, they contribute to successful tax administration (Bassongui & Hounbédji, 2023). By understanding and following relevant laws, they facilitate smoother adoption of digital technology-driven solutions. Taxpayers also play a critical part in enhancing compliance, transparency, and accuracy in tax systems.

Digital technologies have already been leveraged in the tax administration of developed countries (Nose & Mengistu, 2023). This adoption has led to workable tax reforms, proper taxing of the economy, and a reduction of compliance challenges (Estevão, 2021). With the rise of the e-commerce ecosystem, which provides a virtual digital marketplace, paper-based tax systems often struggle to capture all taxable digital activities. However, according to the study by Estevão (2021), transformation to digital technology simplifies tax administration by making it straightforward and simple for taxpayers to conform with tax laws. This minimises the administrative responsibilities of both taxpayers and tax authorities.

Due to the global reach of digital transactions, international coordination and cooperation structures are required and are even essential to ensuring effective tax enforcement. This is illustrated through one particular profit shifting project of the Organisation for Economic & Cooperation Development (OECD) called Base Erosion and Profit Shifting (BEPS) that is intended for the establishment of uniform rules and regulations for taxing digital businesses (Adelakun et al., 2024). The BEPS project aimed to realign taxing of economic activity, create a consistent international tax framework, enhance transparency and information exchange, and prevent harmful tax practices. By adopting digital technologies, countries which are both developed and developing can align with BEPS objectives to ensure that earnings are taxed where economic operations occur, ultimately enhancing tax compliance.

In the last few years, the Southern African Development Community (SADC) countries have made determined efforts to harness digital technologies. The usage of information and communication technology (ICT), predominantly, internet and mobile cell phone usage, has made an impact on tax revenue collection in the SADC region (Jemiluyi & Jeke, 2023). Great strides in this direction have also taken place in South Africa. Taxpayers are able to conduct tax compliance activities electronically via e-filing (Naape, 2023a). The study by Naape (2023a) indicated that e-filing reduces paperwork, processing time and allows for twenty-four-hour access to the tax authority's online digital submission channel. Mobile applications provide real-time access to tax information, payment options, and notifications. Citizens can stay informed and respond promptly to tax-related matters.

With the use of advanced digital data analytics tools, tax authorities can analyse substantial amounts of information to meet tax administration compliance requirements. These tools enable greater accuracy in tax administration and targeted tax enforcement efforts (Alarie, et al., 2021). In addition to this, digital technology adds to existing risk-based tax audit processes, can flag irregularities and, in turn, reduce the need for manual tax audits (Baghdasaryan, et al., 2022). These competencies benefit both taxpayers and tax authorities.

Many tax authorities have resorted to adopting digital technology in the form of electronic tax return filing to avoid potential human intervention and bias (Okunogbe & Pouliquen, 2022). This approach aims at reducing errors, discrepancies, and subjective judgements associated with manual methods of processing returns, therefore making taxpayers submit them digitally. This change goes a long way to contributing towards enhanced tax compliance, which leads to higher overall tax revenue collection (Okunogbe & Pouliquen, 2022). Therefore, as tax administration continues to evolve, using the right digital technology becomes crucial, helping to create accurate and simpler ways to manage taxes to ultimately improve tax compliance.

Many countries may find it more difficult to transition to digital means due to limitations that include a lack of relevant digital skills and digital technology such as networks and infrastructure (Ndulu, Ngwenya & Setlhalogile, 2022). South Africa is in a comparable situation. Factors such as access, affordability, and digital literacy influence the adoption of digital solutions. Researching and understanding these underlying issues will provide better insights into understanding the digital technology adoption in enhancing tax compliance in South Africa.

### **1.3 Problem Statement**

Tax non-compliance continues to be a substantial problem for tax revenue services in developing countries, as it has a bearing on tax revenue performance and the government's ability to service its citizens (Hamilton, 2021). The analysis by Hamilton (2021) highlighted that non-compliance issues such as underreporting of income, fraud, non-filing and late filing of tax returns have contributed to the tax revenue gap. The infusion of digital technologies in tax operations has become prevalent in tax authorities worldwide for accurate tracking of tax revenue and tax compliance. Digital technologies need to collect and process taxpayers' data, cross-reference data, and assist both tax administrators and taxpayers in fulfilling their tax duties.

Despite studies that have been performed by Hesami et al. (2024); Naape (2023b) and Bassongui and Houngbédji (2023) to explain the utilisation of digital innovations in the administration of tax, none has fully assessed the influence, coupled with the unique challenges, of these technologies on enhancing tax compliance. Understanding how digital technologies enhances tax compliance is crucial, as one of the objectives of tax administration is ensuring tax compliance. Improved tax compliance provides tax authorities with the means to enhance voluntary tax adherence, reduce tax non-compliance, and maintain public trustworthiness of the tax structure (Hamilton, 2021).

Factors such as taxpayer attitude, user acceptance, and voluntary tax compliance serve as crucial functions in the adoption of digital technologies. Okunogbe and Santoro (2023a) explained how these factors impact the seamless adoption and deployment of digital technologies is important to evaluate its uptake for tax compliance. In developing countries, unease about data safety, privacy, and accessibility could restrict widespread acceptance of digital technologies (Okunogbe & Santoro, 2023b). Taxpayers may also lack resources or digital literacy, limiting their access to and utilisation of digital platforms for tax compliance. This study sought to evaluate the degree of adoption of digital technologies for improving tax compliance and to propose viable solutions for overcoming challenges and eliminating obstacles in the successful implementation of these technologies.

## **1.4 Objectives of the Study**

The research was undertaken to accomplish the following objectives:

1. To assess the key factors influencing the adoption and implementation of digital technologies in tax administration in South Africa.
2. To explore the potential challenges and barriers affecting the adoption of digital technologies in tax compliance in South Africa.

## **1.5 Research Questions**

To fulfill the study's predetermined objectives, the ensuing research questions were formulated:

1. What are the key factors influencing the adoption and implementation of digital technologies in tax administration in South Africa?
2. What are the main challenges and barriers affecting the adoption of digital technologies in tax compliance in South Africa?

## **1.6 Significance of the Study**

The South African Revenue Service (SARS) is the tax authority responsible for providing tax revenue services for the South African government and administering South Africa's tax system, thereby ensuring that citizens are tax compliant (Aroba & Abayomi, 2023). Digital tax compliance represents the incorporation of digital technologies into tax systems to streamline processes, improve accuracy, and enhance tax compliance. Understanding how the adoption of digital tools can enhance tax compliance can provide detailed insights for both tax authorities and policymakers. It can also assist with the development of future strategies and policies to improve tax compliance levels. Government revenue is directly affected by high levels of tax non-compliance. If digital technology can increase tax compliance, it can increase tax collection, so public enterprises and businesses will benefit from this increase. Digital technologies can simplify the tax process and reduce paperwork. Therefore, assessing their adoption in tax compliance can uncover potential savings for taxpayers and tax authorities.

Assessing digital technology adoption to enhance tax compliance in the South African context could benefit taxpayers by making tax processes more accessible and user-friendly. SARS, the South African tax authority and government would gain insights to use when considering further technology enhancements improved tax compliance levels from the implementation of

technology. Researchers would find valuable data and insights for further studies in digital technology adoption particularly in tax administration and tax compliance.

Additionally, studying the factors that either influence or deter taxpayer adoption of digital technology can provide valuable insights into how they feel about the utilisation of digital technology in tax compliance. It could help in understanding how individuals respond to technological interventions and change their compliance behaviour (Okunogbe & Pouliquen, 2018). Understanding digital technology adoption in enhancing tax compliance is also important beyond national borders, as digitisation adoption is becoming increasingly global. As countries adopt digital technologies, there are best practices and learnings that can be shared. This could assist tax administrations stay updated with technological advancements, improve compliance, and reduce administrative burdens. Considering the experiences and best practices can help tax authorities with similar administrations learn from each other, avoiding common pitfalls and leveraging successful approaches.

### **1.7 Organisation of the Study**

The study's arrangement is explained in this segment. The research is composed of five distinct chapters.

Chapter 1: Introduction and background. The first chapter is an introductory section and includes historical context of the undertaken research, describing the problem, the objectives and questions of conducted research, and highlights the study's importance.

Chapter 2: Literature review. The second chapter is a thorough analysis and examination of the existing literature to assess the viewpoints of other researchers on the topic, to understand how the research projects align, and provide a clear identification of the gaps in research. Relevant theories and models used to explore applicable studies are referenced. Within this review, referring to the context of South Africa plays an essential part, as the research aimed particularly to assess the context in South Africa.

Chapter 3: Research methodology. This chapter delivers details of the research method utilised, which includes the design method, data analysis and the interpretation and presentation of the data. It elaborates on the scoping review and exhibits a list of the chosen literature which forms part of the review.

Chapter 4: Scoping review. Chapter four presents the scoping review and discussions on the findings. It delves into the research findings and examines their results. Secondary data sources are analysed, explained, and the findings are presented using tables and charts.

Chapter 5: Conclusion and recommendations: Chapter five is a synopsis of the main discoveries, along with conclusions and recommendations derived from the study. It explicitly highlights findings and any unexpected or significant results. These findings provide recommendations for tax authorities and identify potential avenues for further exploration. Included in the chapter is an acknowledgement of its limitations due to the use of secondary data sources.

## **CHAPTER 2: LITERATURE REVIEW**

### **2.1 Introduction**

The review of literature for this study involved scrutinising the research at hand on digital technology adoption in enhancing tax compliance in South Africa. This chapter consists of two parts, the first of which unpacks theories involving tax compliance and digital technologies, while the second summarises findings from completed studies which dealt with the relationship between compliance and digital technologies.

### **2.2 Theoretical Literature**

This study made use of the theory of planned behaviour (TPB) to gauge the willingness of tax paying citizens to be tax compliant and the diffusion of innovation (DOI) theory to allow for understanding digital technology acceptance and the rate at which different groups within a population adopt technologies over time. These theories were employed as a lens through which the research was understood.

#### **2.2.1 Theory of Planned Behaviour**

Research conducted by Al-Zaqeba and Al-Rashdan (2020) explored factors influencing tax compliance behaviour by focusing on the TPB, which arose from the contributions of Ajzen in 1985. It provides a foundational outline by accentuating the role of individual attitudes, societal norms, and perceived ability to act in envisioning behavioural determinations (Ajzen, 2020). The study utilised a TPB framework to examine taxpayers' decisions to be tax compliant.

The theory is widely used to serve as a foundation to obtain comprehension of human behaviour (Ajzen, 2020). The framework explains how a person's intent to participate in a specific type of conduct or behaviour is influenced by three key elements, the first being "attitudes", the second "subjective norms", and the third "perceived behavioural control" (Ajzen, 2020).

Attitudes refers to the assessment of the behaviour to check whether it is favourable or unfavourable. Subjective norms, on the other hand, echo the perceived social influence to involve oneself in or steer clear from the behaviour based on the expectations of others. Perceived behaviour control reflects a person's belief in their capacity for executing a certain type of behaviour, taking into account both internal and external factors (Ajzen, 2020; Al-Zaqeba & Al-Rashdan, 2020).

Al-Zaqeba and Al-Rashdan's (2020) study suggests that enhancing moral intensity through proper education and promoting social values that are supportive of tax compliance can potentially improve compliance rates among taxpayers. Al-Zaqeba and Al-Rashdan (2020) defined moral intensity as the degree to which a person perceives the principled consequences of a situation, which in turn influences their behavioural intentions and actions.

The Theory of Planned Behaviour (TPB) framework is relevant for understanding the adoption of digital technology in enhancing tax compliance. This relevance stems from the framework's coverage of key elements influencing behavioural intentions and actions. Firstly, attitudes towards digital technology play a crucial role. This component refers to the positive or negative evaluations individuals hold about using digital tools for tax compliance. If taxpayers perceive that digital technology will make tax filing easier, more accurate, and less time-consuming, they are more likely to adopt these tools.

Secondly, subjective norms encompass the perceived social pressures to use or not use digital technology. When the use of digital technology is widely accepted within society, taxpayers are more likely to conform to these norms. Lastly, perceived behavioural control refers to the degree to which individuals feel confident in using digital technology. This component is critical as it affects taxpayers' perceived ease of use. When taxpayers believe they have the necessary skills and resources to utilise digital tools, their likelihood of adoption increases.

The inclusion of the TPB is thus important for studying digital technology adoption in tax compliance in South Africa because it focuses on how people's intentions, attitudes, and perceived control affects their behaviour. By using this theory, there can be an understanding of why people may or may not adopt new digital technology for tax compliance. It also assists with identifying the psychological and cultural factors that influence their decisions (Al-Zaqeba & Al-Rashdan, 2020).

