Digital skills development at a global assurance, tax and advisory consulting firm in South Africa

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A research report submitted to the Faculty of Commerce, Law and Management, University of the Witwatersrand, in partial fulfilment of the requirements for the degree of Master of Management in the field of Digital Business

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Supervisor: Dr. J. Gobind
Date: 16/05/23
Signature: Janika Gobind

ABSTRACT

Digital technology continues to evolve, and the way employees work is constantly changing. To keep up with the rapid technological developments and compete in the digital economy, organisations need a digitally skilled workforce with the skills and capabilities required to drive digital transformation. However, a qualification audit conducted by the Consultancy X HR team in February 2022 indicated that the qualifications and certifications of employees do not equip them with the skills required to support the consultancy's digital transformation journey.

The purpose of this study was to investigate the low uptake in digital skills development for employees at a global assurance, tax and advisory consulting firm in South Africa. This study followed a qualitative research design, and data was collected through semi-structured interviews, which involved the researcher conducting 60-minute virtual interviews with 9 participants to collect in-depth insights and data from participants on their perceptions of digital transformation and the digital skills uptake at Consultancy X, the impact of the emerging technologies on their roles and the effectiveness of the organisation's current digital skills development approach. The thematic analysis technique was used to analyse the themes and patterns in the feedback from participants.

The study found that the low uptake in digital skills development at Consultancy X was primarily due to time constraints resulting in digital skills development not being prioritised, lack of exposure to digital technologies/skills and resistance to change from employees. The findings also revealed that the organisation’s current digital skills development approach is ineffective due to limited resources being available to support digital skills development and leadership not actively driving digital skills development. However, employees are willing to learn and adopt emerging technologies if they have clarity on the objectives/benefits of the technology; the technology is user-friendly and saves them time. Recommendations were made that may assist the leadership team at Consultancy X in increasing the uptake in digital skills development.

KEYWORDS

Accounting, Digital Skills Development, Digital Transformation, Digital Economy.

DECLARATION

I, Azhar Saley, declare that this research report is my own work except as indicated in the references and acknowledgements. It is submitted in partial fulfilment of the requirements for the degree of Master of Management in the field of Digital Business at the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in this or any other university.

Name: Azhar Saley Signature: 

Signed at …….Johannesburg…….

On the ……05…… day of ……December…… 2022……

DEDICATION

In the name of Allah, the Most Gracious and the Most Merciful. All praise is due to Allah for giving me the strength to overcome all the challenges I experienced while on my research journey and the mental capacity to complete this research paper.

I dedicate this research report to my beloved wife and parents. This journey would not have been possible without your continuous support and motivation.

To my amazing wife, thank you for always supporting me and understanding when I had to work on weekends and late nights. The vision of creating a better future for us motivated me to work on my research paper after a long day at work.

To my parents, thank you for all you have done to help me get to where I am today and for instilling kindness and the belief that I could make a difference in people’s lives from a young age. I am the man I am today because of you. I chose this research topic because I want to make a difference in people's lives by ensuring they have the digital skills necessary to continue supporting their families in the digital economy.

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LIST OF ACRONYMS

4IR	Fourth Industrial Revolution
ACCA	Association of Chartered Certified Accountants
AI	Artificial Intelligence
AICPA	American Institute of Certified Public Accountants
APC	Assessment of Professional Competence
BA	Bachelor of Arts
BAcc	Bachelor of Accounting
BBA	Bachelor of Business Administration
BCom	Bachelor of Commerce
BCG	Boston Consulting Group
CA(SA)	Chartered Accountant (South Africa)
CAATTs	Computer-Assisted-Auditing Techniques and Tools
CCH	Commerce Clearing House
CDO	Chief Digital Officer

CEO	Chief Executive Officer
CFO	Chief Financial Officer
CIMA	Chartered Institute of Management Accountants
CPAs	Certified Public Accountants
CPD	Continuing Professional Development
EY	Ernst and Young
F & A	Finance and Accounting
GAS	General Audit Software
HR	Human Resources
IDP	Intelligent Document Processing
IoT	Internet of Things
IT	Information Technology
ITC	Initial Test of Competence
KPI	Key Performance Indicator
KPMG	Klynveld Peat Marwick Goerdeler

ML	Machine Learning
OCR	Optical Character Recognition
PGDA	Postgraduate Diploma in Accounting
PWC	Price Waterhouse Coopers
RPA	Robotic Process Automation
ROI	Return On Investment
SA	South Africa
SAICA	South African Institute of Chartered Accountants
SAPRO	South African Professional Consulting
TAM	Technology Acceptance Model
USA	United States of America
USB	Universal Serial Bus
UK	United Kingdom
WEF	World Economic Forum

CHAPTER 1. INTRODUCTION

1.1 Statement of purpose

According to Alderman (2019), having a digitally skilled workforce is vital to ensuring business success in the digital economy. As digital technology evolves, the way employees work and the type of work they do is changing. If employees do not have the digital skills necessary to keep up with rapid technological developments, this will impact an organisation's ability to compete in the digital economy (De Lange, Jackling, & Suwardy, 2015). This qualitative study has relied on interviews and literature to investigate the low uptake in digital skills development for employees at a global assurance, tax and advisory consulting firm.

1.2 Background of the study

The Big Four accounting firms: Deloitte, Ernst & Young (EY), Klynveld Peat Marwick Goerdeler (KPMG), and PricewaterhouseCoopers (PwC), dominate the accounting industry and are global market leaders in providing assurance and tax services to large public organisations (Monsen, 2022). These firms have offices all over the world. They have been actively taking steps to expand their presence and gain a competitive advantage in the market by acquiring advisory firms to expand their service offerings (Bagley, Dalton & Ortegren, 2012). They are also investing in emerging technologies to streamline their processes to improve client experience. According to Spence and Carter (2014), the global Big Four firms have acquired 66 advisory firms since 2011. Due to the increased competitiveness in the industry, the smaller and mid-tier assurance, taxation, and advisory firms need to have strategic policies in place to improve client service, maximise profits, increase growth, and maintain competitiveness in the industry.

Consultancy X is a global assurance, tax and advisory consulting firm based in South Africa. The consultancy services clients in the USA, United Kingdom (UK), Netherlands, Australia and New Zealand. Digital transformation involves using

digital technologies to transform business processes and activities (Johnston, 2022). Technological advancements in the industry have accelerated the consultancy's digital transformation journey. Consultancy X have begun leveraging big data to drive decision-making and has partnered with vendors to automate their operational processes.

According to Eswaran (2017), employees' digital skills, competencies, and adaptability are the key drivers in ensuring that organisations achieve digital transformation success. A 2022 qualification audit conducted by the consultancy's Human Resources (HR) team indicated that the qualifications of employees do not equip them with the skills required to support the consultancy's digital transformation journey (South African Professional Consulting (SAPRO) , 2022). The top 5 undergraduate qualifications in Table 1.1 below, the top 5 postgraduate qualifications in Table 1.2 and the top 5 certifications completed by employees were extracted from the Consultancy's February 2022 qualification audit, demonstrating the lack of digital skills-related qualifications and certifications (SAPRO, 2022).

Table 1.1 shows that most employees (52,18%) have an undergraduate degree in accounting, 10,87% of employees have a Bachelor of Arts degree, 6,52% have a Bachelor of Business Administration, and 6,52% of employees have a Bachelor of Commerce degree. The top 5 undergraduate qualifications make up 76,09% of all undergraduate qualifications completed by employees.

Qualification Name	**Percentage of Employees with Qualification**
Bachelor of Commerce in Financial Accounting	36,96%
Bachelor of Accounting (BAcc)	15,22%
Bachelor of Arts (BA)	10,87%
Bachelor in Business Administration (BBA)	6,52%
Bachelor of Commerce (BCom)	6,52%

Table 1.1: Top 5 undergraduate qualifications completed by Consultancy X employees (SAPRO, 2022)

Table 1.2 shows that most employees (60%) have a postgraduate degree in accounting, 5,71% have a Bachelor of Laws LLB degree, and 5,71% have an honours in Psychology. The top 5 postgraduate qualifications make up 71,42% of all postgraduate qualifications completed by employees.

Qualification Name	**Percentage of Employees with Qualification**
Post Graduate Diploma in Accounting (PGDA)	31,43%
Bachelor of Accounting Honours	20,00%
Bachelor of Commerce Honours in Accounting	8,57%
LLB - Bachelor of Law	5,71%
BA Psychology Honours	5,71%

Table 1.2: Top 5 postgraduate qualifications completed by Consultancy X employees (SAPRO, 2022)

Table 1.3 shows that the majority of certifications completed by employees (89.63%) are relevant to their roles in assurance, tax and advisory.

Certification Name	**Percentage of Employees with Certification**
Chartered Accountant (CA)	43,34%
Initial Test of Competence (ITC)	20,00%
Assessment of Professional Competence (APC)	10,67%
Professional Tax Practitioner	7,81%
Advanced Certificate in Auditing	7,81%

Table 1.3: Top 5 certifications completed by Consultancy X employees (SAPRO, 2022)

According to the South African Institute of Chartered Accountants (SAICA) (2020), most assurance, tax and advisory roles require a background in accounting and a Chartered Accountant South Africa CA(SA) certification, which is likely why most employees have an undergraduate or postgraduate degree in accounting and a CA (SA) certification. However, there is a need for employees to, in addition to their pre-existing qualifications, improve their digital skills as

organisations move towards a technology-driven economy, and an investigation into the reasons for the low uptake of digital skills is necessary. The findings from this study may assist the leadership team at Consultancy X and other South African assurance, tax, and advisory firms in understanding why there is a low uptake in digital skills development among their assurance, tax and advisory consultants.

1.3 Research problem

Businesses are enthusiastic about the improvement that innovative technologies will produce, but this development can be jeopardised if digital skills development is not prioritised (Fitzgerald, Kruschwitz, Bonnet & Welch, 2013). As part of Consultancy X's digital transformation journey, the way assurance, tax and advisory consultants work, and the type of work will change. The advancements in technology will result in certain roles falling away, others being altered in how work is being done, and new positions will be introduced, so employees need to upskill themselves for this eventuality (Evans, 2017).

According to Schwab and Zahidi (2020), as digital technology advances and technology adoption grows, 50% of all employees across organisations will need reskilling by 2025. Robotic Process Automation (RPA), Intelligent Document Processing (IDP), Chatbots and predictive modelling are automating many tasks in the accounting industry, which requires employees to understand how these technologies work (Cooper, Holderness, Sorensen & Wood, 2019). If employees do not adapt their skills to the changes in the digital economy, they are at risk of being displaced. If organisations do not have a digital skills development strategy to support their digital transformation strategy, it would hamper their progress and could be crippling for the organisation (El Sawy, Kræmmergaard, Amsinck & Vinther, 2016).

It is therefore necessary to investigate the low uptake in digital skills development at Consultancy X. The research objectives are discussed next.

1.4 Research objectives

The objectives of the research are to:

i. Investigate the low uptake in digital skills development at Consultancy X.
ii. Explore the need to attain digital skills to stay relevant in the digital economy.
iii. Examine the role of organisations in promoting digital skills development.

1.5 Rationale

A preliminary literature review confirmed that while there are studies related to digital transformation and the digital skills gap within the finance and accounting industry, there is limited research addressing the low uptake in the digital skills gap in South African assurance, tax and advisory firms. According to Chris Knowles, a Chief Digital Officer (CDO) at RSM UK, accounting firms focus on recruiting talent with accounting, tax, and audit qualifications required to provide accounting services such as financial analysis, reporting, auditing, and tax to clients (Briah,2021). Blackline, a leading accounting automation software provider, found that 86% of Chief Financial Officers (CFOs) and 35% of C-Suite respondents believe that Finance and Accounting (F&A) organisations are struggling to keep up with the pace of digital transformation(Blackline, 2021). This inability to keep pace with the advancement in digital technology has resulted in a skills gap that can negatively impact the organisation's ability to grow & adapt over the next five years (Blackline, 2021).

The researcher is not an accounting professional. However, he has experience working on digital transformation projects in his previous roles in the banking and health insurance industries and has focused on developing his digital skills to support these projects. The researcher's interest in this topic is informed by the results from the 2022 qualification audit conducted by the HR team at Consultancy X, which found a low uptake in digital skills development at the firm. Consultancy X have begun leveraging big data to drive decision-making and have partnered with vendors to automate their operational processes; however,

employees not having the skills to operate these technologies can jeopardise these digital transformation projects.

According to Duron (2021), an in-depth understanding of a problem is required before a solution is developed. This study contributes to the existing literature on the digital skills gap in the accounting industry by providing insight into the reasons for the low uptake amongst employees at Consultancy X, which may assist the researcher and other South African assurance, tax and advisory firms in implementing solutions to improve the uptake in digital skills development at their firms.

1.6 Delimitations of the study

The delimitations describe what fell in and out the scope of the study:

a) This study focused on the accounting industry; however, the investigation was limited to assurance, tax and advisory services.
b) The study does not represent all assurance, tax and advisory consultancies in South Africa. It is specific to Consultancy X because the researcher is an employee at Consultancy X that was focused on investigating the low uptake in digital skills development amongst employees at the consultancy.
c) Due to the time constraints for the research, data saturation was not reached.
d) The research was qualitative, and the researcher used a descriptive case study approach to generate an in-depth understanding of the reasons for the low uptake in digital skills development at the consultancy by gathering rich primary data.

1.7 Definition of terms

Accounting is the process of recording, classifying, and summarizing financial transactions to provide useful information for decision-making. (Accounting Tools, 2022)

Artificial Intelligence is a broad field that entails using computer algorithms that can learn and change. (Armstrong & Lee, 2021)

Digitalisation is the complete transformation and change of a process, organisation or even society to adapt to new technology-related market and social realities. (Armstrong & Lee, 2021)

Digital economy refers to the economic activity that results from billions of everyday online connections among people, businesses, devices, data, and processes. (Schwab, 2017)

Digital Technologies refer to a broad range of electronic tools, systems, devices, and resources that generate, store, process, or transmit digital information. (Armstrong & Lee, 2021)

Digital Transformation is the sum of all organisational change efforts in response to technological disruption. (Armstrong & Lee, 2021)

Digital Skills Development refers to the process of acquiring and improving the competencies, knowledge, and abilities required to effectively navigate and utilize digital technologies. (Armstrong & Lee, 2021)

The **Digital Skills Gap** is the rise in the scarcity of talent with the digital skills required for jobs within a technologically advanced economy (Milano, 2019).

Fourth Industrial Revolution is a term used to describe how the world of work is evolving due to a range of emerging technologies that are resulting in the convergence of the physical and digital worlds. (Schwab, 2017)

Robotic Process Automation is the application of software tools (robots) to simplify business process delivery. (Armstrong & Lee, 2021)

1.8 Assumptions

- The study assumes that Accounting Industry is experiencing some level of digital transformation.
- The study assumes that there is a low uptake in digital skills development.
- It is assumed that existing digital skills development programmes are available for audit, tax and advisory consultants.

1.9 Chapter Outline

Chapter 1 of this report outlined the purpose of the study, which is to investigate the low uptake in digital skills development for employees at a global assurance, tax and advisory consulting firm. It provides a background on Consultancy X and context into the firm's current digital skills development uptake by presenting data from a recent qualification audit conducted by the consultancies HR team. The research problem highlights the negative impact of low uptake in digital skills development for employees and the consultancy. The research problem was then translated into the three objectives of the research: to investigate the low uptake in digital skills development at Consultancy X, to explore the need to attain digital skills to stay relevant in the digital economy and examine the role of organisations in promoting digital skills development. The final four sections of Chapter 1 present the rationale for the study, the definitions of commonly-used concepts, the scope of the study and assumptions that could influence the outcome of the research.

