EVALUATING THE FACTORS INFLUENCING THE ADOPTION OF TECHNOLOGY AMONG CHRISTIANS AS A MEDIUM FOR WORSHIPPING - CASE OF SDA CHURCH DURING LOCK DOWN IN LUSAKA

By

KASYONTA SIAMATENDU

A Dissertation submitted to the University of Zambia in partial fulfilment of the requirements for the award of the Degree of Master of Business Administration Management Strategy

THE UNIVERSITYOF ZAMBIA

LUSAKA

2024

DECLARATION

I, **Kasyonta Siamatendu**, do hereby declare that this work is my original work achieved through personal reading and research. This work has never been submitted to the University of Zambia or any other Universities. All sources of data used and literature on related works previously done by others, used in the production of this Dissertation have been duly acknowledged. If any omission has been made, it is not by choice but by error.

Signature: ..... Date: .....

COPYRIGHT

APPROVAL

This Dissertation by **Kasyonta Siamatendu** is approved as a partial fulfilment of the requirements for the award of the Degree of Master of Business Administration Management Strategy.

Examiner 1	Signature	Date
……..	……	……
Examiner 2	Signature	Date
……..	……	……
Examiner 3	Signature	Date
……..	……	……
Chairperson Board of Examiners	Signature	Date
……..	……	……
Supervisor	Signature	Date
……..	……	……

ABSTRACT

The outbreak of COVID-19 marked a significant turning point for humanity, impacting various aspects of life, including religious practices. The pandemic accelerated the trend towards digitalization and the increased use of technological resources for worship, particularly due to restrictions or closures of places of worship. However, some churches still exhibited reluctance towards adopting technology for worship. This study aimed to identify the factors influencing the adoption of technology for worship during the COVID-19 lockdown by Seventh-day Adventist (SDA) Christians in Zambia and to propose a model for its implementation. A survey research approach was utilized, with a researcher-administered questionnaire distributed to purposively sampled participants. A total of 384 questionnaire responses were received, resulting in a response rate of 79%. The primary data collected was analysed using Statistical Package for Social Science (SPSS) and Excel. The findings from the regression analysis revealed that performance expectancy, and social influence significantly influenced the behavioural intention to use technology for worship. However, effort expectancy and facilitating conditions did not have a significant impact on behavioural intention. Based on these findings, it is recommended that church leadership and stakeholders consider these factors when introducing technology for worship to enhance church attendance. This can potentially increase financial contributions such as tithes and offerings, as attendance often correlates with financial support. The Unified Theory of Acceptance and Use of Technology (UTAUT) model can be effectively used to evaluate factors influencing technology adoption in worship, as it provides a comprehensive framework for investigating relevant factors.

Keywords: technology adoption, religious practices, technological solutions, UTAUT, Worship.

ACKNOWLEDGEMENTS

This research would not have been possible without considerable information and facts gotten from other researchers and sources that have researched extensively on Technology adoption and to this the researcher duly acknowledges their input to the study.

My deepest appreciation goes to my supervisor, Prof Jackson Phiri for taking the patience of reading through my work and making constructive criticisms and useful suggestions that helped me to stay focused from the beginning of this work till the end. I am highly indebted to my wife, for her constant material and moral support without which this research would not have been made possible; and to all my brothers, sisters and family for their love, encouragement and prayers which gave me the strength to go on at every stage.

Secondly, I wish to extend a heartfelt thank you to all my incredibly special friends whose discussions and ideas in one way or another enlightened me while carrying out this research. Finally, I would like to say special thanks to God Almighty for giving me his grace throughout this period and providing me with both the intellectual and physical capacities and the opportunity to live up to the completion of this research. To all those whose names have not been mentioned here, know that am grateful to you.

DEDICATION

To my wife, Paxinah Chinyama Kaambwa Siamatendu, my children Lillian Namweemba Siamatendu, Racheal Namakoye Siamatendu and Joshua Chikatala Siamatendu, for their moral support throughout this incredible academic journey.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ACRONYMS

BI	Behavioural Intention
DTPB	Decomposed Theory of Planned Behaviour
EE	Effort Expectancy
FC	Facilitating Conditions
GSB	Government Services Bus
ICT	Information and Communication Technology
PBC	Perceived Behavioural Control
PCI	Perceived Characteristics of Innovation
PE	Performance Expectancy
RPA	Robotic Process Automation
SDA	Seventh-Day Adventist
SI	Social Influence
SN	Subjective Norm
SPSS	Statistical Package for Social Science
TAM	Technology Acceptance Model
TIR	Theory of Innovation Resistance
TPB	Theory of Planned Behaviour
TPR	Theory of Perceived Risk
TRA	Theory of Reasoned Action
TTF	Task Technology Fit
UTAUT	Unified Theory of Acceptance and Use of Technology
VIF	Vector Inflation Factor

CHAPTER 1

INTRODUCTION AND BACKGROUND

1.1 Introduction

The chapter looks at the background information to the problem and problem statement regarding the factors which affect the adoption of technology by Christians as a medium of worship. It then looks at the aim of the study followed by the objectives which were used to answer the research questions and lastly the significance of the study to the church and other stakeholders like researchers.

1.2 Background

The outbreak of COVID-19 marked a turning point for mankind (Beaunoyer et al., 2020). All aspects of human life were affected to some extent, including religious services (Baker et al., 2020; Ben-Lulu, 2021; Evener, 2020; Yezli & Khan, 2020). It changed the way in which many religions had been practising their rituals for centuries. It accelerated the recent tendency to use more technological resources and an evident change towards digitalisation (Campbell, 2010a, 2010b, 2012, 2018; Campbell & Tsuria, 2022; Evolvi, 2021; Hutchings, 2015, 2017; Roso et al., 2020).

Buonsenso et al. (2020) state that one of the characteristics shared by the majority of religious events is the gathering of people to carry out their communal religious or spiritual practices, usually in enclosed spaces and, on many occasions, with a lot of physical contact, such as warm greetings, kisses and hugs. These kinds of religious gatherings can be a vector for the transmission of viruses in a similar way as any other event involving gathering in groups (Liu et al., 2020; Quadri, 2020).

On the other hand, closing or restricting access to places of worship might have negative consequences since it leads to the isolation of individuals and groups (Buonsenso et al., 2020). Phillips (2020) traces the history of different religious groups' responses to pandemics (including COVID-19). One of the major differences between the COVID-19 pandemic and the former is that it has become relatively easy to move from face-to-face to virtual services (Wildman et al., 2020). According to Dowson (2020), this was a logical step taken by some Christian churches because of the pandemic, simply, move worship online and use creativity to cope with the problems and situations faced by both parishioners and religious personnel (Adegboyega et al., 2020; Ahman & Thorén, 2021; Buonsenso et al., 2020; Campbell &

Sheldon, 2021; Johnston et al., 2021; Pillay, 2020; Vander Weele, 2020). This can be viewed as the next step in an already-established trend: since the arrival of the Internet, digitalization has been introduced into religious practices, although clearly, the arrival of the pandemic has abruptly accelerated it.

Technology adoption plays a critical role in shaping our modern world. The advancement and adoption of technology vary in different regions and demographics. (Janzen, Aaron T, 2019). Its therefore crucial to understand the factors which influence the adoption of technology, its widespread use and its benefit. The COVID-19 pandemic significantly impacted technology adoption across various sectors. Some key aspects of technology adoption in relation to COVID-19 include Remote Work and Collaboration. With the implementation of social distancing measures and lockdowns, organizations rapidly adopted technology to enable remote work and virtual collaboration. This led to a surge in the use of video conferencing tools, project management software, and cloud-based collaboration platforms.

The other areas that impacted the technology adoption were E-commerce and Digital Payments. As physical stores faced restrictions and people sought to minimize in-person interactions, there was a significant shift towards online shopping and digital payments. This prompted businesses to enhance their e-commerce capabilities and provide contactless payment options to their customers.

Telemedicine and Remote Healthcare is another area which impacted technology adoption. Amidst the pandemic, telemedicine emerged as a safer and more convenient way for patients to connect with healthcare professionals. Remote consultations, digital health monitoring devices, and telehealth platforms gained prominence, reducing the need for in-person visits and minimizing the burden on healthcare systems. Educational institutions transitioned to online learning models, leveraging video conferencing tools, learning management systems, and online collaboration platforms. This forced adoption of technology-facilitated remote education and created opportunities for innovative teaching methods.

The pandemic exposed vulnerabilities in traditional supply chains, prompting organizations to accelerate their digital transformation efforts. Technologies such as Artificial Intelligence-driven demand forecasting, blockchain for supply chain transparency, and robotic process automation (RPA) for logistics management gained traction. To minimize human interaction, businesses increasingly adopted automation and robotics in various sectors. Examples include the use of robots in manufacturing, delivery drones, and automated customer service systems.

It is worth noting that the extent of technology adoption varies across industries and regions, influenced by factors such as digital infrastructure, regulatory frameworks, and economic conditions. The pandemic served as a catalyst, accelerating the adoption of technology across multiple sectors, and redefining how businesses and individuals operate in the new normal.

The factors influencing the adoption of technology are multifaceted and interconnected. Several key elements contribute to the acceptance and integration of technology into societies and organizations. These factors can vary depending on individual perspectives, cultural contexts, economic conditions, and technological characteristics. By examining these factors, researchers, policymakers, and businesses can develop strategies to enhance the adoption of technology.

1.3 Statement of the Problem

Before COVID-19, live-streaming services were only an option for congregations, but at the onset of the pandemic, live-streaming became mandatory for the church's survival. Churches were using live-streaming services such as Facebook Live, YouTube Live, Zoom, Google+ and Periscope not to mention the number of third-party streaming services that allow for multiple platforms simulcasting to share words of encouragement to the online community. There have been both positive and negative outcomes from the sudden influx of online services being added to the already long list of activities churches provide their members.

A national survey of evangelical churches in the USA found that 65 percent of churches have seen a decline in giving, even while almost half of the churches say their online viewing has grown to double or more of their regular in-person attendance. Some people may be watching out of curiosity, while others may be searching for answers. Regardless, the result of this increase in online attendance for churches is that many are now accountable to a much larger audience than they were previously.

Live-streaming has also impacted the persuasive strategies of church leaders, who are accustomed to seeking simply to raise “tithes and offerings.” Now, they must ask the online community to support the church’s non-profit activities and to think of the needs of those who are staffed through the ministry. This shift marks an important reality: Not every online viewer will give to a church, but many will likely give to a cause to which the church is attached.

At the height of the COVID-19 pandemic, the Zambian government through the ministry of Health stopped people from having big gatherings like church meetings, weddings and

funerals. As a result, there was a need to find alternative means of being in contact with congregants in the case of churches. Adoption of technology as a means of worship, such as using digital platforms for religious services, virtual gatherings, or online religious education became a major means for churches despite there being some resistance in some sections of religions. Cardoza, (2019). Hence, this research would like to establish the actual challenges for this refusal to adopt technology so that church attendance which is the main source of income through tithes and offerings is not affected. Further, given the fact that there is very little research that has been done post-COVID pandemic, there is therefore a literature and research gap that this study will aim to bridge.

1.4 Aim of the Study

The aim of this study was to examine key factors that affect the adoption of technology as a medium for worship among Christians and propose a model that religious leaders can use to make informed decisions and create suitable technological solutions that enhance the worship experience so that church attendance is not greatly affected.

1.5 Research Objectives

i. To determine the level of technology usage among SDA church members during the COVID-19 lock down in Lusaka.

ii. To evaluate the factors that influence the adoption of technology by church organizations during the COVID-19 lockdowns in Lusaka.

iii. To propose a model as a solution to the challenges that affect technology adoption as a medium for worshipping so as to improve church attendance.

1.6 Research Questions

i. What was the level of technology usage among SDA church members during the COVID- 19 lock down in Lusaka?

ii. What factors influenced the adoption of technology by church organizations during the COVID-19 locked down in Lusaka?

iii. What model can be used as a solution to the challenges that affect technology adoption as a medium for worshipping so that church attendance is not greatly affected?

1.7 Significance of the Study

The findings of this study will be used to add further insight to the existing studies on Factors that affect adoption of technology and how such factors impact technological adoption in developing countries like Zambia. Furthermore, the findings will be used in developing policy frameworks to alleviate the challenges in the adoption of technology by churches as a medium of worshipping so that church attendance is not greatly affected. This will also help churches to be well prepared in future should there be another pandemic outbreak.

1.8 Scope of the study

The study was conducted within Lusaka district. Specifically, the respondents were sampled from the Woodlands conference which had a total population of 124 churches and 58,818 members (Woodlands conference, 2018).

1.9 Organization of the Dissertation

The dissertation is structured into six chapters, each serving a distinct purpose in the research process.

Chapter 1: Introduction - This chapter sets the stage for the study by providing an overview of the research problem, its significance, and the objectives of the study. It also includes the research questions or hypotheses that will guide the investigation.

Chapter 2: Literature Review - The literature review chapter critically examines existing research and theories relevant to the study. It identifies gaps in the literature that the current study seeks to address and provides a theoretical framework for the research.

Chapter 3: Theoretical Review and Hypothesis Development - This chapter builds on the literature review by presenting the theoretical framework that guides the study. It also develops hypotheses based on the theoretical framework and research questions, which will be tested in the empirical research.

Chapter 4: Research Methodology - The methodology chapter outlines the research design, data collection methods, and data analysis techniques used in the study. It also discusses the sample population, sampling techniques, and any ethical considerations.

Chapter 5: Presentation of Findings and Discussions - In this chapter, the research findings are presented and analyzed. The findings are discussed in relation to the research questions and hypotheses, and the implications of the findings are discussed.

Chapter 6: Summary, Conclusions, and Recommendations - The final chapter summarizes the key findings of the study, draws conclusions based on the findings, and provides recommendations for future research or practice. It also reflects on the limitations of the study and suggests areas for further investigation.

Overall, the dissertation follows a logical progression from introduction to conclusion, presenting a thorough investigation into the research problem and contributing to the existing body of knowledge in the field.

1.10 Chapter Summary

This chapter has given a background and problem statement regarding the factors which affect the adoption of technology by Christians as a medium of worship. The aim of the study was highlighted followed by the objectives which were used to answer the research questions and lastly, the significance of the study was given to define the beneficiaries of the study.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

This chapter will introduce and review literature on the COVID-19 Pandemic as well as the use of Technology in churches taking a holistic approach where the advantages and disadvantages are discussed. It also reviews lessons learnt from the Jehovah's witnesses on the use of ICT during the COVID pandemic as well as the theoretical and conceptual framework.

2.2 COVID-19 Pandemic

The term pandemic means a serious infectious disease that spreads rapidly between people and occurs at the same time not only in one country but around the world (Hawker, 2005; Crowther, 1998). As far as the factors that led to the pandemic outbreak are concerned, a new infectious viral lung disease began in Wuhan, China, at the end of 2019, hence COVID-19. It is a disease associated with the coronavirus crossing the interspecies barrier. This pandemic developed on a global scale. One of the fundamental methods of limiting the expansion or spread of COVID-19 is social distancing. This means quarantine and a radical change in contacts between people, which goes towards virtualization and online contacts.