As stated, the psychological factors concern the role of moral intensity and its impact on people's perceptions of the ethical significance of tax compliance decisions which significantly influences their attitude and intention towards complying with tax laws. Culturally, the study examined the influence of tax regulations, which reflects social norms related to tax (Al-Zaqeba & Al-Rashdan, 2020). Recognising these factors also underscores the multifaceted nature of tax compliance behaviour which is beyond technological solutions and the embracing of digital technology for enhancing tax compliance.

### 2.2.2 Diffusion of Innovations Theory

Everett Rogers established the diffusion of innovations theory in 1962, which offers a comprehensive basis that describes by what method and reasoning, and also the rate at which new ideologies, technologies, and practices are diffused through a social system (Lee, 2021). According to the study by Lee (2021), the theory is a hypothesis of interaction and communication, in which the central aim is to encourage individuals to embrace new practices or products. A persuasive logic is inherent in the theory, an approach which recognises four important components: innovation, communication pathways, duration, and a societal structure (Lee, 2021). It posits that an innovation that has relative and clear benefits, compatibility, is less complicated, can be tested easily, and whose results are easily observed tends to be adopted more rapidly by the target audiences (Lee, 2021).

The theory describes technology adoption in stages. The sequence starts with pioneers, who are also known as innovators. They are the first to experiment with new concepts or innovations in technology. After the innovators, early adopters contribute to establishing the practical value of technologies. The early majority is next. They set the stage for adoption by the public. Thereafter, the late majority are those who adopt well after an invention gains widespread acceptance. Last in the sequence are the slow adopters, who are reluctant to change and prefer traditional methods (Rogers, Singal & Quinlan, 2014). This theoretical framework allows for the identification of factors contributing to the digital technology adoption process.

There are quite a few factors that could hinder the deployment and acceptance of digital innovations in enhancing tax compliance, particularly when examined through the diffusion of innovations theory. Infrastructure limitations, which include unreliable internet connectivity and inconsistent energy supply, can significantly impede the effective use of digital tools. Additionally, the digital skills gap among both taxpayers and tax officials can slow adoption rates, making targeted training and upskilling crucial (Bassegy Mulligan & Ojo, 2022). The high costs associated with digital technologies further exacerbate these challenges (Fanelli, 2021). Security and privacy concerns also pose substantial obstacles, as robust cybersecurity measures are necessary to build trust in digital tax compliance solutions (Okunogbe & Santoro, 2023b).

With reference to the research conducted in this study, the theory of diffusion of innovations provided a structured approach to understanding the complex process of digital technology adoption in enhancing tax compliance from a South African viewpoint. The application of the

theory to digital solution adoption in enhancing tax compliance involved understanding how these principles interact in the tax regime of South Africa, and assisted the exploration of the determinants influencing adoption, from the features of the technology to the social context and offered insights into potential difficulties in implementing digital technologies to improve tax compliance.

## **2.3 Empirical Literature**

Based on scholarly investigation, tax compliance has been the focus of extensive research, particularly in the context of adopting online tools and digital solutions in tax for adherence and compliance purposes. For instance, Night and Bananuka (2020) explored how the incorporation of digital innovations in the form of digital tax systems influences the users' attitudes towards it. According to Olonde (2019), the implementation of digital technology by the Kenya Revenue Authority in Nairobi has significantly impacted tax compliance, stressing its critical role as part of modern tax administration. The study by Naape (2023b) examined the interplay between tax literacy, the intricacy of tax and adherence to tax compliance, emphasising the importance of understanding these factors to improve compliance rates.

Although there is substantial existing research, a comprehensive review of the empirical literature has revealed important gaps and inconsistencies. These gaps underline the need for more analysis to advance the understanding of how digital technologies can be leveraged to enhance tax compliance, particularly within the South African context. It is with this in mind that this study examined the connection between tax compliance and the adoption of digital technologies. This was done with exploring the reviewed studies to understand the factors relating to the adoption of digital technology in tax administration.

### **2.3.1. Empirical Evidence on the Key Influencing Factors on Adoption and Implementation of Digital Technologies in Tax Administration**

Many scholars have researched the influence of adopting digital technology on tax administration. The study by Naape (2023a) explored the impact of e-filing on tax compliance in two parts. In South African context, e-filing is the system which allows taxpayers to file tax returns electronically (Naape, 2023a). Part one studied how South African taxpayers feel about e-filing, and in part two, an analysis of how e-filing affects tax compliance is covered. The research involved sending copies of self-structured questionnaire to one hundred and fifty-one

South African taxpayers. The questionnaire was designed to be completed by respondents without the assistance of an interviewer. Once the data was obtained from the respondents, it was analysed using binary logistic regression. The research found a definite connection between e-filing and tax compliance, implying that taxpayer compliance improves with usage of e-filing. The level to which e-filing encouraged taxpayers' compliance is related to an increase in compliance.

The study also found that online methods of payment and higher educational accomplishment were also positively associated with tax compliance. However, for online tax registration and auto-assessment, the author found that often these resulted in lower outcomes with tax compliance. The overall insights of the research indicated that e-filing has fostered a more favourable view among taxpayers in South Africa (Naape, 2023a).

Although the study provided comprehensive insights into a South African perspective, it did not explore all factors that could influence taxpayers' acceptance of digital technology in tax compliance. The study relied only on the outcomes from the questionnaire sent to a small target group of South African taxpayers (Naape, 2023a). The sample size did not fully represent the varied demographic of taxpayers in South African, which created a potential bias in taxpayer representation. The study also relied on self-reporting, respondents may have overstated or understated their answers due to social desirability bias or memory recall issues.

According to the study by Bassey et al. (2022), the incorporation of digital solutions into the governance of tax has expanded in popularity. It has offered new opportunities to boost tax compliance and simplify tax return filing processes. Tax administration authorities globally are fully committed to digitalisation and the acceptance and implementation of digital tools and solutions in tax compliance. The authors conducted a systematic review of ninety-six journal articles relating to digital tax and information systems literature to explore the digitisation of tax administration. This extensive review helped them identify key themes and factors essential for the successful realisation of a digital tax system.

At the end of the study, a model for analysis was developed outlining fifteen aspects to guide tax authorities on the utilisation of digital technologies in tax administration. The four primary categories considered are technology, stakeholders, context, and demonstrated results. For the first category of technology, the authors emphasised the importance of taking on digital technology. The understanding of stakeholder needs was also highlighted by the framework, suggesting that understanding their roles and expectations is crucial for aligning the

implementation of digital technology with their needs. Considering a broader view of context, the framework addressed digital technology implementation by considering legal, cultural, and economic factors that may impact tax administration. Lastly, tax authorities are encouraged to assess the impact of digital technology adoption, as the demonstrated success of the implementation can guide future strategies and enhancements. The conceptual framework serves as a reference for integrating digital technologies into tax administrations and suggests future research directions to enhance our understanding of online services beyond technology acceptance models.

The study produced mixed findings when examining the adoption of digital technologies to enhance the administration of tax. Although many tax administrations have embraced the adoption of digital technology, there are some that face certain adversities in fully implementing it due to resource constraints, infrastructure limitations, or resistance to change (Bassey et al., 2022). The study also found that the extent to which taxpayers readily adopt digital technology in tax compliance varies; while some are quick to adjust, others continue to rely on traditional methods. The fact that the study does not highlight the unique aspects of South Africa's socio-economic and technological outlook limits its ability to give a complete overview of both the obstacles and the potential gains to the country.

Olonde (2019) examined how different technological advancements affect tax compliance in Kenya, particularly concerning the Kenya Revenue Authority (KRA). According to Olonde (2019), the Kenyan government, having faced budgetary shortfalls, aimed to enhance tax collection through the implementation of information technology into its tax administration. The Olonde (2019) study investigated three specific items, namely, the online filing system called the i-Tax system, the utilisation of massive data analytics for tax regulation conformity and the implementation of blockchain technology. The research design utilised was a descriptive survey. The respondents were forty-six KRA staff members predominantly from the IT department.

The researcher found that the adoption of information technology positively influences tax compliance among larger taxpayers. Factors such as knowledge of the i-Tax system, online tax filing and internet accessibility proved to be important for small and medium taxpayers to meet tax obligations (Olonde, 2019). The study focused on Nairobi, which may not fully represent the diverse tax compliance landscape across other countries in Africa. Other countries have distinct tax laws, regulations, and tax compliance requirements compared to Kenya. These

variations impact how digital technologies are implemented. Additionally, due to the study being limited to Kenya, the composition of taxpayers in other countries are not taken into account. Different segments of taxpayers may respond differently to technology in tax administration.

In a study completed by Hamilton (2021), qualitative research was conducted on statistics from the 2020 International Survey on Revenue Administration (ISORA), involving fifty-nine progressive and developing economies who were analysed. It examined a wide range of tax administration aspects, including trends and trajectories until the conclusion of the 2019 fiscal year. The survey collected information at a national level on tax administration practices. The primary purpose of the survey was to gain insights to facilitate dialogue among tax authorities and stakeholders. It aimed to identify opportunities for improving the administration of tax (Hamilton, 2021).

The research survey showed that digital technologies like the use of data analytics tools, and digital assistant technologies like chatbots, within tax administrations, are used by more than 50% of those who completed the survey (Hamilton, 2021). The report provided a comparative analysis of tax administration, highlighting key trends, recent innovations relating to the usage of digital technologies, and examples of good practice. South Africa was one of the surveyed economies, but specific factors like network availability which is native to South Africa, were not fully captured in the comparative data. The report also relied on data, which was provided voluntarily, which means that some countries did not participate, and this was a gap in coverage. A study of this nature should be complemented with a country-specific analysis for a comprehensive understanding of a specific country's unique tax administration landscape.

A study by Night and Bananuka (2020) sought to investigate the association between the views of individuals toward digital tax systems and their tax compliance behaviour. It focused on small businesses in Uganda, a developing African country. A quantitative research approach was utilised with a design that was cross-sectional and correlational. The data was gathered by sending questionnaires with closed-ended questions to two hundred and fourteen small business owners. The results showed that adoption of digitally powered tax systems and attitudes toward them are substantially linked with tax compliance (Night & Bananuka, 2020).

The study found that both acceptance of digital technology in the form of electronic tax solutions and the attitudes toward them correlates with tax compliance (Night & Bananuka, 2020). Essentially, this finding suggested that when small business owners adopt electronic tax

systems, it positively impacts their overall tax compliance. However, because the study was cross-sectional, it couldn't track changes in behaviour over time. The approach used by Night and Bananuka (2020) was quantitative research and would have limited the small business owners from fully expressing their thoughts and views. The study took place in Uganda, which means that the context of the findings does not adequately represent South Africa.

In the exploration undertaken by Nembe et al. (2024), the authors conducted a literature review highlighting that digital technologies in the form of artificial intelligence (AI) solutions offer unique opportunities for governments to simplify the administration of tax, identify non-compliance, and minimise tax non-compliance. Algorithms relating to machine learning can examine immense amounts of data with speed and accuracy. As part of concluding remarks, the study stated that the adoption of AI enhances tax compliance, but its use must be ethical, collaborative, and balanced with adherence to regulatory safeguards for sustainable development. The authors also indicated that unlocking AI's potential for enhancing tax compliance requires cooperation among government agencies, regulatory bodies, financial institutions, and technology providers (Nembe et al., 2024). The study conducted did not research a specific economic sector or country. It also did not consider any socio-economic factors, such as unequal access to the internet and digital technology, that might be present in South Africa.

Ismail et al. (2021) analysed the trustworthiness and easiness of an online filing and submission system for tax regulation conformity in the scope of "Big Data Analytics" within Malaysia., which refers to the process of examining large and varied datasets (Ismail et al., 2021). Since the emergence of "Big Data", it has become easier for tax authorities to easily analyse large datasets from the existing e-filing tax system (Ismail et al., 2021). The research technique utilised by the authors was a qualitative cross-sectional design that used statistics collected from different participants at a single instance in time. The data was collected from seventy responders through online questionnaires. A key finding from the analysis is that the use of data analytics does enhance tax compliance among taxpayers. Data analytics allowed tax authorities to make use of targeted tax enforcement efforts and detect fraud, leading to improved overall compliance rates.

The study highlighted the influence of large-scale analytical solutions on tax compliance. As indicated by the study's results, it was established that tax authorities were able to leverage data analytics and were able to identify taxpayer patterns and address non-compliance that were

identified from these patterns. Big Data allows tax agencies to target enforcement efforts, detect fraud, and improve overall compliance rates (Ismail et al., 2021). The analysis had limitations, as it was conducted in Indonesia and may not directly apply to other countries due to tax authorities having different tax administrations. In addition, the data could be subject to self-report bias, as it was obtained through online questionnaires. The respondents may have provided socially acceptable responses.