Chapter 2 of this report builds on the previous chapter by providing a theoretical review of the literature related to the digital skills development uptake in the accounting industry, the impact of emerging technologies on jobs and the future of assurance, tax and advisory services and the role of organisations in promoting digital skills development. This chapter also includes the theoretical frameworks that contextualise the theories that will inform the research.

Chapter 3 of this reports outlines the research methodology selected to address the propositions identified in the previous chapter. It includes the research approach, design, population, sampling methods, data collection methods and

analysis techniques used to analyse the data collected. This chapter also includes the limitations of the study, ethical considerations and the quality assurance criteria used to assess and validate the integrity of the study.

Chapter 4 presents the findings from the semi-structured interviews conducted by the researcher. The semi-structured interview involved the researcher obtaining demographic information from the participants. The Huberman and Miles (2014) thematic analysis model was then used to summarise the findings from interviews presented in this chapter. This was a three-step process that involved the researcher reducing the data from the interview transcripts by eliminating invalid data, placing the data in a table to make it easier to analyse, and finally identifying themes and patterns in the data. The themes drawn from the literature review were used to review participant responses, and new themes not covered in the literature review were also highlighted. The themes from the responses for each question were organised from the highest to the lowest number of times they appeared to highlight the most prevalent findings in participant responses.

Chapter 5 builds on the previous chapter by contrasting the findings of the study discussed in Chapter 4 against the literature covered in Chapter 2 to outline any similarities or differences between them. The discussion of the findings addresses the study's objectives: to investigate the low uptake in digital skills development at Consultancy X, explore the need to attain digital skills to stay relevant in the digital economy and examine the role of organisations in promoting digital skills development.

Chapter 6 presents a conclusion based on the research objectives and findings related to the propositions. Recommendations and suggestions for future research have also been made in this chapter.

CHAPTER 2. LITERATURE REVIEW AND THEORETICAL FRAMEWORK

This chapter builds on the previous chapter by providing a theoretical review of the literature related to the digital skills development uptake in the accounting industry, the impact of emerging technologies on jobs and the future of assurance, tax and advisory services, and the role of organisations in promoting digital skills development.

2.1 Theoretical Framework

2.1.1 *The theory of professions*

According to Brante (2009), the theory of professions is a theoretical model built on eight categories used to define a professional role. The first category is education, based on the fact that higher education is required for a professional role. The second category is abstraction, indicating that professionals need abstract knowledge. The third category is uncertainty, which refers to the professionals' role in solving problems when there is uncertainty around a particular issue. The fourth category is autonomy, which refers to independent professional roles. The fifth category is trust due to the integrity required from professionals in their work. The sixth category is the organisational structure of the profession. The seventh category is interchangeability, which states that professionals with the same knowledge should be able to perform the same responsibilities. The eighth and final category is knowledge conveyance, in which a professional's knowledge and skills need to meet society's demands (Brante, 2009).

According to Bowles, Ghosh and Thomas (2020), accountants are regarded as professionals, and the role of assurance, tax and advisory consultants who are qualified accountants is based on their knowledge and ability to perform specific responsibilities. Developments in digital technology have impacted assurance, tax and advisory professions. The responsibilities of assurance, tax and advisory professionals and the professional roles they hold are related to one another, so

if the responsibilities that audit, tax and advisory consultants perform change due to technological developments, then it is likely that the professional role that these professionals hold will change. The theory of professions was used to analyse how digital transformation has impacted the assurance, tax and advisory professions.

2.1.2 *The technology acceptance model*

The Technology Acceptance Model (TAM) is an information systems theory that models how users begin to adopt and use technology. The actual use of the system is the end point where people use the technology (Marangunić & Granić, 2015). Behavioural intention is a factor that drives people to use technology. The main goal of the TAM is to explain the processes underlying technology adoption to predict behaviour and provide a theoretical explanation for the successful adoption of the technology. The practical aim of TAM is to inform practitioners about the actions they can take before implementing the system (Kamal, Shafiq & Kakria, 2020).

The changes in the roles and responsibilities of assurance, tax and advisory professionals due to technological developments can negatively impact an organisation's digital transformation efforts if these professionals resist change. If the assurance, tax and advisory consultants do not accept technological changes, it will result in an unsuccessful implementation of new technology. For a firm to get the full benefit of a technology, it needs to be accepted by the assurance, tax and advisory professionals. The TAM was used to assess how a technology's perceived usefulness and ease of use affect the attitude of assurance, tax and advisory professionals towards new technology. According to Kamal et al. (2020), the following factors impact the adoption of new technology: the effort required to learn and adapt to how the technology works, social pressures, the perceived increase in social status from using the technology, the applicability of the technology to the individual's job, and the efficiency and effectiveness benefits the technology offers.

2.2 Digital Skills Development Uptake in the Accounting Industry

The accounting industry has been affected by technological changes due to its operations. Accounting involves time-consuming manual processes such as collecting, analysing and documenting data from different systems and stakeholders. Technological advancements in the accounting industry have increased the ability of accountants to complete their tasks more efficiently by automating manual processes (Knickrehm, Berthon & Daugherty, 2016). Some major digital trends in accounting are automated invoice generation using Robotic Process Automation (RPA) and cloud storage of financial documents (Jazdi, 2014). These technologies require digitally skilled accountants who understand how to use them, so they can progressively collaborate with machines to improve productivity.

During the third industrial revolution, technological changes affected mostly low-skilled workers; however, change is accelerating faster in the Fourth Industrial Revolution (4IR) and is impacting the medium-high skilled workers as well (Milano, 2019). As new technology emerges, accounting professionals must proactively prepare for the coming years' changes. Whilst the technological changes can be devastating for those that do not adapt and prioritise digital skills development, it has the potential to create opportunities for those that do prioritise digital skills development (Eynon & Geniets 2016)

2.2.1 *The importance of digital skills development in driving digital transformation*

Digital transformation refers to using digital technologies to improve organisational processes, affecting business and governmental organisations at every level (Mugge, Abbu, Michaelis, Kwiatkowski & Gudergan, 2020). Digital technologies are transforming every aspect of the business. Organisations face the challenge of how to adapt and transform to compete and thrive in the digital economy. The evolution of internet capabilities and global connectivity accelerated digital transformation, which has impacted countries globally on an

economic and social level. According to Milano (2019), access to a workforce with a skill precedent is already an essential differentiating factor for organisations; this sets them apart from other market leaders. According to Sousa and Rocha (2019), organisations that invest in the digital skills development of their workforce will be able to adapt quickly and respond to technological changes, resulting in competitive advantage, increased revenue, reduced costs and increased shareholder value.

According to Kane, Palmer, Phillips & Buckley (2015), digital transformation is less about technology and the people leading organisations and the workforce working in this digital environment. Digital technology causes disruption; however, the organisation's adoption of technology by the leaders and employees truly drives digital transformation (Kohnke, 2017). A 5-year study by Kane et al. (2015), which involved surveying 25,000 executives worldwide, found that organisations are only prioritising developing the digital skills of highly skilled employees. However, (Sousa & Rocha, 2019) argue that organisations must focus on upskilling all leaders and employees. These employees and leaders do not need to be experts in a particular technology but instead need to be open-minded, flexible, and willing to learn to understand what emerging technologies do and how they do it. This will help them understand the benefits the technologies offer to the organisation. Then they can use this information to figure out how to revamp their careers to integrate this technology into their roles.

According to Schwab and Zahidi (2020), 84% of organisations plan to automate their processes and enable their employees to work remotely. Schwab and Zahidi (2020) also found that by 2025 an average of 15% of an organisation's workforce will be at risk of being disrupted by technological changes, with an average of 6% of employees becoming obsolete. Organisations are restructuring their workforce in various ways to respond to technological change. The future of jobs survey found that 55% of organisations are introducing more technologies in their value chain, and 41% are looking at using digitally skilled contractors to support these processes. However, Boston Consulting Group (BCG) (2020) argues that organisations will benefit more from upskilling and reskilling their own workforce based on findings that 92% of organisations that have invested in digital skills

development have seen a high return on investment with a 17% higher profit margin, 84% increase in innovation and a 72% increase in the adoption of digital tools and technologies due to continuous learning, increased productivity and a more resilient workforce.

2.2.2 *Progress on digital skills development uptake in the accounting industry*

The rise of technologies like artificial intelligence, big data analytics, blockchain, robotic process automation, and cloud computing have forced accounting firms to invest in new technologies and develop strategies to build employees' digital skills and capabilities (Drum & Pulvermacher, 2016). A study was conducted by Mahembe (2021) to determine the impact of these emerging technologies on skills development in the F&A industry. The researcher conducted virtual interviews with 20 employers, 5 training providers and 14 professional bodies to determine the impact of these technologies and assess the uptake in digital skills by F&A professionals. The key findings from the study were that employers and professional bodies are aware that the roles of accountants, auditors, bookkeepers, tax practitioners and data capturers will be impacted by emerging technologies, and they are also aware of the skills needed by F&A professionals to enable their organisations to succeed in the digital age. However, the issue is that training providers were found to have no digital skills development programmes to assist F&A professionals in developing these skills.

Training providers stated that the time to develop a digital skills development curriculum, budget limitations and resistance to change are reasons a digital skills development programme is unavailable for F&A professionals (Mahembe, 2021). According to ACCA (2020), there is also awareness from F&A professionals that they need to improve their digital skills, with 82% of South African accountants agreeing that they need to increase the pace of digital skills adoption to stay competitive. However, the lack of digital skills development programmes that cater to F&A professionals is a significant factor impacting the digital skills uptake in the industry. Another study by Sage (2020), which contains the results of insights from 3 298 accountants to assess how the profession is emerging, found

that only 22% of accountants are investing in digital skills development, with 24% saying they intend to focus on digital skills development in the next year and 21% of accountants saying they will focus on developing their digital skills in the next one to three years. The accountants said that lack of time, money, and expertise are the barriers that delay their digital skills development studies.

Another study by the Association of Chartered Certified Accountants (ACCA) surveyed 4,000 F&A professionals and found that 70% have expert ability in working with spreadsheets, data management, and project management. However, less than 30% of F&A professionals have expert ability in artificial intelligence, cloud computing, machine learning, big data, blockchain, coding and robotics (ACCA, 2020). This indicates that there is low uptake in developing skills in these areas. If accounting firms want to achieve their digital transformation goals, they need to implement digital skills development programmes that equip their F&A professionals with knowledge and skills in artificial intelligence, cloud computing, machine learning, big data, blockchain, coding and robotics as these technologies are being used to automate F&A processes.

2.2.3 *Proposition 1*

The success of an accounting firm's digital transformation depends on the digital skills and capabilities of the firm's human resources.

2.3 The Impact of Emerging Technologies on Jobs and the Future of Assurance, Tax and Advisory

According to Schwab (2017), the Fourth Industrial Revolution (4IR) refers to changes in the ways of work due to technological developments that are fusing the physical, digital and biological worlds, impacting economies, industries and professional roles around the world. New technologies are evolving rapidly as the world becomes more digital. This revolution is driven by the need for individuals and organisations to solve complex problems quickly while increasing the accuracy and reliability of results. The extensive use of digital technologies has always governed the assurance, tax and advisory professions. However, the

exponential developments in digital technology in recent years are disrupting the industry more than ever, posing opportunities and challenges for accounting firms. If accounting firms want to exploit these opportunities, they need to be agile in responding to the changes that occur as a result of these technological developments and accelerate the adoption of digital skills to ensure that employees are equipped with the skills required to operate the systems powered by these technologies.

2.3.1 *The adoption of emerging technologies at accounting firms*

According to Knickrehm et al. (2016), new technologies are changing how accounting firms conduct their business. According to Yaga, Mell, Roby and Scarfone (2019), blockchain transactions are more transparent and contain fewer errors, making fraudulent transactions more difficult to cover up. Accounting firms are experimenting with technologies such as blockchain that allow more unrestrained transactions and decisions (Yli-Huumo, Ko, Choi, Park & Smolander, 2016). Combined with intelligent analytics, these technologies drastically change how accounting firms work. Data analytics involves identifying and analysing models through analysis, modelling, and visualisation to gather insights and detect anomalies (Vasarhelyi, Kogan & Tuttle, 2015). Intelligent analytics enhances data analytics as it is powered by AI algorithms that can sort through large amounts of information much faster than any human and with far greater accuracy, reducing the risk of inconsistencies (De Santis & D'Onza, 2021). Assurance, tax and advisory professionals are required to manage mountains of information used to generate insights for financial audits, tax submissions and recommendations by advisors to improve a client's operational or financial processes. Data analytics enables these professionals to gather insights and identify anomalies faster (Dicuonzo, Galeone, Zappimbulso & Dell'Atti, 2019). This allows assurance professionals to identify risky financial situations in real-time rather than waiting until the end of the financial year. Additionally, emerging technologies like cloud computing enable assurance, tax and advisory professionals to view and interpret this data instantly and from anywhere in the world (ACCA, 2020).

According to ACCA (2019), many of the big four public accounting firms have developed internal Computer-Assisted-Auditing Techniques and Tools (CAATTs) like General Audit Software (GAS) that is used to reduce operational costs by reducing audit times and increasing the efficiency and effectiveness of service delivery. According to KPMG (2017), CAATTs are computerised audit tools and techniques that accounting firms use to conduct internal and external audits of a client's financial reports and apply controls. Ernst and Young (EY) Canvas is a cloud-based audit platform developed by EY to assist audit teams in navigating, coordinating and managing audits. The platform is built on the EY audit methodology and allows for: centralised planning of audits, real-time monitoring of audit findings and streamlined client communications(EY,2022). Deloitte has also implemented the Omnia platform, which assists audit and advisory professionals in generating deeper insights and identifying outliers by conducting an advanced risk analysis on large data sets (Deloitte, 2022). The Deloitte Omnia platform also processes and highlights information in key documents using advanced document interrogation and analysis capabilities. The PWC Aura platform is another example of an in-house platform developed by a Big Four audit firm. The PWC Aura platform is AI-driven and uses Optical Character Recognition (OCR) and Machine Learning (ML) to read and understand unstructured data in client documents(PWC, 2022). The Aura platform also enables audit teams to conduct a focused analysis of audit insights by giving them access to various visualisation dashboards and detailed reports.

Small and mid-tier firms still rely on off-the-shelf software such as Archer, AuditMate, CaseWare, Commerce Clearing House (CCH) Axess, OneSource and Ultratax (Widuri, O'Connell & Yapa, 2016). Archer, AuditMate and CaseWare are audit management software that consolidates the entire audit process by enabling assurance professionals to manage audit findings, maintain work papers and report on risks and ineffective controls(Gotthardt, Koivulaasko, Paksoy, Saramo, Martikainen & Lehner, 2020). CaseWare is the most advanced of the three audit management software due to its Analytics AI capabilities that use artificial intelligence and machine learning to perform transactions' performance testing to assess internal controls' reliability (Van der Nest, Smidt, & Lubbe, 2017). CCH Axess, OneSource and Ultratax are cloud-based tax

software enabling tax professionals to plan, prepare, review and submit tax returns on a single system to ensure that clients comply with their country's tax regulations(Widuri et al., 2016). The CCH Axess software is the most advanced of the three tax software as it uses predictive analytics to identify tax legislation that may impact the firm's clients, allowing tax professionals to provide valuable insights to clients to reduce their tax liability.