For religions in general, and Christian denominations in particular which are based on religious communities, meant that pandemics are a particular challenge for the identity and life of these communities. Various governments around the world brought in different measures to restrict people from meeting in large numbers. Pastors needed to provide spiritual food in the form of preaching and teaching the word of God during the lockdown, so they decided to adopt innovative methods (technology) such as using social media platforms to reach their congregants. These include WhatsApp, Facebook, Instagram, and Telegram amongst others.

Many churches have resorted to using social media to continue preaching to their congregations. For the church to effectively use various platforms, social media needs planning (a strategy), people (someone in charge), and a purpose (measurable goals) to be effective (Edmondson, 2017). Those are some of the key strategies that will help the church engage both members and guests on social media. It is noted that as the omnipresence of social media grows, it would be imprudent to continue to ignore your church's social media

strategy and presence (Appel et al. 2020). This study looked at some of the arguments and counterarguments about the effective use of various social media platforms that an organization such as the church uses in preaching amid the pandemic of COVID-19 and subsequent lockdown.

Social media as a communication platform can be an effective tool in conveying information and describing current issues to the targeted public audience. Various kinds of social media play different roles but with one main purpose, which is to spread information on an urgent basis and share it with a wide range of people (Derania & Naidu, 2015). It is vital to understand how to share information strategically via social media to control the information shared online with other people. With the arrival of coronavirus also known as COVID-19, many churches have adopted the use of social media to preach the word of God (Howe, 2017). There are several ways to leverage the impact of social media, using online content, photography and more to reach their audience (Di Pietro & Pantano, 2012).

2.3 Information Communication Technology

Information and Communication Technology (ICT) is the application of computers and telecommunications equipment to store, retrieve, transmit and manipulate data. The term is commonly used as a synonym for computers and computer networks. However, it also encompasses other information distribution technologies such as television and telephones (Pillay, 2020). ICT is a powerful collection of elements which include computer hardware, software, telecommunication networks, workstations, robotics and smart chips. Since we live in information society, everyone is expected to be ICT literate (Cardoza, 2020). The ICT literacy entails awareness, knowledge and interaction. This implies that in the study of computers, one will become aware of their importance and good in our society. Additionally, one will learn what computers are and how they work and learn to use a computer to perform some basic tasks or applications.

Factors that lead to the choice of ICT in the church are that ICT is preferred for use in many churches due to its speed. This is because through ICT information can reach the audience within a short duration of time. In addition, ICT platforms are accessible to everyone who is on the web (Pillay, 2020). Further, ICT tools have the ability to store and retrieve information. They are convenient, easy to use, affordable and enjoyable to use and finally, they help reduce the use of paper (Cardoza, 2020).

ICT platforms used in church Today, such as social networking websites have emerged and can be tapped to provide fast, powerful and interactive communication. In order to capture the potential of ICT in fulfilling the great commission, there is a need for Christians and the church to embrace and use ICT. (Pillay, 2020).

The popular examples of ICT platforms used in the church today and church organisations such as the Jehovah's Witnesses include Facebook, Twitter, Instagram, You Tube, Email, Blog, Skype, Zoom, Google Plus and WhatsApp. These platforms are majorly used for Bullet announcements, post sermons, Hymns, Bible studies, Sunday school lessons, and counselling lessons among others. The main purpose of the ICT platforms is to establish and maintain relationships, connect and stay connected to the congregants and attract new converts. However, churches that have embraced the aforementioned platforms are underutilizing them. The majority are only using them to post church's location and brochures (Pillay, 2020).

2.4 ICT tools used in the Church

ICT tools include any communication device like radio, television, phones, computers, microphones, speakers, radios, projectors and televisions, and CCTV (Closed Circuit Television) among others (Pillay, 2020). Different ICT tools are used in varies contexts including education, health care, business sectors, and churches among others. ICT tools have great potential to enhance the transmission of the Gospel and the creation of Christian wisdom in the new information age. (Cardoza, 2020). The advent of the internet has led to congregations using computer technologies to enhance and promote their ministries such as worship, fellowship, pastoral care, education, and mission evangelism. Technology has played a significant role in the spread of Christianity throughout history (Cardoza, 2020).

Accordingly, there is a changing worshipping experience with the emergence of ICT. Various ICT tools are used in church during worship to provide visual sermon outlines, display songs and music and show illustrative video clips. The preacher can make teaching and preaching easy by providing visual sermon outlines on a projector through a computer. This may help the people to follow and internalize the message being delivered and it helps to connect with the congregation wherever they may be (Cardoza, 2020). In addition, ICT is used in churches to enable children to take part in an interactive encounter within the realities of Biblical teachings and play games that enhance biblical literacy. ICT is majorly used during worship to make the ministry more effective, attractive and applicable to the lives of

the congregants, especially the young who are quiet familiar with ICT (Cardoza, 2020). It is through the web that people find personal, social and religious information. As a result of these, religious institutions have devoted more resources in order to improve their presence on the web.

ICT has filtered through society. It has become a tool to aid humans in almost any task in the contemporary church. There are three main uses for ICT in the Church currently: presentation, multimedia and communication. Presentation involves displaying songs, sermons or notices in church service. In addition, multimedia refers to all other uses of audio, video, or other media that are produced through ICT. These may be used to add to the worship experience, to show video clips or to record parts of meetings. ICT is used by some churches and other Christian institutions to resource other churches.

To effectively use ICT platforms as a tool in preaching is seen as playing a key role, especially in reaching out to a larger audience. It is vital to know how to manage digital communication in a local church. It is also vital to identify the ICT medium as a platform that makes sense for your church community. In choosing the right social media platform for instance, it must be noted that various types of social media play different roles but with one main purpose which is to disseminate information and share it with a wide range of people. In the past two years, many church visitors have found vital information on the church's website before their visit. This demonstrates how social media can be used to create the right positive image and influence people's decisions. Having an online presence includes using other social media platforms, which is a major draw for many guests, second only to personal invitations (LaGuardia, 2015).

2.5 Empirical literature review

A study by Patel (2007) in relation to factors influencing technology adoption was done in India. The finding of the research was that the growth of e-commerce has provided an opportunity to understand why people participate in e-commerce activities and adopt information technology. Researchers from various disciplines analyzed the reasons from different perspectives supported by theories such as; diffusion of innovation, theory of reasoned action (TRA), and theory of planned behaviour (TPB). Various models were designed and validated to explain the factors responsible for technology adoption of e-commerce. The purpose of this study was to review the literature on technology adoption and

to critique a number of key models that are frequently applied by researchers in their efforts to examine the factors that predict the adoption of technologies.

A further study was undertaken by Kipyego (2019) in Kenya in relation to factors influencing the adoption of Greenhouse technology among small holder tomato farmers in Nakuru County in Kenya. The findings of the research were that the technology has been proved profitable and also economically viable but the adoption in Nakuru County has however been low. Results indicated that access to extension services, access to credit, membership in farmers' groups and farm income significantly determined the adoption of greenhouse technology.

Another study was undertaken by Musonda (2020) in relation to the factors influencing the adoption of electronic medical records technology in public institutions in Zambia. The study adopted a cross-sectional survey design with a target population of 200 respondents. Using the Krejcie and Morgan table to determine the sample size, 127 respondents were sampled for this study. To achieve the desired representation, simple random sampling was used. A questionnaire with a 5-point Likert scale was constructed and used. The data obtained was analysed by descriptive statistics using SPSS Version 20.0 and the findings were appropriate for the research questions. Qualitative data was analysed by inferential methods and presented descriptively. Both content and construct validity were used to ensure the validity of the research instruments while reliability was determined by using the Cronbach-Alpha Coefficient. Pilot testing to pre-test and validate the research instruments was done prior to the main study. Computed MLR results showed that the four factors studied accounted for 28.5% of the variance with the adoption of EMR. The study recommended that health facilities should increase infrastructure and resources that support EMR use, employees should be supported for further training on EMR operation and suppliers should regularly support and training health staff on how to use EMR usage.

The adoption of technology has driven a lot of research studies worldwide. For example, Kang et al. (2019) explored how adults use information technology in their spiritual and religious lives. The study concluded that the use of technology in spiritual growth is paramount in understanding the scriptures very well. It is also suggested that some Christians use technological applications which help them to watch sermons online, subscribe to religious groups, listen to religious podcasts and keep up with church events. Additionally, it is believed that assisting older folks in assessing church and bible-related applications is tedious compared to the youth who are technologically savvy.

Phillips (2018) assessed technological advancement in churches and concluded that excessive use of social media has influenced the adoption of church members using bible apps in churches. The author further argues that members as consumers want comfort as a form of lifestyle hence, carrying a bulky book as the traditional bible is obsolete. This can be observed in that many Christians nowadays may opt to carry a smart phone to church than carry a traditional bible. He further affirms that the use of information technology tools can strengthen or weaken the faith one has in God if it is not managed well. These concerns are shared by Phillips (2018) who makes a similar argument that information technology can be detrimental despite its huge potential.

The ability to have ease of access as well as online conversation with friends and families makes technology a preferred choice over the traditional bible. Other authors also feel that the use of technology is a lazy approach to spirituality hence a Christian ought to possess a traditional bible as a way of righteousness and upholding the virtues of Christ. Despite these differences, there are some glittering qualities attached to the use of technological applications as they influence reading easily as well as ease of access (Phillips, 2018).

2.6 Jehovah's Witnesses and the Use of ICT

Perhaps one of the major religious organisations that adopted an extensive use of ICT pre-COVID and during the COVID epidemic has been the Jehovah's witnesses. That's the reason why the study looks in depth at their use of technology as it will help bring up some issues which the study was looking at. Jehovah's Witnesses consider meetings an essential part of their behaviour (Chryssides, 2016). Meetings are vitally important to them because through them they receive and strengthen their beliefs, values and the way to apply them in their lives. They regard meetings as something sacred that helps them to feel close to God, and as a channel through which they understand, strengthen and fortify their relationship with both Jehovah and his son, Jesus Christ (WTBTS, 2009).

The digitalisation of Jehovah's Witnesses meetings affected them in many different ways (Cardoza, 2020). To begin with, their in-person meetings were occasions to gather together in order to socially interact, share their feelings and show displays of affection, such as kisses and hugs, which were not possible digitally. Secondly, the digitalisation of meetings enhanced the digital skills and competences of all their members. While young people are considered to be digital natives and the use of new technologies is easily learnt by them (Ng,

2012; Prensky, 2001), the elderly are usually considered digitally illiterate (Lind & Karlsson, 2014) and few efforts are promoted by organisations to help them to handle new technology.

The digitalisation of Jehovah's Witnesses meetings has forced many of their members to learn new technologies, such as how to use both hardware and software to have a videoconference. Therefore, Jehovah's Witnesses have been creating social value (Retolaza et al., 2020) by fighting against digital illiteracy, especially among the elderly which are a group of people usually forgotten by society with regard to the development of digital skills. A third area of impact is that of spirituality, of which meetings are considered to be an essential feature. Jehovah's Witnesses presented the highest percentage (85%) among surveillants in the Religious Landscape Study of the Pew Research Center (Religious Landscape Study, 2020)

2.7 Attitude towards ICT

Some arguments are made for and against the use of ICT in churches. However, ICT must be applied in wisdom to solve problems in the church. Accordingly, there is a worrying trend amongst some churches, where ICT is seen as a necessity for successful ministry. Jewell, (2020) claims that digital technologies have nothing to do with the explosive growth or decline of churches in Latin America. There is a strong lesson that the growth of the church is based on something more than adding technology. On the other hand, there are still churches that see ICT as being inherently bad. This can come from confusion over the role of technology. Technology tends to create human hearts and minds bent on control when worship should instead place the focus on the divine (Philips, 2020).

However, ICT can be made to serve humans in their worship in a similar way that music technology has aided corporate worship in many religions. ICT is over-analyzed so that excuses are found not to use it. Although some very good questions are raised, it appears that presentations in worship have improved worship in many churches. According to Jewell, (2020), balance is needed in the arguments about the use of ICT in churches. Additionally, there is a lack of awareness of the possibilities of using ICT in some churches. Many books are still being written to persuade churches of the benefits of using ICT. Churches now have access to much greater experience of the benefits and practical problems of using ICT, but not all are giving proper thought to how ICT could be used. This may be due to a lack of resources or commitment to ICT.

2.8 Positive impact of ICT

ICT play a role in church globalization. The internet has proved to be one of the most efficient and reliable means of communication globally with little or no restrictions, which Christians cannot ignore because ICT enhances communication speed (Philips, 2020). Through ICT, messages are sent through e-mail to the congregants, new converts or anyone efficiently. With internet connections, any information can travel fast and it saves time and is cheap. Using the Internet is cheaper than the other modes of communication such as telephone, mailing or courier service. Computers are also reliable such that information can be accessed and retrieved from anywhere and at any time. This makes it a reliable mode of communication.

With the advancement of ICT, information can be shared by people all around the world. People can share and exchange opinions, news and information through discussion groups and forums on the internet. This enables knowledge sharing which will contribute to the development of a knowledge-based society. ICT technology has also created the term paperless environment. This term means information can be stored and retrieved through the digital medium instead of paper. The Internet offers fast information accessibility and versatility. It has become a borderless source of services and information. Through the internet, jobs have been created. This happens through having IT Technicians. These help maintain the computers. Fix hardware and install software among others. Computer Programmers are also needed to create software.

2.9. Negative impact of ICT

ICT has made people individualistic and introverted as people tend to choose online communication rather than having real-time conversations. Additionally, it has led to moral decadency and threats to the society. Some ICT users use ICT tools for fraud, Pornography, and Hacking among other vices. Health Problems have also resulted from ICT. For instance, a computer may harm users if they use it for long hours frequently.

Computer users are also exposed to bad posture, eyestrain, and physical and mental stress. Further, some jobs have been lost as a result of computers being used to do the same work that people used to do, for example many factories now have fully automated production lines. Instead of using people to build things, computer-controlled robots are used. There have been negative critics of Christian doctrines, teachings and values in ICT. This has led to the manipulation of those who use ICT platforms for spiritual growth.

Additionally, a huge network of people from diverse backgrounds exposes users to negative behaviour (Philips, 2020). The use of inappropriate images, pornographic literature and videos brings harassment of users. This has made some Christian leaders avoid ICT platforms (Philips, 2020) ICT tools and platforms are very expensive to purchase and maintain. This has discouraged many churches from embracing ICT for use in their churches (Pillay, 2018). In addition, full-time workers in a church may be made redundant because the church may not afford to pay them after buying a high-end presentation system. The church must endeavor to clearly understand the role of ICT in order to make good use of it and even those using it should strive to understand its role and priority. In view of the above, the church should avoid making technology a higher priority than its leadership.

According to Philips (2020), there has been inadequate ICT infrastructure, limited ICT skills and training, limited access to technical support, lack of ICT policies in church and budget constraints hindering the integration of ICT in church activities. Lack of internet connectivity contributes to the slow use of ICT. In addition, lack of regular access to the computers in churches makes it harder to prepare ICT-based sermons. Further, there is irregular power supply in the churches and high-cost hardware and software. This makes it challenging for church leaders to acquire appropriate ICT facilities in churches.