### 2.3.2 Empirical Evidence of the Main Challenges and Barriers Affecting the Adoption of Digital Technologies in Tax Compliance

Okunogbe and Santoro (2023a) examined the role of technology on the administration of tax, particularly in some economically challenged countries. Included in the study were countries such as Sierra Leone and Somalia, other developing countries such as Cote d'Ivoire and Zambia and countries that are more economically advanced such as Botswana and South Africa. An analysis of various studies was conducted to understand how digital technology can assist with recognising the baseline of taxpayers, monitoring tax compliance, and facilitating these processes.

The study provided an overview of the adversities among various tax groupings in Africa. The authors employed intermingling of quantitative and qualitative research techniques. The research also discussed potential obstacles affecting the acceptance and adoption of digital technology in the administration of tax such as inadequate infrastructure, resistance from taxpayers and tax collectors, and regulatory compliance. In the study, Okunogbe and Santoro (2023a) emphasised that the lack of digital technology and automation in administration in the tax environment contributes to these difficulties. According to the authors, monitoring tax compliance without proper IT infrastructure is more difficult.

While digital technologies could improve certain aspects of tax compliance like data processing and accuracy, it raises concerns about the security of data, privacy, and taxpayer rights (Okunogbe & Santoro, 2023a). This is because risks related to digitalisation, such as cyber threats, unauthorised access to information, and data breaches, pose significant obstacles to the implementation of digital technology within tax administration. These risks are not fully understood or measured.

When individuals send electronic returns, they get concerned if their financial information will remain confidential because they think that personal data can be hacked. South Africa faces

similar tax revenue challenges and has been exploring technology-driven solutions. However, it has a unique tax landscape with elements such as a country specific progressive individual tax rate which the paper does not cover. In addition, the paper does not address the current economic climate characterised by slow growth. The research conducted also suggests that there should be comprehensive approaches for addressing these weaknesses to make modern technologies better at improving tax administration.

Fanelli (2021) conducted research relating to challenges experienced by small and medium enterprises (SMEs) in rural areas across several European countries, which included Greece and Hungary, in which countries new digital technologies is still developing. The study was completed by utilising a quantitative research design based on secondary data from research studies conducted over the past two decades. Key findings from the study showed that inadequate infrastructure like internet connectivity in rural areas is a barrier to the embracing of digital technologies. According to Fanelli (2021), narrowed availability to financial resources also serves as a barrier to investing in tools which provide access to digital technologies. Digital technology implementation has high upfront costs and ongoing expenses which may discourage adoption (Fanelli, 2021).

The research also found that for SMEs, especially those with limited financial resources, adopting and maintaining technology can be expensive (Fanelli, 2021). Some SMEs lack technological education, and therefore awareness of available digital technologies or have limited knowledge about their benefits. The study explored many aspects relating to SMEs. However, it is limited in that it only covered the rural SMEs in a specific area in which the social circumstances are completely different to countries like South Africa and where access to internet connection could be due to lack of access to electricity.

The study by Hendriks and Maposa (2020) investigated the impact of e-filing, the SARS online tax filing submission system, on tax compliance behaviour and its collection efforts. The e-filing system was implemented by SARS to streamline the tax submission process for taxpayers in South Africa (Hendriks & Maposa, 2020). The study aimed to assess how the adoption of e-filing affects taxpayers' compliance levels. To perform this assessment, the authors used a qualitative research method. Data was collected through a survey administered to tax practitioners in the Free State Province of South Africa.

These tax practitioners are essential in assisting taxpayers with their tax compliance obligations, and their perspectives illuminate critical points regarding the impact of e-filing on

tax compliance. By focusing the encounters these practitioners experienced, the study sought to uncover insights into how e-filing influences taxpayer behaviour and the operational aspects of tax compliance. The authors' research was limited to tax practitioners in a specific geographical area and focused solely on the e-filing system, which is just one of the digital technologies available for tax obligation management in South Africa. Other technologies and platforms may also be instrumental in enhancing tax compliance. By concentrating only on e-filing with recent enhancements, the study does not address the broader landscape of digital tax tools and their potential to enhance tax compliance.

Shabangu (2020) completed a systematised review of literature obtained from quality journals, using university-provided databases. The aim of Shabangu's study was to evaluate how digitalisation impacts tax administration, particularly in the context of small, medium, and micro enterprises (SMMEs) (Shabangu, 2020). The literature was focused on the main constructs of digitalisation, tax administration and SMMEs over the span of the years 2015 to 2019 (Shabangu, 2020).

The review found challenges within the current tax administration that could hinder SMME's tax compliance such as issues related to the complexity of digital innovation, the cost of adopting the technology, and the varying levels of digital literacy among these enterprises. These complications can make it more difficult for them to steer tax procedures and policies in order to adhere to becoming tax compliant (Shabangu, 2020). Shabangu (2020) concentrated only on SMME's during a short period of under five years. By concentrating solely on SMMEs, the author's review overlooks the experiences and challenges faced by other taxpayers that play a vital role in the country's tax administration. They significantly contribute to tax revenue of the country and studies need to include them.

## **2.4 Summary**

In summary, research has explored the complex interplay between tax compliance and the adoption of digital technologies. However, studies on factors and challenges affecting adoption do not fully capture the South African landscape, for example, the availability of a robust digital infrastructure and the availability of the infrastructure in a single research effort. Studies have limitations such as small sample sizes and lack of diversity.

However, by the employment of advanced research methodologies, the studies have revealed that digital technology adoption can improve taxpayer behaviour and streamline tax

compliance processes. The insights gathered from the studies accentuate the capabilities of digital technology in enhancing tax compliance and these findings pave the way for more informed policies and strategies.

## **CHAPTER 3: RESEARCH METHODOLOGY**

### **3.1 Introduction**

The rationale of this research was to investigate the adoption and employment of digital technologies within tax administration in South Africa. With this in mind, the research also aimed to assess the key determinants of this adoption process, providing an understanding of the elements that either encourage or hinder the acceptance and adopting of digital technologies in tax administration. With the insights gathered, the research conducted sought to offer insights into the role played by the acceptance and implementation of digital technology in enhancing tax compliance in South Africa. The study was a review of academic literature and was guided by the research framework developed by Arksey and O'Malley (2005) and supported by Pham et al. (2014).

### **3.2 Research Design**

According to Arksey and O'Malley (2005), a scoping review of literature aims to chart the significant concepts, categories of evidence, and unexplored research related to a specific topic. It is an organised approach that is employed to gather and systematise diverse evidence on a newly emerged or sophisticated subject that has received restricted interest in scientific literature (Peters et al., 2022). Scoping reviews have become a common and widely adopted method for producing evidence for researchers and policymakers across diverse fields.

Peters et al. (2022) provide additional guidelines on conducting scoping reviews, expanding on the model Arksey and O'Malley (2005) suggested. The authors highlight the imperative of clear and thorough protocols to maintain the quality and transparency of scoping reviews, which cover the essential elements and provide structured guidance on presenting results. The guidance provided in the Peters et al. article was utilised in this study to ensure comprehensive coverage of all research aspects.

This study required an assessment of the adoption of digital technologies to enhance tax compliance with specific reference to South Africa; therefore, the review of selected studies spoke to that requirement. It involved conducting an extensive search across primary literature databases to identify relevant studies on tax compliance and on adoption of digital online technology amongst taxpayers in South Africa.

Essential aspects of existing research were explored. Firstly, research focused on the prospects, obstacles, and consequences of digital adoption in tax in different countries, which can provide valuable insights into the South African context. Thereafter, the study examined how digital technologies enhance tax compliance. By conducting a rigorous empirical analysis, this research contributes valuable perspectives and advanced methodologies tailored to the South African context, offering guidance for policymakers, tax authorities, and researchers.

A scoping review was completed utilising the design proposed by Arksey and O'Malley (2005), organised as follows:

1. Identification of research questions guided the scope and direction of the review.
2. Relevant literature pertinent to the research questions was identified.
3. Study selection chose which literature from the gathered collection to include in the review based on relevance and quality.
4. Data charting which involved extracting and organising key information from the selected studies.
5. Compiling, summarising, and reporting the research results involved analysis of the extracted data to provide an overview of the findings. The results presented in a way that addressed the research questions and highlighted trends or gaps.

The chosen framework included an optional sixth step, which involves stakeholder consultation. This step was bypassed in the undertaken research. The review of existing literature sufficiently addressed the research intention, making further consultation unnecessary for the study's objectives.

### **3.3 Research Questions**

The study is based on two research questions which the scoping review intended to provide answers to:

1. What are the key factors that influence the adoption and implementation of digital technologies in tax administration in South Africa?
2. What are the main challenges and barriers that affect the adoption of digital technologies in tax compliance in South Africa?

### **3.4 Relevant Articles**

This study, through the conduction of an intensive literature analysis, builds on prior research to offer new insights, perspectives, and advanced methodologies specific to the adoption of digital technologies to enhance tax compliance in South Africa. The aim centred on expanding the discourse of tax compliance within the South African context and providing tax authorities policymakers, and researchers with a more detailed understanding of how digital technology influences taxpayer behaviour and compliance.

A thorough search was undertaken across primary bibliographic records and literature to identify relevant studies. The sources included academic journals and articles from Google Scholar, ResearchGate and Google. These search engines were selected for their extensive range of articles and the ability to directly request publications from authors, which ensured high consistency, reliability, and quality, while minimising the risk of study duplication and error.

The observation period extended from 2019 to 2024. During this period, the tax revenue authority improved online tax submissions by adding auto-assessment and additional features to their electronic filing system. This represented a significant advancement of digital technology adoption in tax compliance. Only English-language studies were considered due to translation constraints. The data search keywords derived from the research questions included were the following: taxation, digital tax, tax, tax compliance, electronic tax system, digital technology adoption, South Africa, tax administration, digital infrastructure.

### **3.5 Study Selection**

The inclusion criteria involved selecting articles from predefined sources using specific keywords, which were then refined for relevance. This technique assured that the articles were highly relevant to the research and contributed to a more accurate and targeted analysis. The selected literature also met the requirements of containing evidence supporting the overarching research objectives and research questions.

In the Arksey and O'Malley (2005) blueprint for a scoping analysis, the study selection is a vital step. It defines the scope and focus by setting inclusion and exclusion criteria, ensuring only relevant studies are considered. This study made use of this process to guarantee

comprehensiveness, including all relevant literature. This also allowed for the maintenance of quality and relevance, as there was adherence to predefined criteria.

The study selection process followed the flow outlined in figure 1 below:

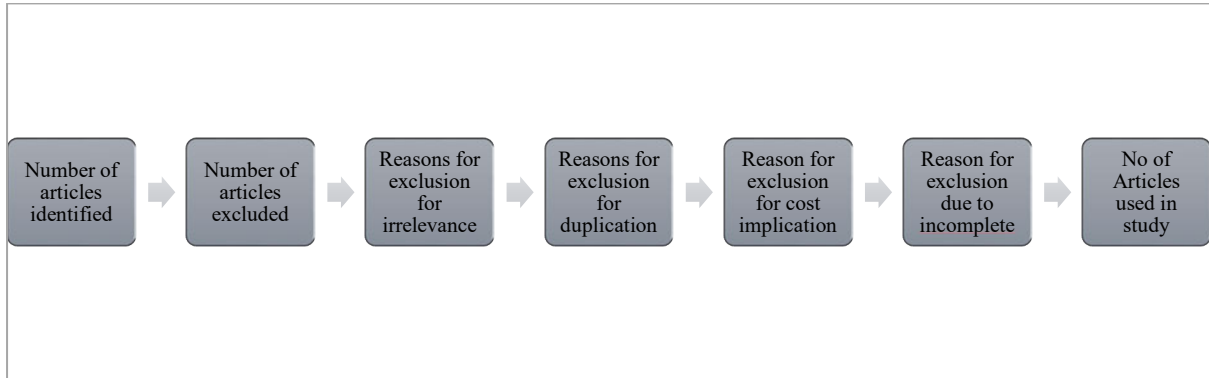


Figure 1: Study Selection adapted from Peters et al. (2022)

### 3.6 Data Charting

The Arksey and O'Malley (2005) mapping for scoping studies provided a detailed approach to data charting. During this process, literature sourced from the search was methodically charted after a thorough review to ensure alignment with the inclusion criteria as outlined to answer the research questions. The chart systematically organised and summarised data from selected studies according to key themes and issues relevant to the research questions and research objectives and was organised as follows:

- Author(s)
- Title
- Aim of the study
- Year of publication
- Geographic setting
- Research methodology
- Study population
- Main findings
- Conclusion

Table 1 provides systematic information on the articles retrieved from the searches:

Table 1: Articles retrieved from the searches. Adapted from Peters et al. (2022)

No	Title and Author(s)	Year of Publication	Source	Included/ Excluded	Reason for Exclusion
1	“Emerging Digital Technologies to Improve Tax Compliance and Administration Efficiency: A Systematic Literature Review” (Hesami et al., 2023).	2023	Google Scholar	Excluded	Excluded as the exploration is based on the topic: “Digital Transformation of Tax Administration and Compliance: A Systematic Literature Review on E-Invoicing and Prefilled Returns” (Hesami et al., 2024). All findings from the previous study are included, therefore rendering the study irrelevant for the purposes of this research.
2	“A Improving Tax Collection Efficiency Through the Use of Technology: A Case Study of African Governments” (Akepe, 2023).	2023	Google Scholar	Included	Not applicable since the study is included.
3	“The Potential Impact of the 4IR on Tax Administration in South Africa” (Van Rooi, 2023).	2023	Google Scholar	Included	Not applicable since the study is included.
4	“Analysis of the influence of digital technology, tax knowledge, and tax socialization on taxpayer compliance	2023	ResearchGate	Excluded	The article is exclusively based on individual taxpayers from the Pratama Praya tax office in Indonesia. The sample does not provide insights relevant to the unique tax and economic landscape of

No	Title and Author(s)	Year of Publication	Source	Included/ Excluded	Reason for Exclusion
	in tax service office Pratama Praya” (Rusdi et al., 2023).				South Africa, therefore rendering the study irrelevant for the purposes of this research.
5	“A systematised review of the literature related to digitalisation and tax administration” (Shabangu, 2020).	2020	Google Scholar	Included	Not applicable since the study is included.
6	“Designing effective policies to address the challenges of global digital tax reforms” (Nembe & Idemudia, 2024).	2024	ResearchGate	Excluded	The article is not relevant to the study as it addresses digital tax only, and not the use of digital technology in tax administration, therefore rendering the study irrelevant for the purposes of this research.
7	“Electronic-Filing [Tax] Fraud in South Africa: Perceptive and Trends” (Shandu & Maluleke, 2023).	2023	Google Scholar	Excluded	The study was conducted with 13 participants highlighted e -filing cybercrime and fraud with KwaZulu-Natal (KZN) Province of South Africa, One of the main focuses of the study was the relationship between various law enforcement and tax authorities in KZN. There is insufficient detail on the adoption of the technology for the purposes for the review. Therefore, the study irrelevant.

No	Title and Author(s)	Year of Publication	Source	Included/ Excluded	Reason for Exclusion
8	“Tax Knowledge, Tax Complexity and Tax Compliance in South Africa” (Naape, 2023b).	2023	Google Scholar	Included	Not applicable since the study is included.
9	“Trust in government, tax digitalization and tax education influence tax compliance with experience as a moderation” (Haq & Tarmidi, 2024).	2024	ResearchGate	Excluded	The research took place in Indonesia. The relevance to South Africa is minimal due to historic factors, rendering the study irrelevant for the purposes of this research.
10	“Perceived Online Tax Compliance Measures on Tax Compliance among Online Traders in Kenya” (Kiprono et al., 2023).	2023	ResearchGate	Excluded	While the study was conducted in Uasin Gishu, Kenya, it specifically focused on online traders who engage in various forms of e-commerce who use the internet to carry out their business activities. Online traders alone are not the focus of the research to be undertaken, rendering the study irrelevant for the purposes of this research.
11	“Adoption of e-Government Services: Exploring the Case of Electronic Tax Filing” (Nisha et al., 2016).	2022	ResearchGate	Excluded	The study suggests a framework for identifying the factors influencing adoption elements in Bangladesh only, therefore rendering the study irrelevant for the purposes of this research.

No	Title and Author(s)	Year of Publication	Source	Included/ Excluded	Reason for Exclusion
12	“The Adoption and Usages of Technology in SMEs: The Case of Making Tax Digital” (Skoumpopoulou & Crisp, 2020).	2020	ResearchGate	Excluded	The study explores how Small and Medium Enterprises adopt and utilise technology, with a specific focus on the United Kingdom initiative called Making Tax Digital (MTD). The study does not examine aspects for South Africa, therefore, rendering the study irrelevant for the purposes of this research.
13	“Exploring the key factors influencing the actual usage of digital tax platforms” (Abu-Silake et al., 2024).	2024	ResearchGate	Included	Not applicable since the study is included.
14	“An Assessment of Tax Digitalisation and Tax Compliance Relationship in Cameroon: The Mediating Role of Behavioural Intentions” (Fossung & Warah, 2020).	2022	Google Scholar	Excluded	Although the researchers investigated the connection between digitalisation and tax compliance in Cameroon, Although the researchers investigated the connection between digitalisation and tax compliance in Cameroon, there are tax structural differences compared to South Africa. This means that the findings from the Cameroonian context are not fully

No	Title and Author(s)	Year of Publication	Source	Included/ Excluded	Reason for Exclusion
					applicable. Therefore, rendering the assessment irrelevant for the purposes of this research.
15	“The adoption of e-government in the tax administration: a scoping review” (Respati, 2020).	2020	ResearchGate	Included	Not applicable since the study is included.
16	“Adoption and Success in the Digital Transformation of E-Tax Services: An Empirical Study” (Celik & Gurses, 2022).	2022	ResearchGate	Excluded	The article is based on taxpayers in Turkey only. Due to South Africa's diverse population, the relevance is minimal. Therefore, the study irrelevant for the purposes of this research.
17	“The Determinants for Accepting and Using e-Government Revenue Application (e-filing)” (Mashabela & Kekwaletswe, 2020).	2020	Google Scholar	Included	Not applicable since the study is included.
18	“The Mediating Role of Adoption of an Electronic Tax System in the Relationship Between Attitude Towards Electronic Tax System and Tax Compliance” (Night & Bananuka, 2020).	2020	Google Scholar	Included	Not applicable since the study is included.

No	Title and Author(s)	Year of Publication	Source	Included/ Excluded	Reason for Exclusion
19	“The Mediating Role of Electronic Tax System Adoption in the Relationship Between Attitude Towards Electronic Tax System and Tax Compliance” (Yakubu et al., 2022).	2022	Google Scholar	Excluded	The research was cross sectional meaning it only captured data at one point in time. The study was confined to the small businesses Tamale Metropolis in Ghana, which may have different socio-economic and regulatory environments compared to South Africa. These differences may affect how the findings apply to South Africa. Therefore, even though the study is conducted in Africa, it is irrelevant for the purposes of this research.
20	“Influence Artificial Intelligence Technology For E-filing and Digital Service Tax (DST) in Tax Administration on Tax Compliance” (Kamil, 2022).	2022	Google Scholar	Excluded	The study was conducted in Indonesia and the relevance to the tax landscape in South Africa is minimal. The study also explored artificial intelligence use which has minimal impact on this study. Therefore, rendering the study irrelevant for the purposes of this research.
21	“Factors affecting tax compliance under electronic tax system: the case of large taxpayer’s office in Addis Ababa” (Babulet, 2021).	2021	Google Scholar	Excluded	Although the article centres on taxpayers in Addis Ababa, Ethiopia in Africa, it specifically addresses large taxpayers who have ready and easy access to digital technology. The influencing factors and

No	Title and Author(s)	Year of Publication	Source	Included/ Excluded	Reason for Exclusion
					challenges they experience may differ significantly due to variations in economic and social environments. Therefore, rendering the study irrelevant for the purposes of this research.
22	“Digital Transformation of Tax Administration and Compliance: A Systematic Literature Review on E-Invoicing and Prefilled Returns” (Hesami et al., 2024).	2024	Google Scholar	Included	Not applicable since the study is included.
23	“Tax Technology, Fairness Perception and Tax Compliance among Individual Taxpayers” (Perveen & Ahmad, 2022).	2022	Google Scholar	Excluded	The study focused on only Pakistan and targeted individual tax filers in Pakistan, who’s economic conditions are different to South African taxpayers. Therefore, rendering the study irrelevant for the purposes of this research.
24	“Exploring the relationship between taxpayers and tax authorities in the digital era: evidence on tax compliance behaviour in emerging	2024	Google Scholar	Included	Not applicable since the study is included.

No	Title and Author(s)	Year of Publication	Source	Included/ Excluded	Reason for Exclusion
	economies” (Belahouaoui & Attak, 2024).				
25	“South African Taxpayers’ Perceptions towards E-Filing” (Naape, 2023a).	2023	Google Scholar	Included	Not applicable since the study is included.
26	“Can ICTs increase tax compliance? Evidence on taxpayer responses to technological innovation in Ethiopia” (Mascagni, Mengistu & Wolfeyes, 2021).	2021	Google Scholar	Excluded	Although the study provided and outline of taxpayer responses to technology in Ethiopia, the relevant due to different economic and social settings is minimal. Therefore, rendering the study irrelevant for the purposes of this research.
27	“Online Tax System (OTS) in Pakistan: The role of Tax Service Quality (TSQ) and Information Communication Technology (ICT)” (Rana et al., 2019).	2019	ResearchGate	Excluded	The study is based on the online tax system in Pakistan. It explored the role of the systems. There are differences in the studied tax landscape and systems to South Africa, therefore rendering the study irrelevant for the purposes of this research.
28	“ICT and Tax Compliance: An Examination of the Policy, Laws and Administration” (Nwachi, 2020).	2020	Google Scholar	Excluded	The study is centred on Nigeria which has different economic, and tax administrative environments compared to South Africa. The specific challenges in ICT infrastructure in Nigeria do not directly apply to

No	Title and Author(s)	Year of Publication	Source	Included/ Excluded	Reason for Exclusion
					the South African context. Therefore, the study irrelevant for the purposes of this research.
29	“Driving information communication technology for tax revenue mobilization in Sub-Saharan Africa” (Adegboye et al., 2022).	2022	Google Scholar	Excluded	This research investigates whether the increasing information and technology communication elevated public revenue collection between 2004 and 2020. As the period of review is 2019-2024, only one year of the research investigation is relevant. In addition, the study examines general ICT measures like telephone, mobile phone, and internet penetration. It is irrelevant for this study as the scoping review delves deeper into specific digital technologies and tools used in South Africa's tax administration, such e-filing.
30	“The Role of the Use of Information Technology in Orderly Financial Administration and Tax Compliance in Digital Business” (Afriani et al., 2023).	2023	ResearchGate	Excluded	The research surveyed 136 digital startup entrepreneurs/financial managers in Malang. However, this sample and geographic focus makes the study irrelevant for this research.

No	Title and Author(s)	Year of Publication	Source	Included/ Excluded	Reason for Exclusion
31	“Tax Compliance Costs and the Use of E-filing by SMMEs” (Nomlala & Oluka, 2021).	2021	Google Scholar	Excluded	The study explored tax adherence intended for compliance financial implications and e-filing motivations for small businesses in Ugu district. It only considered one type of taxpayer in a small town and the study's relevance to this research is limited due to its small sample size of ten candidates and its focus on monetary tax compliance costs such as practitioners' fees, lawyers' fees, and travel expenses. Therefore, the study irrelevant for the purposes of this research.
32	“Tax Compliance and Electronic Filing” (Hendriks & Maposa, 2020).	2020	Google Scholar	Included	Not applicable since the study is included.
33	“The Tax and Technology Challenge” (Arewa & Davenport, 2022).	2022	Google Scholar	Excluded	Incomplete. There is a cost implication for the purchase of the entire study.
34	“The role of artificial intelligence in enhancing tax compliance and financial regulation” (Nembe et al., 2024).	2024	Google Scholar	Excluded	The article outlines the role rather than the adoption of artificial intelligence, therefore rendering the study irrelevant for the purposes of this research.

No	Title and Author(s)	Year of Publication	Source	Included/ Excluded	Reason for Exclusion
35	“Tax Digitalisation and Revenue Tax Compliance: The Empirical Approach” (Nwankwere, 2024).	2024	Google Scholar	Included	Not applicable since the study is included.
36	“Fiscal Regimes and Digital Transformation in Sub-Saharan Africa” (Ndulu et al., 2021).	2021	Google Scholar	Included	Not applicable since the study is included.