2.3.2 *The evolution of assurance, tax and advisory roles due to technological advancements*

According to CIMA (2019), technological developments have evolved the roles of assurance, tax and advisory professionals. Technological advancements have resulted in significant improvements in accounting processes, showing that computerised accounting systems have many advantages over manual accounting systems in terms of speed, accuracy, and reliability of financial data (Kokina & Blanchette, 2019). Before the introduction of computers in 1980, the roles of these professionals were very manual and paper-based. The introduction of computers and spreadsheet programs like VisiCalc and Peach Tree in the late 1970s and 1980s evolved the role of assurance, tax and advisory professionals by computerising accounting processes, thereby improving the speed at which tasks could be performed. Before implementing VisiCalc assurance, tax professionals spent most of their time performing manual calculations (Laar, Van Deursen, Van Dijk & De Haan, 2017). VisiCalc automated calculations by calculating values entered on a spreadsheet (Sorguli & Al-Kake, 2020). The implementation of Peach Tree further simplified the role of assurance, tax and advisory professionals by allowing them to track financial transactions and create financial statements seamlessly (Sorguli & Al-Kake, 2020). Computers continued to evolve in the 1990s, resulting in the introduction of audit and tax software such as CaseWare and Intuit Turbo Tax that allowed financial statements, assurance working papers and tax returns to be prepared electronically (Andreassen, 2020).

From 2000 to 2009, further technological developments were supported by increased computing power and the growth of the internet. This resulted in accounting firms' increased usage of cloud-based accounting software (Kokina &

Blanchette, 2019). The storage of financial transactions on these cloud-based software's resulted in the creation of electronic audit trails, which caused a reduction in paper usage and a migration from reactive financial reporting to proactive financial forecasting to assist assurance and advisory professionals in developing data-driven strategies using financial predictions due to the centralisation of financial data (Andreassen, 2020). From 2010 until now, there has been phenomenal growth in computing power and speed, which has allowed for the development of 4IR technologies. Accounting firms are leveraging RPA and AI to streamline assurance, tax and advisory processes and have also begun using big data, blockchain, and cloud computing to store and protect financial data(Griffin, 2019).

According to Kurtz (2022), tax advisors traditionally focused on ensuring that clients fulfil all their tax obligations by preparing and filing tax returns, tax calculations, and other required forms on behalf of clients to assist clients in reducing their tax liability. Technological advancements have resulted in the creation of a tax technologist role. A tax technologist is a tax professional with a knowledge and understanding of the complexities associated with the tax process and the use cases of emerging digital technologies (Kurtz, 2022). This combination of knowledge enables tax technologists to design, implement and maintain tax systems and automate tax processes to reduce inefficiencies in tax workflows.

Emerging technologies have changed how assurance, tax and advisory professionals work by automating and simplifying their tasks. The assurance, tax and advisory profession will continue evolving and look noticeably different in the next 5 to 10 years. Bowles et al. (2020) argues that assurance, tax and advisory professionals that develop their digital skills will survive these changes; however, their roles will become more specialised. According to Deloitte (2018), assurance professionals will perform a dual role by advising clients on which digital technologies they should leverage to improve financial processes and minimise risk instead of only focusing on analysing financial data.

2.3.3 *Proposition 2*

The evolution of assurance, tax, and advisory roles is correlated with the evolution of emerging technologies.

2.4 The role of organisations in promoting digital skills development

According to Cascio and Montealegre (2016), organisational investment in employees' training and development by providing them access to training courses to improve their digital skills and knowledge creates a competitive advantage for the organisation. A study by (Tsiligiris & Bowyer, 2021) revealed that even though there is awareness of the significance of having a digitally skilled workforce, no strategic plan has been put in place at a national level to address the low uptake in digital skills development. If the low uptake in digital skills development is not addressed, it will become a significant barrier to the digitisation of industries across the global market. A study by Briah (2021) found that while executives view digital transformation as critical to their overall strategy, less than 50% have included digital skills development as part of their human resources strategy.

Whilst organisations play a critical role in promoting digital skills development, the attitude of employees towards implementing new technology is also essential to understand. The attitude of employees towards new technologies impacts the acceptance of these technologies and will affect the success of an organisation's digital transformation projects. The attitude and acceptance of technology also shape how employees will use the new technology.

2.4.1 *Corporate digital skills development programmes*

According to Deloitte (2019), developing corporate digital skills development programmes is critical for organisations that want to develop and maintain a highly-skilled workforce to drive digital transformation efforts. Organisations around the world are struggling to keep up with the advancements in technology due to the shortage of professionals with skills in software engineering, artificial

intelligence (AI), big data analytics, cybersecurity, the internet of things (IoT), RPA, cloud computing and blockchain which is becoming a barrier to digital transformation (Bughin, Hazan, Lund, Dahlström, Wiesinger & Subramaniam, 2018). The scarcity of talent with digital skills has created a war for digitally skilled talent (Milano, 2019). However, only large organisations with the financial resources to afford the salaries of these digitally skilled professionals can recruit them. Smaller and mid-tier organisations that cannot afford to recruit these professionals need to develop and invest in digital skills development programs to equip their organisations with a digitally skilled workforce to support their digital transformation journeys.

Organisations around the world are taking various approaches to develop the digital skills development of their workforce, such as offering employees bursaries for digital skills qualifications related to their roles, partnering with online course providers like Udemy and Coursera or developing their digital skills development programmes by leveraging of the knowledge and experience of digitally skilled professionals in their organisations (Schaefer, Fabian & Kopp, T, 2020). By partnering with online learning providers like Udemy and Coursera, organisations can develop the digital skills of their employees by creating custom learning programmes for employees by leveraging courses by industry experts. The development of internal digital skills development programmes is not a standard option due to the time investment required from digitally skilled professionals who already have objectives they need to achieve. However, EY has created its own digital skills development programme, which gamifies the learning experience by rewarding employees with digital badges for completing digital skills courses in data analytics, RPA, AI, cybersecurity, cloud computing, IoT and virtual reality (EY, 2021). To achieve a bronze badge, employees need to complete a minimum of fifteen hours of internal training on a particular technology; to achieve a silver badge, employees need to complete a minimum of thirty hours of internal training on a particular technology and to achieve a gold badge employees need to write an advanced examination to demonstrate their competency in the technology (EY, 2021).

Professional accounting bodies have also started partnering with accounting firms worldwide by developing competency frameworks and reports on future accounting careers to cope with these changes, overcome foreseeable difficulties and capitalise on perceived opportunities (Stumke, 2020). The American Institute of Certified Public Accounts (AICPA) has introduced a data analytics certification, which recognises certified public accountants (CPAs) who have completed additional training to equip them with data analytics skills (De Santis & D'Onza, 2021). The ACCA has also launched a certificate in Digital Innovation for Finance to assist finance and accounting professionals in understanding the impact of digital technologies on their professions and how they can be used to create value for accounting firms (ACCA, 2021). These are the only two certifications aimed at improving the skills of finance and accounting professionals specifically.

2.4.2 Organisational benefits of having a digitally skilled workforce

Organisations rely more on computers to carry out commercial transactions as information technology has advanced over the last few decades(Kiron, Kane, Palmer, Phillips, & Buckley, 2016). As a result, IT is no longer seen as a business tool that connects and combines all operations and business units within an organisation but as a commercial tool that connects all functions and business units within an organisation. According to Catlin, Scanlan, and Willmott (2015), organisations are investing heavily in digital technologies to automate processes, improve client experience, and drive down costs. However, if the workforce is not digitally skilled, organisations will not be able to exploit the full benefits of these technologies and achieve their digital transformation objectives. A 2019 Global Chief Executive Officer (CEO) survey conducted by PWC found that 54% of executives believe that digital skills shortages result in cost pressures and impact their organisation's ability to innovate and meet client expectations (PWC, 2019). According to PWC (2016), organisations that have invested in digital skills development have seen an increase in productivity and employee morale, resulting in economic returns that are twice as high as organisations that have not invested in digital skills development. Therefore, organisations must recognise that digital skills development is integral to their digital transformation strategies.

Technological developments are also impacting client and employee retention. A study by Mihalce (2017) found that the number one reason highly skilled employees were leaving their organisations was that they did not have a digital transformation and digital skills development strategy. According to Sanchez and Zuntini (2018), 70% of employees believe it is their employer's responsibility to equip them with the digital skills required to drive the organisation's digital transformation strategy; however, only 42% of employees believe that their organisations have digital skills development programmes in place to equip them with digital skills. A study by Stumke (2020) found that having a digitally skilled workforce will also improve the efficiency and effectiveness of employees. The study found that they lose around 8% of productive time due to inadequate digital skills. Studies have shown that digitally literate employees can reduce their cognitive load and improve their productivity by using technology applications to perform certain activities, giving them free time to focus on tasks that require creative thinking (Davison & Ou, 2017). Digitally literate employees can also access information on internal organisation platforms faster, enabling them to gather knowledge to resolve problems faster.

There is also an increased demand for digitally enabled products and services. Client service staff are responsible for supporting clients using these digitally-enabled products and services. If they do not understand how the technologies that enable these products and services work, the adoption of these technologies by clients will be low, resulting in a reduced ROI on technology investments. It is ultimately the responsibility of the human resource and talent development teams to ensure that their workforce has the skills to support the organisation's digital transformation strategies (Ganguly, 2015). According to Chetty, Qigui, Gcora, Josie, Wenwei and Fang (2018), digital literacy varies across different age groups, with younger employees in the 18-34 age group having better technical skills, whilst older employees in the 35-55 age group have better critical thinking skills. Therefore, organisations need training interventions and support to cater to both groups of employees. Once organisations have done their part in having a digital skills development programme, it is then the onus of employees to take the time to complete the training or they risk being replaced.

2.4.3 Proposition 3

Promoting digital skills development is essential for organisations to deliver their digital transformation strategy and increase their return on investment in digital technologies.

2.5 Summary of the literature review

The literature review highlights the importance of increased investment in digital skills development to enable accounting firms to achieve their digital transformation goals. It is evident that emerging technologies are impacting the industry, changing how assurance, tax and advisory professionals operate. Without the cooperation of all people in the firm, the firm will not be able to transition and achieve its digital transformation goals successfully. A firm with a digitally skilled workforce will be equipped with the skills and capabilities required to restructure its value chains and build new business models that will enable them to shape the market in the digital era (Bican & Brem, 2020). To achieve this, F&A executives must recruit the right talent and build the digital skills and attitudes of all employees to conceptualise the impact digital technologies will have on their organisation.

2.5.1 *Proposition 1*

The success of an accounting firm's digital transformation depends on the digital skills and capabilities of the firm's human resources.

2.5.2 *Proposition 2*

The evolution of assurance, tax, and advisory roles correlates with the evolution of emerging technologies.

2.5.1 *Proposition 3*

Promoting digital skills development is essential for organisations to deliver their digital transformation strategy and increase their return on investment in digital technologies.

CHAPTER 3. RESEARCH METHODOLOGY

This chapter outlines the research methodology selected to address the propositions identified in the previous chapter. It includes the research approach, design, population, sampling methods, data collection methods and analysis techniques used to analyse the data collected. This chapter also includes the limitations of the study, ethical considerations and the quality assurance criteria used to assess and validate the integrity of the study.

3.1 Research approach

A qualitative approach allows for detailed and contextualised insights from individuals based on their experiences (Bell, Bryman & Harley, 2018). According to Hair, Page and Brunsveld (2019), the fundamental depth and richness of the data collected through a qualitative study generate insights to assist researchers in obtaining a better understanding of a phenomenon. This study investigated the low uptake in digital skills development at Consultancy X. The qualitative approach was selected to understand the experiences of Consultancy X employees and their attitudes towards digital skills development. Even though the outcomes of a qualitative approach are not measurable and quantifiable – the approach exposed the researcher to the complexities impacting digital skills development uptake as it involved direct interaction with participants, which preserved the context in which the findings were obtained.

3.2 Research design

According to Bell et al. (2018), a research design is a structured plan that helps researchers respond to questions objectively. This study follows an inductivist approach and descriptive case study design to investigate the reasons for low uptake in digital skills development at Bank X. An inductive approach involves generating information from data, whilst a deductive approach builds new findings using conceptual and literature reviews (Bell et al., 2018). According to Hair et al. (2019), case studies allow for richer data collection due to more detailed

information collected from participants. A descriptive case study was used to conduct an in-depth study and extract detailed insights based on the data.

3.3 Data collection methods

Data collection involves gathering information that a researcher will use to draw conclusions (Bell et al., 2018). Semi-structured virtual interviews were used as a data collection method to collect in-depth insights and data from participants. The semi-structured interview involved a direct interaction between the researcher and the participant comprising of open-ended questions that the researcher asked. This data collection method allowed the researcher to clearly understand the reasons for the low uptake in digital skills development at Consultancy X. The researcher is based in Johannesburg, South Africa, and participants are based in various regions in South Africa and the USA. Therefore, an email invite was sent to participants for the virtual interviews that took place on Microsoft™ Teams. The option to participate in the interviews was voluntary, and the interviews were recorded and transcribed using Otter AI™, a meeting recording and transcription software application.

3.4 Population and sample

3.4.1 *Population*

The population of this study comprises all employees working at Consultancy X. Figure 3.1 shows the organisational structure of Consultancy X:

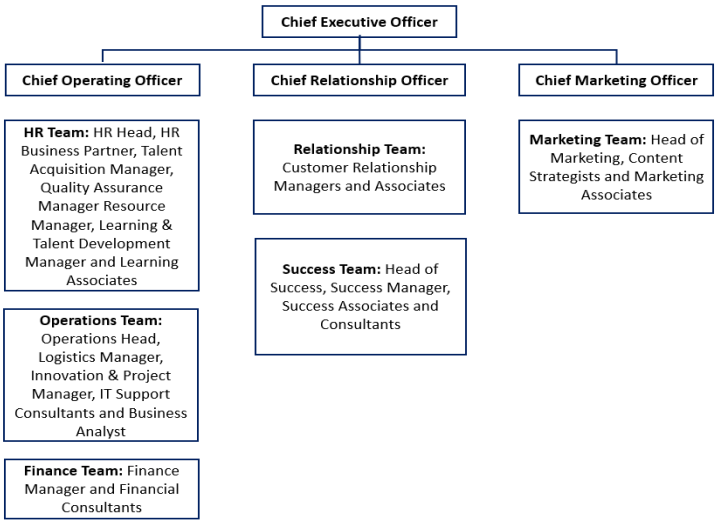

Figure 3.1: Consultancy X Organisational Structure

3.4.2 *Sample and sampling method*

Participants were invited to volunteer for the study using a purposive sampling technique (expert sampling). This sampling technique allowed the researcher to participants that added value to the research based on their role and experience in assurance, tax and advisory consulting, which enabled the research objectives to be met (Saunders, Lewis & Thornhill, 2009). This research investigated the low uptake in digital skills development at Consultancy X, explored the need to attain digital skills to stay relevant in the digital economy and examined the organisations' role in promoting digital skills development. This sampling method benefited the researcher by ensuring that each participant contributed to the research as they fit the population requirements (Bell et al., 2018).

The sample for the study was the learning and talent development manager, four success managers and four consultants at Consultancy X. The table below shows the roles of the sample group and the sample size per role:

Role	**Sample Size**
Learning and Talent Development Manager	1
Success Managers	4
Consultants	4

Table 3.1: Consultancy X sample and sample size

The Learning and Talent Development Manager is responsible for training and developing Consultancy X employees to ensure they have the skills to support the consultancy's strategic objectives. Success Managers are responsible for managing consultants' performance to ensure they deliver high-quality work efficiently and meet client expectations. Consultants provide assurance, tax and advisory services to Consultancy X's global client base. The figure below describes the sample group:

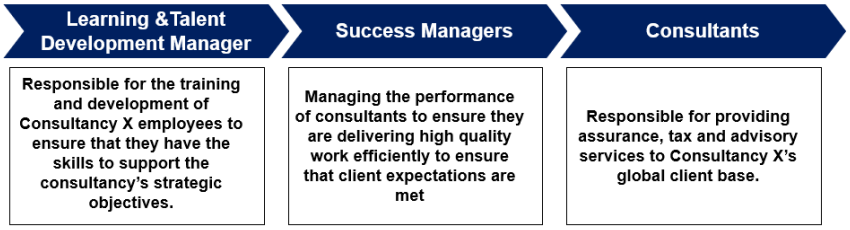

Figure 3.2: Description of the sample

3.5 The research instrument

The research instrument used for this study was a semi-structured virtual interview. The semi-structured interview involved the researcher commencing the interview with a set of interview themes but having the flexibility to change the order in which questions are asked or ask new questions in the context of the research situation (Hair et al., 2019).