2.10 A Summary of the Related Works

Table 1: Literature Review and Gaps

Author	**Topic**	**Findings**	**Gaps**
Daka and Phiri (2019)	Factors Driving the Adoption of E-banking Services Based on the UTAUT Model.	The findings indicate that performance expectancy, effort expectancy, facilitating conditions and behaviour intentions influence a user's intention to adopt internet banking.	The study used purposive sampling which is prone to error thus limiting the generalizability of the findings

Undi-Phiri and Phiri (2022)	Assessing Factors Affecting the Adoption of E-Government Services in Developing Countries for the Transport Sector, amidst the COVID-19 Pandemic	The Findings indicate that Effort Expectancy, Social influence, Trust in Government and Trust in the Internet positively influence the adoption of e-government services.	The study used the results with a response rate of 57% which may not be representative enough (141/249).
Janzen, Aaron T (2019)	Technological Advancement in the church: Effectiveness in improving worship and church functions.	The findings are that there is a lot to be said about the use of technology in the widespread changing culture and communities located around the globe. It is still in question whether the pros outweigh the cons of adding these new technologies into the church.	the study was more of a review of the effects of technology rather than actual research.
Sumaya Kagoya (2020)	The Use of Digital Transformation to Address Education Challenges Caused by COVID-19 in Developing Countries.	The study findings revealed that although the digital transformation is missing in the education sectors of Uganda (MUBS) and Tanzania (UDSM), it	The study adopted the narrative and literature review method rather than test the factors proposed by UTAUT.

		should be implemented to address the education challenges in the COVID-19 season and post-COVID-19, given its massive benefits in this digital era.	
Njuka and Phiri (2021)	Factors Influencing Social Media in Managing Corporate Reputation for a Christian Organisation in Developing Countries Based on the VT4 Model	The church didn't have an official social media site to respond to social media issues against the church.	The study didn't state the effect gender, age, employment, marital status, education had on the responses made. The article didn't state how the 500 was chosen as a sample.
Lishomwa and Phiri (2020)	Adoption of Internet Banking Services by Corporate Customers for Forex Transactions Based on the TRA Model	Social pressures have an influence on whether to use internet banking or not while lack of awareness negatively affected the usage.	The research was only done in one branch of FNB so it cannot be a representative of all customers. Another model like UTAUT needs to be used to try and test more factors which may affect the adoption of internet banking.
Kasanga and Phiri (2020)	Factors Affecting the Adoption and Usage	The claim for luggage was only based on	The study did not show if there were any plans to implement the

	of Luggage Tracking Systems by Public Transporters Based on TAM Model	someone producing a ticket and those sending parcels had to have faith in the bus used as no electronic message was sent to the sender and no tracking of luggage was available.	suggestions put forward by the researcher.
Masumo-Gwebente, D. and Phiri, J. (2022)	Factors Affecting the Uptake of E-Government Services on the Government Services Bus (GSB) in Developing Countries. A Case Study of the Ministry of Lands and Natural Resources in Zambia, Based on UTAUT Model	The research concluded that the performance expectancy, effort expectancy, social influence, and facilitating conditions have an effect on the intention to use the government services bus.	The study conclusions were drawn from only using the Pearson correlation analysis. Another analysis needed to be done to see if the same results could be obtained.
Soneka, P. and Phiri, J. (2019)	A Model for Improving E-Tax Systems Adoption in Rural Zambia Based on the TAM Model.	The research concluded that the majority of taxpayers are filing their returns and paying taxes online. However, there are few taxpayers who still feel that E-tax is not useful, easy to use and secure. Therefore, more	The researcher only got information from those who came to the ZRA offices but then stated that the majority pay their taxes online. So how did the researcher come up with the said conclusion? It could have been better to provide some statistics.

		awareness and taxpayer education must continue to bring everyone on board.	
Daniel Opoku; Rexford Owusu Okyireh; Philip Siaw Kissi (2020)	Consumer Intention towards the Use of Bible Application.	The study reports that perceived usefulness is not statistically significant in influencing attitudes to learning using bible applications on mobile devices. Contrary to this, perceived ease of use, social influence and application content have a significant influence on the attitude of bible users.	The research methodology was purposive sampling from 10 different denominations but it was not stated how many were chosen from each denomination to show reliability and normality.
Tran, Khoa, and Tuyet Nguyen (2021)	Preliminary Research on the Social Attitudes toward AI's Involvement in Christian Education in Vietnam: Promoting AI Technology for Religious Education.	The study results indicate wide acceptance among almost all interviewees, except for those who have absolute and abiding religious faith.	The research was more of market research on the demand for AI's religious innovation in Vietnam, an insight for future religious tech entrepreneurs than really looking at factors which affect the adoption.
Sichisambwe and Sikombe, (2017)	Examining Factors Influencing E-Banking Adoption:	The result of the study shows that the mean expectations of the five	The paper only made Recommendations that there was a need to have

	Evidence from Bank Customers in Zambia	dimensions of service quality are higher than the mean perception thereby indicating that in general customers of both local and foreign banks are not satisfied with the service being offered by the banks.	a model to address this gap without making any suggestions.

2.11 Chapter Summary

This chapter reviewed the literature by other scholars and researchers on the subject matter of Technology Adoption. From the discussions, most studies have focused on the importance of technology adoption and the challenges associated with it, but they have not advised on what framework can be used to enhance technology adoption in organizations. This study therefore seeks to fill this research gap.

CHAPTER 3

THEORETICAL AND CONCEPTUAL FRAMEWORKS

3.1 Introduction

This chapter discusses the Theoretical background and the conceptual frameworks and models related to this study. The chapter includes the theories that underpin this study. Based on these theories, the Chapter then looks at the conceptual Frameworks / Models. Finally, a conceptual framework/ model is developed based on the theoretical and conceptual background. The hypotheses are then developed from the proposed model/framework.

3.2 Theoretical Framework

Technology adoption is one of the mature areas of research in information systems (Sharma & Mishra, 2003). Several researchers have put across various theories explaining reasons why they decided to use a particular theory for research on a particular phenomenon. The theories discussed below led to the development of the UTAUT model as it helps to look at the factors involved in a more comprehensive way.

Some of these theories are:

3.2.1 Theory of Reasoned Action

The theory of Reasoned Action (Fishbein and Ajzen) has its roots in a social psychology setting. The theory proposes three general constructs, namely "behavioural intention (BI), attitude (A), and subjective norm (SN)". According to TRA behavioural intention of a person depends on his attitude and subjective norms. Mathematically, it can be interpreted that behavioural intention is the summation of attitude and subjective norms. Moreover, the intention of a person likely to convert to action if there is the intention to behave in a specific manner is strong enough.

The theory also postulates that a person's intentions about performing a behaviour (which ultimately determine whether they will do so) are influenced by social pressures or "subjective norms", which arise from their individual perceptions of what others will think about them performing the behaviour in question (Vallerand, et al., 1991).

In this theoretical model, both personal attitudes and social or "normative" factors exert a direct influence on behavioural intentions, which are the strongest predictor of actual

behaviour. All other factors in the external environment influence behaviour only indirectly, through their influence on attitudes and subjective norms (Tsai, et al., 2012).

3.2.2 Theory of Planned Behaviour (TPB)

Theory of Planned Behaviour: Developments were made on the TRA as theorized by Ajzen & Fishbein (1975). He proposed TPB which developed the relationship between attitude and behaviour in human actions by introducing a new factor: perceived behavioural control which can be used to predict behaviour. Perceived behavioural control is explained as the behaviour that influences intention. It is a factor that is present in the theory of planned behaviour and not in the theory of reasoned action; this is the point of contrast between the two theories.

The Theory of Planned Behaviour incorporates both social influences and personal factors as predictors, specifying a limited number of psychological variables that can influence a behaviour, namely: intention; attitude; subjective norm (SN); and perceived behavioural control (PBC). First, subjective norms are conceptualized as the pressure that people perceive from important others to execute a behaviour. Second, people's positive or negative evaluations of their performing a behaviour are conceptualized as other predictors of intention (attitudes). Third, PBC represents one's evaluation of the ease or difficulty of adopting the behaviour, and it is assumed to reflect the obstacles that one encountered in past behavioural performances. Finally, attitudes, SN, and PBC are proposed to influence behaviour through their influence on intentions, which "summarize a person's motivation to act in a particular manner and indicate how hard the person is willing to try and how much time and effort he or she is willing to devote in order to perform a behaviour" as Rivis and Sheeran (2003) defined it.

3.2.3 Technology Acceptance Model (TAM): This model focuses on the attitudes and perceptions of individuals toward technology adoption. It suggests that perceived usefulness and perceived ease of use are the key factors that determine the intention to use technology. It was developed from the theory of reasoned action and so adapted some of its principles to the context of user acceptance of a system (Sakala, & Phiri, (2019).

TAM focuses on the attitude explanations of intention to use a specific technology or service; it has become a widely applied model for user acceptance and usage. There are a number of meta-analyses on the TAM that have demonstrated that it is a valid, robust and powerful model for predicting user acceptance (Bertrand & Bouchard, 2008).

Other theories are an extensively used model in IB adoption studies, Perceived Characteristics

of Innovation (PCI), Decomposed Theory of Planned Behaviour (DTPB), the Theory of Perceived Risk (TPR), the Theory of Innovation Resistance (TIR) and the Unified Theory of Acceptance and Use of Technology (UTAUT) (Daka, & Phiri, 2019).

Scholars in technology adoption, have used various theories/models to examine and predict the users' adoption of a technology, including the Theory of Reasoned Action (TRA), Theory of Planned Behaviour (TPB), Task Technology Fit (TTF), Unified Theory of Acceptance and Use of Technology (UTAUT), and Technology Acceptance Model (TAM). Among these theories/models, research indicated that the UTAUT provides a better understanding of the variance in the behavioural intention to use technology (Venkatesh, et al. 2003).

3.3 UTAUT Model

Although there are other models of technology acceptance, the theoretical framework of this research is the UTAUT. The UTAUT model was developed by Venkatesh et al after they identified four key factors, namely, (1) performance expectancy, (2) effort expectancy, (3) social influence, (4) facilitating conditions, and user acceptance of technology innovation. According to Venkatesh et al. (2003), Performance Expectancy (PE) illustrates how the individual believes using technology will improve their performance. Effort Expectancy (EE) signifies the level of ease for individuals to operate the technical application. As the ease of technology increases, the users will increase their adoption rates. Social Influence (SI) examines how users' relatives and their communities can influence their new technological innovation adoption rate. Finally, Facilitating Conditions (FC) investigates how the availability of technical infrastructure and technical support can influence users' adoption rates.

The benefits of UTAUT for technology adoption are comprehensive. It investigates different technology adoption dimensions for analyzing product design, customers' demand and capacity, influential social factors, and physical infrastructure. This information guides developers to tailor their products and services to fit their customer demand and capacity and accept their market. Much empirical research has been based on and recommended the UTAUT model to investigate the technological readiness and acceptability of new technologies across disciplines, such as healthcare, banking, and entrepreneurial innovation. The application of the UTAUT model is also seen in religious technology adoption research.

For example, Baazeem (2020) employs UTAUT and performs partial least square

structural equation modelling (PLS-SEM) to find the relationship between internet users' religiosity on social media and technology adoption in Saudi Arabia. Baazeem (2020). Since the model has high predictability of technological user's behavioural intention and can explain technology acceptance for new technological innovation in the religious and educational context, we have adopted UTAUT in this study under four factors: performance expectancy, effort expectancy, social influence, and facilitating conditions. UTAUT also highlights four moderator variables: (1) age, (2) experience, (3) gender, and (4) voluntariness of use, which have been empirically proven to moderate the intensity of technology adoption.

3.4 Conceptual Framework

In this study, a conceptual framework was developed showing a relation-ship between dependent variables and independent variables. The UTAUT model has variables which can be used in evaluating the factors which affect the adoption of technology as a medium of worship among Christians.

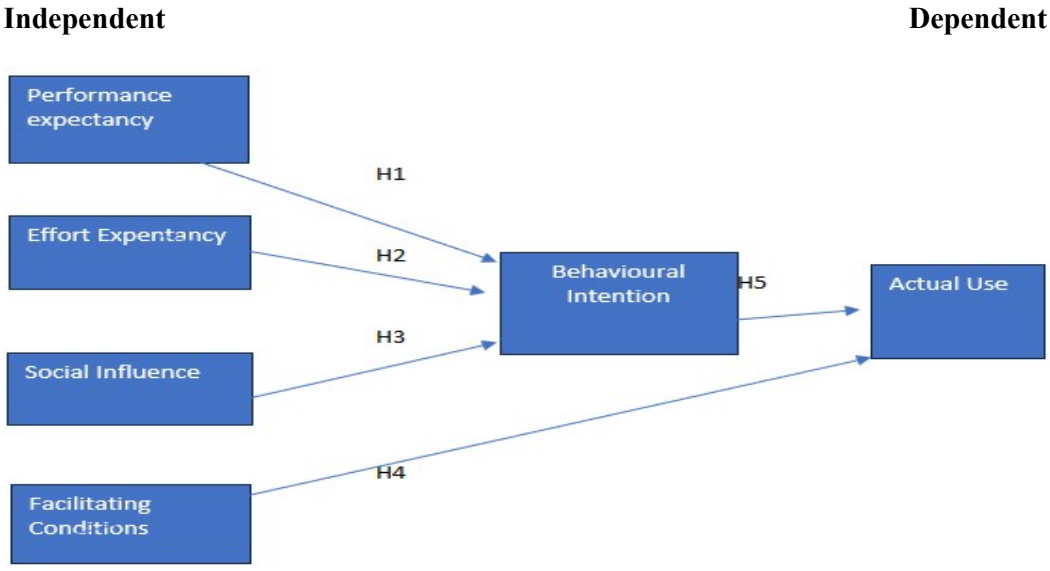


Figure 1: Conceptual Framework

3.4.1 Research Hypotheses

The following hypotheses were used:

Hypothesis 1

H_1 - Performance expectancy influences the usage of technology in worship in the SDA church.

H_0 - Performance expectancy does not influence the usage of technology in worship in the SDA church.

Hypothesis 2

H_1 - Effort expectancy influences the use of technology in worship in the SDA church.

H_0 - Effort expectancy does not influence the use of technology in worship in the SDA church.

Hypothesis 3

H_1 - Social influence has a positive influence on the usage of technology in worship in the SDA church.

H_0- Social influence has no influence on the usage of technology in worship in the SDA church.

Hypothesis 4

H_1 - Facilitating conditions have an influence on the usage of technology in worship in the SDA church.

H_0 - facilitating conditions have no influence on the usage of technology in worship in the SDA church.

Hypothesis 5

H_1 – behavioural intention has an influence on the use of technology in worship in the SDA church.

H_0- behavioural intention has no influence on the use of technology in worship in the SDA church.