The flowchart (Figure 2) outlines the review of results from the articles retrieved from the searches:

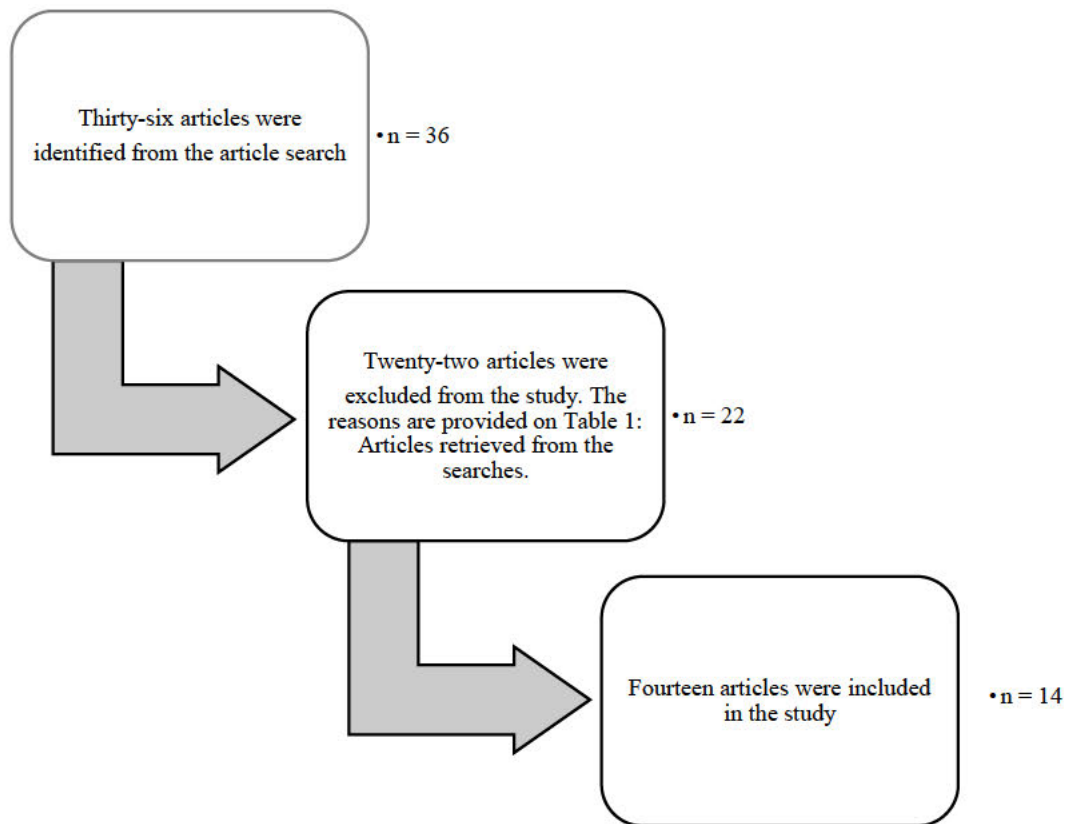


Figure 2: Article review results adapted from Peters et al. (2022) (Note: n = Number of articles)

### 3.7 Compiling, Summarising, and Reporting the Research Results

The bringing together, condensing, and stating of research discoveries involved charting the range, landscape, and dispersal of included studies, followed by a clear and consistent approach to presenting the data (Arksey & O'Malley, 2005). This step constituted the final stage of the scoping review, after all findings were thoroughly summarised and compiled to draw appropriate conclusions. This section offers a broad overview of the study, and the insights derived from existing research.

### 3.8 Summary

This research explored the adoption and implementation of digital technologies in South Africa's tax adherence and administration, assessing factors influencing this process and their bearing on enhancing tax compliance. Using a scoping review framework by Arksey and

O'Malley (2005) and Pham et al. (2014), the study review literature from 2019 to 2024 to identify key factors and challenges in digital technology adoption. Pham et al. (2014), built on the framework established by Arksey and O'Malley (2005) by emphasising the importance of methodological consistency and information collection in scoping reviews.

A comprehensive literature review was conducted in the form of a scoping review which focused on relevant studies and specific criteria for study selection. By organising the findings in line with the scoping review format devised from the Arksey and O'Malley (2005) model, this study offers a wide-ranging assessment of the contribution of digital tools to better tax adherence and compliance in South Africa. It also provides valuable insights into the gaps in the current literature and the areas where further research is needed. The scoping review was organised and summarised according to the framework to provide insights into how digital technology enhances tax compliance, offering guidance for policymakers and researchers.

## CHAPTER 4: SCOPING REVIEW

### 4.1 Introduction

This study conducted a comprehensive review of articles published in academic journals and literature databases, focusing on assessing digital technology adoption in enhancing tax compliance in South Africa. The reviewed articles, published between 2019 and 2024, were selected based on specific inclusion criteria, leading to a conclusive choice of fourteen articles. This review followed the methodological protocols from Arksey and O'Malley (2005), encompassing the steps of formulating the research question, determining pertinent studies, selecting the most appropriate studies, plotting the data, aggregating, simplifying, and presenting research data of the findings.

The studies included in the scoping review were conducted in various countries, including South Africa, sub-other African nations like Rwanda and Kenya, African countries like Morocco and other countries such as Jordan and Indonesia selected based on their relevance. During the study selection process, specific studies from South and Africa were excluded as their relevance to the research topic was minimal. This diverse geographical representation of developing and developed countries allowed for a comprehensive understanding of how digital technologies are being accepted and implemented and their contribution to tax compliance and administration in different contexts.

Another reason for including studies from such diverse countries is to highlight how different economic, political, and social factors shape the use of digital solutions in tax systems. Individually, countries face their own set of challenges and barriers, so by examining a range of settings it assists with identifying both universal trends and region-specific solutions. This broader perspective ensures that the findings are relevant to a wide range of contexts and can inform more effective, locally tailored tax policies.

By reviewing the literature in a specific manner, the study aimed to identify key determinants in the success of digital technology for the purpose behind improving tax administration and ultimately tax compliance. It also sought to highlight the challenges South Africa faces in adopting these technologies, for instance, infrastructure limitations, security concerns, and resistance from both taxpayers and authorities. The review of literature was designed to offer insights for improving tax compliance in South Africa by the implementation and use of digital

technology and guide future research and policy decisions. In doing this, the study sought to identify key factors, challenges and barriers, and research gaps in the existing literature.

This chapter offers detailed descriptions of the assessed research which includes the author(s) of the selected studies, study titles, aims of the studies, year of publication, geographical settings, research methodologies employed, and research findings and concluding results. Table 2 offers a summary of these articles.

Table 2: Reviewed studies summary adapted from Peters et al. (2022)

<b>Author(s)</b>	<b>Title</b>	<b>Aim of the study</b>	<b>Year</b>	<b>Geographical Setting</b>	<b>Research Methodology</b>	<b>Study Population</b>	<b>Key Findings</b>	<b>Conclusion</b>
LE Akepe	“Improving Tax Collection Efficiency Through the use of Technology: A Case Study of African Governments” (Akepe, 2023).	The study aimed to investigate how the adoption of technological solutions can improve revenue collection efficiency in African countries.	2023	The study focused on African countries, specifically Rwanda and Kenya.	The research used detailed case studies of Rwanda and Kenya to explore how these countries have implemented technology in their tax administration systems. Both primary and secondary data sources were utilised.	The study gathered data from various sources, including government reports, tax authority publications, and interviews with key stakeholders involved in tax administration in Rwanda and Kenya.	The researched cases suggested that use of digital technology in tax administration can improve compliance, diminish expenditures, and enhance the government revenue collection. The study does highlight key challenges and obstacles which, namely that African countries face inefficiencies, low compliance, and inadequate revenue	The conclusion of the research is that the adopting online solutions in tax administration has led to improved tax revenue collection in African countries, particularly in Rwanda and Kenya, by streamlining processes and reducing evasion. The study also calls for further

<b>Author(s)</b>	<b>Title</b>	<b>Aim of the study</b>	<b>Year</b>	<b>Geographical Setting</b>	<b>Research Methodology</b>	<b>Study Population</b>	<b>Key Findings</b>	<b>Conclusion</b>
							mobilisation in tax collection.	exploration of how these technological solutions can be tailored to the unique socio-economic and regulatory contexts of African countries.
B Van Rooi	“The potential impact of the 4IR on Tax Administration in South Africa ” (Van Rooi, 2023).	To explore the potential impact of the Fourth Industrial Revolution on South Africa and its tax authority (SARS) and provide insights	2023	South Africa	The study is a doctoral dissertation which followed a qualitative approach analysing non-numerical data	Secondary data sources were utilised including journal articles, tax legislation, reports, media releases and	The study highlighted that increased and improved tax compliance, and enhanced tax services for tax paying citizens are the positive effects of digital technology on tax administration.	The dissertation concludes that the Fourth Industrial Revolution has the potential to revolutionise tax administration in South Africa by introducing

<b>Author(s)</b>	<b>Title</b>	<b>Aim of the study</b>	<b>Year</b>	<b>Geographical Setting</b>	<b>Research Methodology</b>	<b>Study Population</b>	<b>Key Findings</b>	<b>Conclusion</b>
		into tax policies and legislative frameworks that could help SARS navigate changes successfully.			in existing literature.	relevant websites for professional bodies.	However, 4IR is expected to significantly interrupt tax due to trends like increased turnover, decreased demand in the labour market, and the need for re-skilling and upskilling.	technologies that enhance tax compliance. The study also emphasises the need for strong digital infrastructure.
T Shabangu	“A systematised review of the literature related to digitalisation and tax administration” (Shabangu, 2020)	The review was aimed at providing an understanding of the reasons for adopting digital technology and their potential to ease tax adherence	2020	The reviewed literature included studies from South Africa.	The study that was conducted was a systematised literature review.	The study reviews literature from journals focusing on the years 2015 to 2019. A total of 64 articles were identified, and	The study highlighted that digital technology in tax administration presents significant benefits, such as enhanced efficiency, improved compliance, and decreased administrative burdens. However, existing	The review found that digital technology has an impact on tax administration and offers benefits such as increased administration, reduced costs, and

<b>Author(s)</b>	<b>Title</b>	<b>Aim of the study</b>	<b>Year</b>	<b>Geographical Setting</b>	<b>Research Methodology</b>	<b>Study Population</b>	<b>Key Findings</b>	<b>Conclusion</b>
		obligation burdens on small businesses.				35 were selected for detailed analysis.	issues in tax administration that impact SMMEs must be addressed prior to a complete the transition to digital methods to prevent exacerbating non-compliance issues.	improved tax compliance. The study endorses training and resources that can help taxpayers, particularly SMMEs, use digital tax systems better and comply more easily.
B Naape	“Tax Knowledge, Tax Complexity and Tax Compliance in South Africa” (Naape, 2023b)	The study investigated the influence of tax knowledge and tax intricacies on tax conformity from	2023	South Africa	The study was accomplished by using a quantitative research method.	The study involved South African personal income taxpayers. Statistical	The research uncovered findings such as: Knowledge about tax categories, available payment options and penalisation on non-compliance is	The study concluded that enhancing tax knowledge among taxpayers can mitigate the opposing effects

<b>Author(s)</b>	<b>Title</b>	<b>Aim of the study</b>	<b>Year</b>	<b>Geographical Setting</b>	<b>Research Methodology</b>	<b>Study Population</b>	<b>Key Findings</b>	<b>Conclusion</b>
		a South African standpoint.				information was collected utilising 151 completed self-structured questionnaires.	favourably connected with tax compliance. In relation to tax compliance, this relationship is statistically significant. The study highlighted challenges and barriers related to user accessibility and system complexity.	of tax complexity on compliance and improve tax compliance rates. It also highlighted that for tax solutions to work well, taxpayers need an understanding of how to use it.
SA Abu-Silake, H Alshurafat, M Alaqrabawi and M Shehadeh	“Exploring the key factors influencing the actual usage of digital tax platforms” (Abu-Silake et al., 2024).	The authors explored the causes which are crucial to the acceptance and utilisation of an online tax	2024	Jordan	The study was conducted by using a quantitative methodology to gather and analyse primary data.	The study collected data through 394 questionnaires distributed across multiple regions in Jordan.	The study pinpointed critical elements like trust, subjective norms and supposed user-friendliness that influence the usage of digital tax platforms.	The research concluded that user-friendliness, perceived usefulness, and trust are critical factors directly affecting the