The semi-structured interview questionnaire was divided into four sections:

- The first section (Section 1) focused on gathering participant's perspectives on digital transformation and the digital skills uptake at Consultancy X
- The second section (Section 2) focused on understanding the impact of emerging technologies on the participant's current role at Consultancy X.
- The third section (Section 3) focused on gathering participants' perspectives on the effectiveness of the consultancy's current digital skills development approach.
- The fourth and final section (Section 4) focused on gathering participants' recommendations to increase the uptake in digital skills development at Consultancy X.

3.6 Data analysis strategies and interpretation

The thematic analysis technique was used to analyse the data collected from participants. This data analysis technique involved analysing data by searching for themes and patterns in the data set (Huberman & Miles, 2014). The thematic analysis technique was selected due to its compatibility with semi-structured interview data that can be easily interpreted and analysed by identifying themes or patterns in the answers from participants. The transcripts from the interviews recorded and automatically transcribed using Otter AI™ were used to analyse the themes and patterns in the feedback from participants.

3.7 Quality Assurance

Transferability, dependability, credibility and confirmability apply to qualitative research and are used to assess and validate the data's integrity (Bell et al., 2018). This section outlines these concepts in relation to this study.

3.7.1 *Transferability*

For a study to be considered transferable, the findings and research approach need to be transparent and comprehensively documented so that they can be used by researchers in different contexts (Anney, 2014). To ensure that the research is transferable, the researcher kept records of all interactions with participants, such as the recordings of interviews, pdf extracts of transcripts and the analysis/outcomes of the study. This data was stored on a cloud application and on a Universal Serial Bus (USB) to ensure that the data is secure and can be easily accessed.

3.7.2 *Credibility*

For the findings of a study to be considered credible, the study needs to be carried out according to the standards of good practice and the research approach, and the findings need to be consistent (Anney, 2014). An interview guide and questionnaire ensured consistency in the research approach and findings. To maintain data integrity, participants reviewed and approved the interview transcripts before the researcher analysed the data.

3.7.3 *Dependability and Confirmability*

For the study's findings to be considered dependable and confirmable, they need to be consistent with the data collected during the study (Anney, 2014). The interview questionnaire was built around the themes identified in the research objectives and literature review to ensure that the data is dependable and confirmable. The data collected from the interviews were then rigorously analysed to identify themes and patterns in the data to enhance the dependability of the findings.

3.8 Ethical considerations

To protect participants and preserve the confidentiality of their responses, the following steps were taken to adhere to ethical research standards:

- **Permission to conduct the research:** a letter requesting permission to conduct research at Consultancy X was sent to the HR Head, and a letter that provides the researcher with permission to conduct the research at the organisation was required before the research could commence.
- **Ethical clearance:** The Wits Business School ethics form was completed by the researcher and was approved before the researcher could begin collecting data.
- **The context provided to participants (informed consent):** a contextual overview of the research and the interview questionnaire were attached to the interview invite sent to participants so they knew what the research was about before agreeing to participate.
- **Privacy:** the anonymity and confidentiality of the consultancy and the employees involved in the research were maintained by referring to the consultancy as "Consultancy X", and participant codes were used to refer to the participants: "LD1, SM1, SM2, SM3, SM4, C1, C2, C3 and C4"
- **Non-plagiarism:** all sources were acknowledged by referencing them. The research was also submitted to plagiarism detection software to confirm no plagiarism in the paper.
- **No physical or reputation harm was inflicted on participants.**

3.9 Chapter summary

This research followed a qualitative approach to understand the experiences of Consultancy X employees and their attitudes towards digital skills development. An inductive approach and descriptive case study design were used to conduct an in-depth study and extract detailed insights based on the data. The sample for the study was selected using a purposive sampling technique, which allowed the researcher to select participants that added value to the research based on their role and experience in assurance, tax and advisory consulting. The sample consisted of one learning and talent development manager, four success

managers and four consultants at Consultancy X. Data was collected from these participants through 60-minute semi-structured interviews, which involved the researcher asking the participants open-ended questions. The interviews were recorded and transcribed using Otter AI™, a meeting recording and transcription software application. The thematic analysis technique was then used to analyse the themes and patterns in the feedback from participants. Quality assurance techniques were applied to ensure that the research process was comprehensively documented and that there was consistency in the research approach. To protect participants and preserve the confidentiality of their responses, various steps were also taken to adhere to ethical research standards.

CHAPTER 4. PRESENTATION OF FINDINGS

This chapter presents the findings from the semi-structured interviews conducted by the researcher. The semi-structured interview involved the researcher obtaining demographic information from the participants. Thereafter the researcher went through 4 sections to obtain feedback from participants on their perceptions of the digital transformation and digital skills uptake at Consultancy X, the impact of emerging technologies on their roles, and the effectiveness of the organisation's current digital skills development approach. The researcher concluded the interview by obtaining recommendations from participants on how digital skills uptake can be improved at Consultancy X. The Huberman and Miles (2014) thematic analysis model was then used to summarise the findings from interviews presented in this chapter. This was a three-step process that involved the researcher reducing the data from the interview transcripts by eliminating invalid data, placing the data in a table to make it easier to analyse, and finally identifying themes and patterns in the data. The themes drawn from the literature review were used to review participant responses, and new themes not covered in the literature review were also highlighted. The themes and sub-themes from the responses for each question were organised from the highest to the lowest number of times they appeared to highlight the most prevalent findings in participant responses. The summarised findings from each question are categorised and presented according to the propositions identified in the literature review.

4.1 Demographic profile of participants

This sub-section presents the demographic profile of the 9 participants that were interviewed. This covers the age of participants, their current role, their tenure at Consultancy X, and their highest qualification, which is illustrated in Table 4.1 below. The average age of participants is 30 years old, indicating that participants are part of the millennial generation, the first generation to witness exponential technological growth (Eswaran, 2017). The average tenure of participants in their

roles and the organisation is 12 months, indicating they have sufficient institutional knowledge and experience. Two participants have an undergraduate degree in accounting, six have a postgraduate qualification in accounting, and one has a postgraduate degree in Industrial psychology. These qualifications were completed more than three years ago, which aligns with the Consultancy X skills audit data and indicates that participants have not prioritised academic learning in recent years.

Code	Role	Age	Tenure in Role (Mnths)	Tenure in the Organisation (Mnths)	Highest Qualification	Highest Qualification completion date
LD 1	Learning & Development Manager	29	10	10	Bcom Honours in Accounting	2015
SM1	Success Manager	31	10	10	Honours in Industrial Psychology	2014
SM2	Success Manager	33	14	14	Bcom in Accounting	2014
SM3	Success Manager	28	18	18	Bcom Honours in Accounting	2017
SM4	Success Manager	35	20	20	Postgraduate diploma in accounting	2016
C1	Consultant	29	8	8	Postgraduate diploma in accounting	2019
C2	Consultant	37	10	10	Bcom in Accounting	2009
C3	Consultant	28	12	12	Bcom Honours in Accounting	2018
C4	Consultant	27	11	11	Bcom Honours in Accounting	2019

Table 4.1: Demographic profile of participants

4.2 Results pertaining to Proposition 1

This sub-section presents the findings on participant perceptions of digital transformation and the digital skills uptake at Consultancy X and tests the proposition that the success of an accounting firm's digital transformation depends on the digital skills and capabilities of the firm's human resources. In the tables below, three columns are presented: In the first column, the sub-themes are presented, followed by the number of times participants referred to the sub-themes in column two, which are supported by the verbatim responses in the last column.

4.2.1 *Understanding of digital transformation*

Table 4.2 below summarises the sub-themes related to the understanding of digital transformation theme. The understanding of digital transformation was consistent across all participants, with participants indicating the digital transformation involves the usage of digital tools/technologies to improve business processes.

Sub-theme	**Participant Response**	**Verbatim responses that support themes**
Usage of digital tools/technologies	9	*"From my knowledge, digital transformation involves using digital technologies to enhance processes"* -C4 *"I think it is staying up to date with the latest technologies and using digital technologies as a method to help with efficiencies in the workplace."* – SM 1 *"I am thinking about the implementation of digital technology, but I think vital technology, specifically*

		that a company can use to improve the client's experience and improve internal operational efficiencies." – SM3
Process Improvement	9	*"Digital transformation involves leveraging digital technologies to transform organisational processes"* – C3 *"So my understanding would be using digital platforms and digital software in order to transform the business and transform processes."* – SM4 *"It is the implementation of digital tools and technologies to improve business processes"* – SM2

Table 4.2: Understanding of digital transformation themes

Employees having an understanding of digital transformation is critical because it means they have an awareness of digital transformation that will stimulate their thinking on how they need to revamp their careers to integrate emerging digital tools and technologies into their roles.

4.2.2 *Impact of technological advancements on Consultancy X*

Table 4.3 below summarises the sub-themes related to the impact of technological advancements on Consultancy X theme. All participants indicated that technological advancements would have a significant impact on Consultancy X. Participants noted that technological advancements will enable Consultancy X to improve client experience, increase efficiency, reduce costs and gain competitive advantage.

Sub-theme	Participant Response	Verbatim responses that support themes
Major Impact	9	*"I thing it will impact the consultancy to a huge extent. If the company does not adopt technology, then they will not be relevant in a few year's time.."* – SM3 *"It will have a major impact as the adoption of digital technologies is necessary for the organisation's survival"* – SM2 *"Because the workforce is remote, technological advancements will have a major impact on the consultancy. We need to ensure that we are making use of the most recent or effective supply chain technologies to ensure that staff have equipment as and when needed so that staff productivity and client experience is not negatively impacted."* – C4
Improved Client Experience	3	*"It will have a massive effect even if you think about the offers the client service offerings that we do offer to our clients. Digital transformation will have an enormous effect on overall client experience"* – LD1
Increased Efficiency	3	*"It will definitely improve and make the consultancy more efficient, more competitive in the market compared to other firms, improve the ability to Increase their revenue and client base."* – C1

		"I think with using digital software we could look at different processes in different value chains to see how digital technology can drive efficiencies in those processes. I think maybe there's a lot of manual intervention that could be cut out and this could be replaced by automation. So I think it could have a great impact on the consultancy." -SM4
Cost reduction	2	*" If the consultancy adopts emerging technologies, it will allow them to improve their processes, reduce costs and transform client experience."* -C3
Competitive advantage	2	*"I think it can really help the organisation improve its performance, reduce costs and enable the organisation to gain competitive advantage if it the technologies are implemented in the right way."* -SM1

Table 4.3: Impact of technological advancements on Consultancy X themes

Technological advancements will impact organisations of all sizes and across all industries, so Consultancy X must have strategies and plans to exploit these technologies.

4.2.3 *Consultancy X digital transformation strategy*

Table 4.4 below summarises the sub-themes related to the Consultancy X digital transformation strategy theme. Most participants indicated that digital transformation is not incorporated into the Consultancy X business strategy. The rest of the participants indicated that digital transformation is incorporated or starting to be incorporated into the Consultancy X business strategy.

Sub-theme	Participant Response	Verbatim responses that support themes
Ineffective digital transformation strategy	6	*"There are things being worked on which we don't have exposure to, so I would not say it is embedded in the strategy."* -SM2 *"I think that it is starting to be embedded digital strategy. I think that the consultancy is moving into the direction where they see the potential benefits of digital transformation and are conducting research on systems that can be implemented. It's being given more attention, but I don't think it's fully embedded in the strategy as yet."* - SM4 *"Even though the consultancy has been implementing some new systems, I don't think digital transformation is embedded in the strategy as yet. If the organisation wants to embed digital transformation in the strategy, then it needs to be a strategic objective."* – C3
Effective digital transformation strategy	4	*"I do think so. If you think about the different systems they endeavour to acquire, like the HR system and the Learning management system that we are planning to implement - it is definitely the direction we are moving in."* – LD1 *"Yes. Managements mission is to implement sustainable solutions globally, and you can't exactly do that without incorporating digital*

		technologies to transform business processes to improve customer experience." – C2 *"I think it is to an extent. I know that the consultancy has recently introduced a new HR system, and I feel like processes are being updated continuously, but I don't think it's to the level where I necessarily would want to see it. I think they need to be a little bit more intentional with their digital transformation and digital skills development approach."* – C4

Table 4.4: Consultancy X digital transformation strategy themes

A digital transformation strategy is essential because it creates a clear and consistent understanding of an organisation's digital transformation objectives and plans to achieve those objectives.

4.2.4 *Understanding of digital skills*

Table 4.5 below summarises the sub-themes related to the understanding of digital skills theme. Participants understand digital skills to be the ability to navigate digital software, having basic computer skills and the ability to work on Microsoft Office applications and Microsoft Power BI.

Sub-theme	**Participant Response**	**Verbatim responses that support themes**
Navigation of Digital Software	6	*"It is an employees ability to interact with or make use of the digital tools that are available. So the ability to work on various microsoft and accounting softwares."* – C1

		"I think digital skills would be the skills that you need in order to successfully use and navigate digital software. So that could be , just like showing proficiency in terms of identifying what type of digital software to use to benefit business or processes, and then having the skills to successfully use and implement that technology." – SM4
Basic Computer Skills	6	*"I would consider the ability to work on a computer and the ability to perform tasks on softwares applicable to your role as digital skills"* – C3 "To me, it's just the ability to utilize digital devices like computers to access information." – C2 *"I think all of us had consultancy inherently have those skills since we are working in 100% remote environment. But digital skills go even further than that, it also refers to the basic system knowledge that staff members should have. When I say Basics, I am reffering to Microsoft Office products because that's just the foundation where we all working from." – LD1*
Data analysis and reporting	2	*"I would think it would be the ability to work on applications and technology that you use in your day-to-day life and in your profession. Essentially, being able to use stuff like Microsoft Office package and more advanced tools like Power Bi for data analysis and reporting."* – C4

Table 4.5: Understanding of digital skills themes

The roles of assurance, tax and advisory professionals have evolved and will continue evolving over the next 5 to 10 years. To survive these changes, employees must develop their skills and knowledge of emerging technologies.

4.2.5 *The role of digital skills in driving digital transformation*

Table 4.6 below summarises the sub-themes related to the role of digital skills in driving digital transformation theme. All participants indicated that having a digitally skilled workforce is critical to implement digital transformation successfully.

Sub-theme	**Participant Response**	**Verbatim responses that support themes**
Digital Skills = Digital Transformation	9	*"It's definitely integral part of digital transformation.If employees don't possess the skill necessary to use the tools, then digital transformation efforts will be unsuccessful."* – C1 *"Digital skills capacitate a person to carry out digital transformation. Without a digitally workforce, an organisation would not beable to implement digital transformation."* – C2 *"If you don't focus on your own digital skills development then you won't necessarily be aware of what's out there and what you can implement in your business or for your clients to take it that step further. So I think it all starts with looking at yourself and your own skills and the skills within the company. Once you determine that, then you can*

		leverage the necessary skills to drive digital transformation" – C4 *"It is super important. I want to make an analogy. I'm just thinking of a good example. If you think about the transformation to make it sports, you can't improve the performance of the team if the players don't have the necessary skills. In the same way, you can't drive digital transformation without having a sound and solid foundation of digital skills."* – LD1

Table 4.6: The role of digital skills in driving digital transformation themes

Organisations must have a digital skills development strategy to support their digital transformation strategy. If organisations do not have a digitally skilled workforce, it will hamper their digital transformation progress.