3.4.2 Operationalisation of the variables

Performance expectancy is the extent to which an individual believes technology use enhances productivity and usefulness. It looks at the user's level of belief that the technology will improve performance in particular activities like worship. The performance expectancy can therefore be used to determine the user's likeliness to adopt new technology performance due to its usefulness, as it makes business faster, increases productivity and is in general useful in performing its duties. In many studies using the UTAUT model, the performance expectancy factor has been shown to have a significant impact on intention to use.

Effort expectancy is perceived ease of use and user-friendliness. Effort expectancy positively affects the use of particular new technologies. It expresses the degree of convenience regarding the use of the system. The effort expectancy factor has an influence on behavioural intention in both voluntary and compulsory use environments.

Social Influence refers to beliefs and opinions peers and community will have on you by using technology. Social influence is another determinant of behaviour and intention of use of new technology. Social influence involves users gaining a willingness to try new technologies from others, including friends, colleagues, and families. The social influence has a positive effect on the user's intentions to use new technologies.

Facilitating conditions refers to the availability of necessary resources like technical support, infrastructure, and reliable internet. Facilitating Conditions means that users have the resources and knowledge necessary to use mobile Internet. Users need to bear the costs of using mobile Internet, such as communication fees and service fees. In addition, they need to be equipped with the necessary knowledge to operate mobile Internet, which represents an emerging technology. If users do not own these resources and knowledge, they may not continue their usage of mobile Internet (Zhou, 2011). Perceived Value is defined as the consumer's overall assessment of the utility of a product based on perceptions of what is received and what is given (Zeithaml, 1988). In the case of mobile Internet, potential users would probably compare all the attributes of mobile Internet usage with prices of previous mobile phone calls and stationary Internet access. The price value is positive when the benefits of using a technology are perceived to be greater than the monetary cost and such price value has a positive impact on intention. Thus, price value is added as a predictor of behavioural intention to use technology (Venkatesh et al, 2012).

Behavioural intention defines the actual use of a given system and therefore determines technology acceptance. Behavioural intention involves individual attitudes towards a particular technology. The individual's intention to accept new technology is based on the technology's ability to be useful. The degree to which a user considers a particular technology as being useful involves the belief of being free of effort. Thus, the positive behavioural intention towards technology depends on the belief of users for the apps to be useful.

3.5 Chapter Summary

The chapter looked at the theoretical framework and discussed various theories used in technology adoption and the said theories led to the development of the UTAUT model. It further looked at the conceptual framework used for the study and came up with the hypothesis for the study.

CHAPTER 4

RESEARCH METHODOLOGY

4.1 Introduction

This chapter discusses the research methodology that was used to evaluate the factors that influenced the adoption of technology as a means of worship during the COVID-19 lock down by SDA Christians at the Woodlands Conference of the SDA church. It presents the research approach, research design, study population, sample size, sampling techniques, data collection instruments, data analysis and ethical considerations.

4.2 Research Design

A quantitative and qualitative research approach was used in this study. These types of approaches are preferred because they are used to quantify attitudes, opinions, behaviour, and other defined variables and generalize results from a larger sample population. In particular, it usually involves collecting and converting data into numerical form so that statistical calculations can be made and conclusions drawn.

A researcher can select the appropriate research methodology for their research based on the nature of the study, the standards of the field, and practical considerations. According to (William 2018), research design refers to the overall mission, vision, and direction of the study that a researcher chooses to integrate various research components in a logical and consistent manner, ensuring that the identified research problem is addressed in an effective manner. It also includes the design plan for data collection, assigning numbers to examine, cleaning, manipulating, and modelling data to represent quantities.

Research methodology is determined before research conduction. The correct choice of research methodology helps in determining the success and overall quality of any research study and its documentation (Creswel, 2012). Based on the nature of the research, norms of research area, and practicalities a researcher can choose the best research methodology for their research.

Qualitative research design utilizes data that cannot be quantified numerically. In other words, qualitative research focuses on words, descriptions, concepts, beliefs, ideas, and other intangibles. Quantitative research design utilizes numeric and statistical data. It measures variables and verifies existing theories or hypotheses.

Mixed methods-based research attempts to bring both, qualitative and quantitative research. It uses qualitative research to explore a situation and develop a potential model of understanding, which is also called a conceptual framework, and then uses quantitative methods to test that model empirically. This study will adopt a mixed methods research design. The main reason for selecting this design is that mixed methods can help the researcher gain a more complete picture than a standalone quantitative or qualitative study, as it integrates the benefits of both methods (Polit, 2015).

4.3 Population of the Study

Population is the entire aggregation of items from which samples can be drawn for a study (Opoku, 2009). The study population comprised Five SDA districts in the Woodlands Conference. These Five districts/churches were purposely sampled as they represent all the classes of congregants. According to (Saunders, Lewis and Thorn (2003) a study population is a group of people, objects, persons or items from which samples are extracted for analysis and from which the researcher wishes to make the inference. In this study, the population was grouped based on five SDA districts which was purposely sampled in Woodlands Conference which has a total population of 124 churches and 58,818 members (Woodlands Conference, 2022). A district is formed by a number of churches (congregations) which will in turn form what is called a Conference in the SDA church.

4.4 Sample Size

(Kothari 2004) defines a sample size as the number of items to be selected from the universe to constitute the sample and this explains how many sampling units should be surveyed and interviewed. In this study, a sample of 382 church members will be considered that will comprise of pastors, pastoral staff, support staff, volunteers, and peers.

The sample size for this study was determined using Cochran's formula.

$$n_o = Z^2 pq/e^2 \quad \text{..... (1)}$$

e—is the desired level of precision (*i.e.* margin of error);

p—is the (estimated) proportion of the population;

q—is 1 – *p*;

z—value as tabulated below.

e = 0.05;

p = 0.5;

$z = 95\% = 1.96$;

$(1.96)^2(0.5)(0.5)/(0.05)^2 = 384$.

A random sample of 382 people in our target population should be enough to give us the confidence levels we need. Therefore, the sample size calculated was 382 as shown below:

$$n=n_o/1+(n_o/N) \qquad (2)$$

Where,

n = sample size;

N = Population size – 58,818;

384/(1 + (384/58,818));

384/1.006528614;

= 381.5092732

= 382 Sample size.

4.5 Data Collection Methods

Both primary and secondary data will be collected. Primary data is the type of data that is collected by the researcher directly from the main sources while secondary data is the data that has already been collected through primary sources and made readily available for researchers for their research (Macleod, 2018).

4.6 Instruments for Data Collection

In this study, the following research instruments were used;

4.6.1 Questionnaire

A questionnaire is a research instrument consisting of a series of questions for the purpose of gathering information from respondents. In this study, a semi-structured (open) questionnaire was administered to the respondents. The questionnaire was designed in five parts: the first part being the demographic information of respondents, the second part being the technological usage and experience of respondents, part three looked at the technology adoption factors, part four looked at the actual use of technology for worship and finally part five was the interview guide.

To see to it that the questionnaire would give the intended results, it was pre-tested by circulating it to some selected church leaders who helped in checking grammatical and also what the questions intended to achieve.

4.6.2 Interviews

The semi-structured interview is a qualitative data collection strategy in which the researcher asks informants a series of predetermined but open-ended questions. Creswell (2012) defines interviewing as one method by which qualitative data can be gathered. Although it may be less formal than some quantitative methodologies, it is important to design a systematic interview technique as well as carefully analyze and validate interview data.

4.7 Data Analysis

In analyzing the data, the study utilized Statistical Package for Social Science (SPSS) version 20 and Microsoft Excel. The research initially employed correlational analysis to examine the relationships between the variables. The correlational analysis assesses the strength and direction of associations between variables without the researcher manipulating them. This method helps reveal the extent of the relationship between two or more variables, which can be positive, negative, or zero (Mugenda and Mugenda, 2012).

Additionally, multiple regression analysis was conducted to further understand the impact of the variables on each other. Regression analysis allows for the prediction of one variable based on the values of others, providing insights into the relationships and effects of different factors (Mugenda and Mugenda, 2012.) The results of the regression analysis were used to determine the significant factors influencing the adoption of technology for worship, such as performance expectancy, effort expectancy, and social influence. Facilitating conditions were found to not have a significant impact on behavioural intention to use technology for worship.

Overall, the use of both correlational and regression analyses provided a comprehensive understanding of the factors influencing technology adoption in worship settings, highlighting the importance of performance expectancy, effort expectancy, and social influence. These findings can be valuable for church leadership and stakeholders seeking to enhance the use of technology in worship practices.

4.8 Limitations and Ethical considerations

Ethical issues cannot be ignored as they relate directly to a piece of research and to the disciplines that are involved. Four types of ethical principles were proposed by Diener and (Crandall 1978): where there is harm to participants, whether there is a lack of informed

consent, where there is an invasion of privacy, and where deception is involved; these were strictly followed in this study.

All social science research activities are expected to adhere to a minimal set of ethical guidelines and acceptable behaviour. These guidelines include the principles of voluntary participation, informed consent, risk of harm, confidentiality and anonymity (Berg, 2019). Given that scenario, all participants of the research were informed of the purpose of the study and that their participation was voluntary. Participants were informed that they could refuse to answer any questions they felt uncomfortable answering and that they could cease participation at any time. Additionally, it was explained that their information would be kept confidential and not shared with anyone not involved in the immediate research team. Anonymity was observed, and only minimal information was collected on participants. There were no foreseeable reasons why participation would or could result in direct harm to the respondents. Authority was sought from the Seventh Day Adventist Church from Woodlands Conference in order to give credence and legitimacy to this study.

4.9 Chapter Summary

The chapter discussed the research methodology that was used in the study. It presents the research approach, research design, study population, sample size, sampling techniques, data collection instruments, data analysis and ethical considerations.

CHAPTER 5

DATA PRESENTATION AND INTERPRETATION

5.1 Introduction

This chapter describes and analyses the information generated from the data that was obtained from the administration of the questionnaires. The results were presented using determined and suitable data analysis instruments and in this regard, the study made use of descriptive statistics which is presented in frequency distribution tables showing absolute and relative values. While 382 questionnaires were distributed to five selected church districts of the Woodlands Conference of the SDA church, only 304 questionnaires were successfully collected, representing a 79% response rate.

5.2 Descriptive Statistics

The main objective of the analysis was to provide or find out answers to the research questions to determine the level of technology usage among SDA church members during the COVID-19 lockdown in Lusaka; which factors influenced the adoption of technology by churches during COVID-19 locked down in Lusaka; and what model can be used as a solution to the challenges that affect technology adoption as a Medium for worshipping so that church attendance is not greatly affected.

5.2.1 Demographic Data

The presentation of the data from the questionnaire administered to respondents began with the identification of the respondents in terms of their gender, age, marital status, educational level and employment status.

5.2.1.1 Gender

Figure 2 below shows that 61.2% of the respondents on gender were male while 38.8% were female.

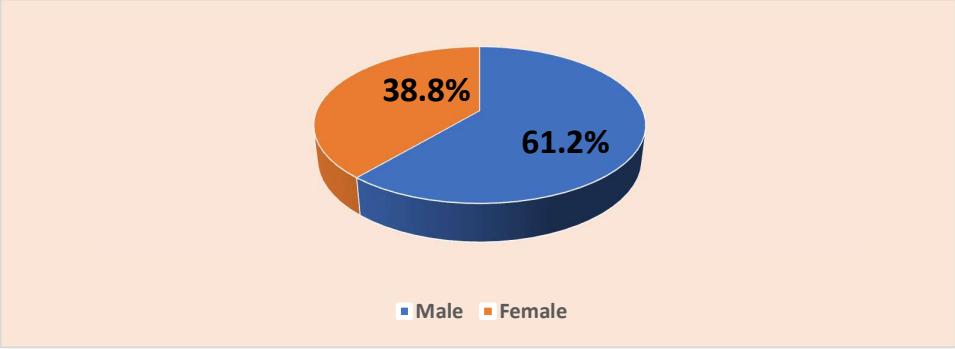


Figure 2: Gender Distribution of Respondents

5.2.1.2 Age

Figure 3 below shows that 11 respondents were 20 years and below representing 3.6%, and 56 respondents representing 18.4% were aged between 21 – 30. Further, 102 respondents representing 33.6% were aged between 31 – 40, 94 respondents representing 30.9% were aged between 41 – 50, 36 respondents representing 11.8% were aged between 51 – 60, with 5 respondents representing 1.6% were aged 60 and above.

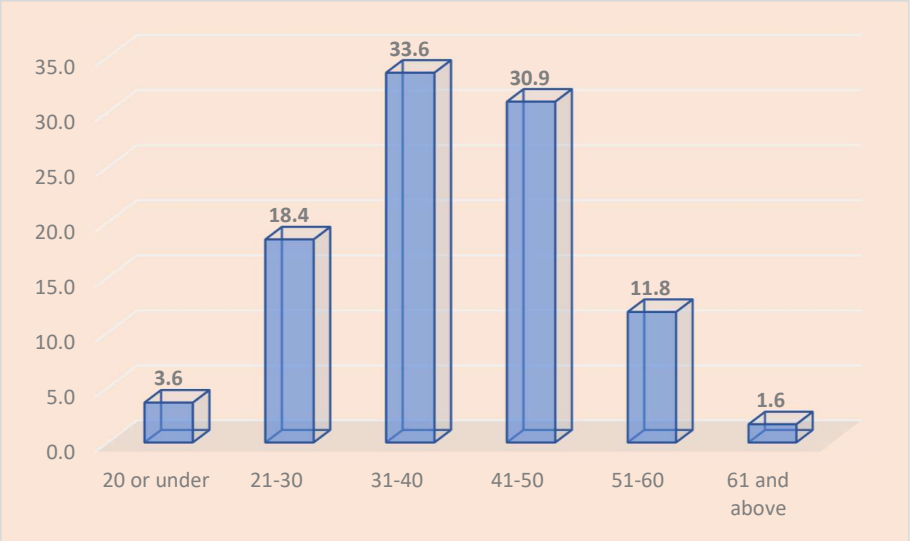


Figure 3: Age Category of Respondents

5.2.1.3 Educational Level

Figure 4 below indicates that 43 respondents representing 14.1% had gone up to senior secondary school level or below in terms of education. Those who had a diploma were 83 representing 27.3%. 120 respondents, representing 39.5% had a first degree and 52

respondents representing 17.1% had a master's degree as the highest level of education, with 6 respondents representing 2% being PHD holders.