<b>Author(s)</b>	<b>Title</b>	<b>Aim of the study</b>	<b>Year</b>	<b>Geographical Setting</b>	<b>Research Methodology</b>	<b>Study Population</b>	<b>Key Findings</b>	<b>Conclusion</b>
		platform among taxpayers.						acceptance and utilisation of digital solutions in tax.
ND Respati	“The adoption of e-government in the tax administration: A scoping review” (Respati, 2020).	The review of literature was undertaken to find what has contributed to the successful deployment and implementation of digital governance for governments in tax administering, by focusing on the design,	2020	Indonesia. The reviewed studies are from over 10 countries.	The study was conducted by undertaking a scoping review.	The study reviewed 79 articles related to the deployment and implementation of e-government in tax administration, with detailed findings reported from	The research uncovered several findings which indicate that the sound deployment of digital technology in tax governing relies heavily on the effective design of systems. User-friendliness, accessibility, security and trust play significant roles in determining how well these platforms are accepted and utilised.	The review concluded that digital technology initiatives in government areas such as tax administration offer significant benefits, including increased efficiency and transparency. The study highlighted that issues such as

<b>Author(s)</b>	<b>Title</b>	<b>Aim of the study</b>	<b>Year</b>	<b>Geographical Setting</b>	<b>Research Methodology</b>	<b>Study Population</b>	<b>Key Findings</b>	<b>Conclusion</b>
		acceptance, usability factors, impacts, and challenges.				ten selected articles.		opposition to adapting to change, security concerns and the need for robust infrastructure must be addressed.
MF Mashabela and RM Kekwaletswe	“The Determinants for Accepting and Using e-Government Revenue Application (e-filing)” (Mashabela & Kekwaletswe, 2020).	The authors explored the elements of accepting and utilising the digital governance online application called e-filing among South	2020	South Africa	A quantitative research technique was implemented in the study in order to collect and examine facts. The statistical information was collected	The study’s sample was based on a satisfactory number South African taxpayers who use or have the potential to use the e-government	The research identified key findings on online submission system acceptance, highlighting that user-friendliness, usefulness, and trust are vital considerations. It also noted that information privacy and security concerns hinder	The study concluded that perceived ease of use, usefulness, and social persuasion are determinants for the acceptance and use of e-filing. These factors should be

<b>Author(s)</b>	<b>Title</b>	<b>Aim of the study</b>	<b>Year</b>	<b>Geographical Setting</b>	<b>Research Methodology</b>	<b>Study Population</b>	<b>Key Findings</b>	<b>Conclusion</b>
		African taxpayers.			through structured questionnaires distributed to South African taxpayers.	(electronic filing of tax returns).	adoption, while demographics like education, and prior tech experience further influence acceptance.	prioritised in implementing digital technology for tax.
S Night and J Bananuka	“The mediating role of adoption of an electronic tax system in the relationship between attitude towards electronic tax system and tax compliance” (Night & Bananuka, 2020).	The study aimed to scrutinise the influence of the adopting of an online tax platform and the connection between sentiments toward the electronic tax system and tax compliance.	2020	Uganda	The research adopted a cross-sectional and correlational research design, collecting data from participants at a particular time. It focused on	The study involved 214 managers in Ugandan small business enterprises (SBEs).	The research found that the adoption of a digital tax regime moderately facilitates the interrelation between attitudes towards the online platforms and tax compliance. It finds significant associations, indicating that both positive attitudes and adoption contribute to higher tax compliance.	The research finds that adopting electronic tax systems influences how taxpayers’ attitudes affect their tax compliance behaviour. According to the study, when these

<b>Author(s)</b>	<b>Title</b>	<b>Aim of the study</b>	<b>Year</b>	<b>Geographical Setting</b>	<b>Research Methodology</b>	<b>Study Population</b>	<b>Key Findings</b>	<b>Conclusion</b>
					examining the relationship between attitudes towards the digital technology system and compliance in relation to tax adherence.		The implications suggest that enhancing attitudes and promoting adoption can improve the tax compliance of small enterprises.	systems are used, positive feelings toward them can result in increased compliance.
S Hesami, HP Jenkins, and GP Jenkins	“Digital Transformation of Tax Administration and Compliance: A Systematic Literature	The study aimed to explore how emerging digital technologies, such as digital billing and the prefilling of tax returns, can	2024	Various countries worldwide. Included in the review is literature from Italy, Sweden	The methodology was a systematic literature review.	Initially the search identified 438 papers. After exclusions, 179 papers remained. A final review	The research highlighted the role of electronic invoicing (e-invoicing) and pre-filled returns in tax administration, tax compliance and costs of complying.	The study concludes that digital technologies such as e-invoicing and pre-filled returns, significantly enhance tax

<b>Author(s)</b>	<b>Title</b>	<b>Aim of the study</b>	<b>Year</b>	<b>Geographical Setting</b>	<b>Research Methodology</b>	<b>Study Population</b>	<b>Key Findings</b>	<b>Conclusion</b>
	Review on E-Invoicing and Prefilled Returns” (Hesami et al., 2024).	enhance tax compliance and administration proficiency.		Australia and China.		led to the selection of 44 papers, of which 29 papers were selected for in-depth reading.	The review also found that the prefilling of tax returns simplifies the tax filing process and helps in tax compliance.	compliance and tax administration by reducing costs and improving accuracy. It also promotes for a well-rounded approach to implementation that considers both taxpayer socio-economic realities and technology developments.
R Belahouaoui and EL Attak	“Exploring the relationship between taxpayers and	The research intended to explore the determinants	2024	Morocco	The authors followed a qualitative study design	The study evaluated interviews with 40 experts	The study suggested that the quality of the relationship, joint reliance and the	The study concluded that digital interaction between tax

<b>Author(s)</b>	<b>Title</b>	<b>Aim of the study</b>	<b>Year</b>	<b>Geographical Setting</b>	<b>Research Methodology</b>	<b>Study Population</b>	<b>Key Findings</b>	<b>Conclusion</b>
	tax authorities in the digital era: Evidence on tax compliance behaviour in emerging economies” (Belahouaoui & Attak, 2024)	shaping the association between tax regimes and tax paying citizens when it comes to digital technology, and how this connection influences the adherence to compliance in terms of tax regulations and laws in developing economies.			by involving interviews with tax inspectors, auditors, certified accountants, and tax consultants.	in Moroccan taxation.	building of credibility between tax revenue agencies and taxpayers are crucial for establishing tax compliance standards. The study asserted that better communication, simpler processes, and digitisation were found to boost tax compliance.	paying citizens and tax authorities positively influence tax compliance behaviour in emerging economies. The study mentions finding ways to build a cooperative dynamic between these taxpayers and tax administration which also

<b>Author(s)</b>	<b>Title</b>	<b>Aim of the study</b>	<b>Year</b>	<b>Geographical Setting</b>	<b>Research Methodology</b>	<b>Study Population</b>	<b>Key Findings</b>	<b>Conclusion</b>
								focuses on trust. and respect.
B Naape	“South African Taxpayers Perceptions towards E-Filing” (Naape, 2023a).	The study investigated South African taxpayers' views toward e-filing and how these perceptions impact tax compliance.	2023	South Africa	The research conducted was a quantitative study using self-structured inquiry questionnaires scrutinised through binary logistic regression.	One hundred and fifty-one observations from South African taxpayers who completed the questionnaires.	The study suggested that e-filing systems encourage greater tax compliance and statistically have an encouraging impact. The development of e-filing improves taxpayers' perceptions and significantly boosts voluntary compliance.	The research concluded that South African taxpayers generally have positive perceptions of e-filing, with factors such as ease of use influencing their acceptance of the digital technology.
C J Hendriks and H Maposa	“Tax Compliance and Electronic	In the study, the authors explored the effect of e-	2020	South Africa	The study utilised surveys sent to	136 practitioners were identified	The study found that the implementation of e-filing has contributed	The study concludes that e-filing improves

<b>Author(s)</b>	<b>Title</b>	<b>Aim of the study</b>	<b>Year</b>	<b>Geographical Setting</b>	<b>Research Methodology</b>	<b>Study Population</b>	<b>Key Findings</b>	<b>Conclusion</b>
	Filing” (Hendriks & Maposa, 2020).	filing on the tax conformance of taxpayers and included testing the efficiency of tax collection by SARS.			a predetermined audience.	in the Free State region of South Africa, of which 110 completed the surveys.	to higher levels of compliance by taxpayers as it has led to more taxpayers submitting their tax returns and paying taxes due. However, despite the success of e-filing, some taxpayers still do not comply with tax legislation. The study suggests that SARS should enhance the promotion of e-filing through tax education and effective communication to maximise its benefits.	tax compliance by simplifying the filing process and reducing the likelihood of errors. However, it also highlights the need for continuous system improvements and taxpayer education.

<b>Author(s)</b>	<b>Title</b>	<b>Aim of the study</b>	<b>Year</b>	<b>Geographical Setting</b>	<b>Research Methodology</b>	<b>Study Population</b>	<b>Key Findings</b>	<b>Conclusion</b>
I Nwankwere	“Tax Digitalisation and Revenue Tax Compliance: The Empirical Approach” (Nwankwere, 2024).	The aim was to research the impact of tax digitalisation on tax adherence.	2024	Nigeria	The study utilised a cross-sectional survey using multiple regression analysis.	The study was conducted using 603 staff members of the tax authority in the capital of Nigeria called Abuja.	The study found that tax digitalisation dimensions, such as electronic tax submission, virtual payment systems and digital reporting exert a favourable and notable effect on tax revenue generation. Electronic reporting was identified as the best predictor of revenue tax compliance.	The empirical study concluded that digital technology in tax positively impacts tax compliance, which proves that digital technology can enhance tax revenue and decrease tax evasion. The study recommended that governments should invest in digital infrastructure to support the

<b>Author(s)</b>	<b>Title</b>	<b>Aim of the study</b>	<b>Year</b>	<b>Geographical Setting</b>	<b>Research Methodology</b>	<b>Study Population</b>	<b>Key Findings</b>	<b>Conclusion</b>
								implementation of digital technology in tax administration.
B Ndulu, C Joseph and K Tryphone	“Fiscal Regimes and Digital Transformation in Sub-Saharan Africa” (Ndulu et al., 2021).	The study sought to investigate how authorities can support digitisation through tax policies in the economy in Sub-Saharan Africa.	2021	Sub-Saharan Africa	The study utilised an analytical framework combining empirical analysis and review of relevant studies.	The analysis covered 40 Sub-Saharan African countries for the period 2014 to 2019.	The research found that network coverage, the cell phone ownership and access to utilities like power are essential for internet use in Sub-Saharan Africa.	The study advocated for removing discriminatory taxes, implementing progressive taxation, and collaborating to subsidise rural internet access. The analysis encouraged authorities to create plans that

Author(s)	Title	Aim of the study	Year	Geographical Setting	Research Methodology	Study Population	Key Findings	Conclusion
								strike a balance between digital innovation and the socio-economic realities of the people they serve.

## **4.2 Introduction to the Factors Influencing Digital Technology Adoption and the Challenges and Barriers Identified in the Scoping Review**

This scoping review unpacked the adoption and implementation of digital technological platforms and solutions in tax administration in South Africa to enhance tax compliance by first identifying and then elaborating on critical elements that influence this dynamic. The influential determinants are a robust digital infrastructure, governmental support, and taxpayer education. The review highlighted that the role played by the ease of use, taxpayer behaviour, and trust in digital technology is also important in understanding their impact on tax compliance. Despite advancements in digital technology in tax administration, potential challenges and barriers such as taxpayer behaviour, trust and security perceptions, inequality in access and complexity of tax systems do persist. This comprehensive analysis provides details of the findings of the scoping review on the factors and potential difficulties influencing the integration and deployment of digital technologies in tax administration in South Africa.

The studies analysed in this scoping review covered three key geographical settings: a worldwide perspective, an African perspective, and a South African perspective. Each layer of this geographical approach provided a deeper, more contextual understanding of the subject at hand and shows how worldwide, African, and South African factors interact to shape the field of the study. To provide a comprehensive review, the chosen geographical setting was thoroughly analysed. Studies with a narrow focus, such as those limited to a specific town with small sample sizes, were excluded. Additionally, the scope of each study was assessed to determine whether it provided sufficient detail on adopting digital technology in tax administration applicable to the South African context.

The review on worldwide studies explored how digital technology is used for tax compliance globally and highlighted common influential factors and potential adversities. The studies focusing on Africa considered the continent's unique socio-economic and infrastructural conditions. The review of South African studies examined how both worldwide and African trends also manifest in the country.