4.2.6 *Factors contributing to the low uptake in digital skills development*

Table 4.7 below summarises the themes related to the factors contributing to the low uptake in digital skills development at Consultancy X theme .Participants indicated that time constraints, competing priorities, lack of exposure to digital technologies/skills and resistance to change are the key factors contributing to the low uptake in digital skills development at Consultancy X.

Sub-theme	**Participant Response**	**Verbatim responses that support themes**
Time Constraints	5	*"I think a major factor is that the organisation has grown at an exponential rate so there hasn't really*

		been any time to prioritise digital skills development." – SM3 *"When you work in the audit environment, sometimes things can get a little bit hectic - so personally I spend more time completely CPD courses that are relevant to auditing, and I know most of my friends working for the consultancy are doing the same thing. Digital skills development is not really a priority for us."* – C4
Competing priorities	3	*"I think one of the reasons could be that the organisation is expanding into a lot of different markets and as it's still a fairly new organization, I think there is a lot of time spent to get the correct systems in place and to define roles and responsibilities. And with that being said, I think digital transformation with digital skills might have not been the main priority"* – LD1 *"I think one of the major factors is that the Firm is still pretty new. A lot of the employees are still getting used to maybe the technology and software, but I also feel that people are comfortable doing things a certain way and don't want to change"* - C1
Lack of Exposure	2	*"I think the major factor is that there is a lack of exposure which results in a lack of interest in the technology."* – SM2

Resistance to Change	2	*"I can name 3. The first one is just resistance to change - audit by nature is the novel reliance on legacy systems and there is a reluctance to not fix what is broken. The second one is the lack of resources and exposure to digital technologies , and lastly change requires a shift in mindset, and there's a lot of scepticism around whether or not the benefit of obtaining digital skills would outweigh the effort you put into completing digital skills development courses"* – C2

Table 4.7: Factors contributing to the low uptake in digital skills development themes

The success of an organisation's digital transformation depends on the digital skills and capabilities of their human resources, so organisations must be aware of the factors contributing to the low uptake in digital skills development and put plans in place to increase the uptake in digital skills development.

4.3 Results pertaining to Proposition 2

This sub-section presents the findings on participant perceptions of the impact of emerging technologies on their roles and tests the proposition that the evolution of assurance, tax, and advisory roles correlates with the evolution of emerging technologies. In the tables below, three columns are presented: In the first column, the sub-themes are presented, followed by the number of times participants referred to the sub-themes in column two, which are supported by the verbatim responses in the last column.

4.3.1 *Impact of emerging technologies on participant roles*

Table 4.8 below summarises the sub-themes related to the impact of emerging technologies on their roles theme. All participants indicated that emerging

technologies would majorly impact their roles. Participants highlighted that emerging technologies would allow them to generate better insights to drive decision-making, automate routine tasks and enable them to work more efficiently.

Sub-theme	**Participant Response**	**Verbatim responses that support themes**
Major Impact	9	*"I think it's going to have massively impact it. It's just going to be a matter of, you know, how quickly you're gonna feel that impact. And it's I think that's quite difficult to predict. I have some basic knowledge on AI and Big Data from a seminar I attended. So if you look at something like journal entry testing , you can feed a lot of data into a model and probably use AI to eliminate non routine information and only focus on the risk areas. Something like journal entry testing is something that takes a lot of time, a lot of digging through data and understanding so if this can be done it will make my job much easier. I think big data analytics is also something that's also going to play a massive role. I think that's probably the one that we see the most of at the moment. I mean, especially when you want to do large scale calculations on a more in depth level. So for example, if you want to reconcile a point of sales systems it would be a lot easier to pinpoint exactly where differences are because you can do it almost on a line by line level at a rapid speed so you don't have to rely as much*

		on things like sampling. So yeah, its much more efficient and will make my job easier" – C4 *"To a very large extent and some of these technologies are already impacting how audits are done. Now you can essentially use artificial intelligence to perform certain tasks for certain sections within the audit. For instance, you can you can use it to obtain an understanding of the business by virtue of it collating information from different sources about the client. Or you can even use it for transaction mapping, which involves the AI mapping routine transactions that have been performed over the years. Big data is the new gold or the new oil in industry - so for instance, now you can actually use big data analytics to do risk assessment and just get an indication of the nature of the audit opinion. RPA reduces the time it takes on an audit, and if there is reduced time that translates into money saved. So yeah, the there will be a huge impact."* – C2
Routine Task Automation	8	*"A lot of the larger firms are already incorporating these technologies, so I think it will definitely have a major impact on my role. I think RPA will simplify the audit process by automating mundane tasks and AI coupled with Big Data will allow us to generate better insights on our clients financial transactions."* – C3 *"I think it could have quite a big impact on my role when we look at the data analytics side of things. So part of my role is also to deal with complaints*

		that we receive from a host firms and I think we this could be valuable or it could impact my role. My role involves analyzing the data that we receive. So doing analytics on data that we received to identify any trends, performing trend analysis on the data is critical and AI would make it easier to identify these trends. A lot of things in the complaints process is done manually by people having to go into a system and log complaints onto the system. If we get that feedback and we could automate that, I feel like that could be done automatically and that would cut out a lot of the admin burden." – SM4 *"My role involves extracting data and then actually using the data to help consultants improve their performance, so I think they extent will be big and will result in me spending way less time doing administrative tasks and capturing data manually."* – SM3
Better Insights	6	*"It will ensure that we get better and more data at regular intervals and just from my perspective that is exactly what we need to be able to understand the needs of our staff, because we need to determine what are the training needs, where are solved now, where do we want them to be and how do we bridge the gap. These technologies will empower me to do my job better because I will have more and better data to make decisions."* – LD1

Table 4.8: Impact of emerging technologies on participant roles themes

Emerging technologies are changing how assurance, tax and advisory professionals work by automating and simplifying their tasks. The assurance, tax and advisory profession will continue evolving and look noticeably different in the next 5 to 10 years.

4.3.2 *Individual time investment in digital skills development*

Table 4.9 below summarises the sub-themes related to the individual time investment in digital skills development theme. Most participants indicated that they do not invest any time into developing their digital skills, and the rest either invest a little bit of time developing their digital skills directly or indirectly.

Sub-theme	**Participant Response**	**Verbatim responses that support themes**
No time invested	6	*"No I am not as I am always tired after work and I just want to get some rest in the evenings and on weekends"* – SM2 *"Unfortunately due to working long hours and me focusing on my CA qualification, I do not have time to do research and learn about these technologies."* – C3
Moderate Time Investment	3	*"Yes, recently I studied the business development course at UCT and one module was focused on digital technologies and how they can be used improve business development. I'm not studying something specifically focusing only on digital technologies though."* – SM3

		"Yes I do attend webinars training and also read up on these technologies from time to time." – C1 *"Yes, I'm doing it indirectly because we are developing training for all of the stuff based on data science and data skills. So it's not that I am particularly our pursuing a course in my own capacity, but rather through all the research we are doing for different courses."* – LD1

Table 4.9: Individual time investment in digital skills development themes

The demands of work and life responsibilities result in limited time being available for skills development. However, if employees do not prioritise digital skills development, they will not survive in the digital economy.

4.3.3 *Willingness to learn and adopt emerging technologies*

Table 4.10 below summarises the sub-themes related to the willingness to learn and adopt emerging technologies theme. All the participants indicated that they would learn and adopt emerging technologies if implemented at Consultancy X.

Sub-theme	**Participant Response**	**Verbatim responses that support themes**
Strong willingness	9	*"I would definitely be open to learning and applying it. I think it's always a little bit scary, I think a lot of people are bit scared of technology, maybe even that's also one of the reasons why people are not developing their digital skills. However for your own growth and development going forward, being agile in responding to change and learning about these*

		technologies can only benefit you and the company." – SM1 *"Change is the only constant, so I would definitely be open to learning and adopting the technology"* – C3 *"If there is goal congruency between the teams implementing the technology and the teams working on it then I would be open to learning about the technology and adopting it. If people from outside the company come in without understanding the reason and the values of the company before implementing the technology, then there will be a lot of resistance to change."* – SM3

Table 4.10: Willingness to learn and adopt emerging technologies themes

For an organisation to get the full benefit of technology, it needs to be accepted by employees. Employees' willingness to learn and adopt emerging technologies is a critical enabler that will improve an organisation's digital transformation outcomes.

4.3.4 *Factors impacting the adoption of emerging technologies*

Table 4.11 below summarises the sub-themes related to the factors that would impact their decision to adopt emerging technologies theme. Participants indicated that the factors that would impact their decision to adopt an emerging technology being implemented at Consultancy X would be: having clarity on the objectives/benefits of the technology, the technology being user-friendly and saving them time.

Sub-theme	Participant Response	Verbatim responses that support themes
Saves time	6	*"I feel like if you don't keep up to date with where the market is heading and with what the people are the technology plays you are going to fall behind. So that's a bit of a motivating factor for me, but also just in terms of getting how it can make your life easier in a way and I can free up some of your time but even maybe open an area where you can add more value because you've used this technology in such a way that would be impactful."* – SM1 *"I think the main things for for me would be that the technology drives efficiencies and reduces the admin burden of the role"* – SM4 *"I would adopt the technology if it reduces time taken to complete the tasks is and reduces my workload, especially for tasks that are repetitive"* - C1
Clarity on Objectives/Benefits	3	*"You can't adopt what you don't know. You can only work on something if you are understand how it works, so getting exposure to the how the technology works and the benefits it offers will be a key factor that would impact my decision to adopt a technology."* – C2 *"I think the end users being involved in the implementation of the technology would be a critical factor that would impact my decision to*

		adopt the technology. If the communication and reason behind the implementation of the technology is not clear, then I would not want to adopt the technology." – SM3
User-Friendliness	2	*"I would want to know the objective, it should be user friendly and it needs to make my job easier"* – SM2

Table 4.11: Factors impacting the adoption of emerging technologies themes

Organisations need to consider the factors that impact the adoption of emerging technologies when implementing new technologies/systems, as the adoption of technology by the leaders and employees will improve the implementation outcomes.

4.4 Results pertaining to Proposition 3

This sub-section presents the findings on participant perceptions of the effectiveness of Consultancy X's current digital skills development approach and tests the proposition that promoting digital skills development is essential for organisations to deliver their digital transformation strategy and increase their return on investment in digital technologies. In the tables below, three columns are presented: In the first column, the sub-themes are presented, followed by the number of times participants referred to the sub-themes in column two, which are supported by the verbatim responses in the last column.

4.4.1 *Leadership support for digital skills development*

Table 4.12 below summarises the sub-themes related to the leadership support for digital skills development theme. Most participants indicated that the leadership team at Consultancy X are not actively driving digital skills

development. The balance indicated that leadership teams partially or fully drive digital skills development.

Sub-theme	**Participant Response**	**Verbatim responses that support themes**
Lack of leadership support	6	*"I believe they want to, and I believe it is part of the plan, but I do think they need to be more intentional about it"* – SM1 *"I would not say that it is being driven. I would say that it is being given thought, but I wouldn't say that it is being driven."* – SM4
Minimal leadership support	3	*"To an extent. We were invited to a data analysis webinar a couple of months back and they recently introduced some excel training. I think there should be a little bit more of a push to develop digital skills"* – C4 *"I think it could be more emphasized, but as being 100 percent remote company once again you can't operate without having digital skills. So I do believe that the leaders, when they see someone struggling with some of the digital aspects that we use they do take the time to try and teach those people how to use a different skills and we are focusing on cultivating the digital skills"* – LD1

Table 4.12: Leadership support for digital skills development themes

Leadership support is necessary to drive digital skills development. Leaders must recognise that digital skills development is integral to their digital transformation

strategy and provide employees with the necessary support and guidance to drive digital skills development.

4.4.2 *Organisational resources to support digital skills development*

Table 4.13 below summarises the sub-themes related to the organisational resources to support digital skills development theme. Participants indicated that Microsoft excel courses and software training are the only resources provided by the Consultancy X learning and development team to support their digital skills development.

Sub-theme	**Participant Response**	**Verbatim responses that support themes**
Microsoft Excel Courses	5	*"So they recently introduced training on how to better your Excel skills, but nothing focused on digital technologies specifically."* – SM1 *"They have recently introduced excel courses to assist employees in developing their skills."* – C1
Software training	4	*"So there has been ad hoc training on certain systems that we use, but nothing related to emerging digital technologies."* – SM4 *"There are some excel courses that were recently introduced and there is training on softwares used by the various firms we work with"* – C3

Table 4.13: Organisational resources to support digital skills development themes

If organisations want to achieve their digital transformation objectives, they need to have resources available that equip employees with knowledge and skills in the emerging technologies that are being incorporated into accounting software and are used to automate F&A processes.

4.4.3 *Effectiveness of the organisation's current digital skills development approach*

Table 4.14 below summarises the sub-themes related to the effectiveness of the organisation's current digital skills development approach theme. All participants indicated that the current Consultancy X digital skills development approach is ineffective.

Sub-theme	**Participant Response**	**Verbatim responses that support themes**
Ineffective approach	9	*"I think its a bit of a grey area - I think there needs to be more done for the digital skills development approach to be considered as effective"* – SM1 "*I wouldn't say it is effective yet as people are on different levels, so there should be training for people with more intermediate and advanced knowledge of excel as an example. They shouldn't have to wait until people complete the basic training before they have access to training to improve their excel skills."* – C2 *"The training on the learning academy consists of PDF documents and some pre-recorded videos basic system skills required. I think more content related to digital technologies needs to be added and the training needs to be more interactive for it*

		to be considered effective. In its current state it is not effective." - C3

Table 4.14: Effectiveness of the organisation's current digital skills development approach themes

There are significant benefits to having an effective digital skills development programme. Leaders must partner with their learning and development teams to improve the effectiveness of their digital skills development approach so that the organisation can leverage the benefits of a digitally skilled workforce.

4.4.4 *Recommendations to improve the effectiveness of the organisation's digital skills development approach*

Table 4.15 below summarises the sub-themes related to the recommendations to improve the effectiveness of the organisation's digital skills development approach theme. Participants recommended that Consultancy needs to create more awareness around their digital strategy, foster a learning culture, introduce digital skills Continuing Professional Development (CPD) courses, implement a digital skills development KPI, provide employees with incentives and offer financial assistance to employees to improve the effectiveness of the Consultancy X digital skills development approach.