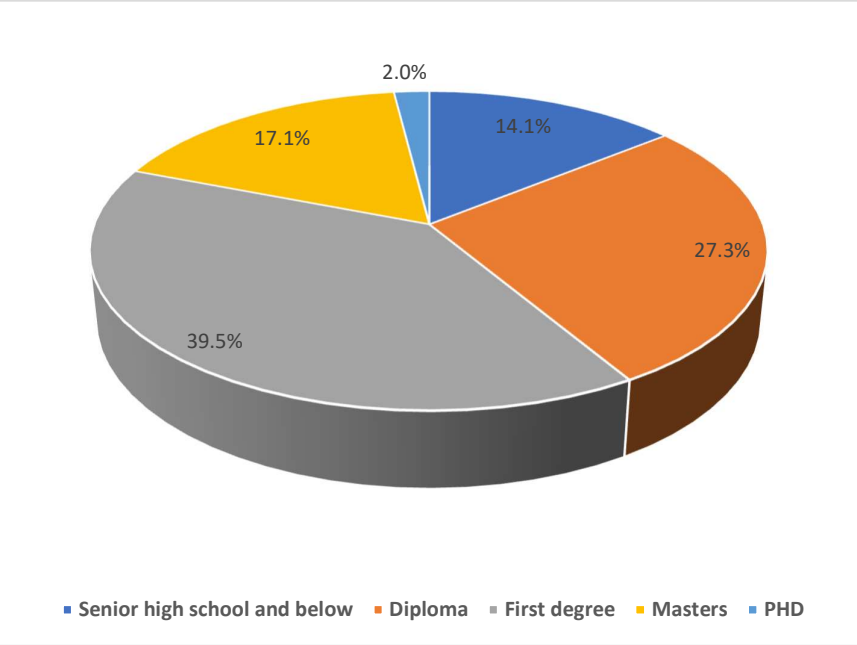


Figure 4: Level of Education of Respondents

5.2.1.4 Employment Status

Figure 5 below shows that 49 respondents representing 16.1% were not working, 194 respondents representing 63.8% were salaried, 51 respondents representing 16.8% were self-employed with 10 respondents representing 3.3% being pensioneers.

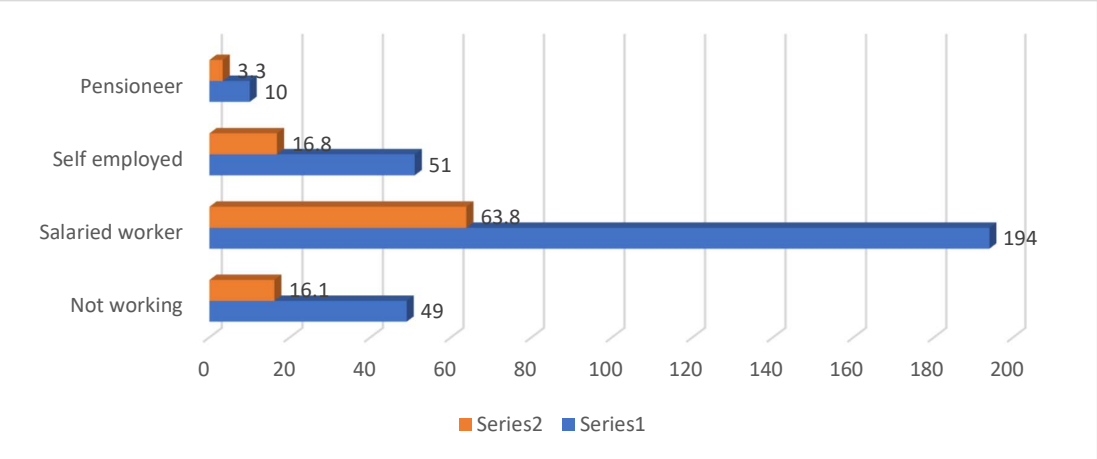


Figure 5: Employment Status of Respondents

5.3 Knowledge & Usage of ICTs.

Given the challenges that came along with COVID-19, the study embarked on establishing whether people/church members were able to use the internet for purposes of worship while sitting in the confines of their homes. However, before establishing their level of usage, it was cardinal to determine their knowledge levels. This was on the premise that if one has no knowledge of ICT then they may not be interested in using the same and will help in understanding their responses.

Table 2: Knowledge about ICTs

	Frequency	Percent	Cumulative Percent
Poor	7	2.3	2.3
Moderate	84	27.6	29.9
Good	137	45.1	75.0
Very good	76	25.0	100.0
Total	304	100.0	

From the above table, 70.1% of respondents were good and very good, while only 2.3% were reported as being poor in ICT knowledge.

5.4 Test of Normality Results

The Kolmogorov-Smirnov test is well applicable for larger sample sizes above 50 ($n \geq 50$) while the Shapiro-Wik test is suitable for small sample sizes (< 50 samples). For both tests, the null hypothesis states that data are taken from a well-distributed population. When $p>0.05$, the null hypothesis is accepted and data are said to be normally distributed. For this research, the sample size was significantly higher than 50, as such the Kolmogorov-Smirnov test was adopted whose results were all statistically significant ($p<0.05$). Therefore, it can be concluded that the variable was not normally distributed.

Table 3: Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Behavioural Intention	0.167	304	0.000	0.923	304	0.000
Performance Expectancy	0.114	304	0.000	0.963	304	0.000
Effort Expectancy	0.106	304	0.000	0.956	304	0.000
Social Influence	0.166	304	0.000	0.926	304	0.000
Facilitating Conditions	0.064	304	0.004	0.963	304	0.000

a. Lilliefors Significance Correction

Source: Survey Data (2023)

5.5 Descriptive Statistics for Factors that Influence Behavioural Intention to Use Technology as a means of worship.

The main aim of the research was to evaluate the factors that affect the adoption of technology as a means of worship among Christians. The ratings by respondents were done on a Likert Scale of 1 to 5 where: 5 represented Strongly Agree; 4 - Agree; 3 - Neutral; 2 - Disagree; and 1- Strongly Disagree. The results were then tabulated.

Table 4 represents descriptive statistics on performance expectancy from respondents; the mean of 4.023 indicates that the respondents agreed with the statement that technology would be useful during worship. Further, the mean of 3.372 indicates that the respondents also agreed that by using technology they would be able to worship in the comfort of their homes. The mean of 3.576 indicates the respondents' agreement that worship would be made easier. However, the average mean of 3.092 indicates that the respondents were neutral (neither agreed nor disagreed) that worship would be more meaningful by using technology. The average mean score of 3.516 indicates that the respondents agreed with the variables of performance expectancy.

Table 4: Descriptive Statistics for Performance Expectance Influence on Technology Adoption

		Frequency Rating						
No.	**Statement**	1	2	3	4	5	Mean	S.D
1	I think that technology is useful during my worship	11	14	49	113	117	4.023	1.029
2	I think using technology would make me worship in the comfort of my home	35	45	55	110	59	3.372	1.270
3	I think that by using technology my worship would be made easier	17	38	60	131	58	3.576	1.102
4	I think by using technology my worship would be more meaningful	36	63	78	91	36	3.092	1.204
	Average mean score	24.8	40	60.5	111.3	67.5	3.516	1.152

Table 5 represents descriptive statistics on effort expectancy from respondents; the mean of 3.766 indicates that the respondents agreed to the statement interaction with the internet and other ICTs was clear and that it could easily be understood. Further, the mean of 3.464 indicates that the respondents also agreed that it was easy to become skilful at using ICTs in church for the purpose of worship. The mean of 4.063 indicates the respondents' agreement that it was easy to use ICTs. Furthermore, the average mean of 4.059 indicates that the respondents were in agreement that learning to use ICTs was easy. The average mean score of 3.838 indicates that the respondents agreed with the variables of effort expectancy.

Table 5: Descriptive Statistics for Effort Expectancy Influence on Technology Adoption

		Frequency Rating						
No.	**Statement**	1	2	3	4	5	Mean	S.D
1	I think that interaction with the internet and other ICTs is clear and easily understandable	5	27	68	138	66	3.766	0.945
2	I think it is easy to become skilful at using ICTs in church	18	43	82	102	59	3.464	1.131
3	I find ICTs easy to use	2	8	57	139	98	4.063	0.820
4	I think that learning to use ICTs is easy for me	3	7	50	153	91	4.059	0.802
	Average mean score	7	21.3	64.3	133	78.5	3.838	0.925

A data mean of 4.003 in Table 6 above indicates that the respondents agreed with the statement that the church needed to consider adopting and use of ICTs since times have changed. Further, a mean of 4.099 indicates an agreement that social media and or ICTs are now acceptable officially in all spheres of life. However, a mean of 2.997 indicates that the respondents were neutral concerning the statement that the use of ICTs was prestigious. The average mean score of 3.699 indicates that the respondents agreed with the variables of social influence.

Table 6: Descriptive Statistics for Social Influence (or Aspects) Influence on Technology Adoption

		Frequency Rating						
No.	**Statement**	1	2	3	4	5	Mean	Std. Deviation
1	Times have changed so the church should consider ICT adoption and use	11	13	48	124	108	4.003	1.006
2	Social media and or ICT are now acceptable officially in all spheres of life	6	9	37	149	103	4.099	0.865
3	The use of ICTs is prestigious	38	58	100	83	25	2.997	1.139
	Average mean score	18.3	26.7	61.7	118.7	78.7	3.699	1.004

Table 7 represents descriptive statistics on facilitating conditions from respondents; the mean of 2.786 indicates that the respondents disagreed with the statement that the church did not have the necessary resources to use ICT in worshipping and meetings during COVID-19 lockdown. Further, the mean of 2.388 indicates that the respondents also disagreed that the church policy did not create an enabling environment for the use of ICTs during lockdown. The mean of 3.069 indicates that the respondents were neutral as to if Church members were willing to use ICTs during the lockdown and that there was no infrastructure in place. Furthermore, the average mean of 2.974 indicates that the respondents were neutral that the cost of ICTs was very prohibitive. The average mean score of 2.804 indicates that the respondents disagreed with the variables of facilitating conditions.

Table 7: Descriptive Statistics for Facilitating Conditions' Influence on Technology Adoption

		Frequency Rating						
No.	**Statement**	1	2	3	4	5	Mean	Std. Deviation
1	The church did not have the necessary resources to use ICT in worshipping and meetings during COVID-19 lockdown	50	68	101	67	18	2.786	1.139
2	The church policy did not create an enabling environment for the use of ICTs during lockdown	74	101	79	37	13	2.388	1.108
3	Church members were willing to use ICTs during the lockbut there was no infrastructure in place	47	58	59	107	33	3.069	1.263
4	The cost of ICTs was very prohibitive	42	76	86	67	32	2.974	1.704
	Average mean score	53.3	75.8	81.3	69.5	24	2.804	1.304

Table 8 represents descriptive statistics on effort expectancy from respondents; the mean of 4.145 indicates that the respondents agreed that the church would be better prepared for future lockdowns. Further, the mean of 3.938 indicates that the respondents also agreed that the church members expressed willingness to use ICTs during the lockdown. The mean of 3.885 indicates the respondents' agreement that the church leadership needs to have a change in policy so that ICT becomes a part of the church program. The average mean score of 3.989 indicates that the respondents agreed with the variables of behavioural intention.

Table 8: Descriptive Statistics for Behavioural Intention Influence on Technology Adoption

		Frequency Rating						
No.	**Statement**	1	2	3	4	5	Mean	Std. Deviation
1	The church will be better prepared in future lockdowns	1	16	30	148	109	4.144	0.824
2	The church members expressed willingness to use ICTs during the lockdown	8	11	50	158	77	3.938	0.893
3	The church leadership needs to have a change in policy so that ICT become a part of the church program	9	20	56	131	88	3.885	0.997
	Average mean score	6	15.7	45.3	145.7	91.3	3.989	0.905

5.6 Bivariate Analysis

According to Sarangam (2021), Bivariate analysis is a type of statistical analysis in which two variables are observed with each other. One of the variables is dependent and the other is independent. Variables are indicated by X and Y. In this research, bivariate analysis was done in order to establish the relationship between Technology acceptance variables and Behavioural Intention. Pearson Correlation Coefficient (r) was used to establish the relationship between Technology acceptance variables and Behavioural Intention by ranking the two (02) variables using an ordinal scale. This was done in order to know whether there was a relationship between the independent variables and the dependent variable before addressing the main objective of this research.

Table 9: Pearson Correlation Coefficient between Performance Expectancy and Behavioural Intentions

		Performance Expectancy	Behavioural Intentions
Performance Expectancy	Pearson Correlation	1	0.189**
	Sig. (2-tailed)		0.001
	N	304	304
Behavioural Intentions	Pearson Correlation	0.189**	1
	Sig. (2-tailed)	0.001	
	N	304	304

**. Correlation is significant at the 0.01 level (2-tailed).

Table 9 shows a Pearson correlation run to determine the impact of performance expectancy on the behavioural intention to use technology from respondents. The results revealed that there was a weak positive correlation between performance expectancy and behavioural intention to use technology as a means of worship ($r = .189$, $p = 0.001$). Since $p < 0.005$, it means that there is a statistically significant correlation between performance expectancy and behavioural intention to use technology as a means of worship.

Table 10: Pearson Correlation Coefficient between Effort Expectancy and Behavioural Intentions

		Effort Expectancy	Behavioural Intentions
Effort Expectancy	Pearson Correlation	1	0.293**
	Sig. (2-tailed)		0.000
	N	304	304
Behavioural Intentions	Pearson Correlation	0.293**	1
	Sig. (2-tailed)	0.000	
	N	304	304

**. Correlation is significant at the 0.01 level (2-tailed).

Table 10 shows a Pearson correlation run to determine the impact of effort expectancy on the behavioural intention to use technology from respondents. The results revealed that there was a strong positive correlation between effort expectancy and behavioural intention to use

technology as a means of worship (r = .293, p = 0.000). Since p <0.05, it means that there is a statistically significant correlation between effort expectancy and behavioural intention to use technology as a means of worship.

Table 11: Pearson Correlation Coefficient between Social Influence and Behavioural Intentions

		Social Influence	Behavioural Intentions
Social Influence	Pearson Correlation	1	0.319**
	Sig. (2-tailed)		0.000
	N	304	304
Behavioural Intentions	Pearson Correlation	0.319**	1
	Sig. (2-tailed)	0.000	
	N	304	304

**. Correlation is significant at the 0.01 level (2-tailed).

Table 11 shows a Pearson correlation run to determine the impact of social influence on the behavioural intention to use technology from respondents. The results revealed that there was a strong positive correlation between social influence and behavioural intention to use technology as a means of worship (r = .319, p = 0.000). Since p <0.05, it means that there is a statistically significant correlation between social influence and behavioural intention to use technology as a means of worship.

Table 12: Pearson Correlation Coefficient between Facilitating Conditions and Behavioural Intentions

		Facilitating Conditions	Behavioural Intentions
Facilitating Conditions	Pearson Correlation	1	0.035
	Sig. (2-tailed)		0.547
	N	304	304
Behavioural Intentions	Pearson Correlation	0.035	1
	Sig. (2-tailed)	0.547	
	N	304	304

Table 12 shows a Pearson correlation run to determine the impact of facilitating conditions on the behavioural intention to use technology from respondents. The results revealed that there was a weak positive correlation between facilitating conditions and behavioural intention to use technology as a means of worship (r = .035, p = 0.547). Since p >0.05, it means that there is no statistically significant correlation between facilitating conditions and behavioural intention to use technology as a means of worship. This could be because respondents felt that this was not a major factor as they had access to mobile internet.