The number of selected studies in each geographical setting is illustrated in figure 3:

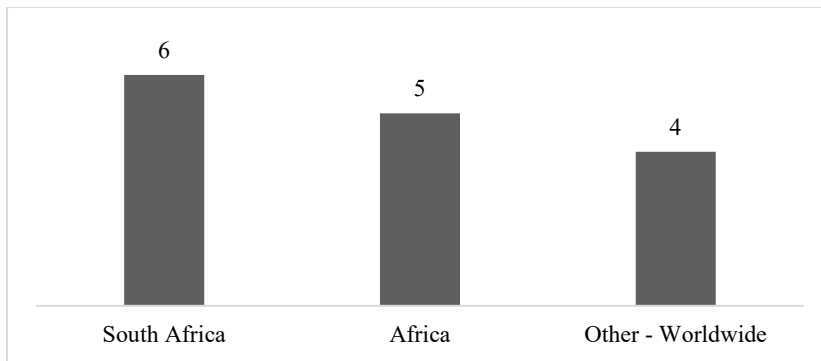


Figure 3: No of studies for each geographical setting (Source: Researcher)

### 4.3 Factors Influencing Digital Technology Adoption and Implementation in Tax Administration in South Africa

#### 4.3.1 Availability of a Robust Digital Technology Infrastructure

The integration and operation of digital technologies in tax administration in South Africa are influenced by several key factors. According to the study by Van Rooi (2023), the digital technology infrastructure in South Africa is important because it offers the necessary framework for digital technology to operate well. Van Rooi (2023) focused on the Fourth Industrial Revolution and defined it as a blend of physical and digital technology advancements which transform how systems, such as digital tax technologies, operate. The study argued that strong digital technology infrastructure helps tax authorities like SARS keep up with evolving digital technology for a more efficient, accurate, and secure tax administration (Van Rooi, 2023). Even the best designed digital technology may fail to deliver the intended benefits without strong digital technology infrastructure. (Van Rooi, 2023).

These findings of Van Rooi (2023) were echoed in the study by Akepe (2023), who shared insights on the significance of infrastructure relating to seamless deployment and acceptance of technology in tax administration within developing countries. According to Akepe (2023), without reliable internet connectivity, adequate mobile phone networks, and consistent access to electricity, the adoption of digital technology in tax will be hindered. The research emphasised that by leveraging digital technology, tax processes are streamlined by tax authorities to enhance tax compliance activities.

The study conducted by Ndulu, Joseph and Tryphone (2021) further emphasises the magnitude of robust digital technology infrastructure for enhancing tax compliance. Ndulu et al.'s (2021)

study of Sub-Saharan Africa includes South Africa in the list of countries studied and supports the fact that network signal availability, mobile cellular device possession, and access to a continuous and uninterrupted electrical power supply are crucial factors for facilitating the adoption of digital technology for enhancing tax compliance. For example, mobile phone ownership and network coverage enable taxpayers to easily interact with tax authorities via mobile platforms, while reliable electricity ensures that digital services remain operational without disruption.

Van Rooi (2023), Akepe (2023) and Ndulu et al. (2021) highlight that while digital technological platforms and solutions have the ability to transform the administration of tax and boost compliance of tax, their success largely depends on the digital infrastructure in place. This necessity is also echoed through empirical research by Nwankwere (2024), who provided practical insights into the success of digitalisation in improving tax administration and compliance rates. As per the study by Nwankwere (2024), investment in robust digital infrastructure supports the implementation of digital tax systems.

#### 4.3.2 Government and Tax Policy Support

The research completed by Hendriks and Maposa (2020) highlighted that strong support from government and clear tax policies are necessary for adopting and implementing online tax technology in tax administration in the context of South Africa, emphasising the need for this support to be continuous. Indeed, SARS has been proactive with promoting digital technology, which has improved tax compliance (Hendriks & Maposa, 2020). One example of this proactive role is seen with the initiative of e-filing, which allows taxpayers to submit their returns online, and has been vital in streamlining the tax compliance process. This proactive approach creates an enabling environment for the embracing of digital technologies within the tax environment (Hendriks & Maposa, 2020).

Respati (2020) also emphasises the importance of proactive government initiatives in digital technology adoption. Respati (2020) argues that successful digital transformation in tax administration is not just about the technology itself, but also about the broader institutional support and leadership that drives these changes. The government's role in leading the change, in collaboration with tax authorities like SARS, is essential for overcoming any barriers to adoption, such as resistance from taxpayers or tax officials, or the lack of adequate infrastructure (Respati, 2020).

Government support in the economic environment also holds a position in adopting digital technology in tax (Shabangu, 2020). The study by Shabangu (2020) highlighted the need for government support in policy and regulatory frameworks, investment in digital infrastructure, and initiatives to enhance digital literacy among taxpayers. Government financial incentives or subsidies can encourage businesses to transition to a digital technology platform for tax compliance (Shabangu, 2020). The study concluded that governments can create an enabling environment that promotes efficient, transparent, and user-friendly digital technology for tax compliance.

#### 4.3.3 Awareness and Education

Education on the positive outcomes and functionalities of digital innovation and solutions in tax is crucial factor for its successful adoption. Research by Naape (2023b) indicates that increased awareness and education can positively influence tax compliance. Notably, taxpayers with specific skills and higher education are more likely to utilise online tax filing over manual tax filing. According to Naape (2023b), taxpayers familiarity with technology and frequent usage of automated processes in their daily lives influence their choice to use digital technology. With these findings, the research highlighted that there is a connection between awareness and education and the use of digital technology for tax compliance (Naape, 2023b).

This assessment is supported by Abu-Silake, et al. (2024), who found that adopting digital technology is inclined to occur among taxpayers with higher levels of education. By improving taxpayers' understanding, awareness and education, their willingness to transition from paper based tax filing to digital technology can be enhanced (Abu-Silake et al., 2024). Insights by Night and Bananuka (2020) indicated that positive attitudes towards digital technology in tax can enhance compliance. This highlights the importance of developing positive attitudes through education and awareness campaigns. By demonstrating the benefits and functionalities of these technologies to taxpayers, they are more likely to adopt them (Night and Bananuka, 2020).

#### 4.3.4 Ease of Use of the Digital Technology

The user-friendliness and practicality of digital technology in tax are significant determinants of its acceptance. The study by Mashabela and Kekwaletswe (2020) found that if the digital technology is easy to navigate and understand, taxpayers are more inclined to use it. The

importance of a user-friendly interface is emphasised with features such as simple language, clear instructions, and intuitive navigation which can enhance the user experience (Mashabela & Kekwaletswe, 2020). These features reduce the effort required to learn and operate the system, making it more available to a wider audience.

The findings in Mashabela and Kekwaletswe (2020) study underline the importance of designing digital technology that is accessible and easy to navigate digital technology for tax compliance. By doing this, the optimisation of tax compliance takes place. This can lead to quicker tax administration which benefit both the tax authority and the taxpayer (Mashabela & Kekwaletswe, 2020). Mashabela and Kekwaletswe (2020) also emphasised that providing adequate technical support and training can increase the ease of use. This support can help users overcome any difficulties they encounter while using digital solutions, resulting in increased confidence and willingness to use the technology.

The study by Naape (2023a) supported the view that the perception of user friendliness of digital technology in tax is a contributing factor in adopting it for tax compliance, an example being e-filing. Out of one hundred and fifty-one respondents to a survey conducted by Naape (2023a), eighty percent of respondents indicated no difficulty in using e-filing. The study found that it often includes step-by-step instructions and help features that guide users through the filing process (Naape, 2023a).

Moreover, the use of digital technology support helps taxpayers feel more confident, reduces the likelihood of errors and enhances the adoption of the digital platform. The study by Hesami et al. (2024), emphasised that digital technologies like prefilled tax returns are user-friendly, and due this, they enhance tax compliance. With prefilled returns, rather than starting from scratch with filing of tax returns, taxpayers only need to review and confirm the information, simplifying the process. Taxpayers are faced with fewer administrative tasks by automating and streamlining these processes and this reduces the overall burden making compliance easier (Hesami et al., 2024). The authors emphasise that the ease of the user-friendly design of digital tax technologies are factors in their adoption and effective use.

Studies by Mashabela and Kekwaletswe (2020), Hesami et al. (2024) and Naape (2023a), highlight that when digital platforms are easy to navigate, with clear instructions and intuitive interfaces, taxpayers are more likely to use them.

#### 4.4 Challenges and Barriers Affecting Digital Technology Adoption for Tax Compliance in South Africa

Despite the positive factors that influence the adoption and implementation of digital platforms and solutions in the administering of tax, studies have shown that there are adverse issues affecting its adoption. The literature review in the study highlighted similar difficulties, as illustrated in Figure 4 below.

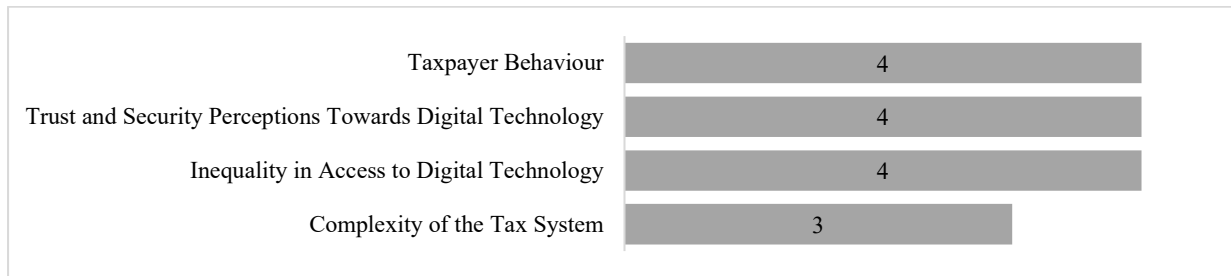


Figure 4: Number of studies indicating key challenges and barriers (Source: Researcher)

The decision to include a comparable number of studies from each of the four category issues: taxpayer behaviour, inequality in access to digital technology, trust and security perceptions, and complexity of the tax system in the scoping review ensured a balanced, comprehensive exploration of the difficulties to adopting digital technology in tax administration.

##### 4.4.1 Taxpayer Behaviour

A critical area that was highlighted by the studies reviewed is taxpayer behaviour. The findings showed that taxpayer behaviour is instrumental and contributes substantially to tax compliance. When the tax system is too complex, taxpayers may struggle to grasp how to fulfil their tax commitments and display negative behaviour towards tax compliance (Naape, 2023b). According to Night and Bananuka (2020), negative behaviour towards digital technology in tax influences its implementation and adoption. If taxpayers do not see clear benefits or improvements from using digital technology, they may be less inclined to adopt it (Night & Bananuka, 2020).

In South Africa, a study by Mashabela and Kekwaletswe (2020) found that taxpayers' behaviour towards tax compliance is fuelled by their beliefs. If taxpayers believe that the digital technology will not make their tax filing process more accurate and less time-consuming, they are less likely to adopt it (Mashabela & Kekwaletswe, 2020). The study also highlighted that demographic factors such as age play an important role. Older taxpayers may be less

comfortable with digital technologies compared to younger ones (Mashabela & Kekwaletswe, 2020). However, Hendriks and Maposa (2020) uncovered that despite being successful in the adoption of digital technology, some taxpayers still do not comply with tax legislation. This indicates that there are other taxpayer behavioural barriers preventing the adoption of digital technology for full tax compliance (Hendriks & Maposa, 2020).

#### 4.4.2 Inequality in Access to Digital Technology

Disproportionate accessibility to digital technology poses another obstacle across the research of several authors. The existence of inadequacies in tax collection and low compliance are prevalent due to inequality in access to digital technology (Akepe, 2023; Ndulu et al., 2021). The analysis completed by Ndulu et al. (2021) signals that availability of internet, mobile cellular device possession, and access to a continuous and uninterrupted electric power supply are vital for internet use in Sub-Saharan Africa. The adoption and implementation of digital technology is more difficult where such services and infrastructure is often lacking, particularly in rural areas. In the study by Van Rooi (2023), the author found that inequality in access to digital technologies between urban and rural areas poses a significant problem. Restricted internet connectivity coupled with limited availability of digital devices in rural regions can hinder the widespread adoption of digital technology (Van Rooi, 2023). This disparity means that while urban areas may benefit from advancements in digital technology tax administration, rural areas may lag behind due to insufficient infrastructure and resources (Van Rooi, 2023).

Transitioning to digital technology for Small, Medium, and Micro Enterprises also presents risks of exacerbating non-compliance issues (Shabangu, 2020). These enterprises often face unique challenges that can be amplified by the acceptance of digital technology. They also lack the necessary resources, technical expertise, and infrastructure to successfully adopt and use digital technology for tax compliance (Shabangu, 2020).

#### 4.4.3 Trust and Security Perceptions towards Digital Technology

When people trust that others are using digital technology, they are more likely to utilise the technology themselves (Abu-Silake et al., 2024). The study by Abu-Silake et al. (2024) found that trust is a critical factor influencing perceptions toward digital technology. Social trust positively affects the usefulness of the digital tax platform. This trust ensures that taxpayers feel confident in the security and reliability of the platform, which, in turn, encourages its

adoption and use (Abu-Silake et al., 2024). The study concluded that higher levels of social trust can enhance the perceived usefulness of digital solutions in tax.

Concerns about data security in digital technology can impact its adoption and usage (Respati, 2020). The research by Respati (2020) emphasises that trust in the digital technology's security is essential for taxpayers to feel confident to adopt and utilise the technology. The study highlighted that a lack of skills and resources within tax administrations, and coupled with insufficient knowledge among taxpayers, can lead to increased concerns regarding security risks when adopting and utilising digital technology (Respati, 2020). This is because both tax officials and taxpayers may not be fully equipped to handle digital technologies securely.

The study by Mashabela and Kekwaletswe (2020) found that building trust in the security of digital technology would ensure that taxpayers feel their data is safe, which is vital for the adoption of the technology in tax compliance. If their trust in the safety of the technology is not present, it will pose an obstacle to adopting the technology. The perceived security risks associated with using digital platforms, such as identity theft and forgery, negatively impact users' willingness to adopt these technologies (Mashabela & Kekwaletswe, 2020).

Mutual confidence between taxpayers and authorities is therefore essential for the use of digital technology for tax adherence activities, according to the study by Belahouaoui and Attak (2024). Sources of mistrust, such as perceived corruption or unfair practices will impact the adoption of digital technology amongst taxpayers (Belahouaoui & Attak, 2024). The study also highlighted that trust in the digital interactions and the security of the systems used by tax authorities significantly influence taxpayer compliance behaviour. When taxpayers have low or no trust in the digital solution presented to them, they will steer away from utilising the technology.

#### 4.4.4 Complexity of the Tax System

Previous studies highlight that the intricacy of the tax system itself can pose a challenge or be a barrier. In the research by (Naape (2023a), the authors found that if the digital platforms are not designed to simplify the tax processes, they may not reduce the tax compliance burden. Complexity can create frustration and confusion among taxpayers which could eventually lead to lower tax compliance levels (Naape, 2023a). In addition to complexity of tax systems, Hendriks and Maposa (2020) found that a shortage of technical skills among taxpayers can impede the use of digital tax systems. Training and capacity-building initiatives are necessary

to equip users with the required skills. This, coupled with resistance to embrace and implement new digital technologies can slow down the implementation and adoption process (Hendriks & Maposa, 2020). This resistance can stem from a lack of understanding, fear of the unknown, or dissatisfaction with the current systems.

The complexity in the tax system and negative perceptions about digital tools deter acceptance of technology. Both Abu-Silake et al. (2024) and Respati (2020) thus demonstrated that trust and security concerns are critical for taxpayers to feel assured that their information is safe when accepting and utilising digital platforms. The studies by Akepe (2023); Ndulu et al. (2021) and Shabangu (2020) support that inequality in access to digital technology, especially in rural areas and among small enterprises presents barriers to its widespread acceptance and usage for compliance of tax.

#### **4.5 Summary**

The literature included in this scoping review aimed to provide a full spectrum comprehension of how the deployment of digital technologies in South Africa has enhanced tax compliance by streamlining processes through e-filing and prefilled tax returns. The review of literature accentuated the critical role of digital technologies in enhancing tax compliance in South Africa. It identified key factors such as robust digital infrastructure, government support, and taxpayer education as essential for successful adoption. However, it also revealed that difficulties and obstacles like inequality in access, complexity of tax systems, and trust issues do persist. The review highlighted the need for further research on the long-term impacts, different taxpayer segments, and integration with existing systems. Addressing these gaps can help tailor digital technology in tax and promote an inclusive tax administration in the tax regime.

## **CHAPTER 5: SUMMARY, CONCLUSION AND RECOMMENDATIONS**

### **5.1. Introduction**

This section provides the summary, conclusion and recommendations to the scoping review. The summary, conclusion, and recommendations have been drawn from the previous chapter which focused on a review of carefully selected literature for the study on assessing digital technology adoption in enhancing tax compliance in South Africa. The conclusions have been drawn on the revelations of the review and inform the recommendations. The chapter concludes with suggestions for future researchers.

### **5.2. Summary of Study**

The selected studies for this scoping review were devoted to understanding the influence of online solutions in enhancing tax compliance in South Africa. Literature findings on this influence on tax compliance were from different perspectives ranging from worldwide studies, African studies to South African studies. The study was conducted by applying the scoping review structure of Arksey and O'Malley (2005). The concentration of effort was particularly relevant for South Africa, where digital transformation in tax administration has gained momentum, despite potential hurdles such as infrastructure limitations, digital literacy issues, and socio-economic disparities. By drawing insights from a range of studies, the review sought to provide a more nuanced understanding of how digital technologies enhance tax compliance in South Africa.

#### **5.2.1 Factors Influencing the Adoption and Implementation of Digital Technologies in Tax Administration in South Africa**

Strong and reliable digital technology infrastructure is vital for the employment of digital platforms and solutions in tax administration. This type of infrastructure is powered by essential components like internet connectivity, mobile phone networks, and electricity. The adoption of digital technology will be hindered without these essential components. The South African government and tax policies play an important role in enhancing digital technology adoption. Technology like the SARS e-filing has made tax processes easier and has improved tax compliance. Further investment into this type of technology as well as digital literacy of these advancements is essential for further progress.

Educating taxpayers about the positives and functionalities of digital tax technologies is crucial in encouraging adoption. Taxpayers with higher education levels and familiarity with technology are more likely to embrace digital technology. Awareness campaigns can thus influence positive attitudes towards digital technology in tax further enhancing compliance. Moreover, the user-friendliness of the technology in tax administration influences adoption. Technology that is easy to navigate and provides clear instructions make it easier for taxpayers to utilise.

### 5.2.2 Challenges and Barriers Affecting Digital Technology Adoption in Tax Compliance in South Africa

Taxpayer behaviour has a pertinent role in the challenges of adopting digital technology. They are less likely to adopt any digital solutions if the tax regime is complex or if they do not see its benefits. Both beliefs and demographics such as age, influence how taxpayers engage with digital technology in tax compliance. Younger taxpayers are more comfortable with the technology.

Unequal access to digital technology like the divide between urban and rural zones creates a barrier to its incorporation. This divide does not allow all taxpayers to access and utilise the technology to gain familiarity with it.

Concerns about data security can negatively affect both the acceptance and usage of digital technology in tax compliance. If taxpayers do not feel confident that their data is secure, they may be hesitant to make use of the digital technology made available to them.

If digital technology does not simplify the tax process for taxpayers, it poses a challenge as it may increase confusion and frustration, leading to lower tax compliance. A lack of technical skills among taxpayers can lead to resistance to adopting the technology and can slow down its adoption.

### **5.3. Conclusion**

The result of the scoping review revealed that digital technology adoption enhances taxpayer compliance with a particular focus on South Africa. Digital technologies such as pre-filled returns and e-filing do minimise human error. This leads to more accurate tax filings and improved compliance. It improves the relationship between taxpayers and tax regimes by providing clear, accessible, and transparent processes. This transparency encourages

compliance by making the tax administration more understandable and trustworthy for taxpayers. Streamlined processes and faster transactions through digital technology make it simpler for taxpayers to comply with tax regulations.

These technologies have made tax administration more accessible and user-friendly. In South Africa, SARS has increased convenience and ease of use with its digital platforms. Their continuous efforts to create safe and reliable digital platforms for tax compliance only add to the taxpayers' confidence. Overall, the advancements in digital technology have contributed to an easier, transparent, and compliant tax environment in South Africa and will likely continue to do so as digital technology advances. However, as we advance with technology, it is crucial to address all current and potential challenges and barriers to ensure continued success.

#### **5.4 Recommendations**

The recommendations stem from the insights derived from the reviewed studies:

To enhance tax compliance through digital technology, it is recommended that the government implement comprehensive digital literacy and tax education programs tailored to diverse demographic groups. These programs should emphasise the benefits of adopting digital technology, such as ease of use and convenience.

Trust in the tax administration is crucial for improving taxpayer behaviour. It is recommended that the government increase transparency in how tax revenue is used with regular public reporting on how funds are allocated and spent. These reports must be consistent and regular to have the desired impact.

The government should prioritise simplifying tax filing processes to ensure that the steps involved are easy to follow and require minimal physical visits to the tax authority or submission of documentation. This could include streamlining third-party data and biometric authentication processes to eliminate redundant or unnecessary requirements.

Addressing the inequality in access to digital technology is essential to ensuring that all taxpayers can benefit from digital technology intended for tax compliance. By providing streamlined internet access, ensuring affordable digital devices, and delivering digital skills training, the government can create a more inclusive tax system. This would mean that every South African, regardless of income or geographic location, could engage with digital technologies and contribute to tax compliance.

By providing clear policies, investing in user-friendly digital infrastructure, offering financial incentives, and promoting digital literacy, governments and tax authorities can ensure that digital tax systems are not only implemented, but also widely accessible and embraced by taxpayers. As a result, the difficulties and constraints to using and accessing digital technology become less significant in the country.

### **5.5 Limitations of the Study**

This scoping review focused on existing literature to assess the contribution of digital technology adoption in enhancing tax compliance among individual taxpayers in South Africa. The study examined the factors influencing the integration of technology-based solutions and the obstacles experienced by drawing insights from existing literature.

It is important to acknowledge that changes in the tax administration landscape, updates in digital technology and evolving taxpayer behaviour may have occurred since the original studies were conducted. Rapid technological advancements, shifts in taxpayer behaviour, and changes in tax policies can impact the relevance and generalisability of early research. The decision to conduct a study that excluded primary data was driven by practical considerations, but the researcher recognises the limitations of this approach. Future research should aim to build on this study by conducting research which utilise primary data collection methods over wider scopes, which will allow for a more direct and detailed assessment of how digital technology enhances tax compliance, particularly in the South African context.

### **5.6 Suggestions for Future Researchers**

The findings of the scoping review outlined important fields for future exploration into the adoption and successful implementation of digital technologies in tax from a South African perspective. The following recommendations for future research stem from the scoping review conducted:

Research on how specific digital infrastructure components such as internet speed and reliability, mobile network quality and electricity reliability influence the adoption of digital tax technologies, particularly in rural or underdeveloped areas would be important. Understanding of how infrastructure hinders or enables the adoption of digital tax technologies will help governments and tax authorities target investment in these areas.

Understanding how limited digital skills pose a limitation for the use of e-filing and other digital platforms is necessary. Therefore, research should focus on how varying levels of digital literacy among taxpayers affect their willingness and ability to engage with digital tax technologies related to tax compliance.

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# ETHICAL CLEARANCE



30 August 2024

Miss Nadia Isobelle Goldstone (224139512)  
School Of Acc Economics&Fin  
Westville

Dear Miss Nadia Isobelle Goldstone,

**Original application number:** 00026987

**Project title:** Assessing digital technology adoption in enhancing tax compliance in South Africa: A scoping review

## Exemption from Ethics Review

In response to your application received on 18 July 2024, your school has indicated that the protocol has been granted **EXEMPTION FROM ETHICS REVIEW**.

Any alteration/s to the exempted research protocol, e.g., Title of the Project, Location of the Study, Research Approach and Methods must be reviewed and approved through an amendment/modification prior to its implementation. The original exemption number must be cited.

For any changes that could result in potential risk, an ethics application including the proposed amendments must be submitted to the relevant UKZN Research Ethics Committee. The original exemption number must be cited.

In case you have further queries, please quote the above reference number.

### PLEASE NOTE:

Research data should be securely stored in the discipline/department for a period of 5 years.

I take this opportunity of wishing you everything of the best with your study.

Yours sincerely,

Prof Claire Lauren Vermaak  
Academic Leader Research  
School Of Acc Economics&Fin

UKZN Research Ethics Office  
Westville Campus, Govan Mbeki Building  
Postal Address: Private Bag X54001, Durban 4000  
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## LETTER FROM EDITOR



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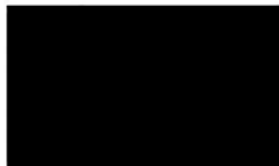
**Certificate of editing**

04 December 2024

**Name:** Nadia Goldstone

**Title:** Assessing digital technology adoption in enhancing tax compliance in South Africa: A scoping review

**This serves to confirm that the above document was edited substantively by a member of the KZN Language Institute's professional English language editing team. The document was returned to the author with tracked changes and comments intended to correct errors and to clarify meaning. It was the author's responsibility to attend to these changes.**



J. Kerchhoff

Director of the KwaZulu-Natal Language Institute

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