Sub-theme	**Participant Response**	**Verbatim responses that support themes**
Digital Skills CPD Courses	5	*"The current CPD courses are purely audit and accounting related, so I think we should rather replace some of the existing courses with a bit more technology related courses like data analysis since as auditors we work with data on a daily basis. I also think that internally produced learning and development content needs to be more digital skills*

		related. Providing people with an annual voucher a Udemy course or some form of other online learning voucher would also be really be helpful." - C4
Digital Strategy Awareness	3	*"I think top management can make it part of our vision, values and strategy in some way and communicate that digital strategy with the team in the conversational manner, not just in a top down manner. Once this is done then digital skills develop should be an individual KPI that is measured by management. There are people from various demographics so the training also needs to cater for employees from various age groups and backgrounds."* – SM3
Digital Skills Development KPI	2	*"I think making employees accountable for their digital skills development by requiring all employees to complete a certain number of digital skills development CPD courses by a certain date and linking this to their KPIs"* – SM1
Incentives	2	*"They should make digital skills development training more accessible to employees through partnerships with LinkedIn learning, Coursera, Udemy and Microsoft. Incentivising employees through digital skills badges or certificates could also be used to motivate employees to complete digital skills development courses."* – C3

Learning Culture	1	*"I think it is creating culture of learning. So what we can do and we are trying to get off the ground is to cultivate or create a platform where people share their skill sets. So that is the main challenge we are facing in an 100% remote working environment as well is there's no office learning peer-to-peer learning or not as frequent as you would have had in the live office. So it's about creating platforms for discussions of digital skills specifically because it's new for everyone. I also think that leaders should be very vocal about it at advocate for it in their teams and encourage discussions around it."* – LD1
Financial Assistance	1	*"They need to create more awareness of digital skills and their benefits, offer financial assistance to study courses and expose all employees to the digital transformation projects being worked on"* – SM2

Table 4.15: Recommendations to improve the effectiveness of the organisation's digital skills development approach themes.

4.5 Summary of the findings

Table 4.16 below summarises the key themes per proposition based on the research objectives.

Research Objectives	Propositions	Themes	Sub-themes
Research Objective 1: To investigate the low uptake in digital skills development at Consultancy X.	**Proposition 1:** The success of an accounting firm's digital transformation depends on the digital skills and capabilities of the firm's human resources.	Understanding of digital transformation	• Usage of digital tools/technologies • Process Improvement
		Impact of technological advancements on Consultancy X	• Major Impact • Improved client experience • Increased efficiency • Reduced costs • Competitive advantage
		Consultancy X digital transformation strategy	• Effective digital transformation strategy • Ineffective digital transformation strategy
		Understanding of digital skills	• Navigation of digital software • Basic computer skills • Data analysis and reporting
		The role of digital skills in driving digital transformation	• Digital Skills = Digital Transformation
		Factors contributing to the low uptake in digital skills development	• Time constraints • Competing priorities • Lack of exposure • Resistance to change
Research Objective 2: To explore the need to attain digital skills to stay relevant in the fourth industrial revolution.	**Proposition 2:** The evolution of assurance, tax, and advisory roles correlates with the evolution of emerging technologies.	Impact of emerging technologies on participant roles	• Major impact • Better insights • Routine task automation
		Individual time investment in digital skills development	• No time invested • Moderate time investment
		Willingness to learn and adopt emerging technologies	• Strong willingness
		Factors impacting the adoption of emerging technologies	• Saves time • Clarity of objectives/benefits • User friendliness
Research Objective 3: To examine the role of organisations in promoting digital skills development.	**Proposition 3:** Promoting digital skills development is essential for organisations to deliver their digital transformation strategy and increase their return on investment in digital technologies.	Leadership support for digital skills development	• Lack of leadership support • Minimal leadership support
		Organisational resources to support digital skills development	• Microsoft excel courses • Software training
		Effectiveness of the organisations current digital skills development approach	• Ineffective approach
		Recommendations to improve the effectiveness of the organisation's digital skills development approach	• Digital Skills CPD Courses • Digital Strategy Awareness • Digital Skills Development KPI • Incentives • Learning culture • Financial assistance

Table 4.16: Summary of key themes per proposition

Proposition 1: *The success of an accounting firm's digital transformation depends on the digital skills and capabilities of the firm's human resources.*

There is a consistent understanding amongst all participants that digital transformation involves using digital tools/technologies to improve business processes and that technological advancements will have a significant impact on the client experience, efficiency, costs, and Consultancy X's ability to gain/maintain competitive advantage. However, most participants indicated that digital transformation is not incorporated into the Consultancy X business strategy. Participants understand digital skills to be the ability to navigate digital software, having basic computer skills and the ability to work on Microsoft Office applications and Power BI. All participants concurred that a digitally skilled workforce is critical to successfully implementing digital transformation. Participants highlighted time constraints, Consultancy X being a start-up organisation, lack of exposure to digital technologies/skills and resistance to change as the key factors contributing to the low uptake in digital skills development at Consultancy X.

Proposition 2: *The evolution of assurance, tax, and advisory roles correlates with the evolution of emerging technologies.*

All participants affirmed that emerging technologies would majorly impact their roles. Participants highlighted that emerging technologies would allow them to generate better insights to drive decision-making, automate routine tasks and enable them to work more efficiently. Most participants do not invest any time in developing their digital skills. However, all the participants indicated that they are willing to learn and adopt emerging technologies if they were implemented at Consultancy X. The factors that would impact the participant's decision to adopt an emerging technology being implemented a Consultancy X would be: having clarity on the objectives/benefits of the technology, the technology being user-friendly, and the technology saving them time.

Proposition 3: *Promoting digital skills development is essential for organisations to deliver their digital transformation strategy and increase their return on investment in digital technologies.*

Most participants believe that the leadership team at Consultancy X is not actively driving digital skills development and that the consultancy's digital skills development approach is ineffective. Microsoft Excel courses and software training were highlighted as the only resources the Consultancy X learning and development team provided to support their digital skills development. Participants want Consultancy X to create more awareness around their digital strategy, foster a learning culture, introduce digital skills CPD courses, implement a digital skills development KPI, provide employees with incentives and offer financial assistance to improve the effectiveness of the Consultancy X digital skills development approach.

CHAPTER 5. DISCUSSION OF THE FINDINGS

This chapter builds on the previous chapter by contrasting the findings of the study discussed in Chapter 4 against the literature covered in Chapter 2 to outline any similarities or differences between them. The discussion of the findings addresses the study's objectives: to investigate the low uptake in digital skills development at Consultancy X, explore the need to attain digital skills to stay relevant in the digital economy and examine the role of organisations in promoting digital skills development.

5.1 Discussion pertaining to Proposition 1

The findings on participant perceptions of digital transformation and the digital skills uptake at Consultancy X are discussed in this sub-section by contrasting the study findings against the literature related to the digital skills development uptake in the accounting industry.

5.1.1 *Understanding of digital transformation*

The first definition from the literature defines digital transformation as using digital technologies to transform business processes and activities (Johnston, 2022). The second definition from the literature defines digital transformation as using digital technologies to improve organisational processes, affecting business and governmental organisations at every level (Mugge et al., 2020). The understanding of digital transformation was consistent across the participant group, with participants indicating that digital transformation involves using digital tools/technologies to improve business processes - this aligns with the definitions of digital transformation from the literature.

"From my knowledge, digital transformation involves using digital technologies to enhance processes" -C4

“It is the implementation of digital tools and technologies to improve business processes” – SM2

Digital transformation has the potential to significantly impact professions in several ways. Employees having this understanding of digital transformation is critical because it means employees have an awareness of digital transformation that will stimulate their thinking on how they need to revamp their careers to integrate these emerging digital tools and technologies into their roles to stay relevant and assist the organisation in transforming their business processes to achieve digital transformation objectives.

5.1.2 *Impact of technological advancements on Consultancy X*

According to Knickrehm et al. (2016), new technologies are impacting how accounting firms conduct their business. All participants agreed that technological advancements would significantly impact Consultancy X. Organisations of all sizes and across all industries will be impacted by technological advancements and need to have strategies and plans to exploit these technologies. Organisations are starting to invest heavily in digital technologies to automate processes, improve client experience, and drive down costs (Catlin et al., 2015). Participant feedback aligned with the literature as they also noted that technological advancements would enable Consultancy X to improve client experience, increase efficiency, reduce costs and gain a competitive advantage.

“It will have a major impact as the adoption of digital technologies is necessary for the organisation's survival” – SM2

“Because the workforce is remote, technological advancements will have a major impact on the consultancy. We need to ensure that we are making use of the most recent or effective supply chain technologies to ensure that staff have equipment as and when needed so that staff productivity and client experience is not negatively impacted.” – C4

With the rise of technologies like artificial intelligence, big data analytics, blockchain, robotic process automation and cloud computing, Consultancy X

must invest in new digital tools and technologies to take advantage of their benefits.

5.1.3 *Consultancy X digital transformation strategy*

A study by Mihalcea (2017) found that the number one reason highly skilled employees were leaving their organisations was that they did not have a digital transformation and digital skills development strategy. Half of the participants indicated that digital transformation is not incorporated in the Consultancy X business strategy, with the rest indicating that digital transformation is incorporated in the Consultancy X business strategy or that it is starting to be incorporated in the Consultancy X business strategy. The findings indicate that Consultancy X does not have a digital transformation strategy to keep up with the pace of digital transformation.

"Even though the consultancy has been implementing some new systems, I don't think digital transformation is embedded in the strategy as yet. If the organisation wants to embed digital transformation in the strategy, then it needs to be a strategic objective." – C3

A digital transformation strategy is essential because it will create a clear and consistent understanding of Consultancy X's digital transformation objectives and plan to achieve those objectives. On the contrary, if Consultancy X do not put a digital transformation strategy in place soon, it will negatively impact its ability to attract/retain talent and compete in the digital economy. Additionally, a successful digital transformation strategy must take into account the impact of digital transformation on the professions of finance and accounting professionals, and must work to ensure that the benefits of automation are balanced with the need for professional judgment and expertise.

5.1.4 *Understanding of digital skills*

A study conducted by the ACCA surveying 4,000 F&A professionals found that 70% have expert ability in working with spreadsheets, data management, and

project management software. However, less than 30% of F&A professionals have expert ability in artificial intelligence, cloud computing, machine learning, big data, blockchain, coding and robotics (ACCA, 2020). Participant understanding of digital skills aligns with the skills of the 70% of F & A professionals that have the expert ability in working with spreadsheets, data management, and project management software, as participants understand digital skills to be the ability to navigate digital software, having basic computer skills, the ability to work on Microsoft Office applications like Microsoft Excel and more advanced management applications like Microsoft Power BI.

"It is an employees ability to interact with or make use of the digital tools that are available. So the ability to work on various microsoft and accounting softwares." – C1

"I think digital skills would be the skills that you need in order to successfully use and navigate digital software. So that could be , just like showing proficiency in terms of identifying what type of digital software to use to benefit the business or processes, and then having the skills to successfully use and implement that technology." – SM4

While the foundational digital skills outlined by participants are essential, the roles of assurance, tax and advisory professionals have evolved and will continue evolving over the next 5 to 10 years. To survive these changes, Consultancy X employees need to develop their skills and knowledge of emerging technologies like artificial intelligence, cloud computing, machine learning, big data, blockchain, coding and robotics that will be incorporated into their roles.

5.1.5 *The role of digital skills in driving digital transformation*

Businesses are enthusiastic about the improvement that innovative technologies will produce, but this development can be jeopardised if digital skills development is not prioritised (Fitzgerald et al., 2013). According to Eswaran (2017), employees' digital skills, competencies, and adaptability are the key drivers in ensuring that organisations achieve digital transformation success. All

participants affirmed that having a digitally skilled workforce is critical to successfully implementing a digital transformation strategy at Consultancy X, which aligns with the literature.

"Digital skills capacitate a person to carry out digital transformation. Without a digitally workforce, an organisation would not beable to implement digital transformation." – C2

"It's definitely integral part of digital transformation.If employees don't possess the skill necessary to use the tools, then digital transformation efforts will be unsuccessful." – C1

If Consultancy X does not have a digital skills development strategy to support their digital transformation strategy, it would hamper its progress and could be crippling for the organisation. If Consultancy X invest in the digital skills development of their workforce, it will allow them to adapt quickly and respond to technological changes, resulting in competitive advantage, increased revenue, reduced costs and increased shareholder value (Sousa & Rocha, 2019).

5.1.6 *Factors contributing to the low uptake in digital skills development*

According to ACCA (2020), there is awareness from F&A professionals that they need to improve their digital skills, with 82% of South African accountants agreeing that they need to increase the pace of digital skills adoption to stay competitive. However, the lack of digital skills development programmes that cater to F&A professionals is a significant factor impacting the digital skills uptake in the industry. Another study by Sage (2020), which contains the results of insights from 3 298 accountants to assess how the profession is emerging, found that only 22% of accountants are investing in digital skills development, with 24% saying they intend to focus on digital skills development in the next year and 21% of accountants saying they will focus on developing their digital skills in the next one to three years. The accountants said that lack of time, money, and expertise are the barriers that delay their digital skills development studies. In line with the

literature, participants also said that time constraints and lack of exposure to digital technologies/skills are contributing to the low uptake in digital skills development at Consultancy X. In the context of the TAM, digital skills development plays a crucial role in shaping both perceived usefulness and perceived ease of use. Therefore, Consultancy X should focus on digital skills development to increase adoption and effective use of new technologies.

"When you work in the audit environment, sometimes things can get a little bit hectic - so personally I spend more time completely CPD courses that are relevant to auditing, and I know most of my friends working for the consultancy are doing the same thing. Digital skills development is not really a priority for us." – C4

"I think the major factor is that there is a lack of exposure which results in a lack of interest in the technology." – SM2

Employees need to also make the time to develop their digital skills and increase their exposure to digital technologies, or they risk not being relevant in the next few years as their roles evolve. Additionally, the participant group highlighted that Consultancy X being a start-up organisation and employees being resistant to change as another two factors contributing to the low uptake in digital skills development at Consultancy X.

"I think one of the major factors is that the Firm is still pretty new. A lot of the employees are still getting used to maybe the technology and software, but I also feel that people are comfortable doing things a certain way and don't want to change" - C1

While building a start-up can be challenging due to the foundational systems and processes that need to be put in place, being a start-up is also an advantage for Consultancy X. Most established corporations have legacy learning programmes and systems that they have invested a lot of time and money into building which are not relevant today. Consultancy X being a start-up have the opportunity to craft revolutionary learning programmes that equip employees with the digital skills required to drive digital transformation. Due to the exponential pace of

change in the digital economy, resistance to change is expected during this process. However, this resistance to change can be limited and managed by implementing change management plans to create awareness of the change/s, get buy-in from employees and guide employees through the change/s.

5.2 Discussion pertaining to Proposition 2

The findings on participant perceptions of the impact of emerging technologies on their roles are discussed in this sub-section by contrasting the study findings against the literature related to the impact of emerging technologies on jobs and the future of assurance, tax and advisory.

5.2.1 *Impact of emerging technologies on participant roles*

Technological advancements in the accounting industry have increased the ability of accountants to complete their tasks more efficiently by automating manual processes (Knickrehm et al. , 2016). Studies have shown that digitally literate employees can reduce their cognitive load and improve their productivity by using technology applications to perform certain activities, giving them free time to focus on tasks that require creative thinking (Davison & Ou, 2017). A study by Stumke (2020) found that having a digitally skilled workforce will also improve the efficiency and effectiveness of employees. The study found that they lose around 8% of productive time due to inadequate digital skills. Studies have shown that digitally literate employees can reduce their cognitive load and improve their productivity by using technology applications to perform certain activities, giving them free time to focus on tasks that require creative thinking (Davison & Ou, 2017).

All participants affirmed that emerging technologies will majorly impact their roles. The finding from participants on the perceived impact of emerging technologies on their roles is aligned with the literature, with participants also highlighting that emerging technologies will allow them to generate better insights to drive

decision-making, automate routine tasks and enable them to work more efficiently.