Table 13: Pearson Correlation Coefficient between Behavioural Intentions and Actual Use

		Behavioural Intention	Actual Use
Behavioural Intention	Pearson Correlation	1	0.083
	Sig. (2-tailed)		0.001
	N	304	304
Actual Use	Pearson Correlation	0.083	1
	Sig. (2-tailed)	0.001	
	N	304	304

Pearson correlation run to determine the impact of behavioural intention on the Actual use of technology from respondents. The results as shown in Table 13 revealed that there was a positive correlation between behavioural intention and the actual use of technology as a means of worship (r = .083, p = 0.001). Since p <0.05, it means that there is a statistically significant correlation between behavioural intention and the actual use of technology as a means of worship.

By using the results obtained and the analysis using the Pearson correlation, the above conclusions were made. Performance expectancy, effort expectancy, and social influence have an influence on the usage and adoption of technology as a means of worship in the SDA church. The facilitating conditions have no influence on the usage and adoption of technology as a means of worship as the church encouraged the members to use technology during the COVID lockdown.

5.7 Multivariate Analysis

In this study, the factors influencing the adoption of technology as a medium for worship among Christians, specifically focusing on Seventh-day Adventists (SDAs) in Lusaka were investigated. Regression analyses using two key dependent variables: behavioural intentions and actual use were conducted. While, the independent variables included demographic factors (gender, age, highest level of education) as well as additional factors related to technology adoption (facilitating conditions, social influence, effort expectancy, performance expectancy and behavioural intention at some point). The findings from both analyses provide valuable insights into the factors driving technology adoption in worship settings.

5.7.1 Behavioural Intentions as the Dependent Variable

The analysis revealed several key findings. Initially, the model with basic demographic variables—gender, age, and highest level of education—explained a small but significant portion ($R^2 = 0.036$, $p = 0.011$) of the variance in behavioural intention.

Table 14: Model Summary for Analysis with Behavioural Intentions as the Dependent Variable

Model	R	R Square	Ad. R Square	R Square Change	F Change	F	Sig.	Durbin-Watson
1	.190a	0.036	0.026	0.036	3.749	3.749	0.011	
2	.396b	0.157	0.137	0.121	10.591	7.864	0	1.617

However, this model was improved significantly ($R^2 = 0.157$, $p < 0.001$) with the inclusion of additional factors related to technology adoption, such as facilitating conditions, social influence, effort expectancy, and performance expectancy.

The inclusion of these additional variables enhanced the explanatory power of the model, indicating that they play a substantial role in shaping behavioural intentions regarding technology adoption in worship settings. Among these factors, social influence had the strongest positive impact ($\beta = 0.232$, $p < 0.001$), followed by the highest level of education ($\beta = 0.278$, $p = 0.026$) and effort expectancy ($\beta = 0.123$, $p = 0.027$). Interestingly, performance expectancy and facilitating conditions did not show a significant impact on behavioural intention ($\beta = 0.027$, $p = 0.601$), and ($\beta = 0.022$, $p = 0.496$) respectively.

Table 15: Regression Coefficients for Behavioural Intentions as the Dependent Variable

Model		Unstandardized Coefficients		Sig.	Collinearity Statistics	
		B	Std. Error		Tolerance	VIF
1	(Constant)	11.191	0.623	0.000		
	Gender	0.183	0.254	0.471	0.975	1.025
	Age	-0.169	0.119	0.158	0.912	1.096
	Education Level	0.409	0.128	0.002	0.934	1.071
2	(Constant)	6.122	1.031	0.000		
	Gender	0.386	0.242	0.112	0.948	1.055
	Age	-0.154	0.114	0.179	0.888	1.127
	Education Level	0.278	0.124	0.026	0.885	1.130
	PERFORMANCE EXPECTANCY	0.027	0.051	0.601	0.570	1.754
	EFFORT EXPECTANCY	0.123	0.055	0.027	0.584	1.712
	SOCIAL INFLUENCE	0.232	0.063	0.000	0.738	1.354
	FACILITATING CONDITIONS	0.022	0.032	0.496	0.979	1.021

a Dependent Variable: BEHAVIOURAL INTENTION

The results suggest that individuals are more likely to adopt technology for worship when they perceive that others in their social circle are doing the same (social influence). Additionally, ease of use (effort expectancy) and educational background play roles in shaping their intentions. However, the perceived usefulness of technology (performance expectancy) and the presence of facilitating conditions did not seem to influence their behavioural intentions significantly.

5.7.2 Actual Use as the Dependent Variable

The study also examined the factors influencing the actual use of technology as a medium for worship among Christians, focusing on Seventh-day Adventists (SDAs) in Lusaka. The analysis revealed several important findings. Two sets of regression analyses were conducted with “Actual Use” as the dependent variable.

5.7.2.1 Effect of Performance Expectancy, Effort Expectancy, Social Influence and Facilitating Conditions on Actual Use

To begin with, performance expectancy, effort expectancy, social influence and facilitating conditions were entered as the independent variables.

Table 16: Model Summary for Effect of Performance Expectancy, Effort Expectancy, Social Influence and Facilitating Conditions on Actual Use

Model	R	R Square	Adj. R Square	R Square Change	F Change	F	Sig.	Durbin-Watson
1	.115a	0.013	0.003	0.013	1.352	1.352	0.258	
2	.319b	0.102	0.081	0.089	7.3	4.8	0	1.876

Initially, the model with basic demographic variables—gender, age, and highest level of education—showed a weak and non-significant relationship with actual use ($R^2 = 0.013$, $p = 0.258$). However, this model significantly improved ($R^2 = 0.102$, $p < 0.001$) with the inclusion of additional factors related to technology adoption, such as facilitating conditions, social influence, effort expectancy, and performance expectancy.

Table 17: Regression Coefficients for Effect of Performance Expectancy, Effort Expectancy, Social Influence and Facilitating Conditions on Actual Use

Model		Unstandardized Coefficients		Sig.	Collinearity Statistics	
		B	Std. Error		Tolerance	VIF
1	(Constant)	17.181	1.075	0.000		
	Gender	0.400	0.438	0.362	0.975	1.025
	Age	0.031	0.206	0.880	0.912	1.096
	Education Level	0.384	0.221	0.084	0.934	1.071
2	(Constant)	10.553	1.815	0.000		
	Gender	0.643	0.426	0.133	0.948	1.055
	Age	-0.008	0.201	0.966	0.888	1.127
	Education Level	0.170	0.218	0.436	0.885	1.130
	PERFORMANCE EXPECTANCY	0.183	0.090	0.043	0.570	1.754
	EFFORT EXPECTANCY	0.008	0.097	0.935	0.584	1.712
	SOCIAL INFLUENCE	0.352	0.111	0.002	0.738	1.354
	FACILITATING CONDITIONS	0.028	0.056	0.619	0.979	1.021

a Dependent Variable: ACTUAL USE

The inclusion of these additional variables enhanced the explanatory power of the model, indicating that they play a substantial role in shaping the actual use of technology in worship settings. Among these factors, social influence had the strongest positive impact ($\beta = 0.352$, $p = 0.002$), followed by performance expectancy ($\beta = 0.183$, $p = 0.043$). However, effort

expectancy, highest level of education, and facilitating conditions did not show a significant impact on actual use.

The results suggest that individuals are more likely to use technology for worship when they perceive that others in their social circle are doing the same (social influence). Additionally, the perceived usefulness of technology (performance expectancy) plays a role in shaping their actual use. However, the ease of use (effort expectancy), the highest level of education, and the presence of facilitating conditions did not significantly influence their actual use.

In conclusion, the findings from both analyses highlight the importance of social influence and perceived usefulness in predicting both behavioural intentions and actual use of technology for worship among Christians. These insights can inform strategies to promote the adoption and use of technology in worship settings, ultimately enhancing the worship experience for believers.

5.7.2.2 Effect of Behavioural Intentions on Actual Use

The regression analysis results indicate that the model including basic demographic variables (gender, age, and highest level of education) as predictors explained a very small but significant portion ($R^2 = 0.013$, $p = 0.258$) of the variance in actual use of technology for worship (Model 1).

Table 18: Model Summary for Effect of Behavioural Intentions on Actual Use

Model	R	R Square	Ad. R Square	R Square Change	F Change	F	Sig.	Durbin-Watson
1	.115a	0.013	0.003	0.013	1.352	1.352	0.258	
2	.133b	0.018	0.005	0.004	1.314	1.343	0.253	1.838

However, this model was improved with the inclusion of an additional predictor, behavioural intention, which resulted in a slightly higher R^2 value of 0.018 (Model 2). Despite this improvement, the overall explanatory power of the model remained low, suggesting that the included variables may not fully capture the complexity of factors influencing actual technology use in worship settings.

In Model 1, none of the demographic variables (gender, age, and highest level of education) showed a significant impact on actual technology use, as indicated by their p-values being greater than 0.05. This suggests that these variables do not play a substantial role in predicting actual use of technology for worship among Seventh-day Adventist church members in Lusaka.

Table 19: Regression Coefficients for Effect of Behavioural Intentions on Actual Use

Model				Sig.	Collinearity Statistics	
		B	Std. Error		Tolerance	VIF
1	(Constant)	17.181	1.075	0.000		
	Gender	0.400	0.438	0.362	0.975	1.025
	Age	0.031	0.206	0.880	0.912	1.096
	Education Level	0.384	0.221	0.084	0.934	1.071
2	(Constant)	15.904	1.548	0.000		
	Gender	0.379	0.438	0.387	0.973	1.027
	Age	0.051	0.207	0.807	0.906	1.104
	Education Level	0.337	0.225	0.135	0.903	1.108
	BEHAVIOURAL INTENTION	0.114	0.100	0.253	0.964	1.037

a Dependent Variable: ACTUAL USE

In Model 2, which includes behavioural intention as an additional predictor, the results show that behavioural intention did not have a significant impact on actual technology use (β = 0.114, p = 0.253). Additionally, gender, age, and highest level of education also remain non-significant. This suggests that while behavioural intention may play a role in predicting technology adoption in other settings, its influence on actual technology use for worship purposes among Seventh-day Adventist church members in Lusaka is not statistically significant.

5.8 Discussions

This section discusses the findings to answer the research questions developed in the first chapter.

5.8.1 Level of technology usage and usage among SDA church members during the COVID-19 lock down in Lusaka.

The findings of the study on the level of technology usage and usage among Seventh-day Adventist (SDA) church members in Lusaka during the COVID-19 lockdown revealed several key insights. Firstly, a majority of respondents (70.1%) reported having good to very good knowledge of ICTs. This suggests that SDA church members in Lusaka have a solid foundation in ICTs, which could facilitate the adoption of technology for worship purposes. This finding aligns with previous research indicating a general familiarity and comfort with technology among churchgoers (Hemant Patel, 2007).

Secondly, the study showed that church members were able to use the internet for worship while at home during the lockdown. This highlights a level of adaptability and willingness to embrace technology, which is in line with the findings of other studies that have shown a positive attitude towards the use of ICTs for religious purposes (Kang et al., 2019). The ability of church members to quickly adapt to using technology for worship reflects the importance of ICTs in maintaining religious practices during times of crisis, such as the COVID-19 pandemic.

The study also examined the factors influencing the behavioural intention to use technology for worship. The results indicated that respondents generally agreed that technology would be useful, easy to use, and would make worship more convenient. However, there was a neutral response regarding whether the use of technology would make worship more meaningful. This finding is consistent with previous research that has highlighted the need to carefully consider the impact of technology on the worship experience (Phillips, 2018). While technology can enhance convenience and accessibility, it is important to ensure that it does not detract from the spiritual depth and authenticity of worship.

Furthermore, the study identified facilitating conditions, such as the availability of resources and infrastructure, as potential barriers to the adoption of technology for worship. Respondents disagreed that the church lacked resources or policies that would enable the use of ICTs. However, there was a neutral response regarding the cost of ICTs, suggesting that affordability could be a concern for some church members. This finding underscores the importance of addressing cost-related barriers to ensure equitable access to technology for worship purposes.

In conclusion, the findings of the study suggest that SDA church members in Lusaka have a good level of knowledge and are willing to use ICTs for worship purposes. However, there are still some barriers, such as cost and infrastructure, that need to be addressed to fully realize the potential benefits of technology in worship settings. By addressing these barriers, churches can enhance the worship experience and ensure that all members remain connected and engaged, even during challenging times.

5.8.2 Factors that influence the adoption of technology by church organisations during the COVID-19 lockdowns in Lusaka.

The study on the adoption of technology by church organizations during the COVID-19 lockdowns in Lusaka yielded significant insights into the factors influencing behavioural

intentions and actual use of technology for worship among Seventh-day Adventist (SDA) church members. The findings revealed that social influence and perceived usefulness played crucial roles in shaping both behavioural intentions and actual use of technology for worship, aligning with several existing studies.

One such study by Daka and Phiri (2019) on the adoption of e-banking services found that performance expectancy, effort expectancy, facilitating conditions, and behavioural intentions influence a user's intention to adopt internet banking, which resonates with the current study's findings. Similarly, Undi-Phiri and Phiri (2022) observed that effort expectancy, social influence, trust in government, and trust in the internet positively influence the adoption of e-government services, supporting the importance of these factors in technology adoption.

Moreover, the study's findings on the impact of social influence align with the study by Soneka and Phiri (2019), which proposed a model for improving e-tax systems adoption in rural Zambia based on the Technology Acceptance Model (TAM). Their research indicated that social influence plays a significant role in taxpayers' adoption of e-tax systems. Additionally, the findings regarding the influence of perceived usefulness on actual use of technology for worship are supported by the study by Daniel Opoku et al. (2020), which found that perceived ease of use, social influence, and application content significantly influence users' attitudes toward using Bible applications on mobile devices.

However, the current study's findings regarding the lack of significant impact of facilitating conditions on both behavioural intentions and actual use contradict some existing literature. For instance, Masumo-Gwebente and Phiri (2022) found that facilitating conditions significantly affect the intention to use e-government services on the Government Services Bus (GSB) in developing countries. This disparity suggests that the influence of facilitating conditions on technology adoption may vary depending on the context and type of technology being adopted.

In conclusion, the study's findings underscore the importance of considering social influence and perceived usefulness in promoting the adoption and use of technology for worship among SDA church members in Lusaka. These insights can guide church leaders and policymakers in implementing strategies to enhance the worship experience through technology, while also highlighting areas where further research and intervention may be needed to address barriers to adoption.

5.8.3 A model as solutions to the challenges that affect technology adoption as a medium for worshipping so as to improve church attendance

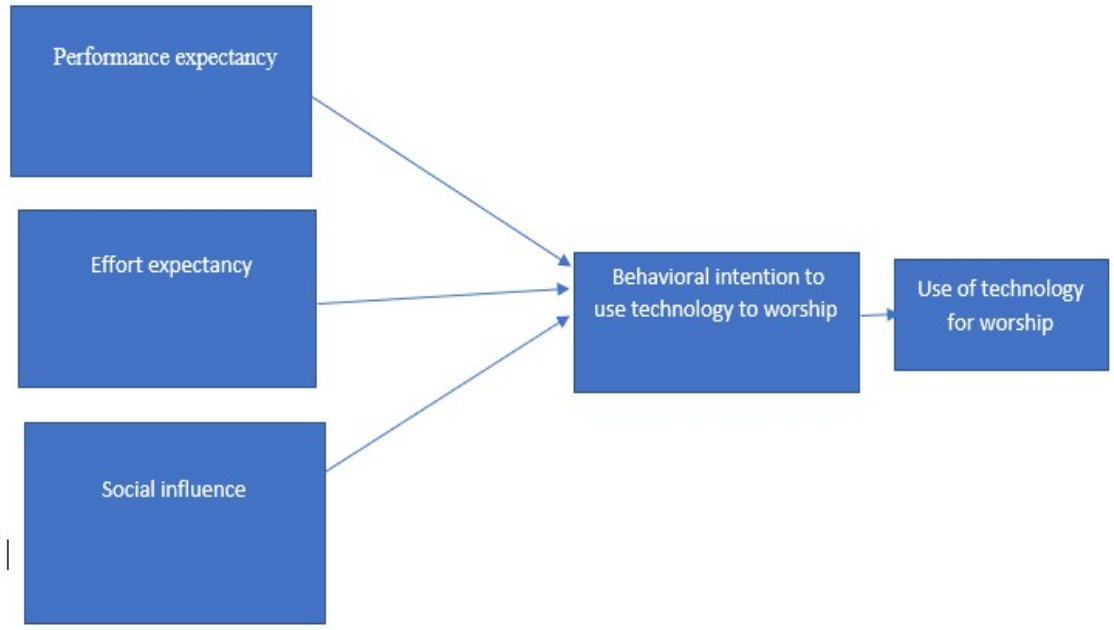
To address the challenges that affect technology adoption as a medium for worshiping and to improve church attendance, a model is proposed based on the study findings and aligned with existing literature. The proposed model integrates key factors identified in the study and draws on insights from relevant literature:

Enhanced Social Influence: Given the significant impact of social influence on both behavioural intentions and actual use of technology for worship, the model emphasizes enhancing social influence within the church community. This can be achieved through targeted social campaigns, testimonials from early adopters, and creating a culture that embraces technology use for worship. This aligns with findings from Soneka and Phiri (2019), which highlight the importance of social influence in technology adoption.

Improved Perceived Usefulness: To enhance the perceived usefulness of technology for worship, the model suggests providing training and education on the benefits and practical applications of technology in worship settings. Additionally, incorporating interactive features and personalized content can enhance the overall worship experience, aligning with findings from Daniel Opoku et al. (2020), which emphasize the importance of perceived usefulness in technology adoption.

Accessible and User-Friendly Technology: Efforts should be made to ensure that the technology used for worship is accessible and user-friendly for all church members. This includes providing technical support, ensuring compatibility with different devices, and addressing any usability issues. This aligns with findings from Masumo-Gwebente and Phiri (2022), which highlight the importance of facilitating conditions in technology adoption.

Figure 6: Modified UTAUT Model as suggested solution



The model calls for continuous evaluation and improvement which are essential aspects of the proposed model for enhancing technology adoption in worship. This involves actively seeking feedback from church members to understand their experiences and needs better. Monitoring usage patterns can provide insights into how technology is being utilized and where improvements can be made. By incorporating new features or technologies based on evolving needs, churches can ensure that their technology remains relevant and effective in enhancing the worship experience. This aligns with the iterative nature of technology adoption, highlighting the importance of adapting to changing circumstances and staying responsive to the needs of the congregation (Undi-Phiri & Phiri, 2022).

Additionally, the model emphasizes the significance of collaboration and partnerships in driving technology adoption in worship settings. By collaborating with technology providers, churches can gain access to expertise and resources that can facilitate the adoption process. Industry experts and other churches can also provide valuable insights and best practices that can help overcome common challenges. This collaborative approach can accelerate the adoption of technology for worship and ensure that churches are leveraging the latest advancements to enhance their worship experience. This aligns with findings from Janzen (2019), underscoring the importance of collaboration in embracing new technologies within church settings.

In conclusion, the proposed model offers a comprehensive approach to addressing the challenges of technology adoption for worshiping and improving church attendance. By focusing on enhancing social influence, perceived usefulness, accessibility, continuous improvement, and collaboration, churches can create a more engaging and inclusive worship experience, ultimately leading to increased church attendance.

5.9 Chapter Summary

This chapter presented the results of the descriptive analysis and explains why each analysis was undertaken. The chapter also presented the results of the Pearson correlation and regression analysis. The chapter also presents the discussions of the study.

CHAPTER 6

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction

This chapter presents answers to the study questions in the first chapter. The conclusions and answers to the study questions are founded on descriptive, regression and correlation analysis results. The chapter also recommends the factors to take into consideration before introducing any technology to the members.

6.2 Research Summary and Conclusions

The aim of this study was to examine key factors that affect the adoption of technology as a medium for worship among Christians and propose a model which religious leaders can use to make informed decisions and create suitable technological solutions that enhance the worship experience so that church attendance is not greatly affected. The following were the findings per specific objective:

i. To determine the level of technology usage among SDA church members during the COVID-19 lock down in Lusaka.

The study found that a significant proportion of SDA church members in Lusaka utilized technology during the lockdown for worship purposes, indicating a willingness to embrace technological solutions for spiritual needs during challenging times.

ii. To evaluate the factors that influence the adoption of technology by church organisations during the COVID-19 lockdowns in Lusaka.

For the second objective, the study identified several key factors influencing the adoption of technology by church organizations. Social influence, ease of use, and educational background were found to be significant factors shaping behavioural intentions and actual use of technology for worship. However, the perceived usefulness of technology and the presence of facilitating conditions did not significantly impact behavioural intentions or actual use.

iii. To propose a model as solutions to the challenges that affect technology adoption as a medium for worshipping so as to improve church attendance.

Lastly, the study proposed a model to address challenges affecting technology adoption for worship. The model emphasizes continuous evaluation and improvement of technology adoption processes, as well as collaboration and partnerships with technology providers and

industry experts. These strategies aim to enhance the adoption of technology for worship, ultimately improving the church attendance experience for members.

From the research hypothesis which were formulated, the results are as in the table below:

Table 20: Hypothesis Testing Summary

	Hypothesis	p-value	conclusion
H1	Performance expectancy influences the usage of technology in worship in the SDA church	0.043	Null hypothesis rejected
H2	Effort expectancy influences the use of technology in worship in the SDA church	0.935	Failed to reject null hypothesis
H3	Social influence has a positive influence in the usage of technology in worship in the SDA church	0.002	Null hypothesis rejected
H4	Facilitating conditions have influence on the usage of technology in worship in the SDA church	0.619	Failed to reject null hypothesis
H5	Behavioural intention has influence on the use technology in worship in the SDA church	0.258	Failed to reject null hypothesis

In conclusion, the study provides valuable insights into the level of technology usage among SDA church members in Lusaka, the factors influencing technology adoption by church organizations, and proposes a model to address challenges in technology adoption for worship. These findings can inform strategies to enhance the use of technology in worship settings, ultimately improving the overall church attendance experience.

6.3 Recommendations

Based on the study findings, the following practical recommendations can be made:

(i) **For Church Leaders and Administrators:**

- Encourage and support the use of technology for worship among church members by providing training and resources.
- Foster a culture of innovation and openness to technological advancements

within the church.

- Collaborate with technology providers and industry experts to enhance the adoption of technology for worship.

(ii) **For Technology Providers:**

- Develop user-friendly and culturally relevant technological solutions for worship.
- Provide support and training to church leaders and members on the use of technology for worship.

(iii)**For Government and Policy Makers:**

- Create policies and initiatives to promote the use of technology in religious institutions.
- Provide support and incentives for churches to adopt technology for worship.

(iv)**For Church Members:**

- Embrace and actively participate in the use of technology for worship.
- Provide feedback and suggestions for improving the use of technology in church settings.

Implementing these recommendations can help overcome challenges and enhance the adoption of technology for worship, ultimately improving the church attendance experience for members.

6.4 Limitations of the Study

The study faced several limitations that should be considered when interpreting the results. Firstly, the study's focus on Seventh-day Adventist (SDA) church members in Lusaka may limit the generalizability of the findings to other church denominations or regions. Additionally, the study's reliance on self-reported data from respondents may introduce response bias and inaccuracies.

Furthermore, the study's cross-sectional design limited the ability to establish causal relationships between variables. Longitudinal studies could provide more insight into the long-term effects of technology adoption on church attendance. Additionally, the study's use of a quantitative approach may have overlooked qualitative aspects that could provide deeper

insights into the adoption of technology for worship.

Lastly, another limitation is the potential for social desirability bias, where respondents may have provided answers that they believed were socially acceptable rather than reflecting their true opinions or behaviours. This bias could impact the validity of the findings, particularly regarding behavioural intentions and actual use of technology for worship.

Overall, while the study provides valuable insights into the adoption of technology for worship among SDA church members in Lusaka, these limitations should be considered when interpreting the results.

6.5 Recommendations for Future Studies

For future studies, several avenues could be explored to further enhance our understanding of technology adoption for worship purposes among churchgoers. Firstly, longitudinal studies could be conducted to track the long-term effects of technology adoption on church attendance and engagement. This would provide valuable insights into the sustainability of technology use in worship settings.

Secondly, qualitative research methods, such as interviews and focus groups, could be employed to gain a deeper understanding of the motivations, barriers, and experiences of church members regarding technology adoption. Qualitative data could complement quantitative findings and provide richer insights into the factors influencing technology adoption in churches.

Additionally, comparative studies could be conducted to compare the adoption of technology for worship among different church denominations or in different regions. This could help identify unique challenges and strategies for technology adoption that are specific to different church contexts.

Furthermore, studies could explore the role of leadership and organizational culture in facilitating or hindering the adoption of technology in churches. Understanding how leaders influence technology adoption decisions and how organizational culture supports or resists technological changes could inform strategies for promoting technology adoption in churches.

Lastly, future studies could examine the impact of technology adoption on broader aspects of church life, such as community engagement, outreach, and spiritual growth. By examining

the holistic effects of technology adoption in churches, future studies can provide a more comprehensive understanding of its implications for the church and its members.

6.6 Chapter Summary

This chapter provided a summary and conclusion of the study's findings. It further provided recommendations based on the findings. The chapter also brought to light the limitations that surrounded the study, and provided some recommendations of how future research could address some of these limitations among others.

REFERENCES

Åhman, H., & Thorén, C. (2021). When Facebook Becomes Faithbook: Exploring Religious Communication in a Social Media Context. Social Media + Society, 7(3). https://doi.org/10.1177/20563051211041644

Ajani OT, Adeyemi AR (2019) Communication technology: Tool for changing the face of worship in Christian religion in Nigeria.

Ajzen, I., & Fishbein, M. (1975). A Bayesian Analysis of Attribution Processes. Psychological Bulletin, 82, 261-277. https://doi.org/10.1037/h0076477

Andersen (Eds.), E-Health—For continuity of care—Proceedings of MIE2014, the 25th European medical informatics conference, Istanbul, Turkey, August 31—August 31, 2014 (Vol. 205, pp. 353–357). IOS Press. https://doi.org/10.3233/978-1-61499-432-9-353 Google Scholar

Ben-Lulu, E. (2021). Zooming in and out of virtual Jewish prayer services during the COVID-19 pandemic. Journal for the Scientific Study of Religion, 60(4), 852–870. https://doi.org/10.1111/jssr.12746 [Crossref], Google Scholar

Berg. (2019). Religion, media, and joint commitment: Jehovah's witnesses as a 'plural subject'. Online - Heidelberg Journal of Religions on the Internet, 14, 79– https://doi.org/10.17885/heiup.rel.2019.0.23949 Google Scholar

Buonsenso, D., Malorni, W., Sisti, G. L., & Moscato, U. (2020). COVID-19 and religion: Risk and opportunities. Preprints. https://doi.org/10.20944/preprints202012.0173.v1 Google Scholar

Campbell, H. A. (2010a). Exploring religious community online: We are one in the network. Lang. Google Scholar

Campbell, H. A. (2010b). When religion meets new media. Routledge. [Crossref], Google Scholar

Campbell, H. A. (2012). Understanding the relationship between religion online and offline in a networked society. Journal of the American Academy of Religion, 80(1), 64–. https://doi.org/10.1093/jaarel/lfr074 [Crossref], [Web of Science ®], Google Scholar

Campbell, Heidi A., and Zachary Sheldon. 2021. "Religious Responses to Social Distancing Revealed through Memes during the COVID-19 Pandemic" Religions 12, no. 9: 787. https://doi.org/10.3390/rel12090787

Cardoza, D. (2019). The JW Library App, Jehovah's Witness technological change, and ethical object-formation. In J. H. Fewkes (Ed.), Anthropological perspectives on the religious uses of mobile apps (pp. 219–240). Springer. https://doi.org/10.1007/978-3-030-26376-8_11 Google Scholar

Chryssides, G. (2018). Historical dictionary of Jehovah's Witnesses (2nd ed.). Rowman & Littlefield. Google Scholar

Creswell, J. W. (2012). Educational research: Planning, conducting, and evaluating quantitative and qualitative research. Upper Saddle River, NJ: Merrill

Daka, G. C., & Phiri, J. (2019). Factors Driving the Adoption of E-Banking Services Based on the UTAUT Model. International Journal of Business and Management, 14, 43-52. https://doi.org/10.5539/ijbm.v14n6p43

Daniel Opoku; Rexford Owusu Okyireh; Philip Siaw Kissi (2020). Consumer Intention towards the Use of Bible Application. American Journal of Education and Learning, 5(1): 72-86.

Davidson, James, and Dean Knudsen. 1977. A New Approach to Religious Commitment. Sociological Focus 10: 151–73

Hackett, Conrad. 2019. How Religious Composition Around the World Differs between Younger and Older Populations. Socius: Sociological Research for a Dynamic World 5.

Hilton, John. 2018. Teaching Religion Using Technology in Higher Education. New York, NY: Routledge

Hussein, R., Mohamed, N., Ahlan, A. and Mahmud, M. (2010) An Integrated Model on Online Tax Adoption in Malaysia. Proceedings of the European, Mediterranean and Middle Eastern Conference on Information Systems: Global Information Systems Challenges in Management, 225-248.

Janzen, A.T, (2019) Technological Advancement in the church: Itd effectiveness in improving worship and church functions .Selected Honors Theses. 123. https://firescholars.seu.edu/honors/123.

Joan, N., 2021. The Impact Of E-Banking on Customer Retention in Commercial Banks of Uganda: A Case Study Centenary Bank. COLLEGE OF BUSINESS AND MANAGEMENT SCIENCES

Kang S.L et al. (2019) Capitalizing and Compensating: Older Adults' Religious and Spiritual Uses of Technology. Anthropology & Aging Vol 40, No 1 (2019) ISSN 2374-2267 (online) DOI 10.5195/aa.2019.194 http://anthro-age.pitt.edu

Kathambi F. et al (2021) Integration of Information and Communication Technology in church worship. International Journal of Innovative Research in Science, Engineering and Technology, Vol.2, Issue 11, 001-003

Kothari, C. R. (2004). Research Methodology: Methods and Techniques. New Agw International Limited.

Lule, Isaiah; Omwansa, Tonny Kerage and Prof. Waema, Timothy Mwololo. Application of Technology Acceptance Model (TAM) in M-Banking Adoption in Kenya. International Journal of Computing and ICT Research, Vol. 6 Issue 1, pp 31-43. H

Lusaya S, Kalumba B (2018) The Challenges of Adopting the Use of E-Banking to the Customers: The Case of Kasama District Banking Customers. Sch J Appl Sci Res. Vol: 1, Issu: 2 (26-31).

Meyer, P (2006) Impossible representations: Pentecostalism, vision, and video technology in Ghana. In: Meyer, B, Moors, A (eds.) Religion, Media, and the Public Sphere. Bloomington, IN: Indiana University Press, pp. 290–312. Google Scholar

Migliori GB, Thong PM, Akkerman O, Alffenaar J-W, Álvarez-Navascués F, Assao-Neino M, et al. Worldwide effects of coronavirus disease pandemic on tuberculosis services, January–April 2020. Emerg Infect Dis. 2020 Nov [date cited]. https://doi.org/10.3201/eid2611.203163

Omotayo FO (2017) Adoption and use of information and communication technologies by Pentecostal churches in Ibadan, Nigeria. J Librarian Info

Opoku-A, K. (2009): Social Research Methods, University Printing Press. Kumasi.

Patel, Hemant. (2007). Factors Influencing Technology Adoption: A Review.

Phillips, H. (2020). '17, '18, '19: Religion and science in three pandemics, 1817, 1918, and 2019. Journal of Global History, 15(3), 434–443. Google Scholar

Oppong, Gladys, Yaa Saah, Saumya Singh, and Fedric Kujur. 2020. Potential of digital technologies in academic entrepreneurship—A study. International Journal of Entrepreneurial Behaviour and Research 26: 1449–76.

Pillay, J. (2020). COVID-19 shows the need to make church more flexible. Transformation, 37(4), 266–275. https://doi.org/10.1177/0265378820963156 [Crossref], Google Scholar

Plaza-Navas, M. A. (2016b). Music and Jehovah's Witnesses: An historical approach to their hymnal and music practices. Acta Comparanda - Subsidia, 3, 23–. https://digital.csic.es/handle/10261/258698 Google Scholar

Ramburn, H. and Van belle, J. (2011) Use and Adoption of Mobile Data Services in Africa: An Empirical Study in Mauritius and South Africa. International Journal of e-Education, e-Business, e-Management and e-Learning, 1, 28-34. https://doi.org/10.7763/IJEEEE.2011.V1.5 [Citation Time(s):2]

Rami Baazeem (2020). How Religion Influences the Use of social media: The Impact of the Online User's Religiosity on Perceived Online Privacy and the Use of Technology in Saudi Arabia. Kingston: Kingston University. [Google Scholar

Raza, Syed Ali, Nida Shah, and Muhammad Ali. 2019. Acceptance of mobile banking in Islamic banks: Evidence from modified UTAUT model. Journal of Islamic Marketing 10: 357–76.

Retolaza, J. L., San-José, L., & Torres-Pruñonosa, J. (2018). Legitimizing and delegitimizing factors of firms in society: Is it a problem of communication or strategic? An approach based on the distributed social value as the key factor for the organizations' social legitimacy. In E. Díez-De-Castro & M. Peris-Ortiz (Eds.), Organizational Legitimacy: Challenges and Opportunities for Businesses and Institutions (pp. 159–170). Springer. https://doi.org/10.1007/978-3-319-75990-6_10 [Crossref], Google Scholar

Rivis, A., Sheeran, P. Descriptive norms as an additional predictor in the theory of planned behaviour: A meta-analysis. *Curr Psychol* **22**, 218–233 (2003). https://doi.org/10.1007/s12144-003-1018-2

Sakala, L., & Phiri, J. (2019). Factors Affecting Adoption and Use of Mobile Banking Services in Zambia Based on TAM Model. Open Journal of Business Management, 7, 1380-1394. https://doi.org/10.4236/ojbm.2019.73095

Sarangam, A. (2021, January 15). Bivariate Analysis: An Easy Guide for Beginners in 2021. Next Jigsaw.https://www.jigsawacademy.com/blogs/business-analytics/bivariate-analysis/#:~:text=Bivariate%20analysis%20is%20a%20kind,extent%20the%20change%20has%20occurred.

Schaupp, L.C., Carter, L. and Hobbs, J. (2009) E-File Adoption: A Study of U.S. Tax-Payers' Intentions.

Soneka, P., & Phiri, J. (2019). A Model for Improving E-Tax Adoption in the Rural of Zambia Based on the TAM Models. Open Journal of Business Management, 7, 908-918

Sharma, R., & Mishra, R. (2014). A Review of Evolution of Theories and Models of Technology Adoption. Indore Management Journal, 6, 17-29.

Sumaya Kagoya. (2020) The Use of Digital Transformation to Address Education Challenges Caused by COVID-19 in Developing Countries. Social Sciences. Vol. 9, No. 6, 2020, pp. 233-240. doi: 10.11648/j.ss.20200906.14.

Tran, Khoa, and Tuyet Nguyen. 2021. Preliminary Research on the Social Attitudes toward AI's Involvement in Christian Education in Vietnam: Promoting AI Technology for Religious Education. Religions 12:208. https://doi.org/10.3390/ rel12030208

Undi-Phiri, B. and Phiri, J. (2022) Assessing Factors Affecting the Adoption of E-Government Services in Developing Countries for Transport Sector, amidst the COVID-19 Pandemic. Communications and Network, 14, 69-90. doi: 10.4236/cn.2022.142006.

Vander Weele, T. J. (2020). Love of neighbor during a pandemic: Navigating the competing goods of religious gatherings and physical health. Journal of Religion and Health, 59(5), 2196–2202. https://doi.org/10.1007/s10943-020-01031- [PubMed], Google Scholar

Venkatesh, V. et al. (2003). User Acceptance of Information Technology: Towards a Unified View. MIS Quarterly, 27, 425-478. https://doi.org/10.2307/30036540

Wildman, W. J.et al (2020). Religion and the COVID-19 pandemic. Religion, Brain and Behaviour, 10(2), 115–117. Scopus. https://doi.org/10.1080/2153599X.2020.1749339 [Taylor & Francis Online], [Web of Science Google Scholar

Williams, TC (2008) A changing worship experience: The emergence of media technology and contemporary worship in an evangelical church. MA Thesis, Florida State University, USA.

WTBTS. (1989, June). Enjoying theocratic association. Our Kingdom Ministry, 32(6), 1–. https://wol.jw.org/en/wol/d/r1/lp-e/201989203 Google Scholar

APPENDICES

Appendix 1 - Questionnaire

The University of Zambia

Graduate School of Business

Evaluating Factors Influencing the Adoption of Technology among Christians as a Medium for Worshipping - The case of SDA Church during lock down in Zambia.

Kasyonta Siamatendu
MBA Management Strategy)
For more information or any queries, kindly get in touch on **0977491046**

Dear Respondent,

I am a student at the University of Zambia in my final stage pursuing an MBA in Management Strategy. As partial fulfillment for the award of a Master's degree, I am conducting a baseline study on: "***Evaluating Factors influencing the adoption of Technology among Christians as a medium for worshipping. The case of SDA Church during lock down in Zambia."***

You have been purposefully sampled to provide information for the topic indicated above. The information being collected is purely for academic purposes as such, it will be treated with maximum confidentiality. Subsequently, you are not supposed to indicate your name or any personal information that can lead to revealing of your identity.

Your co-operation will be greatly appreciated.

For more information or any queries, kindly get in touch with the following:

Project Supervisor: Dr. Jackson Phiri (Jackson.phiri@cs.unza.zm) or

Coordinator: Dr. Bupe M. Mwanza (directorgsb@unza.zm)

PART ONE: DEMOGRAPHIC INFORMATION (PLEASE TICK [√])

1. Gender: Male [ ] Female [ ]

2. Marital Status: Single [ ] Married [ ] Divorced [ ] Other [ ]

3. Age: 20 or under [ ] 21-30 [ ] 31-40 [ ] 41-50 [ ] 51-60 [ ] 61+ [ ]

4. Highest level of education: Senior High School and below [ ] Diploma [ ] First degree [ ] Masters [ ] Ph.D. [ ]

5. Type of employment: Not working [ ] Salaried worker [ ] Self-employed [ ] Pensioner [ ]

6. Occupation (Please specify, e.g. "University Lecturer in Graduate School of Business")

……..

7. Are you a Pastor or Congregant? yes [ ] No [ ]

If you are a Pastor, are you a Presiding Church pastor [ ]

Associate pastor [ ]

Children Pastor [ ]

Congregant [ ]

8 How long have you been pastoring? 1-3 years [ ] 3-6 years [ ] Over 6 years [ ]

N/A [ ]

PART TWO: ICT USAGE AND EXPERIENCE (PLEASE TICK [√])

9. How do you describe your general knowledge about ICT? Very poor [ ] Poor [ ] Moderate [ ] Good [ ] Very good [ ]

10. How would you describe your Internet knowledge? Very poor [ ] Poor [ ] Moderate [ ] Good [ ] Very good [ ]

11. How long have you been using the Internet? Don't use [ ] Less than 1yr [ ] 1- 2 yrs. [ ] More than 2 yrs. [ ]

12. How often do you use the Internet per day? Don't use [ ] Less than 1hr [ ] 1-2 hrs. [ ] 3- 4 hrs. [ ] More than 4 hrs. [ ]

PART THREE: TECHNOLOGY ADOPTION FACTORS

Using a rating scale from the lowest point of 1 to the highest point of 5, please circle the number that indicates your level of agreement or disagreement with the following statement.

SD = strongly disagree | D = Disagree | N = Neutral | A = Agree | SA = Strongly Agree | NA= Not Applicable

No	Statement					
	Performance Expectancy	**SD**	**D**	**N**	**A**	**SA**
1	I think that technology is useful during my worship	1	2	3	4	5
2	I think that using technology would make me worship in the comfort of my home	1	2	3	4	5
3	I think that by using technology, my worship will be made easier	1	2	3	4	5
4	I think by using technology my worship would be more meaningful	1	2	3	4	5
	Effort Expectancy	**SD**	**D**	**N**	**A**	**SA**
1	I think that interaction with internet and other ICT is clear and easily understandable	1	2	3	4	5
2	I think it's easy to become skillful at using ICT in Church	1	2	3	4	5
3	I find ICTs easy to use	1	2	3	4	5

4	I think that learning to use ICT is easy for me	1	2	3	4	5
	Social Influence/ Aspects	**SD**	**D**	**N**	**A**	**SA**
1	Times have changed so the church should consider ICT adoption and use	1	2	3	4	5
2	Social media and or ICT are now acceptable officially in all spheres of life	1	2	3	4	5
3	Use of ICT is prestigious	1	2	3	4	5
	Facilitating Conditions					
1	The Church did not have the resources necessary to use ICT in worshiping and meetings during the COVID 19 Lockdown	1	2	3	4	5
2	The church policy did not create an enabling environment for the use of ICT during the COVID Lock down	1	2	3	4	5
3	Church members were willing to Use ICT during the lock down but there was no ICT infrastructure in place	1	2	3	4	5
4	The cost of ICT was very Prohibitive	1	2	3	4	5
	Behavioural Intention	**SD**	**D**	**N**	**A**	**SA**
1	The Church will be better prepared in future lock downs .	1	2	3	4	5
2	The Church members expressed willingness to Use ICT during the lock down	1	2	3	4	5
3	The church leadership needs to have a change in policy so that ICT become a part of the church program .	1	2	3	4	5

PART FOUR: ACTUAL USE OF TECHNOLOGY FOR WORSHIP (PLEASE TICK [√])

1. How long have you been using ICT facilities for worship? Under 1 year [ ] 1-2 years [ ] 3- 4 years [ ] more than 4 years [ ]

2. On a weekly basis, how many times do you use ICT for church related functions? Not at all [ ] once a week [ ] 2-3 times [ ] more than 3 times [ ]

3. How frequently do you use your ICT for the following services?

Functionality	Never 1	Rarely 2	Sometimes 3	Often 4	Always 5
Gospel music					
Reading the Bible					
Watching sermons					
Worship services					
Sharing word of God					

Interview Guide

Use of Information communication Technologies in pastoral work

1. Do you have church website? Yes..... No.....

2. Does your church do a webcast or podcast? Yes [ ] No [ ] I don't know what it is [ ]

3 Do you support the idea of using technology in worshiping in your church ?

Give reasons for your answer……..

What do you think is the reason for not using Technology in your worship at church during the COVID lock down ?

Restrictive Church Policies [ ] General Financial and economic status of congregants[ ]

Physical interaction was better [ ] Restrictive cost of the technology [ ]

4-Which of these Christian Religious software do you have in your personal computer?

Worship..... Commentaries..... EBooks… All ……

5. Would you like to use ICT for preaching or teaching and give a reason why ?

6. Do you think the use of ICT for preaching and teaching would have helped the SDA church during the lock down ?

Give reasons to your answer ?

7. Do you think use / non use of ICT in worship in the SDA Church has obvious advantages / disadvantages ?

8. Which type of ICT would you have preferred to use during the COVID lockdown?

Television [ ]

Radio [ ]

Google meet or ZOOM [ ]

Facebook [ ]

Whatsapp [ ]

Appendix 2: Introduction letter

THE UNIVERSITY OF ZAMBIA

Mobile : 0953-975662/0977-613985
Email : directorgsb@unza.zm/gsb@unza.zm
Tel : +260 211 294105

Graduate School of Business
P.O. Box 32379
Lusaka, Zambia

14th December, 2022

TO WHOM IT MAY CONCERN

RE: INTRODUCTORY LETTER FOR KYASONTA SIAMATENDU

This letter serves to introduce Kyasonta Siamatendu a bonafide student in our Master of Business Administration (MBA) Management Strategy programme at the University of Zambia - Graduate School of Business (UNZA–GSB). In partial fulfilment of their Postgraduate studies, the students are required to undertake a Dissertation (Research).

This entails that students collect data from various institutions in line with the research they are conducting. This research is purely for academic purposes and the student is ethically bound to treat the provided information with strict confidentiality.

We will appreciate the assistance that you will render Mr Siamatendu to collect the data and the information from your institution that will assist her to carry out this research. Should you have any queries or would like further information about her, please contact the UNZA–GSB on the above e-mail address or telephone numbers.

Yours Faithfully,

Dr Lubinda Haabazoka
DIRECTOR – GRADUATE SCHOOL OF BUSINESS

cc Assistant Registrar - Graduate School of Business

15 DEC 2022

"Towards Improving Service and Excellence in Higher Education Beyond Fifty Years"

Appendix 3: Publications

K.Siamatendu and J.Phiri, (2024), "Evaluating Technology Adoption Among Christians Organisations as a Medium of Worshipping During Lock down in Developing Countries."

Open Journal of Business and Management (OJBM) (In Press)