“I think it's going to have massively impact it. It's just going to be a matter of, you know, how quickly you're gonna feel that impact. And it's I think that's quite difficult to predict. I have some basic knowledge on AI and Big Data from a seminar I attended. So if you look at something like journal entry testing , you can feed a lot of data into a model and probably use AI to eliminate non routine information and only focus on the risk areas. Something like journal entry testing is something that takes a lot of time, a lot of digging through data and understanding so if this can be done it will make my job much easier. I think big data analytics is also something that's also going to play a massive role. I think that's probably the one that we see the most of at the moment. I mean, especially when you want to do large scale calculations on a more in depth level. So for example, if you want to reconcile a point of sales systems it would be a lot easier to pinpoint exactly where differences are because you can do it almost on a line by line level at a rapid speed so you don't have to rely as much on things like sampling. So yeah, its much more efficient and will make my job easier” – C4

Emerging technologies have changed how accounting professionals work by automating and simplifying their tasks. In the context of the theory of professions, the accounting profession will continue to evolve and look noticeably different in the next 5 to 10 years. According to Deloitte (2018), accounting professionals will perform a dual role by advising clients on which digital technologies they should leverage to improve financial processes and minimise risk instead of only focusing on analysing financial data. Employees must develop digital skills to survive these changes and adapt to these more specialised roles.

5.2.2 *Individual time investment in digital skills development*

A study by Sage (2020), which contains the results of insights from 3 298 accountants to assess how the profession is emerging, found that only 22% of accountants are investing in digital skills development, with 24% saying they intend to focus on digital skills development in the next year and 21% of

accountants saying they will focus on developing their digital skills in the next one to three years. According to ACCA (2020), there is awareness from F&A professionals that they need to improve their digital skills, with 82% of South African accountants agreeing that they need to increase the pace of digital skills adoption to stay competitive. The findings from the study closely align with the literature, with most participants indicating that they do not invest any time into developing their digital skills, and the rest either invest a small amount of time developing their digital skills directly or indirectly.

"Unfortunately due to working long hours and me focusing on my CA qualification, I do not have time to do research and learn about these technologies." – C3

"Yes, I'm doing it indirectly because we are developing training for all of the stuff based on data science and data skills. So it's not that I am particularly our pursuing a course in my own capacity, but rather through all the research we are doing for different courses." – LD1

The demands of work and life responsibilities result in limited time being available for skills development. However, if employees do not prioritise digital skills development, they will not survive in the digital economy and will be replaced by digitally skilled talent. Therefore, the onus is on employees to prioritise developing their digital skills.

5.2.3 *Willingness to learn and adopt emerging technologies*

Digital technology causes disruption; however, the organisation's adoption of technology by the leaders and employees truly drives digital transformation (Kohnke, 2017). The changes in the roles and responsibilities of assurance, tax and advisory professionals due to technological developments can negatively impact an organisation's digital transformation efforts if these professionals resist change. If the assurance, tax and advisory consultants do not accept technological changes, it will result in an unsuccessful implementation of new technology. For a firm to get the full benefit of a technology, it needs to be accepted by the assurance, tax and advisory professionals (Kamal et al., 2020).

“Change is the only constant, so I would definitely be open to learning and adopting the technology” – C3

“I would definitely be open to learning and applying it. I think it's always a little bit scary, I think a lot of people are bit scared of technology, maybe even that's also one of the reasons why people are not developing their digital skills. However for your own growth and development going forward, being agile in responding to change and learning about these technologies can only benefit you and the company.” – SM1

One of the key factors in the TAM is the willingness to adopt, which refers to an individual's attitude or inclination towards using a new technology. If an individual is not willing to adopt a new technology, they are unlikely to use it, regardless of its perceived usefulness or ease of use. All the participants indicated that they are willing to learn and adopt emerging technologies if implemented at Consultancy X - this critical enabler will improve Consultancy X’s digital transformation outcomes and improve the success rate of any technology implementations.

5.2.4 *Factors impacting the adoption of emerging technologies*

Sousa and Rocha (2019) argue that organisations must focus on upskilling all leaders and employees. These employees and leaders do not need to be experts in a particular technology but instead need to be open-minded, flexible, and willing to learn to understand what emerging technologies do and how they do it. According to Kamal et al. (2020), the following factors impact the adoption of new technology: the effort required to learn and adapt to how the technology works, social pressures, the perceived increase in social status from using the technology, the applicability of the technology to the individual's job, and the efficiency and effectiveness benefits the technology offers. The findings from the study are aligned with the literature as the participant group also highlighted having clarity on the objectives/benefits of the technology, the technology being user-friendly and saving them time as factors that would impact their decision to adopt an emerging technology being implemented at Consultancy X.

“I would adopt the technology if it reduces time taken to complete the tasks is and reduces my workload, especially for tasks that are repetitive” -C1

“I feel like if you if you don't keep up to date with where the market is heading and with what the people are the technology plays you are going to fall behind. So that's a bit of a motivating factor for me, but also just in terms of getting how it can make your life easier in a way and I can free up some of your time but even maybe open an area where you can add more value because you've used this technology in such a way that would be impactful.” – SM1

According to the TAM, the adoption of a technology is influenced by two key factors: perceived usefulness and perceived ease of use. The TAM also identifies attitude towards using the technology, social influence and compatibility of a new technology with existing systems, processes, and workflows as factors that impact adoption. Consultancy X need to consider all these factors when implementing new technologies as the adoption of technology by the leaders and employees will improve the outcomes of digital transformation projects.

5.3 Discussion pertaining to Proposition 3

The findings on participant perceptions of the effectiveness of Consultancy X’s current digital skills development approach are discussed in this subsection by contrasting the study findings against the literature related to the role of organisations in promoting digital skills development.

5.3.1 *Leadership support for digital skills development*

A 2019 Global CEO survey conducted by PWC found that 54% of executives believe that digital skills shortages result in cost pressures and impact their organisation's ability to innovate and meet client expectations (PWC, 2019). According to Sanchez and Zuntini (2018), 70 % of employees believe it is their employer's responsibility to equip them with the digital skills required to drive the organisation's digital transformation strategy; however, only 42 % of employees believe that their organisations have digital skills development programmes in

place to equip them with digital skills. Most participants indicated that the leadership team at Consultancy X are not actively driving digital skills development, with the rest indicating that the leadership team are partially driving digital skills development.

"To an extent. We were invited to a data analysis webinar a couple of months back and they recently introduced some excel training. I think there should be a little bit more of a push to develop digital skills" – C4

"I believe they want to, and I believe it is part of the plan, but I do think they they need to be more intentional about it" – SM1

The findings from the literature were aligned with the findings from the study as the leadership team at Consultancy X are not actively driving digital skills, which could also contribute to the low uptake in digital skills development. In the context of the TAM, digital skills can be seen as a factor that affects perceived ease of use, which in turn affects adoption. The Consultancy X leadership team must recognise that digital skills development is integral to their digital transformation strategy.

5.3.2 *Organisational resources to support digital skills development*

According to Deloitte (2019), developing corporate digital skills development programmes is critical for organisations that want to develop and maintain a highly-skilled workforce to drive digital transformation efforts. Organisations around the world are taking various approaches to develop the digital skills development of their workforce, such as offering employees bursaries for digital skills qualifications related to their roles, partnering with online course providers like Udemy and Coursera or developing their digital skills development programmes by leveraging of the knowledge and experience of digitally skilled professionals in their organisations (Schaefer et al. , 2020). Participants indicated that Microsoft excel courses and software training are the only resources the Consultancy X learning and development team provides to support their digital skills development. The findings from the study are contrary to the literature on

corporate digital skills development programmes being introduced by organisations in various industries.

"So they recently introduced training on how to better your Excel skills, but nothing focused on digital technologies specifically." – SM1

"So there has been ad hoc training on certain systems that we use, but nothing related to emerging digital technologies." – SM4

One of the key factors that influences technology adoption, as identified in the TAM, is the perceived ease of use of the technology. Providing digital skills development resources can help employees to become more familiar and comfortable with the new technology, and can improve their perceptions of its ease of use. This, in turn, can increase their willingness to adopt the technology. If Consultancy X want to achieve their digital transformation goals, they need to implement digital skills development programmes that equip employees with knowledge and skills in artificial intelligence, cloud computing, machine learning, big data, blockchain, coding and robotics, as these technologies are being incorporated in accounting software and are used to automate F&A processes.

5.3.3 *Effectiveness of the organisation's current digital skills development approach*

As digital technology advances and technology adoption grows, 50% of all employees across organisations will need reskilling by 2025 (Schwab and Zahidi, 2020). According to PWC (2016), organisations that have invested in digital skills development have seen an increase in productivity and employee morale, resulting in economic returns that are twice as high as organisations that have not invested in digital skills development. All participants indicated that the current Consultancy X digital skills development approach is ineffective.

"I wouldn't say it is effective yet as people are on different levels, so there should be training for people with more intermediate and advanced knowledge of excel as an example. They shouldn't have to wait until people complete the basic training before they have access to training to improve their excel skills." – C2

“The training on the learning academy consists of PDF documents and some pre-recorded videos basic system skills required. I think more content related to digital technologies needs to be added and the training needs to be more interactive for it to be considered effective. In its current state it is not effective.” - C3

Organisations that invest in the digital skills development of their workforce will be able to adapt quickly and respond to technological changes, resulting in competitive advantage, increased revenue, reduced costs and increased shareholder value (Sousa & Rocha, 2019). BCG (2020) also argues that organisations will benefit more from upskilling and reskilling their workforce based on findings that 92% of organisations that have an investment in digital skills development have seen a high return on investment with a 17% higher profit margin, 84% increase in innovation and a 72% increase in the adoption of digital tools and technologies due to continuous learning, increased productivity and a more resilient workforce. There is significant evidence in the literature of the benefits of an effective digital skills development programme. The learning and development team at Consultancy X need to improve the effectiveness of its digital skills development approach so that the organisation can benefit from the skills of a digitally skilled workforce.

5.3.4 *Recommendations to improve the effectiveness of the organisation's digital skills development approach*

The AICPA has introduced a data analytics certification, recognising CPAs who have completed additional training to equip them with data analytics skills (De Santis & D'Onza, 2021). The ACCA has also launched a certificate in Digital Innovation for Finance to assist finance and accounting professionals in understanding the impact of digital technologies on their professions and how they can be used to create value for accounting firms (ACCA, 2021). EY has created its own digital skills development programme, which gamifies the learning experience by rewarding employees with digital badges for completing digital skills courses in data analytics, RPA, AI, cybersecurity, cloud computing, IoT and virtual reality (EY, 2021). Participants recommended that Consultancy needs to

create more awareness around their digital strategy, foster a learning culture, introduce digital skills CPD courses which is similar to the EY digital skills development programme in the literature, implement a digital skills development KPI, provide employees with incentives like the digital badge incentive idea from the literature and offer financial assistance to employees to improve the effectiveness of the Consultancy X digital skills development approach.

“The current CPD courses are purely audit and accounting related, so I think we should rather replace some of the existing courses with abit more technology related courses like data analysis since as auditors we work with data on a daily basis. I also think that internally produced learning and development content needs to be more digital skills related.Providing people with an annual voucher a Udemy course or some form of other online learning voucher would also be really be helpful.” -C4

As Consultancy X craft their digital skills development programme, it must consider the digital literacy variances across different age groups. They will need to customise training interventions to cater to all employees.

5.4 Summary of the findings

The findings from the study in Chapter 4 were contrasted against the literature in Chapter 2 to outline any similarities or differences between them. Overall, there is a convergence between the literature and the findings from the study. The first proposition based on the literature is that the success of an accounting firm's digital transformation depends on the digital skills and capabilities of the firm's human resources. This proposition is reinforced in the study's findings, with all participants affirming that having a digitally skilled workforce is critical to successfully implementing a digital transformation strategy at Consultancy X. The second proposition based on the literature is that the evolution of assurance, tax, and advisory roles correlates with the evolution of emerging technologies. This proposition is reinforced in the study's findings, with all participants affirming that emerging technologies will significantly impact their roles and allow them to

generate better insights to drive decision-making, automate routine tasks and enable them to work more efficiently.

The third proposition based on the literature is that promoting digital skills development is essential for organisations to deliver their digital transformation strategy and increase their return on investment in digital technologies. This proposition is reinforced in the study's findings, with participants indicating that promoting digital skills development will allow Consultancy X to adapt quickly and respond to technological changes, resulting in competitive advantage, increased revenue, reduced costs and increased shareholder value. A consistent theme in the research findings is that there is a low uptake in digital skills development at Consultancy X due to time constraints resulting in digital skills development not being prioritised, lack of exposure to digital technologies/skills and resistance to change from employees. By addressing the perceived ease of use factor of the TAM through digital skills development, Consultancy X can increase the likelihood of successful technology adoption and implementation. The Consultancy X leadership team must recognise that digital skills development is integral to their success in the digital economy and encourage digital skills development through customized digital skills development training interventions to upskill leaders/ employees and put change management plans in place to ensure that change is managed effectively to improve the outcomes of its digital transformation projects.

CHAPTER 6. CONCLUSIONS, LIMITATIONS & RECOMMENDATIONS

6.1 Introduction

In this chapter, the findings about the propositions will be integrated with the research objectives introduced in Chapter 1 to present a conclusion. The research objectives of the study were to:

i. Investigate the low uptake in digital skills development at Consultancy X.
ii. Explore the need to attain digital skills to stay relevant in the digital economy.
iii. Examine the role of organisations in promoting digital skills development.

Based on the findings, recommendations and suggestions for future research have also been made.

6.2 Conclusions regarding research objective 1

The first research objective was to investigate the low uptake in digital skills development at Consultancy X. The literature covered the importance of digital skills development in driving digital transformation and the progress on digital skills development uptake in the accounting industry. Some of the findings from the literature were:

- New technologies are having a significant impact on how accounting firms conduct their business (Knickrehm et al.,2016)
- The digital skills, competencies, and adaptability of employees are the key drivers in ensuring that organisations achieve digital transformation success (Eswaran, 2017)
- The lack of digital skills development programmes that cater to F&A professionals, the lack of time, money, and expertise in digital

technologies are impacting the digital skills uptake in the industry (Sage, 2020)

This led the researcher to the proposition that the success of an accounting firm's digital transformation depends on the digital skills and capabilities of the firm's human resources. This proposition was reinforced in the study's findings, with all participants affirming that having a digitally skilled workforce is critical to Consultancy X successfully implementing a digital transformation strategy. Participants highlighted that technological advancements would enable Consultancy X to improve client experience, increase efficiency, reduce costs and gain a competitive advantage which correlates with the findings from the literature. There was a consistent theme in the research findings that there is a low uptake in digital skills development at Consultancy X due to time constraints resulting in digital skills development not being prioritised, lack of exposure to digital technologies/skills and resistance to change from employees. Consultancy X and other organisations in the accounting industry must be aware of the factors contributing to the low uptake in digital skills development and put plans in place to increase the uptake in digital skills development to ensure that digital transformation objectives are achieved.

6.3 Conclusions regarding research objective 2

The second research objective was to explore the need to attain digital skills to stay relevant in the digital economy. The literature covered the adoption of emerging technologies at accounting firms and the evolution of assurance, tax and advisory roles due to technological advancements. Some of the findings from the literature were:

- There is awareness from F&A professionals that they need to improve their digital skills, with 82% of South African accountants agreeing that they need to increase the pace of digital skills adoption to stay competitive (ACCA, 2020).

- Only 22% of accountants are investing in digital skills development, with 24% saying they intend to focus on digital skills development in the next year and 21% of accountants saying they will focus on developing their digital skills in the next one to three years (Sage, 2020).
- Technological advancements in the accounting industry have increased the ability of accountants to complete their tasks more efficiently by automating manual processes (Knickrehm, Berthon & Daugherty, 2016).

This led the researcher to the proposition that the evolution of assurance, tax, and advisory roles correlates with emerging technologies. This proposition was reinforced in the study's findings, with all participants affirming that emerging technologies will significantly impact their roles and allow them to generate better insights to drive decision-making, automate routine tasks, and work more efficiently. The findings from the study aligned closely with findings from the literature, with most participants indicating that they do not invest any time into developing their digital skills, and the rest either invest a small amount of time developing their digital skills directly or indirectly. However, all participants indicated that they are willing to learn and adopt emerging technologies if they were implemented at Consultancy X and highlighted that having clarity on the objectives/benefits of the technology, the technology being user-friendly and saving them time as factors that would impact their decision to adopt an emerging technology being implemented at Consultancy X.

The literature and findings from the study indicate that digital skills are required at an organisation and individual level to survive changes in the digital economy. Consultancy X need to consider the factors that impact the adoption of emerging technologies when implementing new technologies/systems, as the adoption of technology by the leaders and employees will improve the implementation outcomes. Employees also need to take the initiative and make the time to develop their digital skills and increase their exposure to digital technologies, or they risk not being relevant in the next few years as their roles continue to evolve.

6.4 Conclusions regarding research objective 3

The third research objective was to examine the role of organisations in promoting digital skills development. The literature covered corporate digital skills development programmes being implemented at organisations across various industries and the organisational benefits of having a digitally skilled workforce. Some of the findings from the literature were:

- 54% of executives believe that digital skills shortages result in cost pressures and impact their organisation's ability to innovate and meet client expectations (PWC, 2019).
- 70 % of employees believe it is their employer's responsibility to equip them with the digital skills required to drive the organisation's digital transformation strategy (Sanchez & Zuntini, 2018).
- 92% of organisations that have an investment in digital skills development have seen a high return on investment with a 17% higher profit margin, 84% increase in innovation and a 72% increase in the adoption of digital tools and technologies due to continuous learning, increased productivity and a more resilient workforce (BCG, 2020).

This led the researcher to the proposition that promoting digital skills development is essential for organisations to deliver their digital transformation strategy and increase their return on investment in digital technologies. Participants indicated that the current Consultancy X digital skills development approach is ineffective due to limited resources available to support digital skills development and leadership not actively driving digital skills development. Participants indicated that it is the organisation's responsibility to promote digital skills development by creating awareness around their digital strategy, introducing digital skills CPD courses, implementing a digital skills development KPI to hold employees accountable, providing employees with incentives for developing their digital skills and offering financial assistance to employees to improve their digital transformation outcomes. Based on the literature and study findings, it is concluded that it is the organisation’s responsibility to provide employees with the resources and training required to develop the digital skills related to the evolution

of their roles, as this will increase the organisation's return on investment in digital technologies. Once the organisation has provided the employees with these resources, the onus is on employees to invest the time and effort into developing their digital skills, or they risk becoming irrelevant.

6.5 Limitations

The limitations describe the constraints faced by the researcher while conducting the study:

a) Due to the time limitations of this research, a sample of 9 participants were interviewed; therefore, the perspectives of all Consultancy X employees were not considered.

b) Due to all employees working remotely and some across different time zones, data was collected through virtual interviews, which required flexibility in scheduling the interviews.

c) The context of Consultancy X is not representative of other assurance, tax and advisory consulting firms.

d) The average age of participants is 30 years old, so the findings did not include the perceptions of assurance, tax and advisory professionals in the 40-60 year old age demographic.

e) The findings were based on the researchers impression that participant perceptions of digital transformation and the digital skills uptake, the impact of fourth industrial revolution technologies on employee roles and of the effectiveness of the organisation's digital skills development approach need to be considered when investigating digital skills uptake in an organisation.

6.6 Recommendations

The findings from the research indicate that there is a low uptake in digital skills development. The factors below were highlighted by participants as contributors to the low uptake in digital skills development:

1. Time constraints
2. Lack of exposure to digital technologies/skills
3. Resistance to change
4. Limited digital skills development programmes being made available to support digital skills development
5. Lack of leadership support for digital skills development

The following practical recommendations below may assist the leadership team at Consultancy X and other South African assurance, tax, and advisory firms to increase the uptake in digital skills development:

1. Thirty-minute “Daily dose of Digital Skills Development (DSD)” blocks in all employee diaries to give employees time to focus on their digital skills development.
2. Development of a Digital Transformation Hub that consists of leaders with digital skills expertise that will create awareness and provide employees with increased exposure to digital transformation projects, industry-relevant digital skills and emerging technology trends.
3. Implementing the Westerman, Bonnet and McAfee (2014) digital transformation compass change management model, which involves creating an awareness of the change, creating actionable roadmaps, constantly communicating with stakeholders and ensuring that employees have the skills/capabilities to sustain the transition. Guiding employees and stakeholders through the changes using this change model is vital to managing resistance to change effectively.
4. Partnering with Wits Business School to develop a customised digital skills development programme for finance and accounting professionals. This will allow the organisation to leverage the knowledge of digital technology

experts to equip their employees with the digital skills required to improve digital transformation outcomes. The proposed syllabus is illustrated in Table 6.1 below. The proposed syllabus consists of 3 core courses to assist finance and accounting professionals in developing a general understanding of emerging digital technologies, as well as a minimum of 3 compulsory electives focused on specific technologies impacting the finance and accounting function:

Qualification Name: Certificate in Digital Transformation for Finance & Accounting Professionals
Accredited by: South Africa Qualifications Authority (SAQA), Association of Certified Chartered Accountants (ACCA), Chartered Institute of Management Accountants (CIMA) and South African Institute of Chartered Accountants (SAICA)
Who is it for: The programme is for finance and accounting professionals/executives who want to understand the impact of emerging digital technologies on their professions and develop their knowledge/skills of these technologies to enable them to use these technologies to generate value for the organisation.
Duration: 12 months
Delivery: Online
Core Courses (Students need to complete all 3 core courses)
Digital Technology Fundamentals

Understanding Cryptocurrency and Digital Assets
Finance & Accounting Strategy in a Digital World
Electives (Students need to select three electives)
Blockchain for Finance & Accounting
Data Analytics for Finance & Accounting
Cybersecurity and Risk Management for Finance & Accounting
Artificial Intelligence for Finance & Accounting
Finance & Accounting Process Automation
Digital Financial Services

Table 6.1: Certificate in Digital Transformation for Finance & Accounting Professionals Proposed Syllabus

5. Implementation of a digital skills development KPI on all employee performance scorecards, which requires all employees to complete one digital skill short course which is relevant to their roles on Udemy, Coursera, Mooc, Get Smarter or LinkedIn Learning every quarter or a digital technology-related SAQA, SAICA, ACCA or CIMA accredited qualification every two years.

6.7 Suggestions for further research

The findings from this research study relate to Consultancy X specifically. However, during the literature review, it was found that digital transformation and digital skills research related to assurance, tax and advisory firms across South Africa is relatively limited. Due to the exponential pace of change in the digital economy, which is impacting the industry, more research into digital transformation and digital skills at accounting firms is required. The following areas are suggested for future research:

- While there is some literature available on the digital systems and digital skills development programmes being implemented by Big 4 and Mid-tier firms, further research is required on digital skills uptake at the Big four and Mid-tier firms in South Africa that have digital skills development programmes in place to determine if digital skills development programme availability results in increased uptake.
- Further research on the digital maturity of accounting firms in South Africa is required to assess if firms are equipped to achieve strategic and operational outcomes in the digital economy.
- Further research could be carried out on the evolution of audit, tax and advisory roles due to technological advancements.
- A study could be conducted to determine the impact of legacy systems on digital transformation at accounting firms.
- There is global demand for South African Chartered Accountants. A study could be conducted to understand the impact remote working has had on talent retention at accounting firms in South Africa.

Table 6.2 Consistency table: research questions, propositions, data collection and data analysis

RO #	State Research Objective	Prop #	State Proposition or Hypothesis	Data collection detail	Data analysis method
1	To investigate the low uptake in digital skills development at Consultancy X.	1	The success of an accounting firm's digital transformation is dependent on the digital skills and capabilities of the firm's human resources	Semi-structured interview • Duration: 60 mins • Sections: 4 • Questions: 14 (excluding demographic questions)	Thematic analysis technique
2	To explore the need to attain digital skills to stay relevant in the digital economy.	2	The evolution of assurance, tax, and advisory roles is correlated with the evolution of emerging technologies.		
3	To examine the role of organisations in promoting digital skills development.	3	Promoting digital skills development is essential for organisations to deliver their digital transformation strategy and increase their return on investment in digital technologies.		

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APPENDIX A: Participant Information and Consent Form

Research title: Digital skills development at a global assurance, tax and advisory consulting firm in South Africa

Request for permission to conduct research interviews for a Masters thesis

Dear participant,

I am seeking your permission to conduct an interview regarding your perceptions of digital skills uptake Consultancy X**.** I am a Master's student at the University of Witwatersrand in Johannesburg, South Africa.

I want to ask you to reflect on your experience with the digital transformation, the digital skills of employees at Consultancy X, the impact of emerging technologies on your role and the effectiveness of the consultancy's current digital skills development programme during our one-on-one interview. You will be one of several employees asked to participate in this study.

The questionnaire is a semi-structured, open-ended interview schedule, meaning I list vital points to be discussed, but you will be welcome to elucidate further with your individual experiences. The questionnaire is attached for your review.

This research project will be conducted under the supervision of Dr Jenika Gobind of the University of Witwatersrand, Graduate School of Business Administration. I am providing this letter with an outline of the research objective (below). The names of all participants who help with the field research, including the name of yourself and the organisation, will not be mentioned in this research paper, academic journal articles, or conference papers resulting from the study. Your identity and opinions and that of the organisation will not be at any time identifiable.

Primary research objective

The primary objective of this research is to investigate the low uptake in digital skills development at Consultancy X. Participants such as yourself will be referred to only by participant codes in all information reported from this research: e.g. participant A.

The confidentiality of the collected information from yourself will be maintained throughout my research until the data is destroyed five years after the study's conclusion. The collected data will be used to produce a Masters's dissertation, which will appear in the University of Witwatersrand academic library and may appear in research articles or conference papers from the dissertation.

Upon completion of the study, I will provide you with an electronic copy of the full research report on request. I would also be most happy to discuss any further restrictions/ethical issues you may have.

The research takes place as follows:

Qualitative interviews commencing in September 2022

- Data collection will involve virtual interviews and will last for approximately one hour. The questions will be made available to you before we meet. You have the freedom not to answer any question posed to you if you are uncomfortable answering and may withdraw from this study at any time.
- Interviews will be recorded and transcribed verbatim using Otter AI
- Data collected from the interviews will be analysed.

Should you have any queries, please do not hesitate to contact my supervisor using the contact details provided below or me**:**

Dr Jenika Gobind: Jenika.Gobind@wits.ac.za

Azhar Saley: 723154@students.wits.ac.za

Thank you for investing your time in this study.

Yours sincerely

Azhar Saley

INFORMED CONSENT PARTICIPANT AGREEMENT FORM

I_____, acknowledge that the researcher, disclosed to me the purpose of the study and I have willingly agreed to participate in the study conducted by Azhar Saley on the topic: Digital skills development at a global assurance, tax and advisory consulting firm in South Africa

I further acknowledge that I have been informed that I may voluntarily withdraw at any stage of the research interview process. I also acknowledge that I have been made aware that all personal information that I provide will be kept confidential and anonymous. All other information I provide will only be used for this study. Furthermore, I grant the researcher permission to record and publish the helpful information I have provided in this study.

Date: _____ Place: _____

Participant Signature: _____

APPENDIX B: Interview Guide

Introduction

Hi [Name of Participant],

It is now [time] on the [date], and I will be starting the interview. This interview is also being recorded and transcribed by an AI-powered recording and transcription tool called Otter.

Before we begin, I want to thank you for participating in this study. As per the context provided on the interview invite and consent form you have signed, these interviews are for my master's research. I will start by collecting some demographic information from you; then, we will go through 4 sections to obtain feedback on your perceptions of the digital transformation and digital skills uptake at Consultancy X, the impact of fourth industrial revolution technologies on your role, the effectiveness of the organisation's current digital skills development approach. We will end the interview by getting recommendations from you on how digital skills uptake can be improved at Consultancy X.

I also want to reassure you that your confidentiality will be protected. Your name and surname will not be used, and you will be identified using a participant code "Participant A, B, C" to protect your identity.

Demographics Questions

- What is your current role at Consultancy X?
- How long have you been in your current role?
- How long have you been working at Consultancy X?
- How old are you?
- What is the highest qualification you have obtained? and in what year did you complete this qualification?

Section 1: Perceptions of digital transformation and the digital skills uptake at Consultancy X

1.1 What is your understanding of digital transformation?
1.2 To what extent do you think technological advancements will impact the consultancy?
1.3 Do you think that digital transformation is embedded in the strategy of the consultancy?
1.4 What does consider to be digital skills?
1.5 What role do you think digital skills plays in driving digital transformation?
1.6 A recent qualification found there is a low uptake in digital skills development. What factors do you think are contributing to the low uptake in digital skills development?

Section 2: The impact of the fourth industrial revolution technologies on your role

2.1 To what extent will fourth industrial revolution technologies like Artificial Intelligence, Big Data Analytics, Robotic Process Automation, Blockchain and cloud computing impact your role?
2.2 Are you currently studying any courses, watching videos, or reading books to improve your knowledge of these technologies?
2.3 If any of these technologies were implemented to improve a process related to your role, would you be open to learning about the technology and adopting it?
2.4 What are the factors that would impact your decision to adopt the technology?

Section 3: Effectiveness of the organisation's current digital skills development approach

3.1 Are leaders in the organisation driving digital skills development?
3.2 What resources has the organisation provided you with to support the development of your digital skills?
3.3 Do you think that the organisation's current digital skills development approach is effective?

Section 4: Recommendations

3.4 What do you think the organisation can do to improve the uptake in digital skills development?

APPENDIX C: Permission Letter

Wits Business School

Faculty of Commerce, Law & Management

PERMISSION LETTER FOR AZHAR SALEY TO CONDUCT RESEARCH AT SAPRO

Dear Dr Gobind,

I hereby give permission to Azhar Saley, Student number:723154 to conduct qualitative interviews with 10 of my employees for his master's research titled *Digital skills development at a global assurance, tax and advisory consulting firm in South Africa*

My conditions for this research to be conducted at the firm are:

- The anonymity and confidentiality of the firm and all the employees involved are maintained
- The interviews are no longer than 60 minutes
- The research is forwarded to me for review prior to it being published

Please contact Gen Brand, Head of People & Culture, at Gen.Brand@sxxxx.com or +1 214 407 2654 if you have any additional questions.

Yours Sincerely,

Genevieve Brand

Gen Brand

Head of People & Culture

APPENDIX D: Ethics Clearance

Graduate School of Business Administration
University of the Witwatersrand, Johannesburg

Wits Business School Ethics Committee
Constituted under the University Human Research Ethics Committee (Non-Medical)

Ethics Clearance Certificate

Ethics protocol number: WBS/DB723154/591
This certificate is only valid with a legitimate ethics protocol number and signed by the Researcher (below).

Project title	Digital skills development in a global tax consulting firm in South Africa
Investigator / Researcher	Mr Azhar Saley
Nature of Project	MM (Digital Business)
Decision of the Committee	Approved, provided stakeholders and participants are guaranteed confidentialty.
Issue Date of Certificate	2022-09-15
Expiry date	Date of submission of the project / research report
Chairperson	Prof Anthony Stacey ☎ +27 11 717 3587 +27 82 880 4531 anthony.stacey@wits.ac.za

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Declaration by Researcher

One copy must be signed by the Researcher and returned to the Chairperson of the Wits Business School Ethics Committee.

I fully understand the conditions under which I am authorized to carry out the abovementioned research and I guarantee to ensure compliance with these conditions. Should any departure to be contemplated from the research procedure as approved I undertake to resubmit the protocol to the Committee.

Signature

16 September 2022
Date: