CHURCH TECHNOLOGICAL GROWTH AND SUSTAINABILITY: INSIGHT FROM SYSTEM DYNAMICS

by

COURAGE MATOBOBO

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I further declare that I have not previously submitted this work, or part of it, for examination at Unisa for another qualification or at any other higher education institution.

_____ ___28 October 2022____

SIGNATURE DATE

DEDICATION

This Thesis is dedicated to my mother, Memory Matobobo, my wife, Ophellia Kimbini, my daughter, Arshel Janelle Matobobo, and my son, Asher Tadiwa Matobobo.

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ABSTRACT

Religious organisations that have realised the importance of ICTs are increasingly adopting and using various technologies to spread evangelism while seeking to grow membership. Currently, a few studies evaluating the use of ICTs in religious organisations through systems dynamics approach to focus primarily on sustainability and a growth perspective. Very little is said in such studies about the use of the adopted ICTs and their impact on these religious organisations. This study addresses the knowledge gap identified by assessing the impact of ICTs on the sustainability and growth of the Seventh-day Adventist (SDA) churches across South Africa. Data collection involved interviews with church leaders, a questionnaire survey of church members, a document analysis of the Book of Acts, and Facebook posts from the SDA churches. The qualitative data were analysed thematically using Atlas-ti 8. The questionnaire survey data were analysed using the Statistical Package for the Social Sciences version 25, while data from Facebook were analysed using sentiment analysis. The findings showed a high level of ICT usage among church leaders and members. The study found that church leaders use ICTs to create online communities for their congregations, which were essential in addressing the communication and informational needs of church leaders. However, there were reports of misuse of ICT, such as the circulation of inappropriate content, and scams. Nonetheless, the gains to the church were more worth it than the concerns as the church leaders managed to come up with corrective measures. The study further found that lack of proper data integration from distributed departments and poor consolidation of reports from the church departments caused church leaders to make wrong decisions that affected the operations of the church. For improved decision-making, the study proposed the development of a pastoral analytics-based dashboard that uses a single screen for data consolidation and reporting. The study contributes to scientific knowledge by addressing the existing gap in the impact of ICT on the sustainability and growth of modern churches by developing a pastoral dashboard for church leaders. This study recommends further data collection from other religious organisations.

Key Words:

Church Growth, Church Sustainability, Technological Growth, ICT, Social Media, System Dynamics, Religious Organisations, Online Technologies, Technology Adoption, Technology Use, Pastoral Analytics-based Dashboard, Informational Needs

PUBLICATIONS

The articles presented in this section were presented and/or published as conference proceedings, book chapters and journal articles. This PhD thesis is not a collection of these published articles.

Journal papers

1. C. Matobobo and F. Bankole, (2021), Customising and Implementing e-Dashboard in Religious Organisations, Academic Journal of Current Research, Vol. 8, no 10, pp. 1-15, ISSN: 3244-5621

Book Chapters

1. C. Matobobo and F. Bankole, (2022), Technological Growth in Religious Organisations: Exploring Social Media Impact through the Lens of System Dynamics, IGI Global

Conference papers

1. C. Matobobo and F. Bankole, (2022) Church Sustainability: Exploring Online Technologies through the Lens of System Dynamics, UKAIS2022
2. C. Matobobo and F. Bankole, (2021) Evaluating eWOM in Social Media: Religious Leaders vs Religious Organizations: Functionality Approach. Proceedings of the UK Academy for Information Systems Conference Proceedings 2021. 15, ISSN: 978-0-9560272-1-4
3. C. Matobobo and F. Bankole, (2020), Is the Impact of Human-Computer Interaction in Religious Organisations a Hype or Crossword? Proceedings of the 25th UK Academy for Information Systems (UKAIS) International Conference, 29th April 2020, Virtual Conference, paper 28, ISSN: 978-0-9560272-2-1 *(DoE accredited)*

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1. C. Matobobo and F. Bankole, (2018), ICT and Religious Organisation: An Outlook. Corruption: wealth, power, religion and democracy, Stellenbosch University

ACRONYMS AND ABBREVIATIONS

CC	Cape Conference
CLD	Causal loop diagram
CS	Computer Science
eWOM	Electronic Word of Mouth
HCI	Human-Computer Interaction
ICT	Information and Communication Technology
IS	Information System
IT	Information Technology
KNFC	KwaZulu Natal-Free State Conference
KPI	Key Performance Indicators
LC	Lesotho Conference
MRT	Media Richness Theory
NC	North Conference
NC	Northern Conference
NNC	North Namibia Conference
QUAL	Qualitative
QUAN	Quantitative
RSS	Really Simple Syndication
SAU	Southern Africa Union
SC	Swaziland Conference
SD	System Dynamics
SDA	Seventh-day Adventist
SNC	South Namibia Conference
SoP	Spirit of Prophecy
SPSS	Statistical Package for the Social Sciences
TAM	Technology Acceptance Model
TOC	Trans-Orange Conference
TOE	Technology, Organisation and Environment
TPB	Theory of Planned Behaviour
TRA	Theory of Reasoned Action
UGT	Uses and Gratifications Theory
WOM	Word of Mouth

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CHAPTER 1: INTRODUCTION

1.1 Introduction and Background

In accordance with religious teachings, church growth, and sustainability remain fundamental objectives for religious institutions because of the mandate to make disciples and retain them. The advent of ICTs has enabled people to have access to information, improved the flow of information and communications and provided traditionally disadvantaged groups with better communication channels than before (Alassiri, Muda, Ghazali & Ahamefula, 2014). This usage has enabled information sharing, knowledge generation, research, advertisement, and marketing and enlightens the people in the community (Osawaru, 2010). ICT usage trends in religious organisations are reported to be increasing alongside other sectors such as agricultural sectors, banking, schools, retail enterprises and manufacturing industries (Revere & Kovach, 2011; Arthur & Rensleigh, 2015; Yan, Filieri & Gorton, 2021). In some sectors, the impact of ICT has been tremendous, while in others, it has been minimal (De Wet, Koekemoer & Nel, 2016; Tichaawa, Mhlanga & Sicwebu, 2017). Successful implementation of ICT solutions is crucial for realising ICT benefits (Haupt, Scholtz & Calitz, 2015). Adopters of ICT solutions should therefore be able to be critical when selecting ICT solutions that meet their needs and organisational circumstances.

The use of ICT within organisations potentially brings more benefits in terms of competitive advantage. ICT enables adopters and implementers to be reachable by all who have access, irrespective of geographical location. Access to services is a basic attribute of customer satisfaction. Furthermore, ICTs have improved the efficiency of operations in organisations, saved time for the users and reduced the costs of an organisation (Apiyo & Kiarie, 2018). Literature shows that decision-makers who use ICT tools in strategic decisions can easily identify new markets and change company product lines (Watson & Wixom, 2007). These decision-making abilities are usually complex by mere reasoning without the aid of current and correct information. Using ICT systems in religious organisations can potentially lead to membership growth and sustainability. To achieve these, decision-makers will have to use the information produced by reliable ICTs to plan essential evangelism campaigns, management of membership, and effective communication with the immediate communities.

Church growth largely depends on membership growth, an important aspect that religious organisations strive for to successfully execute the great commission of evangelising to the whole world (Hammett, 1999; Boaheng, 2014). Due to the Coronavirus (Covid-19) pandemic, the operations

of several religious organisations were affected as members could not physically gather to share the Word of God as they had before (Pillay, 2020). However, the increase in the use of ICTs has resulted in several technologies being deployed in different social and economic areas to assist in accomplishing various religious tasks. Bolu (2012) posits that the utilisation of ICTs has emerged as an immense benefit for many religious organisations with tech-savvy members. Using ICTs in religious organisations could potentially change how leaders and members evangelise, thereby growing the organisation. There are models developed to model the growth of religious organisations, such as the conversion model (Hayward, 2002; Wilson, 2017). Many of these models focus on the enthusiast groups believed to be active for some time in recruiting new members and then become inactive after some time. It has been noted that in many cases, religious organisations recruit through friendship networks and personal contacts (Fred, 2015; Činčala, 2016; Lie, 2018). Due to the successful adoption and use of technologies, the recruitment of new members is no longer solely dependent on enthusiasts but also the use of ICTs such as social media (White, Tella & Ampofo, 2016).

The advent of social media has enabled people to connect, develop, produce, and share media content at an increasingly fast rate necessitating the spread of information at an accelerated pace and, in most cases, instantly. Social media properties have helped transform consumers of media content into active participants by getting them involved in electronic word-of-mouth (eWOM) activities (Delafrooz, Rahmati & Abdi, 2019). eWOM is ""any positive or negative statement made by potential, actual, or former customers about a product or company, which is made available to a multitude of people and institutions via the Internet"" (Hennig-Thurau, Gwinner, Walsh & Gremler, 2004:39). eWOM has been extensively used in the marketing arena by consumers to search for information posted by previous customers and to make themselves comfortable before purchasing products or services (Erkan & Evans, 2016). Although the use of eWOM has proved beneficial in the marketing of goods and/or services, especially in profit-making organisations (Hennig-Thurau et al., 2004), very few research studies have studied eWOM in social media in the context of religious organisations such as churches.

Some religious organisations use social media to reach their members and non-members (Kgatle, 2018). The use of eWOM could assist people seeking to join religious organisations, as they can go through sentiments posted on church social media pages and get an idea of the church. A study by the Pew Research Center showed that about half of American adults have looked for a new religious congregation at some point in their lives (Pew Research Center, 2016). The research further showed that 83% of these Americans considered the quality of preaching when choosing a congregation (Pew

Research Center, 2016). This indicates that most people do not simply join congregations without assessing their services. Social media platforms have features that could assist people in assessing a church and its services by going through the comments posted on their social media platforms.

As the church grows, it is important to implement strategies that enable member retention and, at the same time, are sustainable for the church. Sustainability in the organisation refers to the adoption of strategies and activities that meet the needs of an organisation and its stakeholders while protecting, sustaining and enhancing the human and natural resources that will be needed in the future (Labuschagne, Brent & Van Erck, 2005). Transition to organisation sustainability is a "long-term, multi-dimensional, and fundamental transformation process, which establishes that a socio-technical system shifts more toward sustainable modes of production and consumption" (Jo, Kim & Lee, 2021:1). Religious organisations have sociological aspects that include institutional structure, the spirituality of members, membership growth, worldview, and religious routines (Labuschagne (Hennig-Thurau et al., 2005; Koehrsen, 2018). Religious organisations need to move these sociological aspects toward sustainable models. Therefore, church sustainability in this study refers to the church's ability to stand for its cause and objectives in every situation and time. The findings of this study present the value of ICTs in sustaining religious organisations in member retention as well as addressing the needs of church leaders.

The adoption and use of ICTs, especially by religious leaders, have received little attention in academic research (Sircar & Rowley, 2020). Much ICT research in religious organisations focuses on usage by members (Lee, 2018); few researchers have focused on religious leaders. As a result, little is known about the level of ICT usage by religious leaders and how churches share practices (Sircar & Rowley, 2020). Very few studies have evaluated the use of ICTs in religious organisations, especially from the perspective of church sustainability and growth through the lens of systems dynamics. It is, therefore, important to understand how technology can sustain and grow religious organisations since religion plays an essential role in people's lives (Campbell, 2005). Unfortunately, in most cases, religion is seen as an insignificant cultural group without any bearing on technology or development (Campbell, 2005). Research on religion is important since religion is a powerful weapon that church leaders can use to raise awareness of the Word of God to establish unity, fairness, good healthy living, mutual understanding, growth, diligence, and contentment among the people of God (Erasmus, 2007; Adedeji, 2012). The study, therefore, evaluates the impact of ICT on church sustainability and growth using the four Southern Africa Union (SAU) conference churches as the case study through the lens of system dynamics. System dynamics was used to describe and simulate dynamically complex issues through the structural identification of feedback and delay processes that

drive system behaviour (Walters, Archer, Sassenrath, Hendrickson, Hanson, Halloran, Vadas & Alarcon, 2016).

1.2 Problem Statement

For religious organisations to grow in membership, decision-makers at all levels should have the proper base for decision-making. Unfortunately, religious organisations hardly capitalise on ICT, thereby missing benefits that can be derived from the successful implementation of ICT and tend to make decisions intuitively (Ossai-Ugbah, 2011). Moreover, organisations collect volumes of data (e.g. through manual church records) that can hardly be processed manually, preventing organisations from realising new patterns that might help make informed decisions (Gutzler, 2014). Religious organisations require ample storage and outstanding processing power to deal with the large volume of data, hence the need for ICT. The research, therefore, seeks to evaluate the level of adoption and usage of ICT in the four Southern Africa Union (SAU) conference churches.

Religious leaders need accurate, up-to-date, and integrated information to help in the decision-making process. Informed and viable decisions have been hailed as critical for religious organisations because church leaders use them to plan, lead, organise, staff, and control human and other resources to achieve organisational goals effectively and efficiently (Oosthuizen & Lategan, 2016). However, religious organisations across the world tend to focus on the needs of members without prioritising the systems needed by church leaders to function efficiently and effectively toward achieving organisational goals (Sider, 2018). Arthur and Rensleigh (2015) believe that future research should focus on identifying the trends in information needs and social media needs of religious organisations to share appropriate information at convenient times with their members and decision-makers. This shows that the identification of the information needs of users is important to the proposal and design of efficient and effective information systems that are beneficial to the organisation (Devadason & Pratap, 1996). Although information systems have proved to be beneficial in most sectors of the economy, such as the agricultural sector, education, and health (Zhong, Yang & Chen, 2015; Kuek & Hakkennes, 2020), inadequate church administrative systems that do not consistently meet the needs of church leaders were mentioned as part of five challenges affecting church leaders in decision-making (Sider, 2018). Research into the information needs of church leaders is essential to ensure that religious organisations focus on the organisation's mission and vision (Sider, 2018).

Furthermore, implementing ICT is a complex and high-risk endeavour because organisations need to implement correct ICT at the appropriate time (Potnis, 2015; Verma & Voida, 2016). Besides, there is no guarantee that ICT implementation will lead to positive benefits as there are some issues that

affect the successful implementation in organisations, such as lack of sponsorship, lack of skilled staff, poor data quality and no defined methodologies (Venter, 2005; Verma & Voida, 2016). Nevertheless, positive benefits can be expected if the organisation implements ICTs with due diligence. Even though many studies have reported the increasing use of ICTs in religious organisations, the studied literature does not report on the use of these technologies to foster growth and sustainability. This research explores factors that hinder the successful adoption and use of ICT in the four SAU conference churches.

The high demand for ICT has brought several ICT systems into the market. This, however, has increased the possibility of failure due to companies picking up less efficient ICT systems or solutions for business problems (Schiff, 2014; Ramanigopal, Palaniappan & Mani, 2012). It is, therefore, crucial to have the best criteria for selecting ICT systems or solutions to implement the best solution. This study, thus, evaluates the criteria for selecting ICT systems for use in the four SAU conference churches.

Although some religious organisations are using ICT, there are, however, little or no evaluations of its impact on church sustainability and growth of religious organisations compared to profit-making organisations (Richards, Yeoh, Chong & Popovič, 2014). This hinders growth and development within religious organisations. The research evaluates the impact of ICT on the church sustainability and growth of the four SAU conference churches.

1.3 Research Aim

This study aims to evaluate the impact of ICT on church sustainability and growth of the four Southern Africa Union (SAU) conference churches.

1.4 Research Objectives

The main objective of this research study was:

> *To evaluate the impact of ICT on church sustainability and growth in the four SAU conference churches.*

Other sub-objectives were:

i. To explore the level of ICT adoption and use in the four SAU conference churches.
ii. To explore factors that hinder the adoption and use of ICT in the four SAU conference churches.
iii. To determine the criteria for selecting ICT systems for use in the four SAU conference churches

iv. To examine the informational needs of church leaders in the four SAU conference churches to develop a prototype pastoral analytics dashboard that can be used to provide religious leaders with consolidated reports on the organisation's key performance indicators (KPI).

v. To explore growth and sustainable models used by the apostles in the early church to apply them in this 21st century to improve church sustainability and growth.

vi. To determine the role and impact of eWOM in the four SAU conference churches.

vii. To explore the contributions of ICT toward church sustainability and growth.

1.5 Research Questions

The main research question to be answered in this study is stated as:

What is the impact of ICT on church sustainability and growth of the four SAU conferences?

To assist in answering the main questions, the following sub-questions are asked:

SRQ1: What are the levels of ICT adoption and use in the four SAU conference churches?

SRQ2: What factors hinder the use of ICT in the four SAU conference churches?

SRQ3: What are the criteria for selecting ICT systems for use in the four SAU conference churches?

SRQ4: What are the information needs of church leaders in the four SAU conference churches?

SRQ5: What models were used by the apostles in the early church to sustain and grow churches?

SRQ6: What is the role and impact of eWOM in the four SAU conference churches?

SRQ7: How do ICTs contribute to the sustainability and growth of the four SAU conference churches?

1.6 Research Methodology

This research study adopted the pragmatic research paradigm utilising a qualitative design that enabled the collection of data from religious leaders and the Bible from the Book of Acts and a quantitative approach to collect data from church members. The pragmatic research paradigm was adopted because the researcher believes that the problem can be solved by a mix of approaches (Morgan, 2007). Data were collected and analysed independently. The concurrent design consisted of the qualitative (QUAL) and quantitative (QUAN) phases that were conducted independently of each other (Creswell, 2013; Warfa, 2016). The purpose of triangulation was to collect different types of data that gives a different perspective to the problem under study. A detailed methodology is discussed in Chapter 3 of this study.

1.6.1 Population, Sample Size and Sampling Procedures

The population for this study was church members and leaders within the four (4) SAU conference churches. The SAU conferences include the Cape, KwaZulu Natal-Free State, Northern, and Trans-Orange Conferences. The study included all the church conferences in South Africa that belong to the SAU. The study used a sample of 12 church leaders and all 28 chapters of the Book of Acts for qualitative data, public data on Church Facebook pages, and 205 church members for quantitative data. Purposive sampling was used to collect qualitative data from church leaders, and convenience sampling was used for quantitative data from church members. A detailed discussion of the research population, sample size, and sampling procedures is provided in Chapter 3.

1.6.2 Data Generation and Analysis Techniques

Data were collected from church leaders using semi-structured interviews. Document analysis was used with the Book of Acts (Bible). The qualitative data were analysed thematically using Atlas-ti 8. Quantitative data was collected from church members using a closed-ended questionnaire and analysed using SPSS 26. The results from quantitative data were presented in the form of frequency tables, graphs and descriptive statistics. The data collection and analysis procedure is shown in Figure 1.1. Detailed data generation and analysis are presented in chapter 3.

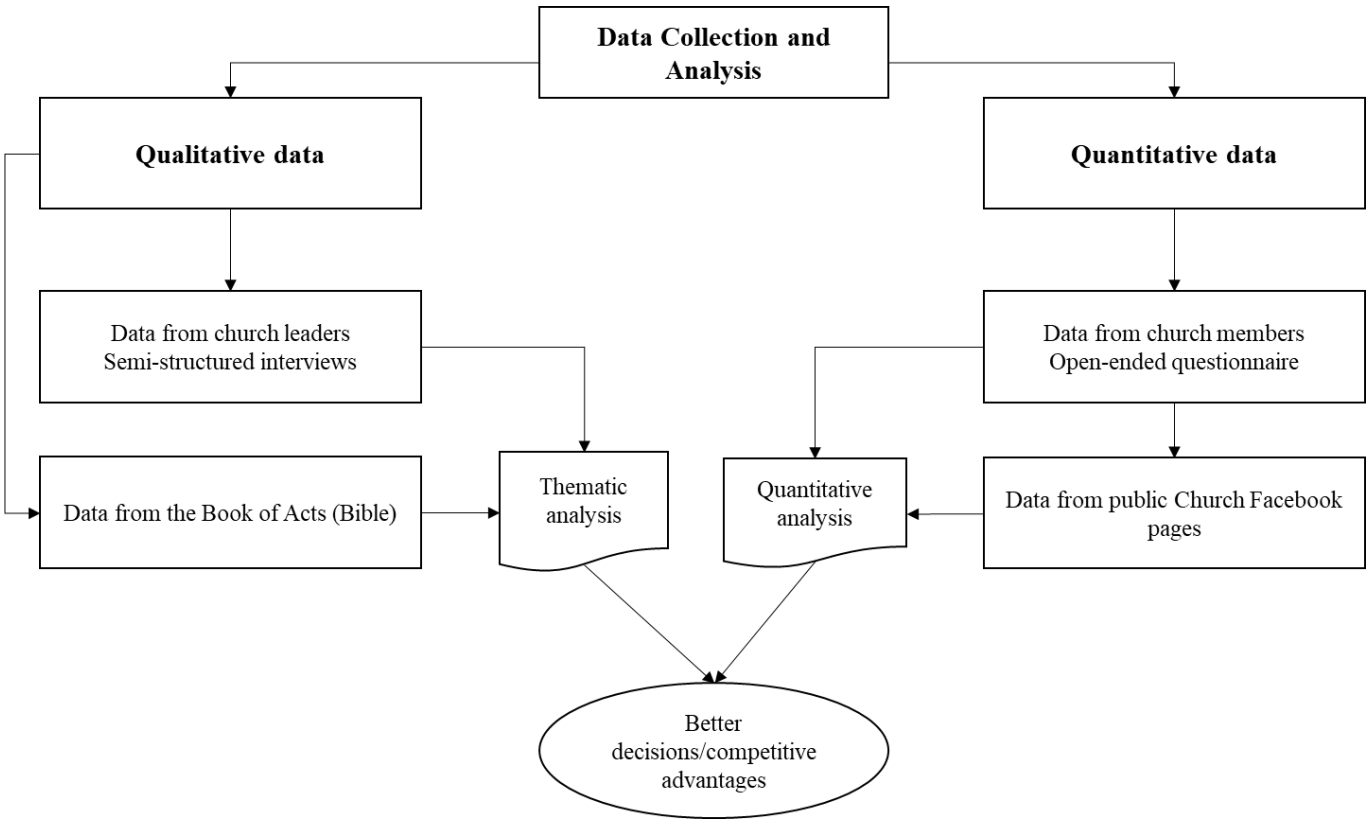

Figure 1.1: Data Collection and Analysis Procedure

1.7 Significance of the Study

This research is useful to researchers, ICT developers, and religious organisation decision-makers, such as pastors, church treasurers, evangelists, administrators, and elders. Researchers could use this research as a base for future research within a non-profit environment. ICT developers could use this research to improve the ICT systems within religious organisations to encourage church sustainability and growth. Decision-makers within religious organisations may need to understand the impact of ICT on the sustainability and growth of religious organisations as a strategy of growth to fulfil their missions. The research study used empirical data to evaluate the impact of ICT on church sustainability and growth using the lens of system dynamics, and causal loops were identified that church leaders could use to make policies that govern ICT use in religious organisations. Church leaders could use causal loops to understand the causes and effects of risks and opportunities in a complex system. The study also analysed church sustainability and growth from the Biblical perspective using the Book of Acts so that church leaders could apply the Bible models contained there to 21st-century churches. This could assist church leaders and system developers in developing ICT to help sustain and grow churches. Church sustainability and growth are important because they enable churches to recruit new members and retain them, fulfilling the great commission of making disciples of all nations.

The study further examined the informational needs of religious leaders, and pastoral analytics was developed to assist religious leaders in making informed decisions that could sustain and grow churches. Religious organisations could adopt these pastoral analytics to assist them in decision-making. This gives system developers an idea of systems that could benefit religious leaders to sustain and grow their organisations.

From the reviewed literature, there is no or little literature on the impact of ICT on church sustainability and the growth of religious organisations, making it a grey area. The study seeks to contribute to the body of knowledge on the use of ICT for church sustainability and growth. ICT provides churches with sustainability strategies, such as conducting meetings online and addressing the spiritual needs of members through online platforms and growth through evangelism via online channels.

1.8 Scope of the Research

Evaluative research was used to evaluate the impact of ICT on church sustainability and growth. The research study will focus on the SDA Church in South Africa. Sample data will be collected from all

four conferences of the SDA in South Africa using both quantitative and qualitative methods. Only decision-makers such as pastors, elders, and heads of departments participated in the interviews, and church members participated in the survey. The study will not assess the spiritual growth of the members but will only focus on membership growth and church sustainability. However, the study could have a bias in selecting participants since it would be difficult to get records of all the church members in every church.

1.9 Thesis Structure

This section presents the chapters of the thesis and its interactive diagram in Figure 1.2.

Chapter 1: Introduction

Chapter 1 introduces the thesis: problem statement, research questions, research objectives, research scope and limitations, research ethics, and the contributions of the research.

Chapter 2: Literature Review

Chapter 2 reviews Literature on ICT in religious organisations. It covers an exploration of the usefulness of ICT in religious organisations, the factors that hinder the successful implementation of ICT in religious organisations, and the criteria for selecting ICT systems or solutions.

Chapter 3: Theoretical Frameworks, Theories, and Models

Chapter 3 discusses the theoretical frameworks, theories, and models related to ICT adoption and media use.

Chapter 4: Research Methodology

Chapter 4 discusses the research methodology that will be used to carry out the research study. The research design, paradigm, approach, and method adopted for the research will be discussed. It will also discuss the data collection methods to be employed to collect data.

Chapter 5: Data Analysis and Interpretation of Results

Chapter 5 discusses the results of the analysis of the data collected for the mixed method. It looks at the themes discovered from the interviews and also presents factors that will be identified from the literature.

Chapter 6: Discussion

Chapter 6 discusses the results of the analysis of the data collected for the mixed method. It looks at the themes discovered from the interviews and also presents factors that will be identified from the literature.

Chapter 7: Conclusion, Contributions, and Limitations

Chapter 7 discusses the findings of the research study. Finally, a conclusion of the thesis will be given, and recommendations will be presented and discussed.

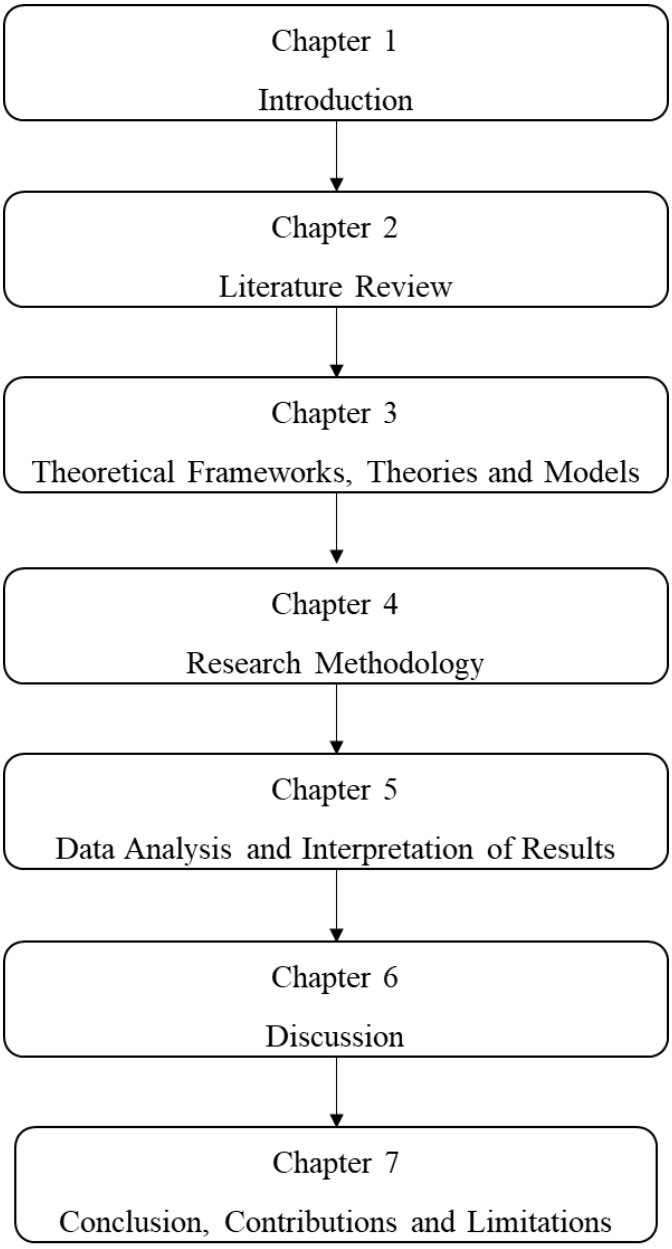

Figure 1.2: Thesis Interactive Diagram

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

A literature review is conducted to provide a summary, description, and evaluation of the works carried out concerning the research problem being investigated. Literature reviews give an overview of sources used to find information regarding a particular topic under investigation for the audience and how the research fits within the field under study. This chapter reviews the application of ICTs in religious organisations. This chapter reviewed various ICTs used in religious organisations as strategies for church sustainability and membership growth. The chapter also reviewed the benefits derived from successful adoption, the use of ICTs, and the challenges that hinder the adoption of ICTs in religious organisations. Lastly, the chapter discussed theories, models, and frameworks for technology adoption and media use to provide insights into how religious leaders adopt and use ICT.

To conduct literature analysis, various data sources comprised of published academic journal articles, conference proceedings, research reports, and various Church websites were used. Some of these research articles were accessed through the Google search engine. Google provided hyperlinks to various indexed electronic resources such as online research databases. Also, some sources were searched from various electronic databases, including IEEE Explore, ACM Digital Library, Science Direct, Elsevier, and Springer.

The literature analysis was carried out in the following order: Section 2.2 discusses religious organisations, Section 2.3 discusses church growth and sustainability, Section 2.4 discusses the application of ICT in religious organisations, Section 2.5 discusses informational needs of church leaders, Section 2.6 discusses theories, models, and frameworks for ICT adoption and use, Section 2.7 discusses system dynamics as the theory building model, and finally, Section 2.8 concludes the chapter.

2.2 Religious Organisations

Religious organisations are organisations with identity and mission inferred from a religious or spiritual tradition and operate as registered or unregistered, non-profit, voluntary entities (Berger, 2016). Religious organisations were given the mandate by Jesus Christ to preach and convert people to Christ according to the Holy Bible in Matthew 28: 19-20. Jesus is the central figure of Christianity (Groh and Johnson, 1977; Objantoro, 2018). Christian teachings believe that Jesus was conceived by the Holy Spirit through a virgin named Mary, performed marvels amid His service, established the Christian Church, died on the cross as a sacrifice for the remission of the sins of all people, rose from

the dead, and went to Heaven, from where He will return (Schweizer, 1967; Wright, 1998). A church is a body of believers in Jesus Christ (Pratt, 2016). Jesus gave the great commission to His apostles before His death:

""**19** Go ye therefore, and teach all nations, baptizing them in the name of the Father, and of the Son, and of the Holy Ghost: **20** Teaching them to observe all things whatsoever I have commanded you: and, lo, I am with you always, even unto the end of the world. Amen.""

(Matthew 28: 19- 20, King James Version)

The world has several religions such as Christianity, Islam, Hinduism, Buddhism, Chinese traditional religion, Primal-indigenous, African Traditional and Diasporic, Sikhism, and Bahai. These religions have the following composition; Christians (31.0%), Muslims (25%), Hindus (15.2%), Buddhists (6.6%), Jews (0.2%), Folk (5.6%), while 15.6% did not affiliate with any religion (Deshmuks, 2022) (see Figure 2.1). Christianity is currently the leading religion, with around 2.4 billion members globally. Within the Christianity religion, there are major denominations such as Catholics, Protestants, Orthodox, Restorationists, and many others. Christianity is a monotheistic religion centred on the life and teachings of Jesus Christ (Williams, 2008; Denova, 2022). This study used the Seventh-day Adventist (SDA) church as the case study because the researcher saw the need since he is a member of the church. They observed the use of ICTs for years and were impressed to evaluate the impact of ICTs within the four SAU conference churches.

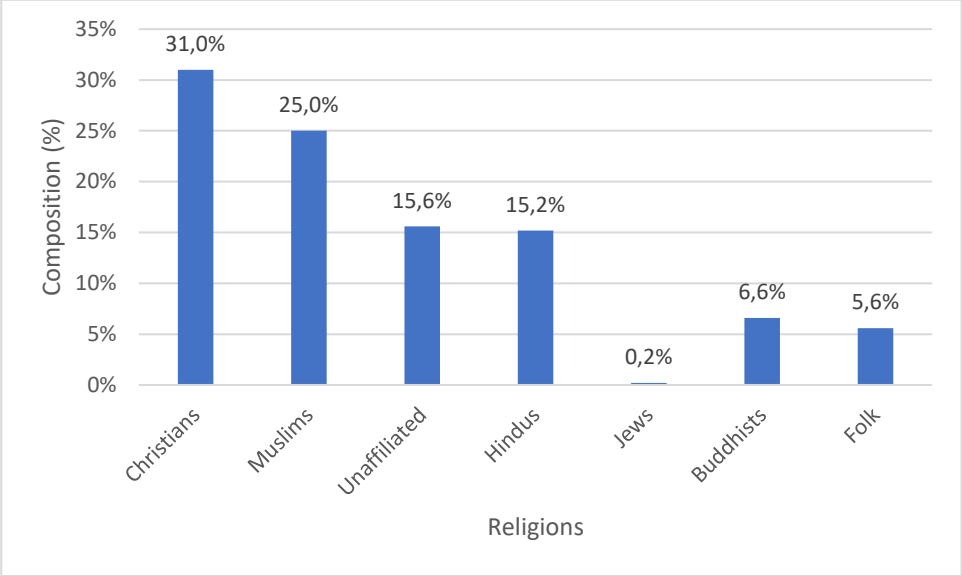

Figure 2.1: Major religious groups

Source: (Deshmuks, 2022)

Religious organisations also strive to minister to the needs of their members and the surrounding community. They maintain data about its members, such as personal details, baptism details, and the social status of families. Church membership is open to any person who accepts the beliefs followed by a particular denomination. Members can join and leave the organisation freely. An individual should undergo baptism to be considered a member of a particular denomination. In some churches, members have the right to participate in decision-making through a voting system.

Religious organisations can be classified as non-profit organisations as they run on a non-profit status. They are sustained through tithes and offerings from the members and visitors (Mwenje, 2016; Moon, 2020; Septiana, Prasetyo & Sulistiyo, 2022). It is perhaps critical for religious leaders to manage their members and resources, such as money, to achieve their goals. However, some churches do not pay tithes or offerings – the church survives on donations. In God's church, management is essentially the stewardship of the talents of the people for God's service (Jeavons, 1994). Management involves fundamental functions such as planning, leading, organising, and controlling. The church must develop ways to make more disciples, thereby growing the membership (Jo et al., 2021; Oosthuizen & Lategan, 2016).

a) The SDA Church: A Case Study

The SDA Church emerged from the Millerite movement of the 1840s, and the General Conference of the SDA Church was established in the United States of America in 1863 with a membership of 3500 and 125 churches (Land, 2011; Seventh-day Adventists - The Heritage Continues, 2006). The SDA

church is classified under Protestant churches. The SDA Church is governed by the General Conference (GC) of the SDA. The GC is supported by other structures such as Divisions of the GC, unions, and conferences. Members can make decisions through the voting process. The Church has reached over 200 countries spreading out the Gospel of Christ. As of December 2015, the Church had 19,126,438 members and 81,552 churches globally (Seventh-day Adventist World Church Statistics 2015, 2016). As of December 2016, the Church had 20,008,779 members (McChesney, 2017). Long-term decisions are made collectively by leaders representing the whole body of SDA believers.

The mission of the SDA is to ""call all people to become disciples of Jesus Christ, to proclaim the everlasting gospel embraced by the three angels" messages (Revelation 14:6-12), and to prepare the world for Christ's soon return"" (Mission Statement of the Seventh-day Adventist Church, 2009). To achieve its mission, the Church uses diverse strategies such as Internet evangelism, door-to-door evangelism, mega efforts, and tele-evangelism (Amanze & Wogu, 2015). All these strategies are meant to promote church growth.

Church growth is associated with evangelism and/or missionary activities that imply reaching out to those who have not accepted Christ and their incorporation into a church, hence increasing membership (Worancha, 2012). This research considers growth in terms of membership in the Church. Christians have the mandate to grow their churches. This is seen in the statement in Matthew 28:19, New King James Version, ""make disciples of all the nations."" The members of a church organisation are to participate in missionary work to bring many to Christ, thereby promoting church growth. In Acts 2:41 and Acts 5:14, it can be seen that more members were added to the body of Christ (Church). Jesus said in John 12:32, King James Version, ""And I, if I be lifted up from the earth, will draw all [men] unto me."" Jesus desires to bring all people to Him, thereby, growth within religious organisations.

Principles of growth that can be applied to religious organisations:

- **The organisation of the members:** leaders of religious organisations can utilise the skills possessed by members through proper church administration. The desire for growth should start with the leaders for them to lead the members in that direction. This principle of organisation of the members has been identified as an essential principle of church growth (Ishola-Esan, 2014). ICT might be of use in organising the church members.
- **Discipleship Training:** once members are added to the church, they are also expected to bring other members. To do that, they need to be trained in different areas, such as evangelism, witnessing, and administration. When members are brought into the church, they are trained

to work in the church for growth. Discipleship is seen as the key to the growth of religious organisations (Harelimana, 2014).

- **Developing spiritual gifts:** according to Paul in 1 Corinthians 12 and Ephesians 4, a church is a body of believers having diverse spiritual gifts, such as teachers, pastors, prophets, and administrators. These gifts need to be developed and sharpened so that believers are useful in God's ministry (Budiselić, 2011).
- **The utilisation of resources:** Church growth involves the allocation and use of resources. Some religious organisations generate data, which can be processed to assist in the distribution of resources. ICT systems can provide decision-makers with information that might help them utilise resources (Piñeros and Gomez, 2017; Akinsola and Munepapa, 2021). The use of ICTs can assist decision-makers in utilising resources in the best way.
- **Good demographic setting**: a good demographic setting was given as another necessary principle for healthy church growth (Ishola-Esan, 2014). In other words, a church organisation needs to develop a relationship with its community. For the church to do that, it might be necessary to have data about the community, such as their needs.

This is not an exhaustive study of all the principles that might lead to growth. Instead, these are just some principles that might lead to membership growth when applied by religious organisations to achieve a great commission. However, some churches use other membership growth principles, such as face-to-face engagement and promoting healthy lifestyles (Edmiston, 2007).

Figure 2.2 shows the membership growth rate for the global SDA Church. The growth rate was calculated from yearly membership.

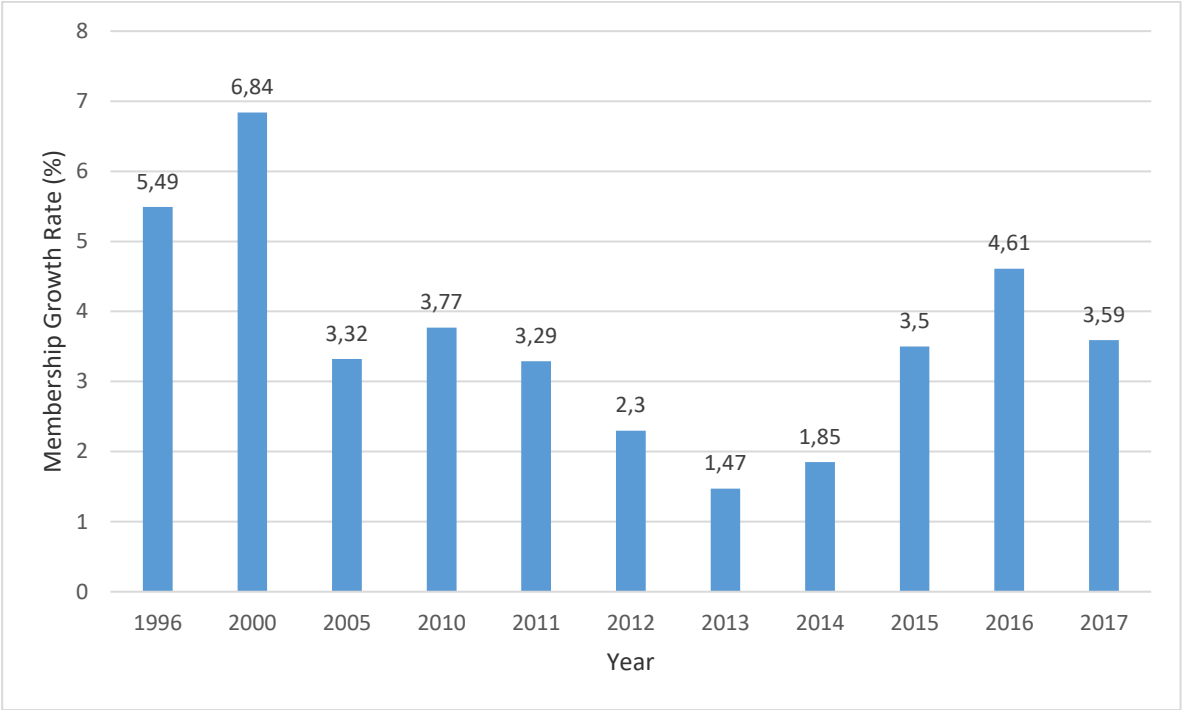

Figure 2.2: Membership Growth Rate within the SDA Church
Source: (Seventh-day Adventist World Church Interesting Facts and Figures, 2016)

Figure 2.2 reflects that the growth rate is fluctuating. For example, from 1996 to 2000, there was a growth from 5.49% to 6.84%, followed by a decline in 2005 to 3.52%. The lowest growth rate was in 2013, 1.47%, whilst the highest was 6.84% in 2000. From 2014 to 2016, there was a constant rise in the growth rate followed by a drop in 2017, as seen in Figure 2.2.

Figure 2.3 shows membership within the Southern Africa-Indian Ocean Division (SID) of Seventh-day Adventists, a sub-entity of the General Conference (GC) of the SDA. The SID coordinates the activities of the southern portion of Africa, and this includes countries such as Angola, Ascension Island, Botswana, Comoro Islands, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Réunion, São Tomé and Príncipe, Seychelles, South Africa, Swaziland, Zambia, and Zimbabwe. The growth rate of the SID is presented in Figure 2.3 from 2007 to 2017.

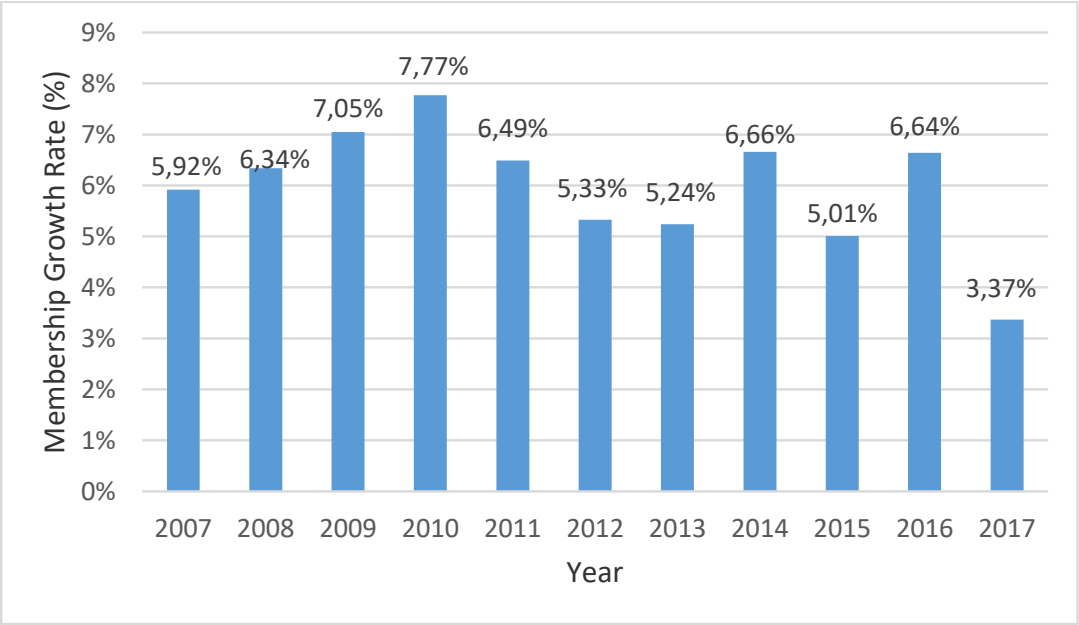

Figure 2.3: Membership Growth Rate in the SID
Source: (Seventh-day Adventist Church, 2019)

As illustrated in Figure 2.3, the membership growth rate fluctuated from 2007 to 2017. The lowest growth rate of 3.37% was experienced in 2017, while the highest of 7.77% was experienced in 2010. On average, the SID had membership growth of at least 5% from 2007 to 2016. The SID membership growth rate is generally higher than the world church.

Figure 2.4 shows membership growth within the SAU union conference. The SAU runs eight conferences, namely: Cape Conference (CC), KwaZulu Natal-Free State Conference (KNFC), Lesotho Conference (LC), Northern Conference (NC), North Namibia Conference (NNC), South Namibia Conference (SNC), Swaziland Conference (SC) and Trans-Orange Conference (TOC). Figure 2.4 presents the membership growth rate for the SAU from the year 2007 to 2017.

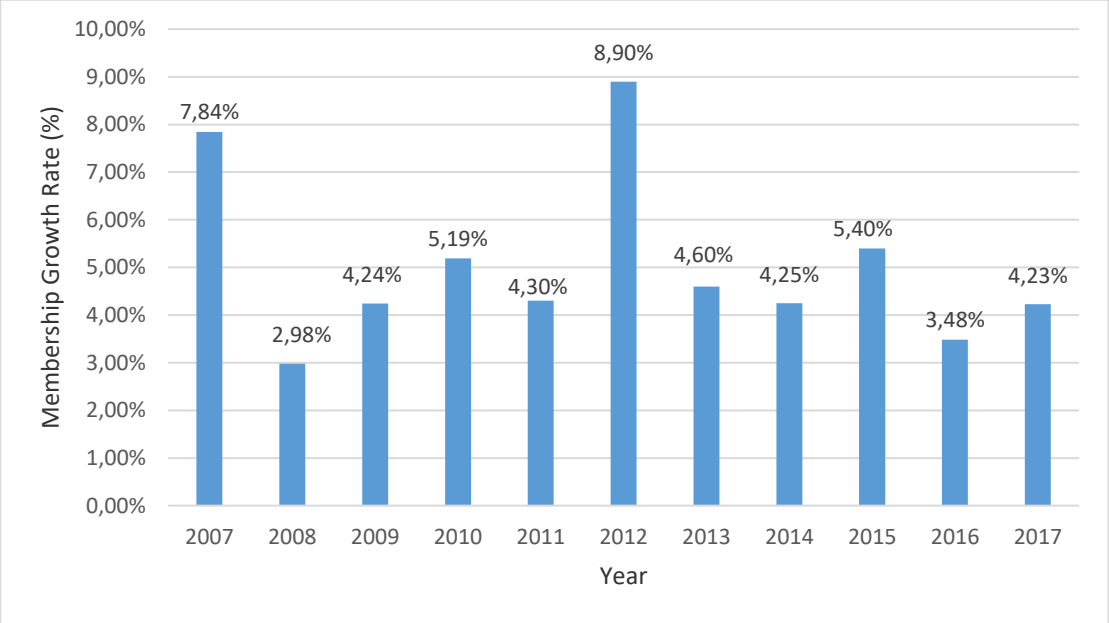

Figure 2.4: Membership Growth Rate in the Southern African Union
Source: (Seventh-day Adventist Church, 2019)

Figure 2.4 shows that the membership growth rate for the SAU fluctuated from as low as 2.98% in 2008 to 8.90% in 2012. On average, the membership growth rate of the SAU was at least 4% in most of the years. The growth rate of the SAU is generally low in most years compared to the SID except in 2007 and 2012.

Figure 2.5 shows the membership growth rates of the four conferences of the SAU geographically located in South Africa, including the CC, KNFC, NC, and TOC. The membership growth rates for the four conferences are characterised by positive and negative fluctuations. For example, in 2007, TOC had a high membership growth rate of 20.59%, followed by a very sharp decline to -1.51% in 2008. On the other hand, NC had a membership growth rate ranging from -2.94% to 9.26%.

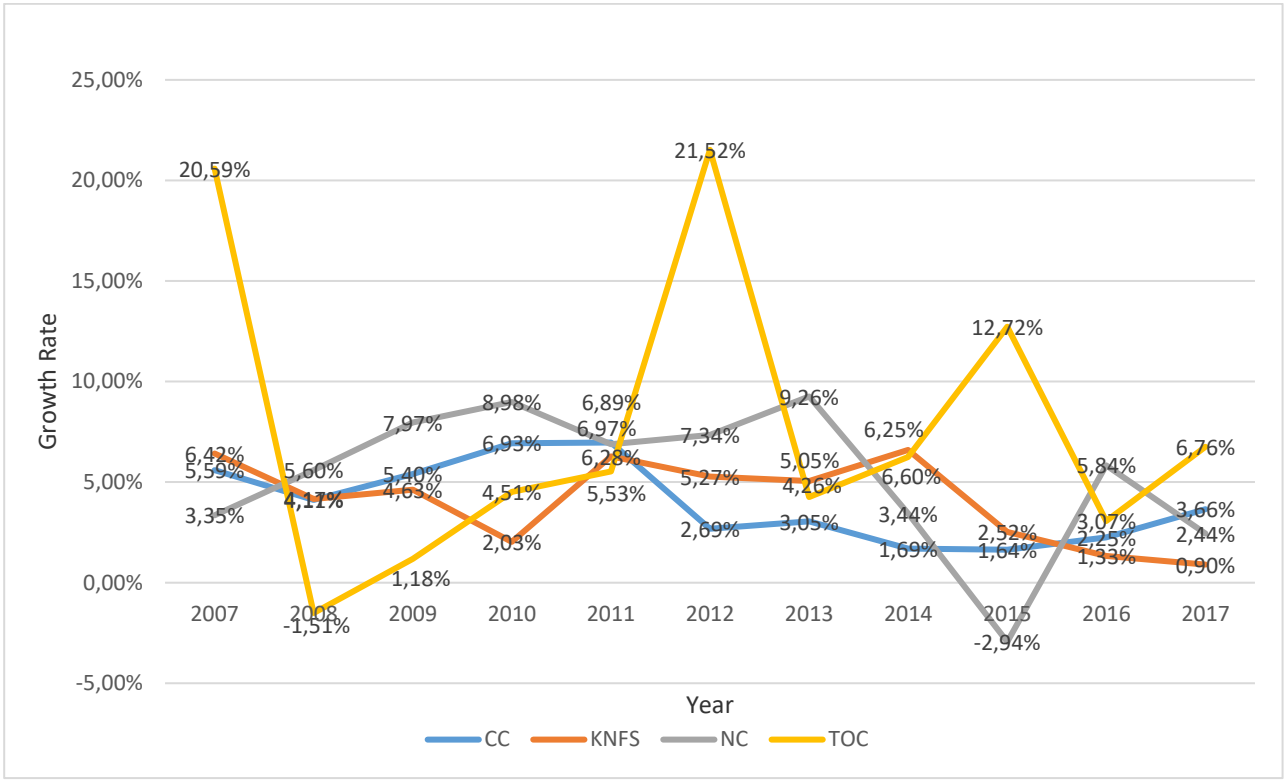

Figure 2.5: Membership Growth Rate in the Four South African Conferences
Source: (Seventh-day Adventist Church, 2019)

It is, therefore, crucial to note that ICTs can be used to sustain and grow churches. However, the impact of ICTs on the growth of the SAU's four conferences is unknown. This research study, therefore, evaluated the impact of ICT on the sustainability and growth of the four conferences of the SAU located in South Africa.

2.3 Church Growth and Sustainability

This section discusses in detail church growth and sustainability under separate subsections.

2.3.1 Church Growth

Growth is essential to the long-term survival of any organisation. Organisations invest in various growth strategies to grow their businesses (Westerlund & Leminen, 2012). Growth strategies play a significant role in the expansion, development, stability, and success of the business as they enable organisations to expand their market shares, develop into new markets, and develop new products and services (Absanto, 2013). Every business needs to develop better strategies to improve its competitive edge to survive in this competitive world, and more so, businesses need to continuously change their development processes to make progress (Sahay, Mohan & Maini, 2004). In the business environment, growth means both quantitative and qualitative development. Quantitative growth means an increase in the production level, sales volumes, product range, investments, and the extent

of resources, such as the number of employees (Durmaz & Ilhan, 2015). Mostly it is easy to measure growth in profit-making organizations using these metrics. On the other hand, it may be difficult to measure the growth of non-profit organisations, such as religious organisations, using the same metrics since the nature of products, services, and purpose of existence is different from profit-making organisations. In as much as religious organisations do not exist for profit, they raise awareness of the word of God to establish unity and good healthy living among the people of God (Tomalin, 2018). In addition, religious organisations focus on the spirituality of their members and try to make more disciples, thereby increasing membership. Qualitative growth is about developing quality business elements such as property, technology, and humans to give competitors a competitive advantage and help them to resilient in pleasant or favourable situations (Durmaz & Ilhan, 2015). Qualitative growth, therefore, may translate to quantitative growth.

To understand growth in the context of organisations, business growth indicators should be used to measure it. Business growth indicators can be grouped into four main categories, namely, business outcomes, business outputs, capacity, and qualitative indicators (Absanto, 2013). Outcome indicators look at the profit the business generates after subtracting business expenses from revenues (Absanto, 2013). Religious organisations do not exist for profit, but they have some sources of income, such as tithes and offerings from members and donors, while also having operating expenses. Therefore, it can be economically beneficial for a church to have many members to generate income for the organisation's survival. Output indicators focus on the main outputs of the business, such as its products and or sales (Hansen, 1992; Taques, GLópez, Basso & Areal, 2021). This is different from religious organisations as they do not focus on producing products but on improving the spirituality of members and membership levels. However, it will be possible for religious leaders to measure membership growth if they maintain accurate membership records. Furthermore, religious leaders can realise their organisation's growth by observing an increase in the number of employees and assets such as ICT equipment. Qualitative indicators include aspects such as organisation structure, management practices, and degree of formalisation (Absanto, 2013). In the case of religious organisations, a church can grow in terms of membership or having branches that may lead to the formation of other churches.

Growth strategies can be classified into main categories, namely: organic and inorganic growth strategies. Organic growth is also referred to as internal growth. Organic growth occurs when an organisation uses its resources to improve its current activities by either increasing sales volumes or introducing new products in the market (Durmaz & Ilhan, 2015). This can be facilitated through the use of strategies such as the implementation of successful customer relationship management, the use

of technology, and the improvement of business processes (Bruner, 2004). Inorganic growth is considered external growth as it enables businesses to grow through partnerships with other businesses (Durmaz & Ilhan, 2015). This study focuses on organic growth strategies as it explores the usage of social media in religious organisations as a growth strategy.

This study develops on the basic church growth model developed by (Hayward, 1999; Hayward, 2005). The model is based on the following six major assumptions:

1. Unbelievers are recruited into the church by a subset of believers called enthusiasts. These are also referred to as active believers (Hayward, 1999).
2. The enthusiasts are active in recruiting members for some time and then become inactive church members (Hayward, 1999). The assumption is that the new believer loses their enthusiasm to recruit after some time and their network of unbelieving friends as they become integrated into the life of the church. The belief is that new believers are the primary means through which churches can have contact with unbelievers.
3. The enthusiastic period of these members starts immediately after the conversion of an unbeliever (Hayward, 1999).
4. Churches can have adults leave the church for various reasons (Hayward, 2005). There is a belief that members who leave the church may not be immediately open to reconversion.
5. The church can have some additional members by retaining the children of believing parents (Hayward, 2005).
6. The church will lose numbers through deaths (Hayward, 2005).

Research has explored the role of ICT, such as social media, particularly Facebook, on the growth of churches (Collins & Sturgill, 2013; Kgatle, 2018). To the researcher's knowledge, no research has examined the growth of religious organisations using social media through the lens of system dynamics. It is beneficial to examine the effects of ICT on the growth of religious organisations as digital media has a role in making converts or enthusiasts (Hayward, 2002). It was noted that word of mouth is useful when religious organisations want to recruit new members (Sargeant, 2000). Due to the global pandemic, the use of word of mouth has been affected to a greater extent because of the restrictions placed by various governments limiting gatherings and physical contact. Nowadays, large volumes of electronic word of mouth (eWOM) are generated on social media (Farzin & Fattahi, 2018). These eWOM sentiments can be positive, neutral, or negative based on the level of satisfaction of visitors and have the power to influence who might want to join the church. Furthermore, Hadaway observes that churches that grow faster report more recruitment activity among their members (Hadaway, 1993). The study of church growth using ICT as a strategy of organic growth through the

lens of system dynamics is significant to religious leaders in developing policies because it gives them an understanding of ICTs that are important for growth and sustainability.

2.3.2 Church Sustainability

In an organisation, sustainability refers to the adoption of strategies and activities that meet the needs of an organisation and its stakeholders while protecting, sustaining, and enhancing the human and natural resources that will be needed in the future (Labuschagne et al., 2005). Transition to organisational sustainability is a ""long-term, multi-dimensional, and fundamental transformation process, which establishes that a socio-technical system shifts more toward sustainable modes of production and consumption"" (Jo et al., 2021:1). Religious organisations have sociological aspects that include institutional structure, the spirituality of members, membership growth, worldview, and religious routines (Labuschagne et al., 2005; Koehrsen, 2018). For this study, church sustainability refers to the church's ability to always stand up for its cause and objectives in every situation. The COVID-19 era, for example, tested the sustainability of churches that do not use ICT as members could not gather physically. The findings of this study highlight the value of online technologies in sustaining religious organisations through member retention as well as in addressing the needs of church leaders.

2.4 Information and Communication Technology and Religious Organisations

ICT is a collection of software and hardware technologies involved in gathering, organising, storing, processing, retrieving, and transmitting information (Mohsenzadeh & Isfandyari-Moghaddam, 2009). ICTs include all those technologies that aid in handling information and facilitate different forms of communication among human beings and electronic systems (Hamelink, 1997). The information generated from these ICT systems is used in the decision-making process to improve the quality of decisions made in the organisation. ICTs involve telecommunications, applications, devices, data, and information management techniques used to create, produce, process, analyse, package, transmit, retrieve, and store information (Taylor, 2015). The advent of ICTs has enabled people to have access to information, improved the flow of information and communications, and provided traditionally disadvantaged groups with communication channels (Alassiri et al., 2014). ICTs include technologies such as telephone, radio, television, fax, video, Internet, and computers (Chhachhar, Qureshi, Khushk & Ahmed, 2014). These technologies provide various ways of communication and enable the effective sharing of information. The use of ICTs enables information sharing, knowledge generation, marketing, research, and advertising and enlightens the community (Osawaru, 2010). The use of ICT is continuously rising in most sectors, including religious organisations, agricultural sectors, banking sectors, schools, retail enterprises, and manufacturing industries. In some of these sectors, the impact

of ICT has been tremendous. However, in some sectors, such as religious organisations, the impact of the use of ICTs has not been evaluated.

The use of ICTs can be undermined in religious organisations due to their nature as non-profit organisations, but there are some religious organisations with proper IT structures, such as the Baptist Church, Seventh-day Adventist Church (SDA), Anglican Church, Life.Church and Catholic Church (Ossai-Ugbah, 2011). Some of these religious organisations have implemented advanced ICTs such as BI systems or solutions. For example, Life.Church adopted Tableau, and the Church of Jesus Christ of the Latter-day Saints implemented BI products from Microsoft and Oracle, such as Crystal reports (Which Reporting and Business Intelligence Programs does the Church Use, no date). However, most religious organisations use traditional BI tools such as Excel and structured query language (SQL) for analysing organisational data (Pelley, 2014).

On the other hand, some religious organisations have implemented basic ICTs, such as using projectors for visual aids and speakers for audio aids. These are the efforts of the Churches to reach their objectives and to fulfil their mandate given by Jesus. However, some religious organisations have not yet accepted the use of ICTs during worship services despite the benefits derived from their proper use.

2.4.1 Broadcasting Technologies

This section discusses the broadcasting technologies that churches could use to achieve their goals and mission.

i) Radios and Community Radios

Radio is an ICT that uses radio waves to transmit information to people. Radios were fully implemented in the United States around the early 1920s by conservative Protestants as a way of preaching the gospel to hundreds of people (Schultze, 1988). Radio stations can reach a community, town, or the whole nation, and it is an inexpensive way of communicating with the masses. Individual families can listen to a single radio set at a particular time. Radios are relatively cheap to buy and the medium of communication nationally. It is one of the common technologies owned by families or individuals, even in developing countries. Radios can be possessed even in places without electricity connectivity. Radio can cater to people who speak different languages, covers people in various geographical areas reinforces oral traditions and communal lifestyles, is affordable to establish and maintain, and its presence is pervasive (Austin, 2014). Radio can be one of the best media for reaching out to the world as it has broad coverage. Messages broadcasted through radio can be constantly

repeated, allowing the messages to sink into the minds of the audience. Furthermore, radios can penetrate nearly all barriers caused by social classes, cultural differences, and lifestyles (Sackey, 1990). This makes it possible for the gospel to spread through radios to people of every class, culture, and belief with fewer restrictions.

Community radio stations are short-range FM radio stations to meet the information needs of the surrounding communities (Koradia, Premi, Balachandran & Seth, 2010). A study into the development of communication in seven Pacific Island countries (Kiribati, Fiji, Nauru, Samoa, the Solomon Islands, Tonga, and Vanuatu) conducted by Austin (2014) revealed that 43.24% of the community radio stations that previously existed or currently existing were affiliated with Pacific churches. Community radio often draws on the strong sense of communion and belonging offered by religion through sharing God and using evangelical songs and positive religious messages to warm up their hearts (Medrado, 2013).

South Africa has over 249 community radio stations broadcasting cultural, entertainment, and religious programs in eleven languages (Van Rooyen & Van Doorslaer, 2021). To reach out to a large African population, the SDA church opened a radio station called The Hope FM in Sandton, a section of Johannesburg, South Africa, to broadcast messages in various African languages (South Africa: Adventist World Radio Opens Regional Office, 2003). The purpose of this radio station was to assist in reaching millions of unreached people living within the African continent. The Inono.fm broadcasts sermons from different South African church denominations such as the SDA, Anglican, and Methodist. The radio station is even available online.

ii) Satellites and Televisions (TV)

The introduction of satellite dishes promoted the spreading of the Gospel across the globe. People can access channels ranging from gospel, entertainment, news, education, and sports. The SDA church has several TV channels that can be accessed, such as Hope Channel, 3ABN, Amazing Discoveries, and Amazing Facts. Some of these channels are privately owned. These channels play a crucial role in evangelising the world. For example, the Hope Channel has 46 channels worldwide and is broadcasting in 57 languages, including Spanish, Portuguese, German, Romanian, Mandarin, Russian, Tamil, Hindi, Ukrainian, Arabic, Farsi, and Telugu (Hope Channel, 2018). This shows that the SDA church uses the Hope Channel to spread the Word of God to many people. Furthermore, these channels can be accessed through the Internet using a browser. This makes the Gospel available to people who have not yet entered church doors. Satellites and TVs are powerful ways of sharing the Gospel with the world because they reach an audience.

2.4.2 Online Technologies

Online technologies in this study encompass social media sites (e.g., Facebook, Twitter), messaging applications (e.g., WhatsApp), media sharing (e.g., YouTube, Tik Tok), email, and video conferencing (e.g., Zoom, Skype). The rapid rise of online technologies presents tremendous opportunities in various sectors, such as education, health, and religion. For example, in education, online technologies can foster student engagement in the learning process, which could benefit many students, leading to a decrease in attrition, enhancing learning outcomes, and improving student satisfaction (Revere & Kovach, 2011). In religious organisations, the use of online technologies could be beneficial as believers stay up to date and informed of whatever will be happening, which may encourage the involvement of the congregation members in church functions (Arthur & Rensleigh, 2015). Various forms of communication may be used by people in the online environment, such as emails, instant messaging (IM), and short messaging systems (SMS) (Arthur & Rensleigh, 2015). The articulation of technology in religious organisations from the perspective of members has also been studied in-depth (Witman & Sparkman, 2010; Chiluwa, 2012; Frost & Youngblood, 2014). Research by Chiluwa (2012) presented an outline of seven major churches in Nigeria using descriptive data along with the online user. Frost and Youngblood (2014) used ANOVA and MANOVA analyses to show a statistically significant difference in congregation size based on online religion usage. There are, however, few research studies, if any, that have assessed online technologies such as online communities as tools for sustaining religious organisations. It is beneficial to assess the impact of online technologies on the different types of religious organisations and activities to help ensure that their primary mission is being achieved (Witman & Sparkman, 2010). A study conducted by Corley (2018) considered relationship building, prayer, assimilation, and hospitality as the most important functions facilitated by church leaders to attract and retain church membership. A study by Arn (2007) further emphasised a genuine caring, listening, sharing, and trusting relationship between Christians and non-Christians. It is, therefore, important to understand how online technologies can be used to support these aforementioned factors that affect membership and retention (Corley, 2018). Retention of members is a challenge in religious organisations. For example, a 2007 ANN news story reported that nearly 28 Adventists leave the church for every 100 who join (Ravhengani, 2010). Furthermore, the ANN news reported that between 2000 and 2005 the SDA church baptised more than 5 million people and lost nearly 1.4 million (Ravhengani, 2010).

i) Electronic Mail (E-mail)

The introduction of emails has led to improvements in communication. Emails allow people who are geographically limited to communicate by sending messages. Email services require both parties to

have an email account to send and receive emails. It is free of charge to send or receive an email as long as there is Internet connectivity. This can be a challenge to those in undeveloped areas where no ICT infrastructure can support email services.

Email services could improve communication within religious organisations as leaders could communicate among themselves, with church members, the community, and external stakeholders. The SDA is a global church with members and leaders in different countries and is governed by the General Conference of the SDA based in America. Emails could enhance effective communication from the higher offices to lower offices and vice versa. Also, members might need to communicate with leaders or vice-versa. Email services may be used in religious organisations to send announcements, documents, videos, and audio, exchange information among different people, give feedback on a particular subject and solve issues that may arise within the Church's structures.

ii) Video Conferencing

Video conferencing is communication between two or more participants at different sites using the Internet to transmit audio and video data using platforms such as Skype (Beal, 2016). Users can use devices such as personal computers (PCs), tablets and smartphones for video conferencing. The use of video conferencing is ever-increasing due to the availability of the Internet, the growth of broadband and the low cost of using video conference technologies such as Skype (Page, Hynes & Reed, 2019). Video conferencing enables users to conduct real-time meetings in different parts of the world without necessarily travelling to a central location. This saves on time and resources required in travelling. Most churches, such as the SDA and Catholic Church have a formal hierarchical structure, ranging from a local church to a worldwide church (Ooga, 2019). Video conferencing could help church leaders within and outside the structures to communicate easily and effectively if adopted within religious organisations. Video conferencing enables people from different geographical places to conduct a meeting or conference as if they are at a centralised location. Religious organisations could use video conferencing services to conduct Bible studies, church meetings and the sharing of prayer requests.

iii) Social Networks, Instant Messaging and Electronic Word of Mouth

Social media platforms are Internet-based applications that allow people to interact using online platforms to share and discuss information, ideas, personal messages, and other content about each other and their lives using a multimedia mix of personal words, pictures, videos and audio (Yeboah & Ewur, 2014). Various social networking platforms are being used, such as Facebook, Twitter, WhatsApp, and Instagram. These sites provide an interactive platform that enables its users to

communicate with others to establish social relations to enable the sharing of information and knowledge experienced by individuals in real life (Alassiri et al., 2014). These platforms allow users to interact with each other and can send and receive messages instantly. There has been a tremendous rise in the number of users of social media globally. In 2008 there were around 100 million users, which increased to 1.056 billion in 2012. As of 2018, the number of users increased to 2.32 billion globally (Statista, 2018). As of January 2019, South Africa had 23 million active social media users, of which 22 million are active mobile social media users (Statista, 2019). This shows that the majority of people are using social media platforms. According to Matangira (2018), WhatsApp has moved to the top, pushing Facebook to the second position, and YouTube moved to the third position in South Africa. Furthermore, almost 50% of South Africans use this instant messaging service (Matangira, 2018). Some churches are adopting some of these platforms for communication purposes, such as WhatsApp and Facebook (Ogunsole & Raji, 2019). Social media platforms enable people to hold conversations, share information, and create relationships and groups to accomplish tasks. Members can use these platforms in religious organisations to send and receive announcements during the week, post spiritual messages and enable members to interact with each other. This could enable congregation members to keep in touch with each other, thereby improving the effectiveness of the church.

Table 2.1: Comparison of common social media and instant messaging tools in religious organisations

	Email	SMS	Facebook groups	Twitter	WhatsApp
Cost	Free	Payment	Free	Free	Up to $1 a year
Accessibility	Ability to change text size	Ability to change text size	Fixed text size	Fixed text size	Ability to change text size
Information about user availability	No information	No information	No information	No information	Full information
Opening group	Possible	Possible	Easy	Not natural	Easy
Adding and removing members to a group	Not possible for the App	Possible	Requires participant approval	Requires participant approval	Easy
Having a fluent conversation as a group	Not natural	Impossible	Easy	Not natural	Easy
Privacy	Relatively high	Relatively high	Relatively low	Relatively low	Relatively high
Members' usage in private life	Relatively high	Relatively high	Relatively high	Relatively low	Relatively high
Sharing content	Relatively easy	Ungainly	Relatively easy	Relatively easy	Relatively easy
Organise events	Relatively easy	Possible	Relatively easy	Relatively easy	Relatively easy
Interaction	Not easy	Not possible	Relatively easy	Relatively easy	Relatively easy

Source: (Bouhnik, Deshen and Gan, 2014)

The use of social networking has the following benefits for religious organisations (Alassiri et al., 2014):

- It provides faster and more accessible information delivery channels. Social networks are characterised by the high-speed transfer of information. As a result, the information is delivered more effectively in low-cost ways and enables access to information leading to high adoption of ICTs in religious organisations.
- ICTs enhance the exchange of information and the creation of networks among different groups of people remotely and globally. This allows people to share ideas, knowledge and experience in areas of interest, which, in a way, aids in sharing the Gospel message with different people.

The rapid growth of communication among online users on social media platforms has increased interest in eWOMs. Wang and Rodgers (2010) classified eWOM sources into two: 1) sites that provide customers with review forums and feedback pages, and 2) social media sites. This current research study focuses on social media sites. Research has shown that social media sites are considered appropriate platforms for eWOM (Erkan & Evans, 2016; Farzin & Fattahi, 2018). Social media are a "group of Internet-based applications that build on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of user-generated content" (Kaplan & Haenlein, 2010). Social media encompass (a) social networking sites, such as Facebook, WhatsApp, and Twitter, (b) media-sharing sites, such as YouTube, Tumblr, and Flickr, (c) creation and publishing tools, such as wikis and blogs, (d) aggregation and republishing through Really Simple Syndication (RSS) feeds, and (e) remixing of content and republishing tools (Greenhow, 2011). Social media play a crucial role in religious organisations, such as communicating, evangelising, and maintaining relationships. For example, Kgatle (2018) investigated the role of Facebook in prophetic churches located in Southern Africa. The research revealed that Facebook was mainly used for broadcasting services and advertising events. Research by (Chukwudi, Izang, Ogu and Monday, 2016) evaluated the use of social media as an evangelism tool in the SDA church. The authors noted an increase of over 500 000 views on Babcock University's social networking sites and over 2 000 online members all over the world. Churches can reach large audiences through social media, as most people are on social media (Ortiz-Ospina, 2019). The availability of internet access in most parts of South Africa has improved the means of sharing information globally, making it easy for religious organisations to share information with many people in different parts of the world through various social media platforms. It is crucial for churches surviving in the 21st century to find new, flexible and appropriate ways of preaching the gospel, especially to those who do not relate to traditional ways (White et al., 2016). The traditional ways of operation pose challenges (Sambo & Bankole, 2016),

especially in times of a global pandemic (COVID-19), where governments impose lockdown restrictions and social distancing regulations in most of the affected countries. Social media enable religious organisations to operate even under lockdown restrictions by enabling people to receive spiritual messages and content on social media platforms. Research shows that most people spend most of their time on social media platforms performing various activities such as chatting, watching videos, and socialising because they are social beings (Ortiz-Ospina, 2019). Most social media research that has been conducted focuses on church members; few researchers have targeted church leaders even though they are making decisions regarding technology adoption.

There is a need to develop an understanding of how churches share practices and learn to hone and target their social media activities (Sircar & Rowley, 2020). The use of social media is gaining momentum globally, as one in three people uses social media platforms (Ortiz-Ospina, 2019). Social media allow people to create personal profiles and enable them to interact with a community of friends (Kaplan & Haenlein, 2010). With social media, people can interact online by sharing information, ideas, personal messages, and other content about each other and their lives (Yeboah & Ewur, 2014; Drahoova & Balco, 2016). This, in a way, facilitates the dissemination of eWOM content as people interact at different levels.

Social media have been used across various sectors of the economy, in both for-profit and non-profit sectors, such as churches, healthcare, politics, tourism, natural disaster control, religious organizations, parenting, and dating (Barczyk & Duncan, 2011; Perrin, 2015). This reflects that social media have affected people's personal lives, social lives, and the business arena. The use of social media in churches can expose members to harassment from others which can hinder church growth and sustainability (Badmos, 2014). eWOM information in social media can assist individuals and institutions in making decisions, such as which services to watch and know the sentiments of followers.

iv) Content Download Sites

Content download sites are sites where people can access shared multimedia content such as videos, presentations, and audio in different formats such as mp3, mp4, FLV, AVI and wma. These sites include YouTube, Hisholyspace.com, holypal.com, Xianz and Ultimate Tube, a Christian alternative to YouTube. YouTube is a common video-sharing platform that allows people to upload and download content from the Internet. Content download sites allow users to access, watch and/or download videos such as movies and sermons from the Internet. Religious organisations may upload material such as video and audio sermons on these sites so that members and the public can access

the content. For example, there are ministries within the SDA church, such as Hope Sabbath School, Three Angels Broadcasting Network (3ABN) and Amazing Facts, which provides Sabbath school discussions on the YouTube platform for the public to access the presentations. Members and non-members have access to the content, and they can download the presentations. Content downloading sites such as YouTube allow sermons from various presenters from different Churches to be uploaded, and people will have opportunities to listen to the best presenters. This will be a form of enriching members and, at the same time, evangelising the world. Religious organisations that use this technology to evangelise provide presentations to the public in videos for easy downloading.

On the other hand, content download sites can also provide presentations that mislead those seeking the truth about the Gospel since anyone can post his/her material. Downloading content from these sites requires the consumer of the material to be very careful of whatever he/she accesses. This might discourage people from using these downloading sites for spiritual nourishment.

The study investigates the value of online technologies in sustaining religious organisations in member retention as well as addressing the communication and informational needs of church leaders using the lens of system dynamics.

2.4.4 Why is it Necessary for Churches to Use ICT?

ICT is, to a greater extent, crucial in religious organisations because it could support evangelism, improve communication in the church environment, and help leaders understand the organisation through data. The way the church operates these days have changed completely compared to years ago. For example, previously, some churches depended on manual record keeping and physical gathering for services and meetings. Organisations that do not capitalise on ICT may become outdated, irrelevant, and crippled in terms of growth. The fact that we are living in a global village is a reason enough to utilise ICTs in religious organisations. ICTs will link communities, churches, church leaders, and countries. Some churches like the SDA and Catholics have membership globally, so there is perhaps a need for such churches to link up with sister churches, especially where uniformity and standardisation are necessary. Leaders within these organisations need to communicate at a global level, hence, the need for effective ICT systems.

Nowadays, most religious organisations generate voluminous data, which requires ICT systems to collect, process, and analyse the data. These systems will present actionable information to decision-makers to assist in making effective and informed decisions. This has been made possible through

ICT analytics such as Business Intelligence. On the other hand, religious organisations which work in isolation from ICT are more prone to make decisions intuitively.

Religious organisations were given the mandate by Jesus Christ to reach the world (Shore, 2006). This means the Word of God has to reach all people living on the earth. It is submitted that ICT can reach some people who may not be reached through face-to-face evangelism. ICTs have led to the development of various platforms from which religious organisations can reach the world, such as church websites, blogs, forums, and social platforms such as WhatsApp, Facebook, and Twitter. Nonetheless, customised platforms would target the intended communities with spam and the like. However, this study is of the view that ICTs could be used to address the needs of religious organisations and enable these organisations to fulfill their mandate.

Technological advancements also push religious organisations into utilising ICTs. For example, ICTs have provided religious organisations with platforms that promote effective worship by developing applications such as hymnals and Bibles. Most of these applications are free of charge to anyone, such as Christ in Song, Adventist Hymnal, and Bible applications. Also, the availability of ICT devices such as smartphones could enable religious organisations to benefit from these free applications. Hence, the need for religious organisations to fully adopt ICTs at different levels.

ICTs are crucial in religious organisations in aiding visual and audio messages during worship services. Visual and audio ICT devices used in religious organisations include projectors, speakers, mixers, microphones, keyboards, and computers. These devices help during sermons, lessons, and report presentations in churches. Visual and audio devices can be used during song services and a sermon or lesson presentations. Most congregations, especially in South Africa, have members from different cultures and nationalities who speak different languages, making it difficult for members to understand each other effectively without the use of ICTs. ICTs such as microphones and speakers are useful to amplify the voices of those presenting the messages to benefit each member of the congregation. The use of appropriate ICTs can be of great benefit to all churches, regardless of the church size. These ICTs are discussed under the following headings:

a) ICT Aids in Song Service

Psalm 149: 1 show that song service is one of the crucial services in worshipping the Lord. The book of Psalms is filled with songs that show how music was vital during the time of the patriarchs like David. Also, Paul in Colossians 3:16 says, “Let the message of Christ dwell among you richly as you teach and admonish one another with all wisdom through psalms, hymns, and songs from the Spirit,

singing to God with gratitude in your hearts." This shows that song service is a crucial part of worship. Nowadays, most churches have incorporated song service as part of worship. To assist members with lyrics during song services, hymnals have been designed. Unfortunately, some members do not own these hymnals due to various reasons such as unaffordability, not being a member of the church, and lack of interest.

It is expedient for churches to provide tools that can provide members of the congregation with the resources necessary for song service because it encourages members to participate in the service. In a study conducted by Miller and Strongman (2002) within the Pentecostal-Charismatic churches, the mood of the participants significantly increased directly just before the service until directly after the music and worship services, and music played an essential role in changing the congregants' mood. The use of projectors by some churches has enabled the beaming of songs. Displaying song lyrics on the projector enables even those without hymnals to access electronic hymnals. Various software applications have been designed for beaming songs during worship services, such as Extreme Worship and Presenter.

On the other hand, some churches might not be able to afford the resources required for beaming lyrics during worship, such as a projector, computer, and speakers. However, there are mobile applications available for this purpose. For example, in the Seventh-day Adventist (SDA) Church, there are several applications available to members that they can install on their mobile devices (Adventist Review, 2020). There are around 54 hymnal mobile applications that can be accessed from the Google Play Store available to SDA members. These hymnals cater to different languages. In South Africa, thirty-eight million (67%) own at least one mobile phone (Matangira, 2018). Churches can take advantage of the fact that the majority of people own at least a mobile phone and adopt different mobile applications that can be used during song services, Sabbath school lessons, and Bible studies. If churches can use mobile applications, they yield benefits such as low costs for members with mobile devices, less need to buy a physical hymnal, and promotion of singing as most members will have access to the lyrics of the song.

b) ICT Aids in Sermon/ Lesson Management

The use of ICTs during services has some benefits, such as enabling members of the congregation to follow the presentation, the ability to beam verses and other quotations relevant to that specific presentation, and the ability to use graphics that create a lasting impression on the members of the congregation (Wyche, 2008). Several software presentation management applications are available for church worship services, such as social media, Proclaim, and Media shout. These software

applications allow the designer to customise and incorporate graphics. ICTs enable the presenters to incorporate texts, pictures, and videos in their sermons to assist the members in following the presentation (Francis, 2012). The use of ICTs during congregational worship service makes teaching and preaching easy for the presenters through the use of visual sermon outlines, displaying some aspects of the teachings and preaching into points, sub-points, and other scriptures with supporting explanations on a projector through a computer (Ossai-Ugbah, 2011). Therefore, visual aids could help the congregation members to follow and internalise the presentations.

Using ICTs could be beneficial when presenting subjects difficult for the audience to understand as it helps them learn the unknown from the known. The Bible has themes such as prophecy, time prophecy, and history. It is challenging to present the Sanctuary and prophecy, as found in the book of Daniel 2, 7, 8, Revelation 13, and 17, without visual aids (Shabiralyani, Hasan, Hamad & Iqbal, 2015). These passages of the scriptures present animals or beasts, which are difficult for hearers to understand. Presenting these lessons requires appropriate presentation skills, strategies, and ICT aids.

ICTs promote effective communication within the church and among churches. Various communication technologies such as Skype, WhatsApp, telephones, and cell phones are being utilised in religious organisations (Singarimbun, 2021). These technologies have improved the communication process within these organisations. Therefore, considering the reasons stated previously, it can be noted that ICT is crucial in developing and managing religious organisations as a strategy for church sustainability and membership growth.

2.4.5 Uses and Benefits of ICT in Religious Organisations

ICT solutions implemented correctly may help a business entity realise some benefits though they might not be easy to measure and quantify (Haupt et al., 2015). The use of ICT applications can bring some benefits to organisations using them. However, these benefits are not automatic but depend on the successful implementation of appropriate ICT solutions. It is, therefore, crucial for an organisation to select suitable ICT solutions for the best results. ICT systems provide users of the information with reliable access to information that can aid decision-making, improve customer satisfaction, improve the organisation's competitive edge, improve business processes and provide more and better information (Wanda & Stian, 2015). Furthermore, ICTs can save time for data providers and users since there are more efficient data delivery methods in place, as well as a reduction in IT infrastructure costs (Watson & Wixom, 2007). Organisational managers may use ICTs to make strategic decisions that might improve the organisation's performance in areas such as targeting and entering into a new market, changing a company's positioning from product to customer-centred, or assisting managers

in introducing a new product line into the market (Watson & Wixom, 2007). These decisions might be difficult to make by just mere reasoning but are enhanced using ICTs such as BI analytics. Moreover, features such as usability and user satisfaction are also pushing decision-makers into the utilisation of ICT applications (Sebetci, 2018).

The use of ICT in religious organisations could benefit decision-makers and church members because it could help in processing volumes of church data. Decision-makers can use ICTs for data analysis, and members enhance their worship experience. In research conducted by Felder (2011), the results revealed that ICT has the potential usefulness in improving religious organisational performance and providing value to churches by helping pastoral leaders achieve the goals and missions of their organisations. Religious organisations can use ICTs similarly to profit-making organisations, providing quality information to decision-makers. Leaders may use the information to make informed decisions that promote growth within religious organisations, such as identifying members ready to receive the gospel. ICTs can help church leaders to make strategic and tactical decisions for the organisation. This might give direction to the church, thereby enabling it to meet its goals and mission, which can be another way of church growth.

In profit-making organisations, ICTs improve their business processes. Religious organisations, however, do not have business processes like profit organisations but carry out activities such as planning, witnessing, and evangelism (Wielhouwer, 2004). These processes can be facilitated through the full adoption of ICTs. This may assist the church in targeting the right people at the right time with appropriate strategies (Olson, 1989). ICTs can positively benefit religious organisations when successfully implemented. For example, religious organisations might use ICTs to forecast using historical and prevailing data, allowing them to estimate the direction to take to achieve their goals. Also, it can enable the efficient planning and allocation of organisational resources (Spanos, Prastacos & Poulymenakou, 2002). Furthermore, the organisations will be able to answer the ‘what-if' questions, which might assist decision-makers in making the best decisions.

ICT can also be used to understand why church members' and visitors' attendance fluctuates. In addition, ICTs can also be used for outreach planning purposes, management of funds, and donations. Most large religious organisations have several functional areas, such as finance, pastoral care, and missionary work. ICT tools can be used to bring this data from different functional areas together so that the organisation can have a single view of the data, which can improve the decision-making process. The research will explore the uses of ICT in religious organisations.

However, despite these ICT benefits, a study conducted in Croatia showed that ICTs are not yet universally accepted; they are seen as more prevalent in large organizations or competitive companies (Dubravac & Bevanda, 2015). Also, in a survey conducted in 2013 by Gartner CIO, ICT analytics were reported as the top technology priorities for profit-making organisations (Oakley, 2015). These benefits of ICTs can also be realised by other sectors, such as religious organisations, which are still lagging.

2.4.6 Challenges of ICT in Religious Organisations

Regardless of the benefits that may be derived from the successful implementation of ICT, some religious organisations are still not fully capitalising on ICT. The reasons may emanate from decision-makers or church members. According to the findings by Ossai-Ugbah (2011), it was shown that educational background plays a significant factor in the use of ICT by the pastors themselves and their churches. Some of the challenges religious organisations face in using ICTs are principally a lack of ICT skills and ICT personnel (Ossai-Ugbah, 2011). Moreover, there are some costs associated with ICT, such as hardware, software, implementation, and staff costs (Watson & Wixom, 2007; Negash, 2004). For example, religious organisations will require hardware and software to build data warehouses and servers. This might be costly to the organisation, thereby hindering the adoption of ICT. Also, costs to cater to the staff implementing and maintaining ICT might be high. This, in turn, impedes the adoption of ICT by religious organisations. Furthermore, some people do not want to modernise church activities under the assumption that modernity corrupts the congregants leading to a detrimental effect on sustainability and growth (Magezi, 2015). The research will explore factors that hinder the full adoption of ICT in religious organisations.

2.5 Informational Needs of Church Leaders

Few studies have studied the informational needs of church leaders concerning information systems development and usage in improving decision-making. Research by Harris and Roland (2014) investigated the informational needs of church worship leaders in the collection development for worship service planning, leaving a gap in the planning and development of an information system. Devadason and Pratap (1996) pointed out that it is crucial to accurately identify, analyse and classify the information needs of users as a base for the planning, implementation, and operation of information systems. This is important as any lapse in the proper identification of the information needs of users affects the efficiency of an information system (Devadason & Pratap, 1996). Understanding the informational needs of church leaders is essential as they are responsible for planning, leading, organising, staffing, and controlling human and other resources to effectively and efficiently achieve organisational goals (Oosthuizen & Lategan, 2016). The study seeks to investigate

the information needs of church leaders in the decision-making process, and the findings will be used to develop an information system in the form of a dashboard that will be used to assist church leaders in decision-making.

Having adequate information is essential for successfully performing a person's task or solving a problem (Nicholas, 2000). Information is vital as every person requires information to make decisions and strive, especially in this 21st century, just as doctors need the information to treat patients, lawyers to handle cases, teachers to teach students, and the elderly require information to stay healthy and to make informed choices (Ijiekhuamhen, Edewor & Emeka-Ukwu, 2016). In the same vein, church leaders need the information to make informed decisions concerning strategic plans, church budgets, and ministry programs. To promote effective decision-making, information must be (Mendoza & Bescos, 2001):

- Timeous: decision-makers need to receive information within the required timeframe to make timeous decisions. The delivery of information should depend on the frequency of use.
- Sufficient: decision-makers should be provided with adequate information necessary for effective decision-making.
- Reliable: information should be consistent and accurate for decision-makers to trust.
- Exhaustive: decision-makers should be provided with complete information. The information should reveal all important aspects relevant to the areas in which decision-makers are involved.

Decision-makers need to be given information that is adequate and not excessive. To avoid gathering excessive information, an organisation needs to identify the decision-makers informational needs by understanding what information they need, when they need it, for which need, to perform which role, and in which format to make optimal decisions and eventually gain a competitive advantage (Devadason & Pratap, 1996; Vuori, 2006). Devadason and Pratap (1996) added that each specific information need should highlight the following:

(i) The type, kind/nature of information or facts required, such as opinions, advice, technical details, statistical data, news, theory;

(ii) In which format, such as a table, graph, state-of-the-art, trend report, original document;

(iii) The extent of coverage, such as exhaustive, selective, only recent, limited by a specific period;

(iv) How often, such as daily, weekly, monthly;

(v) In what media, such as print, audio, visual;

Information needs can be categorised into objective and subjective needs. An objective information need is typically believed to be needed to solve a given task or problem. In contrast, a subjective information need is what an individual thinks he or she needs to solve a task or problem (Vuori, 2006). Examining information needs help in understanding what is currently happening, evaluating if it is the right course, helping in understanding the problem or solving a problem, and finally completing the existing knowledge (Chew, 1994; Vuori, 2006). Understanding the informational needs of church leaders can assist in the development of a digital dashboard that can be used for easy retrieval of information.

Digital dashboards (e-Dashboard) are a visual display of key performance indicators that offer an at-a-glance window into the overall business performance and can display integrated data from various sources in a unified and interactive manner for human-computer interaction (Mahmodabadi, Langarizadeh, Mehrjardi & Emadi, 2019). The first step in dashboard development is selecting key performance indicators and determining the underlying relationship between them (Ghazisaeidi et al., 2015). Key Performance Indicators (KPIs) are the criteria defined for performance objectives so that an organisation can monitor its progress toward predefined targets (Azami-Aghdash et al., 2015; Mahmodabadi et al., 2019). A set of measurable quantitative metrics is used to measure and compare the performance in terms of achieving the organisational strategic and operational goals. Therefore, it is very important to select KPIs based on organisational goals (Mahmodabadi et al., 2019).

2.6 Gaps in the Literature

This study found a gap regarding the use of ICT on church sustainability and growth. This study, therefore, fills the gap regarding the non-availability of literature on the impact of ICT on religious organisations and contributes to the body of knowledge. The full adoption of ICT could improve the decision-making process, communication systems, and operations within religious organisations.

2.7 Overview of the Theories

The Theory of Reasoned Action (TRA) was developed to help explain or predict the behaviour of individuals who are faced with new options of action. The TRA has been adopted in several studies as a theory for examining different behaviours of people when faced with new options such as communication, consumer, and health behaviour (Shimp & Kavas, 1984; Albarracin Johnson, Fishbein & Muellerleile, 2001; Belleau, Summers, Xu & Pinel, 2007).

The Theory of planned behaviour (TPB) is a theory that assumes that the actual usage of a technology is determined by behavioural intention and perceived behavioural control. The TPB has been applied

to several research studies to understand different behaviours such as voting behaviour and health-related behaviours (Albarracin et al., 2001; Tung, Vernick, Reiney & Gielen, 2012)

Diffusion of Innovation Theory (DoI) is a theory that explains the rate at which new ideas, practices, or products spread across a population. The theory has been applied mostly in marketing areas to help understand and promote the adoption of new products (Robertson, 1967; Lowrey, 1991)

The Technology Acceptance Model (TAM) was developed to understand why people adopt different technologies. The TAM has been applied to several studies to understand relationships that exist between usefulness, ease of use, and system use (Hendrickson, Massey & Cronan, 1993; Moyo, 2021).

The theoretical framework of Technology, Organisation, and Environment (TOE) is used to predict the intent of an organisation to adopt an information system. The TOE seeks to explain how ICT adoption is influenced by technological, organisational, and environmental contexts. The TOE has been applied in several studies to understand different IT adoptions, such as websites, e-commerce, enterprise resource planning, and knowledge management systems (Oliveira & Martins, 2011).

The honeycomb framework was developed to understand the functions of social media in different contexts. The honeycomb framework has been used to understand social media adoption and online recovery strategies (Talwar, Dhir, Singh, Virk & Salo, 2020). The media richness theory (MRT) was introduced in 1984 by Richard Daft and Robert Lengel to describe and evaluate the effectiveness of communication mediums within an organization. Uses and Gratifications Theory (UGT) is a theory rooted in traditional mass communication which seeks to understand how particular media are solicited and chosen to meet their needs.

2.8 Chapter Summary

The Chapter discussed the application of ICT in religious organisations. The study showed the importance of ICT religious organisations as a strategy for church sustainability and growth. The study examined the benefits of adopting and using ICT in religious organisations. The study also discussed the factors that hinder religious leaders from adopting and using ICT in churches. The next chapter discusses theoretical frameworks, theories, and models that relate to the study.

Chapter 3: Theoretical Frameworks, Theories and Models

3.1 Introduction

The previous Chapter focused on the literature review and theories underpinning this study. A theoretical framework is a structure used to define how the study philosophically, epistemologically, methodologically, and analytically approach the whole study (Grant & Osanloo, 2016). This Chapter discusses theoretical frameworks, theories and models that influenced this study. The rest of the Chapter is organized as follows: Section 3.2 discusses technology adoption theories, Section 3.3 discusses media use theories, Section 3.4 discusses system dynamics as theory, Section 3.4 justifies the chosen models, Section 3.5 presents the conceptual framework for the study, and finally, Section 3.6 summaries the Chapter.

3.2 Technology Adoption Theories, Models and Frameworks

Technology adoption theories are theories that help in understanding how users accept and use technology. To help explain the impact of ICT in religious organisations, five underpinning theories: Theory of Reasoned Action, Theory of Planned Behaviour, Innovation Diffusion Theory, Technology Acceptance Model and Technology, Organisation and Environment are discussed as technology adoption theories underpinning this study. These theories suggest that certain factors influence users' decisions when presented with new technology on how and when they will use it (Ali & Soar, 2018). Technology adoption theories focus on an individual's intention to engage in a certain behaviour, such as adopting and using new technologies (Otieno, Liyala, Odongo & Abek, 2016). Researchers must have a comprehensive theoretical and practical knowledge of the frameworks and models to understand the factors that promote the increased use of ICT (Brown, Venkatesh & Bala, 2006). Technology adoption theory examines people and their choices to accept or reject a particular innovation (Straub, 2009). Technology innovation impacts international trade, industry structure, the formation and development of new businesses, and the growth and survival of existing businesses (Utterback, 1971; Tidd, Bessant & Pavitt, 1997).

3.2.1 Theory of Reasoned Action

The Theory of Reasoned Action (TRA) was proposed in 1975 by Fishbein and Ajzen to help explain or predict the behaviour of individuals who are faced with new options of action (see Figure 3.1). According to the TRA, a person's conduct is determined by their intention to carry out a behaviour, which is dependent upon their attitude toward the activity in question as well as their subjective norms (Fishbein & Ajzen, 1975). The TRA held that the best indicator of whether or not someone will engage in particular conduct is an individual's intention to do so (LaCaille, 2020). Intentions are then predicted

by attitudes and subjective norms. TRA can explain whether an individual's behaviour is driven by behavioural intentions, such as taking advantage of innovations (Otieno et al., 2016). Behavioural intentions are a function of an individual's attitudes toward behaviour, subjective norms surrounding behavioural performance, and individual perceptions (Otieno et al., 2016).

TRA has been criticised for ignoring the importance of social factors that can be determinants of an individual's behaviour in real life (Armitage, Conner & Norman, 1999; Grandon & Mykytyn, 2004). Social factors could affect the adoption of technology in churches since religion influences how people live. To overcome the challenges of the TRA, the theory of planned behaviour (TPB) was proposed as an additional factor in determining individual behaviour. The TRA was not considered in this study because it does not factor in social factors in the adoption of new technologies.

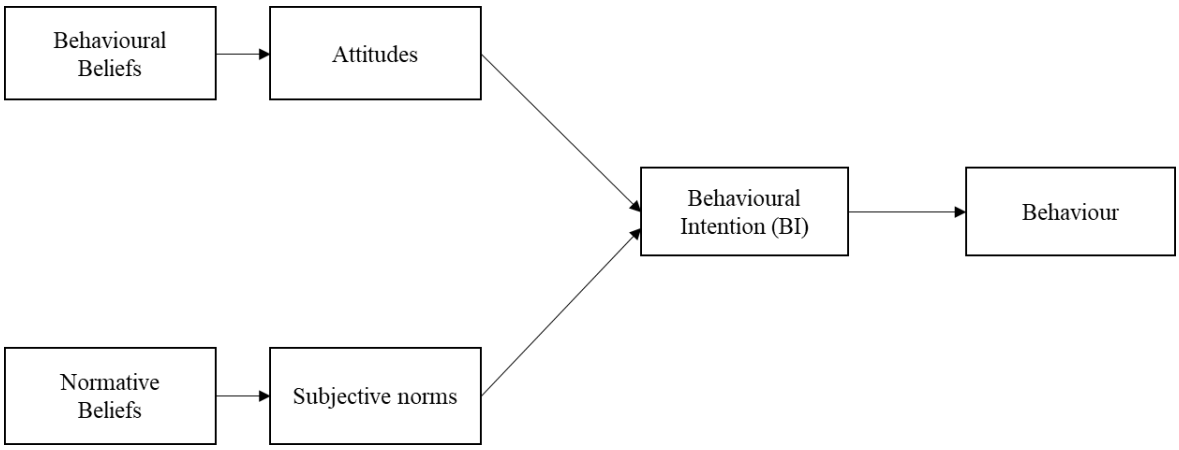

Figure 3.1: Theory of Reasoned Action
Source: (Otieno et al., 2016)

3.2.3 Theory of Planned Behaviour

The TPB extends TRA to address situations where individuals do not have complete control over their actions (Fishbein & Ajzen, 1975) (see Figure 3.2). The TPB assumes that actual use (AU) is determined by behavioural intention (BI) and perceived behavioural control (PBC) (Lin, 2007). TPB relies on the assumption that people are usually very logical and use the available data efficiently (Ali & Soar, 2018). The theory states that three core components - attitudes, subjective norms, and perceived behavioural control - together shape a person's behavioural intentions (LaCaille, 2020).

Behavioural attitudes: Attitudes are components formed by perceptions (thoughts), values (beliefs), and affections (emotions) of a particular object (Al-Swidi, Huque, Hafeez & Shariff, 2014). An individual first forms beliefs about the consequences of certain actions (LaCaille, 2020) (e.g., “If I eat

healthy foods, I will improve my health and live longer."). People's beliefs influence their attitudes and assessments of the outcome of their actions (e.g., "Being in good health and living longer"). This means church leaders need to evaluate the benefits and the challenges of ICT before adopting and use in religious organisations.

Subjective norms: Subjective norms are perceived social impacts or impulses that comply with or do not comply with a particular behaviour (Al-Swidi et al., 2014). Subjective norms see social impact as perceived social pressure to take or not take action (Graf-Vlachy & Buhtz, 2017) (e.g., "My friends think I should eat healthy foods."). These subjective norms contribute to the perception of social pressures and motivate individuals to comply (LaCaille, 2020) (e.g., "I feel pressured to monitor my diet, and I want to be accepted by my friends."). The implications for religious leaders could be adopting and using ICT without adequately evaluating the benefits and challenges of a particular technology.

Perceived behavioural control (PBC): PBC measures how well a person perceives their behaviour to be under their control (Pourmand etc., 2020). People form beliefs about factors that may facilitate or inhibit their engagement in specific behaviours, and these beliefs could lead to a sense of ease or difficulty in engaging in the behaviour (LaCaille, 2020). Researchers show that the adoption and use of new technology are influenced by the individual's specific knowledge, skills, and attitudes (Seufert, Guggemos & Sailer, 2021). This could imply that technology adopters could focus on easy-to-use and forget other factors.

From the discussion, TPB could be useful to religious leaders as they evaluate the benefits, usability, and challenges of adopting new technology. Religious leaders make decisions regarding strategies that promote church sustainability and growth. The decision to adopt and use ICT in religious organisations lies in the belief that ICT would be beneficial for the attainment of the church's mission. There is a tendency for decision-makers to adopt technology to match the competitors (Wei & Ismail, 2009).

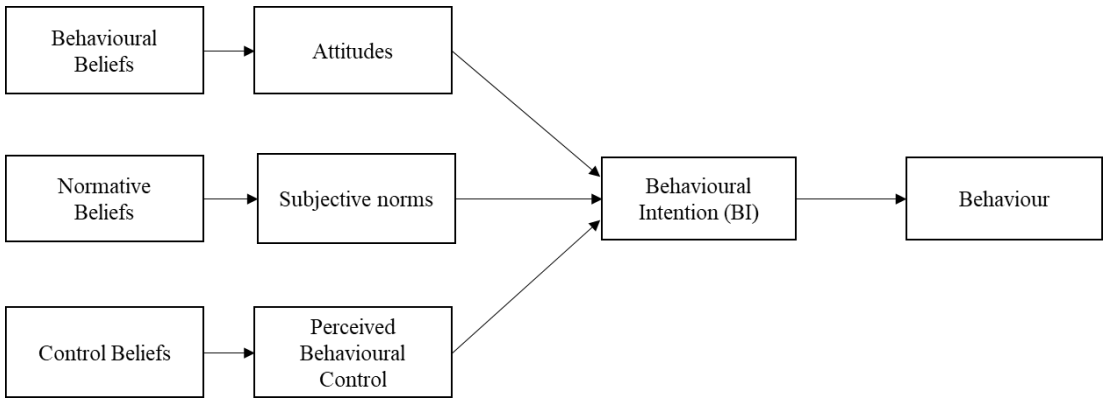

Figure 3.2: Theory of Planned Behaviour
Source: (Fishbein & Ajzen, 1975)

Limitations of the Theory of Planned Behaviour (Miller, 2017; LaMorte, 2019b) include the following:

- The person is assumed to have acquired the skills and resources to perform the desired behaviour successfully, regardless of intent.
- Other variables that influence behavioural intentions and motivations, such as fear, threat, mood, and past experiences, were not taken into account.
- Normative influences are considered, but environmental or economic factors that may influence an individual's intention to act are not yet considered.
- TPB assumes the behaviour is the result of a linear decision-making process and does not take into account that it may change over time.
- The additional configuration of perceived behavioural control was an essential addition to the theory but said nothing about actual control over behaviour.

The TPB was considered in this study to understand the behavioural attitudes of church leaders regarding the adoption and use of ICT in religious organisations.

3.2.4 Diffusion of Innovation Theory

Diffusion of Innovation Theory (DoI) is a theory that explains the pattern and speed with which new ideas, practices, or products spread across a population (Halton, 2021). The DoI theory is used to understand the adoption of innovation in terms of four elements of diffusion: innovation, time, communication channels, and social systems (Kim & Crowston, 2011). The DoI theory is a social process of conveying subjectively perceived information about new ideas. It is based on the notion that new ideas, practices, or objects have perceptible channels, time, and modes of being adopted by individuals or organisations (Minishi-Majanja & Kiplang'at, 2013). When an individual hears of innovation that he or she believes to have important consequences for him- or herself or people under

his or her control, uncertainty about how to respond usually prompts them to seek more information, which leads to exploration (Dearing & Cox, 2018). The DoI classifies people into five categories: innovators, early adopters, early majority, late majority, and laggards. These classifications show the stages of innovation adoption, with innovators being the first in the process and the laggards being the last (see Figure 3.3). Innovators are venturesome and technology enthusiasts eager to try new technologies and can cope with the high degree of uncertainty about the technology at the time of adoption (Rogers, 1983). Early adopters are influential leaders with the greatest degree of opinion leadership in most social systems. Potential technology adopters seek advice and information from them because they are respected by their peers for the discrete use of new technologies (Rogers, 1983). The early majority deliberate for some time with peers before completely adopting new technology, and this period is relatively longer than that of the innovator and the early adopter (Rogers, 1983). The late majority are skeptical and cautious of technology and adopt new technologies just after the average member of a social society due to fear of risking their limited resources and probably responding to increasing pressure from peers (Rogers, 1983). Laggards are the last members to adopt technology in a social system as most of them are near isolated in social environments, and they also interact mainly with members with relatively traditional values (Rogers, 1983). The adoption of an innovation is primarily influenced by the following factors (LaMorte, 2019a):

- Relative Advantage - the degree to which an innovation is considered superior to the ideas, programs, or products it replaces.
- Compatibility – the degree to which an innovation aligns with the values, needs, and experiences of potential adopters.
- Complexity – the level of difficulty in understanding and/or using innovations.
- Trialability - the degree to which an innovation can be experimented with or tested before an individual commits to adopting it.
- Observability - The extent to which the innovation provides tangible results.

Implicitly, religious organisations need to evaluate technology's benefits, usability, and compatibility with the organisation’s values, needs, and experiences.

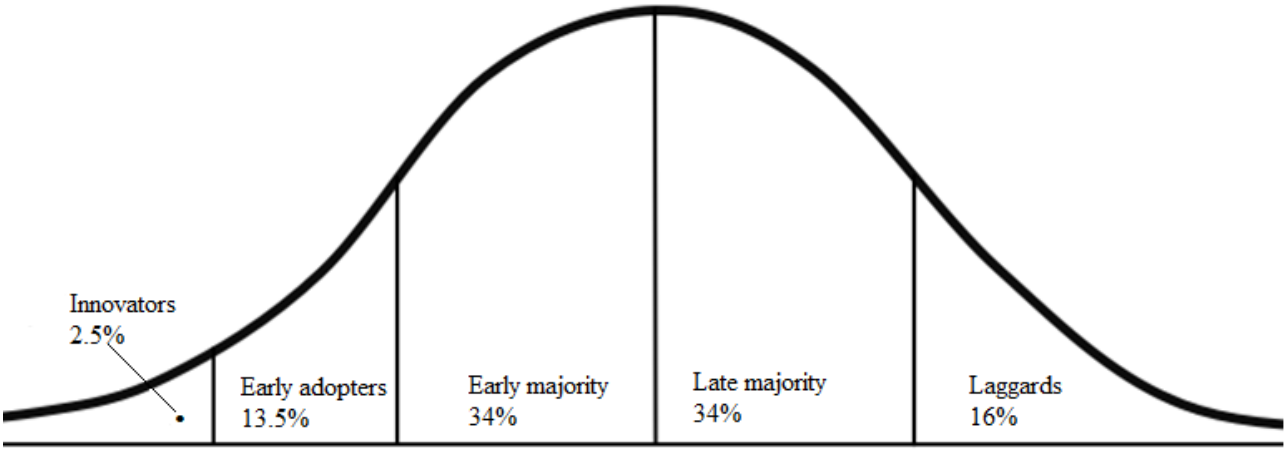

Figure 3.3: Diffusion of Innovation Theory
Source: (Rogers, 1983)

Limitations of Diffusion of Innovation Theory (LaMorte, 2019a):

- It is more effective at adopting behaviour than at stopping or preventing behaviour.
- Individual resources and social support for adopting new behaviours (or innovations) are not considered.

3.2.5 Technology Acceptance Model

The Technology Acceptance Model (TAM), developed by Davis, assumes that users tend to use technology when they perceive it as useful to them and feel it is easy to use (Davis, 1989; Brezavšček, Šparl & Žnidaršič, 2017) (see Figure 3.4). This means that employees will likely accept and use systems that make their tasks easier to perform (Ajibade, 2018). The TAM is used as the basis for tracing the impact of external variables on internal beliefs, attitudes, and intentions (Legris, Ingham and Collerette, 2003). It has become one of the most widely used models in information systems because it is simple and easy to understand (King & He, 2006). The TAM is one of the significant theories in an information system that explains and states that the acceptance and adoption of computer-based technology by individuals depends on their perceived usefulness (PU) and perceived ease of use (PEU) of that technology (Phua, Wong & Abu, 2012). PU refers to the degree to which an individual believes that using a particular technology would improve his or her job performance (Davis, 1989). On the other hand, PEU refers to the degree to which an individual believes that using a particular technology would be free of effort (Davis, 1989). TAM is considered in this study to understand the level of adoption and use of ICT in the four SA conferences of the SDA.

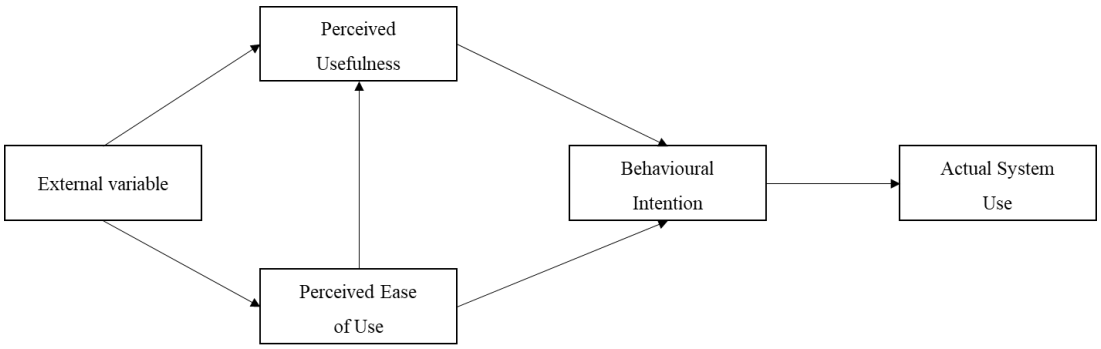

Figure 3.4: TAM 2 - Technology Acceptance Model
Source: (Davis, 1989)

Despite its popularity, the TAM has been criticised for failing to explain the reasons behind individuals' acceptance and use of new technology in a business environment (Ajibade, 2018). The TAM does not consider factors such as education and age of the user as external variables that could influence the acceptance of the technology and the willingness to use technology (Zahid, Ashraf, Malik & Hoque, 2013). Furthermore, all TAM relationships are not accepted in all studies as there have been wide variations in the predicted effects in various studies with different types of users and systems (Legris, Ingham & Collerette, 2003; King & He, 2006).

The TAM was used in this study to understand the impact of the TAM's constructs on the adoption of technology within the four SAU conference churches.

3.2.6 Technology, Organisation, and Environment Framework

The theoretical framework of Technology, Organisation, and Environment (TOE) is a classic framework used to predict the intent of an organisation to adopt an information system (IS) (Jere & Ngidi, 2020) (see Figure 3.5). The TOE framework is made of three constructs, namely, the technological context, organisational context, and environmental context of the organisation. The technological context looks at the important technologies available within an organisation, both internal and external, in terms of usefulness in improving the productivity of an organisation (Lippert & Govindarajulu, 2006). For an organisation to have successful technology adoption, the organisation must have good IT infrastructure, employees with technical skills, and user time (Metaxiotis, 2009; Baker, 2012). Technology context has the following sub-constructs:

- *Relative advantage*: looks at the benefits of adopting technology to the organisation. These benefits can be measured in terms of financial, convenience, satisfaction, and improved standards (Jere & Ngidi, 2020). Relative advantage is an important determinant that influences the adoption of ICT (Chiu, Chen & Chen, 2017). Decision-makers will likely adopt a technology if it benefits the organisation (Maduku, Mpinganjira & Duh, 2016).

- *Compatibility*: decision makers tend to adopt new technology they believe in and are compatible with their existing systems and business processes (Borgman, Bahli, Heier & Schewski, 2013).
- *Complexity*: Individuals or organisations tend to adopt new technologies that are easy to use rather than those that are difficult to use (Jere & Ngidi, 2020). The complexity of technology is an important determinant of technology adoption, as decision-makers believe that adopting complex ICTs could be risky as people may abandon complex ICTs (Abualrob & Kang, 2016).

The organisational contexts are resources available within the organisation that could support the acceptance of an innovation (Lippert and Govindarajulu, 2006). Organisational context looks at organisational determinants such as size, communication channels, and management (Angeles, 2014). Top management influences the adoption of new technologies since they are the ones who champion change within an organisation (Angeles, 2014). Top management support is key in adopting new technology since top management is responsible for forming organisational strategies and objectives (Maduku et al., 2016). Therefore, top management will likely adopt new technology with maximum benefits to the organisation and minimum risks (Ghobakhloo & Tang, 2013).
The organisational context has the following sub-constructs:

- *Financial resources*: financial resources available within an organisation influences the adoption of new technology (Chairoel, Widyarto & Pujani, 2015).
- *Knowledge of ICT*: knowledge of ICT is another factor that influences the adoption of new technologies within organisations (Alshamaileh, 2013). Organisations with employees with ICT skills tend to adopt new technology better than organisations with limited ICT skills (Hung, Tsai & Chou, 2016).

The environmental context refers to the setting in which the organisation operates and is influenced by its competitors and the organisation's ability to access resources supplied by others (Lippert & Govindarajulu, 2006). The environmental context has the following sub-constructs:

- *Competitive pressure*: competitive pressure is one of the environmental factors that play a role in adopting new technologies though it is not very important (Awa, Ojiabo & Emecheta, 2015). Industries with high levels of competition mostly succeed through the adoption and use of advanced ICT (Yoon, 2009; Chiu et al., 2017).
- *External support*: a substantial determinant in organisations that influences the adoption of new technologies (Chiu et al., 2017)

The TOE framework was considered to understand the adoption and use of technology in terms of the technological, organisational, and environmental context. The contexts of religious organisations are different from profit-making organisations.

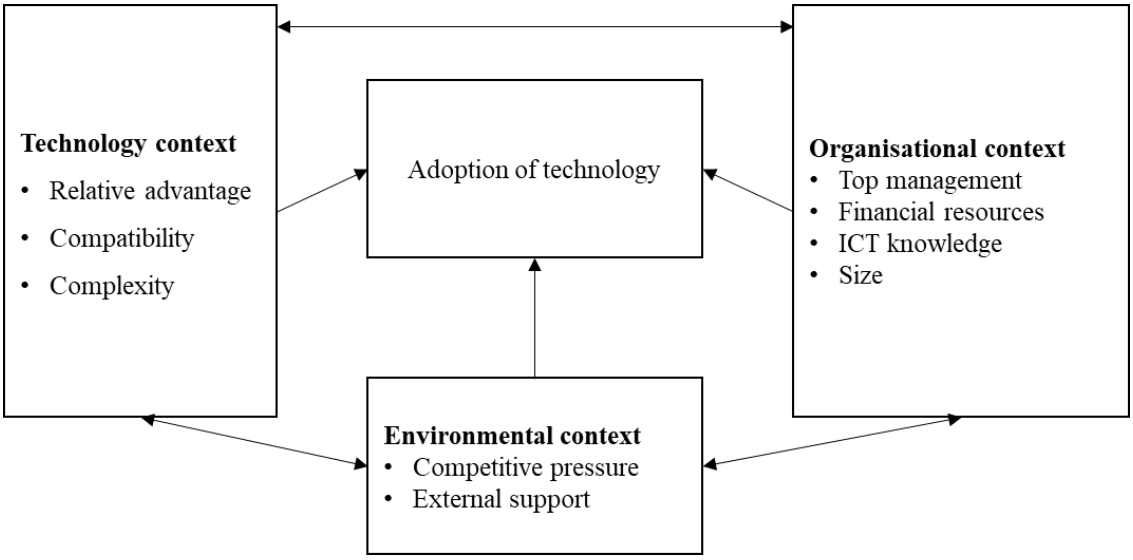

Figure 3.5: Technology, Organisation, and Environment Framework
Source: (Jere & Ngidi, 2020)

3.3 Theories, Models and Frameworks of Media Use

This section discusses the theories, models, and frameworks concerned with the use of media.

i) Honeycomb Framework

Kietzmann, Hermkens, McCarthy and Silvestre (2011) developed a honeycomb framework with seven functional building blocks of social media: identity, conversations, sharing, presence, relationships, reputation, and groups, as shown in Figure 3.6. These building blocks allow organisations to understand the different levels of social media's functionality and usage. They are constructs that allow us to understand the different levels of SM functionality.

- *Identity*: the identity functional block represents the extent to which users reveal their identities (such as name, age, gender, profession, and location) in a social media setting (Kietzmann et al., 2011). Consumers' decisions to engage online are influenced by trust in brands and other users who like the same brand (Azar, Machado, Vacas-De-Carvalho & Mendes, 2016). However, the main challenge of identity is privacy, as users share their identities on social media (Kietzmann et al., 2011).
- *Conversations:* the conversations block functional represents the extent to which users communicate with other users in a social media setting (Kietzmann et al., 2011). Most social media platforms enable users to communicate with other individuals or in groups. Users can

contribute to product or service-related content through comments (Silva, Feitosa, Duarte & Vasconcelos, 2020). These comments can influence other users.

- *Sharing*: the sharing functional block represents the extent to which users exchange, distribute, and receive content (Kietzmann et al., 2011). Users can share content such as videos, pictures, links, and text on social media. Consumers respond more positively to the content shared through social media platforms than to paid placements such as advertisements (Hudson, Huang, Roth & Madden, 2016).
- *Presence:* the presence functional block represents the extent to which users can know if other users are accessible (Kietzmann et al., 2011). Presence means knowing the whereabouts of others in the virtual world and/or in the real world. Online users can see if other users are online or offline, e.g., on WhatsApp and Facebook messenger.
- *Relationships*: the relationships functional block represents the extent to which users can be related to other users (Kietzmann et al., 2011). Relationships are associations users form with others that lead to conversations, sharing of objects of sociality, listing each other as a friend, or meeting up (Kietzmann et al., 2011). For example, users feel a strong relationship with an organisation when an organisation interacts with them by replying to comments, solving their problems, and inviting them to participate (Hudson et al., 2016).
- *Reputation*: The reputation functional block is the extent to which users can identify the standing of others, including themselves, in a social media setting (Kietzmann et al., 2011). An online presence helps an organisation improve its reputation as customers express their feelings about the products and/or services (Silva et al., 2020). When customers 'like' or 'dislike' a product or service on social media, it influences the reputation of the organisation since the message is automatically posted to the newsfeeds of the user's friends and, in a way, forms word of mouth to other users (Swani, Milne & Brown, 2013). Therefore, online reputation is an important element that enables an organisation to achieve its objectives (Kudeshia, Sikdar & Mittal, 2016).
- *Groups*: The groups' functional block represents the extent to which users can form communities and subcommunities (Kietzmann et al., 2011). There are two main types of groups that exist in most social networks. The first type of group is the one created by individuals. An individual can create a group based on his or her friends, fans, or followers (e.g., Twitter and Facebook). The second type of group can be a public or private group. People can join these public and private groups. Some of these groups are open to anyone, closed, and require approval for someone to join or secret (by invitation only).

The honeycomb model could assist in understanding the functions of social media in religious organisations. Few studies have explored the functions of social media among religious organisations.

There is a need for more detailed studies on the level of use and uses of social media by church leaders and by church groups with specific responsibilities (Sircar & Rowley, 2020).

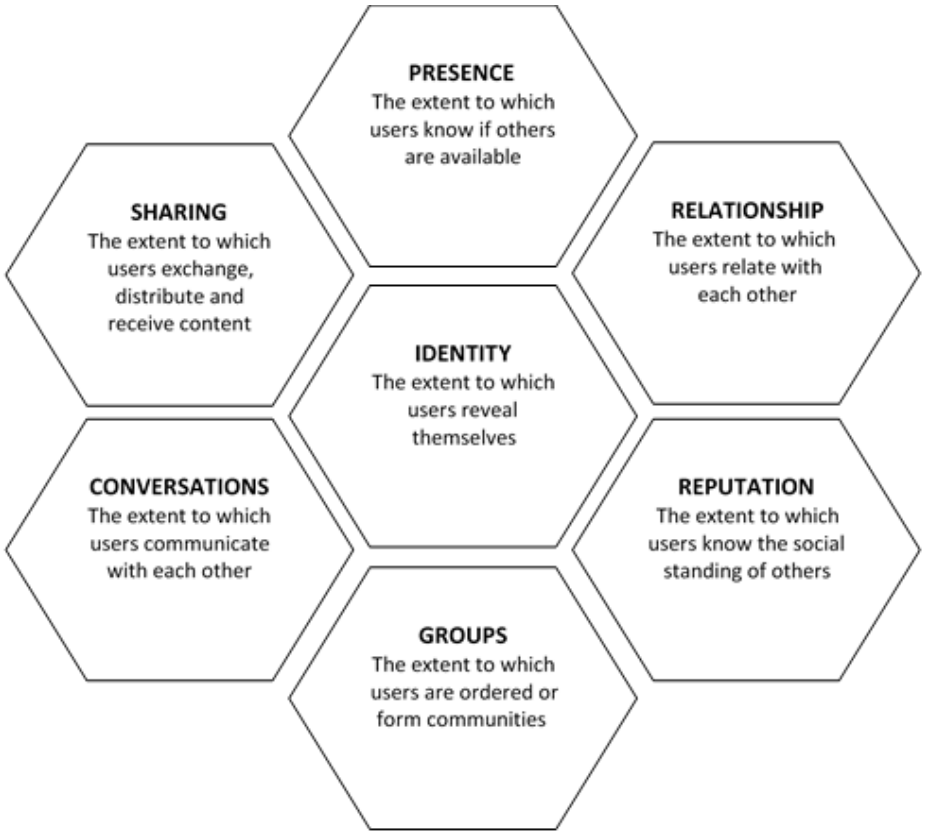

Figure 3.6: Honeycomb framework
Source: (Kietzmann et al., 2011)

ii) Media Richness Theory

The media richness theory (MRT) was introduced in 1984 by Richard Daft and Robert Lengel to describe and evaluate the effectiveness of communication mediums within an organisation (Bergin, 2016). Media richness refers to the amount of information that can be shared through a specific communication medium such as face-to-face, telephone, and email (Lecoure & Carroll, 2009) (See Figure 3.7). Richer mediums (such as those that enable two-way communication) are believed to convey a greater sense of presence than less rich mediums (Schmitz & Fulk, 1991). The MRT theory seeks to describe and explain communication challenges faced by managers in their organisations, such as the absence of information required when one is performing a task at an expected level of performance (uncertainty) or conflicting interpretations about a particular task (equivocality) (Bergin, 2016). The MRT argues that the choice of media depends on the degree of uncertainty or equivocality in the communication task (El-Shinnawy & Markus, 1997). The theory has it that media richness is at the core of a communication medium, as its objective and fixed property, which refers to how a medium can communicate various amounts of the message content (Simon & Peppas, 2004).

Advocates of the media richness theory believe richer media are used for equivocal tasks to help managers to be more effective and efficient, while leaner media are used for less equivocal tasks (Daft & Lengel, 1986; Kahai & Cooper, 2003). MRT has been applied to several studies to help understand the impact of different types of communication media on the performance of various tasks (Daft & Lengel, 1984; Wright, Schwager & Donthu, 2008).

The degree of richness of a medium is measured by the following four factors:

- *The immediacy of feedback*: Immediacy of feedback is the degree to which a channel allows the users to give a quick response to the communications they receive (Dennis & Kinney, 1998). The channel can enable feedback and the speed at which the feedback can be delivered (Ferry, Kydd & Sawyer, 2001). Synchronous interactional media are richer than asynchronous non-interactional media (Drew, 2022).
- *Multiple cues*: The richness of a communication medium can be measured by its ability to convey multiple cues through multiple channels (Ferry et al., 2001). Multiplicity cues refer to how information can be communicated, such as text (e.g., written words), verbal cues (e.g., tone of voice), or nonverbal cues (e.g., eye contact) (Dennis & Kinney, 1998). The richness of a medium is improved by cues such as sight, sound, and touch (Drew, 2022). Multiple channels involve the use of different senses (such as sight, sound, and touch), while multiple cues are alternative ways to communicate over specific channels (Ferry et al., 2001).
- *Language Variety*: Language variety refers to the use of a variety of signs and symbols in written form to convey a message and diverse language formats in spoken form (Ferry et al., 2001). When a medium has a variety of words, signs, and symbols, it becomes much richer (Drew, 2022).
- *Personal focus*: Personal focus is the degree to which a message sent through a specific medium is seen as of a personal nature (Ferry et al., 2001). Personalness is the degree to which the message receiver feels the sender's nearness through the communication media used. Communication mediums that bring warmth to the receiver and personal are believed to be richer (Drew, 2022).

The MRT is criticised for the following reasons:

- It is considered to have inconsistent key tenets. The scope of the theory is limited as it does not consider social pressures. Social pressure is believed to influence media use much more strongly than media richness in some situations (Markus, 1994). Some tasks are not influenced by the type of media used; the accuracy of the message communicated will not be affected (Dennis, Valacich, Speier & Morris, 1998).

- It does not consider the cultural and social backgrounds of the people. Research by Ngwenyama and Lee (1997) shows that cultural and social background influence individuals' choice of media regardless of the richness of the media. Some situations call for communication channels that enable individuals to convey cultural protocol rather than the richness of the channel (Lee, 2000).
- It might be limited to studies for modern technologies since it was developed before Web 2.0 technologies (Drew, 2022).

Information richness	Medium	Feedback	Channel	Source	Language
High	Face-to-face	Immediate	Visual, audio	Personal	Body, natural
↑	Telephone	Fast	Audio	Personal	Natural
	Written, personal	Slow	Limited visual	Personal	Natural
	Written, formal	Very slow	Limited visual	Impersonal	Natural
	Numeric, formal	Very slow	Limited visual	Impersonal	Numeric
Low					

Figure 3.7: Characteristics of media richness
Source: (Bergin, 2016)

iii) Uses and Gratifications Theory

Uses and Gratifications Theory (UGT) is a theory rooted in traditional mass communication which seeks to understand how particular media are solicited and chosen to meet their needs (Mehrad & Tajer, 2016). The UGT theory is concerned with understanding why people use certain types of media, their needs for using them, and the satisfaction (such as social and psychological needs) they derive from using them (Katz, Haas and Gurevitch, 1973; Ku, Chen and Zhang, 2013; Kasirye, 2021). The desire for individuals to satisfy these social and psychological needs motivates people to use specific technologies (Magsamen-Conrad, Dowd, Abuljadail, Alsulaiman & Shareefi, 2016). The UGT was originally applied to study the mass communication media adoption behaviours but has been extended to examine satisfaction with using various communication technologies (Lee & Ma, 2012). The UGT has been applied to understand the motives of people when using technologies such as smartphones, instant messaging, e-mail, and social networking sites (Park, Kim, Shon & Shim, 2013: Ku et al., 2013). The UGT theory suggests that people are aware of their needs, so to get the needed gratification, they evaluate various channels and content available to them and select

appropriate media (Katz, Blumler & Gurevitch, 1974; Mehrad & Tajer, 2016). Media channel selection is an active engagement process in which the audience evaluates the potential benefits of media use (Lee & Ma, 2012). The UGT theory provides an excellent foundation and relevance for research on the motives of social media usage (Menon & Meghana, 2021), and several studies have applied UGT to study its usage, impact, and consequences (Karnik, Oakley, Venkatanathan, Spiliotopoulos & Nisi, 2013; Baek, Holton, Harp & Yaschur, 2011). The UGT could be used to understand social media usage in religious organisations. However, the UGT has not been used much outside the United States to identify the gratification motivations of various media (Ruggiero, 2000). Table 3.1 summarises previous findings of studies where UGT was applied to explore the gratifications for technology use.

The UGT is criticised for the following reasons:

- It lacks internal consistency and theoretical justification for the model (Ruggiero, 2000).
- It assumes that people know their needs and gratifications. However, it is believed to be practically impossible for an individual to know all their needs and gratifications since some of them come as the individual is using the media that he or she might have thought of (Kasirye, 2021).
- It fails to discuss the power of media, which is critical since it influences people in their choice of media (Kasirye, 2021).
- It overlooks the psychological consequences involved if the user fails to examine the media (Kasirye, 2021).

Table 3.1: Gratifications from technology use

Technology	**Gratifications**
Instant messaging (IM)	Peer pressure/entertainment, relationship maintenance, freer expression, sociability, Affection, entertainment, relaxation, fashion, inclusion, sociability, escape
Email	Peer pressure/entertainment, relationship maintenance, freer expression, sociability
Blog	Self-expression, entertainment, social interaction, passing time, information, professional advancement
Social networking sites	Keep in touch with old friends/current friends, post/look at pictures, make new friends, locate old friends, learn about events, post-social functions, feel connected, share information, academic purposes, dating, socialising, entertainment, self-status seeking, information seeking

Source: (Ku, Chu & Tseng, 2013)

3.3 System Dynamics as Theory Building Model

System dynamics modelling is a method used to describe and simulate dynamically complex issues through the structural identification of feedback and delay processes that drive system behaviour (Walters et al., 2016). System dynamics is a problem-oriented modelling approach founded by Jay Forrester in the late 1950s to help managers understand industrial problems better (Currie, Smith & Jagals, 2018). System dynamics provide the means for understanding complex problems, which in turn informs the way decision-makers navigate complex decision-making processes (Currie et al., 2018). By using system dynamics, decision-makers can understand how systems change over time (Martin, 1997). System dynamics have been used to model the dynamics in areas such as the climate, healthcare systems, food industry, and military (Homer & Hirsch, 2006; Currie et al., 2018). System dynamics was originally rooted in the management and engineering sciences but has gradually developed into a valuable tool in analysing social, economic, physical, chemical, biological, and ecological systems (Martin, 1997). The system dynamics approach involves developing computer simulation models that depict development processes and feedback and can be developed into policies (Homer & Hirsch, 2006). This, in a way, allows decision-makers and policymakers to test their scenarios before moving to action (Takahashi, 2015). System dynamics models can be formulated as systems of high-order, nonlinear, differential equations, natural processes, and physical structures relevant to the purpose of the model (Sternam, 2002). The use of system dynamics helps understand

the dynamics of decision-making in complex situations, for example, how a policy change in one part of the system influences other sub-systems and can eventually change the behaviour of the whole system (Nabavi, Daniell & Najafi, 2017). System Dynamics draws on both qualitative and quantitative methodologies to analyse system behaviours over time (Nabavi et al., 2017). Qualitative modelling is used in situations where the end goal is to develop causal loop diagrams (CLD) that represent dynamic factor interaction while quantitative modelling is used in situations where the end goal is to model and simulate the dynamic effects of factors and their interaction using Stocks and Flows diagrams (Walters et al., 2016). In qualitative modelling, CLDs are used when one needs a better understanding of the interrelations among a system's components (Nabavi et al., 2017). CLDs are used to show important relationships. An example of a CLD is given in Figure 3.8 to give a general understanding of the relationship between birth and population and death and population of a country. Quantitative analysis can be performed using tools such as Vensim or Stella. Quantitative modelling enables the analyst to build a simulation model to evaluate and assess the model's behaviour under different circumstances.

Example of a CLD describing the population

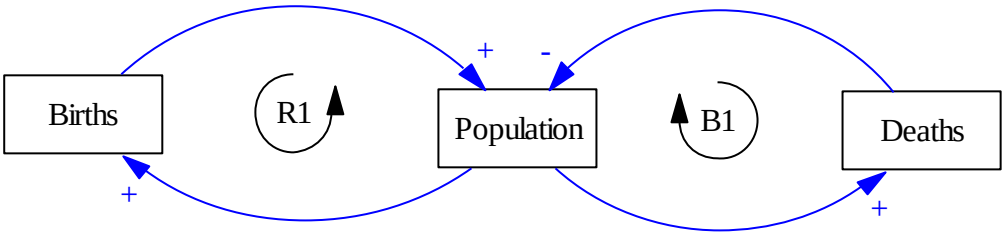

Figure 3.8: Simple CLD describing the population of a country

Figure 3.8 shows a simple CLD describing the population dynamics of a country. The diagram has two (2) loops, namely: reinforcing (R1) and balancing loop (B1). The reinforcing loop shows exponential growth on a system while the balancing loop tries to stabilise a system. The diagram shows that the population is influenced by two (2) variables (births and deaths). In the R1 loop, more births increase the population of a country while an increase in the population could in turn increase the number of people being born. In the B1 loop, a high death rate decreases a population of a country while an increase in the population could mean more deaths.

In this study, system dynamics is applied to model different factors that influence church growth and sustainability. These factors include the availability of resources, usage level of ICT, and commitment of members. Church leaders need to understand the dynamics of these factors on church growth and sustainability, for example, the availability of resources does not guarantee the anticipated as it also

depends on the commitment of members to participate in evangelism. In addition, system dynamics is used to show how technology adoption and use impact church membership growth and retention. The CLDs are used to model the causal effects of technology use on church sustainability and growth. In religious organisations, growth is achieved when non-church members join the church and add to the membership. Church membership declines due to a variety of reasons, such as dislike of ministers, issues with church members, and deaths. The most effective way to model this growth and decline is through systems dynamics.

3.4 Justifications of the Models

The literature on theories of technology adoption and use suggests that organisations are influenced by several factors when adopting and using technologies. This study focuses on the use of ICT to grow and sustain churches. In order to understand the impact of the use of ICT on the church's sustainability and growth, the following models were adopted; TPB, TAM, TOE, honeycomb framework, MRT, and UGT.

- The TAM was used because it emphasises the perceived benefits of the use of technology (Davis, 1989), which can impact church growth and sustainability.
- The TPB was adopted because it considers the benefits and risks of adopting ICT (Olushola & Abiola, 2017; Taherdoost, 2018).
- The TOE was adopted because it considers technology, organisation and environment in adopting and using an information system (Jere & Ngidi, 2020).
- The honeycomb framework was used because it helps to understand the different levels of social media's functionality and usage (Kietzmann et al., 2011).
- The MRT was adopted because it helps evaluate the effectiveness of communication mediums within an organisation (Bergin, 2016).
- The UGT was adopted because it helps to understand how particular media are used and chosen to meet the needs of the adopters (Mehrad & Tajer, 2016).

3.5 Conceptual Framework

A conceptual framework is a system of concepts, assumptions, expectations, beliefs, and theories that supports and informs research (Maxwell, 2005). The conceptual framework allows the researcher to model relationships between variables that may or may not imply a particular theoretical perspective to describe a phenomenon (Yamauchi, Ponte, Ratliffe & Traynor, 2017). A conceptual framework can be represented visually, symbolically, or numerically. The technological growth framework used in this study has the following building blocks: church leaders, church members, non-member

population, environment and beliefs, ICT and its factors, system dynamics, and output (see figure 3.9).

Figure 3.9 illustrates the main concepts that guide the study. However, this is not an exhaustive list. The technological growth conceptual framework is made up of the constructs from the theories discussed in this section such as the TAM, TPB, DoI, honeycomb, MRT, and UGT. Church leaders and members adopt and use ICT to perform religious activities such as sharing spiritual content with members and non-members, communication, and church administration. In this study, data is collected to understand the level of adoption and use of ICTs by the church members and leaders within the four conference churches of the SAU (see Chapter 4). The use of ICT within the church could contribute to church growth, church sustainability, and member retention. The non-member population is a crucial aspect of the technological growth framework as they add to church membership after their conversion. This non-member population accesses the Word of God through various ICTs such as YouTube, Facebook, and Twitter. The non-member population is the key contributor to the church's growth. ICTs are used to improve the worship experience of believers. Worship experience contributes to the dynamics of church growth and sustainability. Church members and leaders have their beliefs that influence the use of ICTs to perform religious activities. Data collected from church leaders and members are used to understand the influence of beliefs on the adoption and use of ICT within the SAU conference churches. Also, the conceptual framework is influenced by the church environment. The church environment considers how the church leaders within the SAU conference churches interact with each other, the interactions of congregation leaders within a particular region or district, and interactions among church members.

The use of ICTs in religious organisations is influenced by factors such as the perceived usefulness of ICT, the rate of ICT adoption within the church environment, media richness, and proper assessment of the risks of ICT. For the church to achieve technological growth, church leaders and members need to understand the uses and benefits of ICTs within the church environment. The rate of ICT adoption in churches could influence church growth, church sustainability, and member retention, for example, churches could have online members due to high ICT adoption. Church leaders and members could adopt and use rich media, for example, WhatsApp can enable people to conduct a meeting within a group. However, there should be a proper assessment of the risks that could come because of ICT adoption and use. All these factors influence the dynamics of church growth and sustainability. System dynamics is used to understand the causal effects of various variables on church growth and sustainability. System dynamics was used because church growth is dynamic in nature. The output of this conceptual framework is church growth, member retention, and

church sustainability. There are, however, undesirable outcomes such as content flooding in online communities and fights within church social media groups that need to be mitigated to experience desirable outcomes. If these challenges are not mitigated, they could lead to church members leaving the church. This construct was derived from the literature review. The conceptual framework is applied to Chapters 5 and 6.

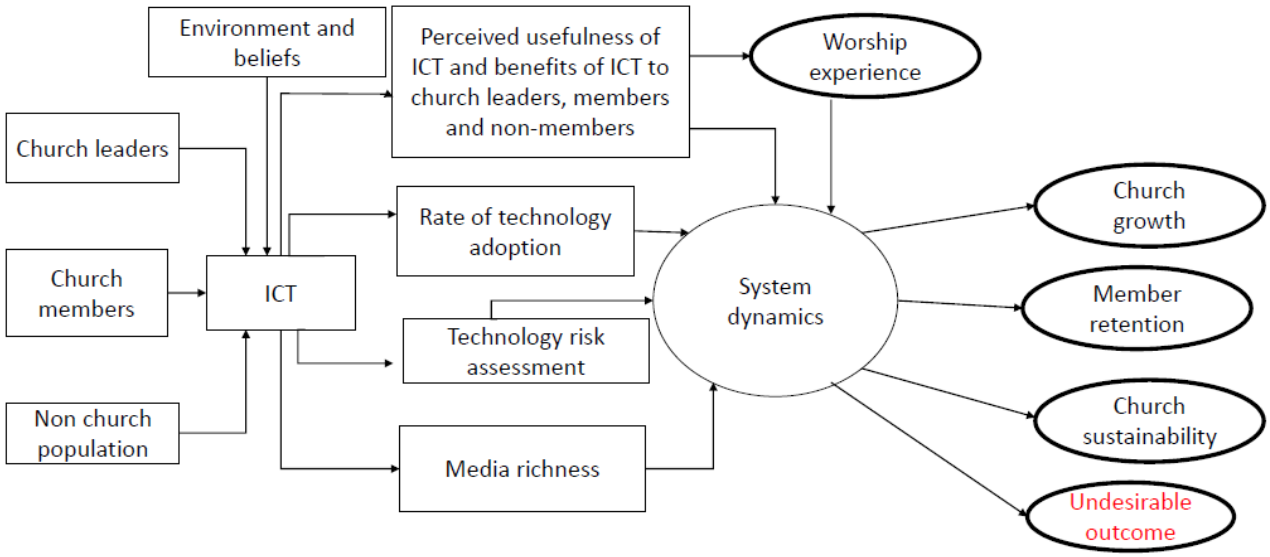

Figure 3.9: Technological Growth Framework

3.6 Chapter Summary

This Chapter discussed the theories, models and frameworks that influenced this study. A technological growth conceptual framework was developed. The next Chapter discusses the methodology adopted in this research.

CHAPTER 4: RESEARCH METHODOLOGY

4.1 Introduction

The previous Chapter outlined the theoretical frameworks, theories and models that relate to the study. This Chapter presents the research design and methodology used to answer the research questions presented in Chapter 1. The research methodology, philosophy, paradigm, strategy, approach, and design adopted in conducting the research are discussed in detail. This Chapter also discussed the data collection procedures and techniques and how the findings were validated.

4.2 Research Overview

This research study adopted the Research Onion Model (Saunders, Lewis & Thornhill, 2009a). Figure 4.1 presents the layers of the Research Onion Model, and the layers are explained in the relevant sections.

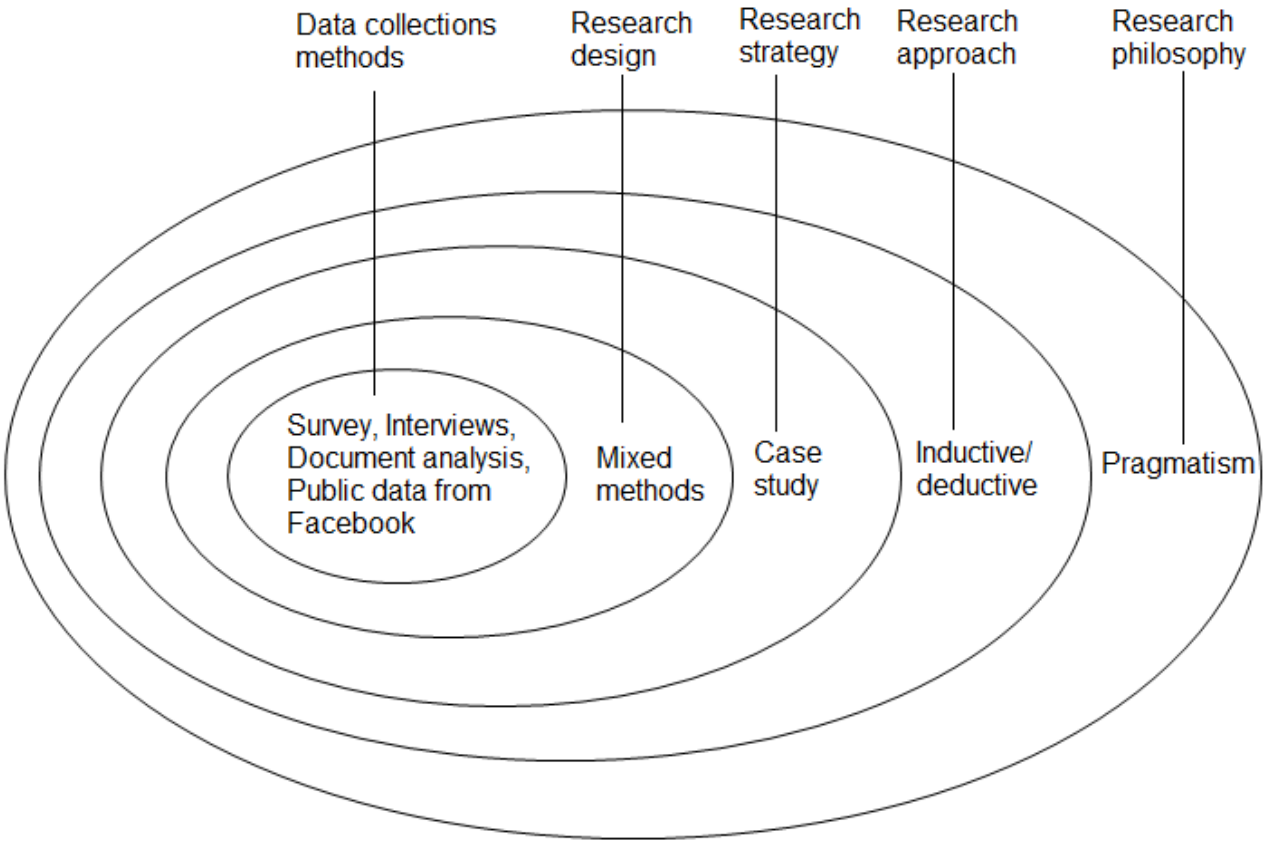

Figure 4.1: Research Onion Model
Adapted from (Saunders et al., 2009a)

4.3 Research Philosophy

Research philosophy is a system of beliefs and assumptions about the development of knowledge (Saunders, Lewis & Thornhill, 2009b). Conducting a review of research philosophy is a crucial aspect

of research as it opens the researcher's mind to other possibilities, which can, in turn, enrich his or her research skills and enhance his or her confidence that he or she is using the appropriate methodology (Holden & Lynch, 1996). There are three main common ways of viewing the research philosophy; ontology, epistemology and axiology. Ontology philosophy looks at the nature of reality, while epistemology looks at the relationship between the researcher and the reality of how researchers know the reality (Edirisingha, 2012). Axiology refers to the ethical issues that should be considered by the researcher when planning to conduct research (Kivunja & Kuyini, 2017). Axiology is concerned with the role and place of values in the research process, particularly the influence of values on the relationship between paradigm, methodology, and methods (Zaidi & Larsen, 2018). The values that guided the study are discussed in Section 4.12. Epistemology is concerned with how we gain knowledge of what exists and the relationship between the research participant and the researcher (Ponterotto, 2005; Spencer, Pryce &Walsh, 2014). Moreover, epistemology looks at the guidelines for knowing and achieving knowledge and the possibility of being shared and repeated by others to obtain good quality research and reliable findings (Kivunja & Kuyini, 2017). The researcher and research participant may have a closer relationship or may be considered independent of one another. There are several epistemologies and ontology ideologies or paradigms that can be adopted in various research such as positivism, interpretivism, realism, and pragmatism. This study discusses only three research philosophies that influence this study, namely positivism, interpretivism and pragmatism. Figure 4.2 shows the underlying philosophical assumptions adopted in this research study.

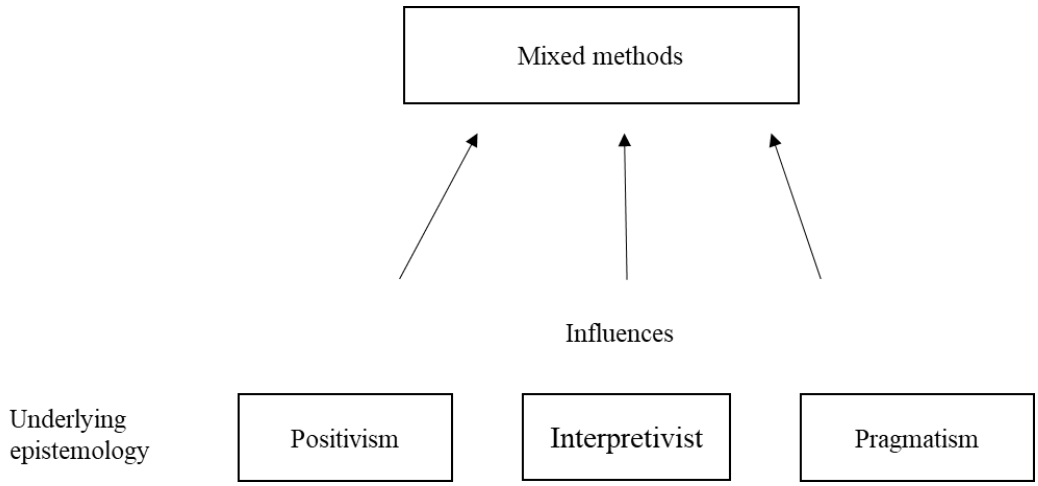

Figure 4.2: Underlying philosophical assumptions:

Figure 4.3 shows a summary of the three philosophies: methods and means of data collection.

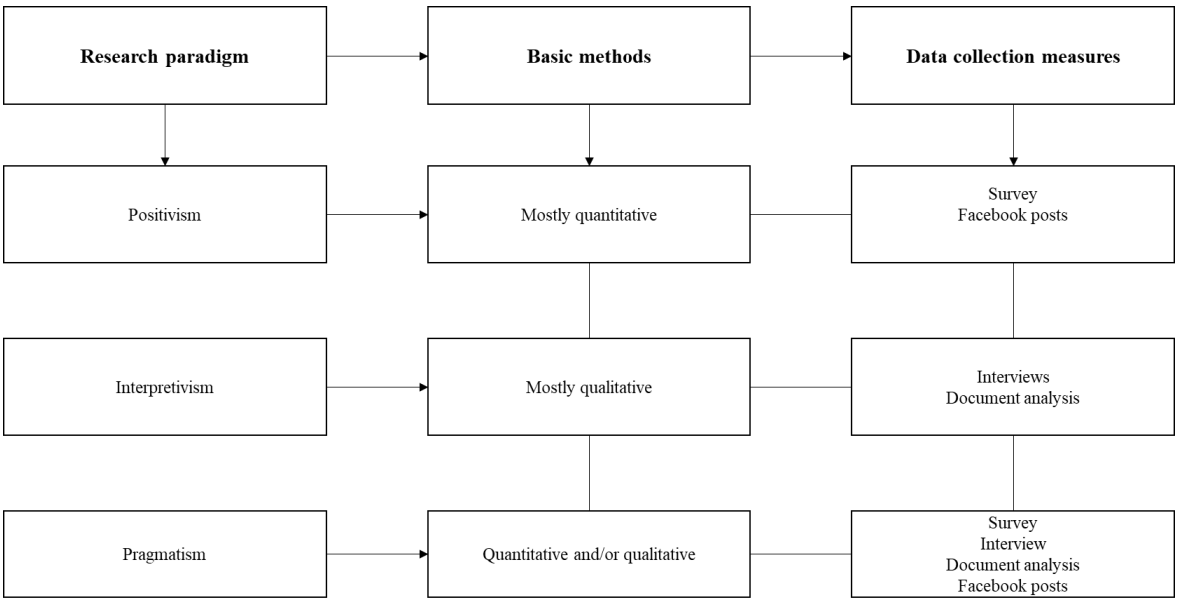

Figure 4.3: Paradigms: methods, and means of data collection
Adapted from (Žukauskas, Vveinhardt & Andriukaitienė, 2018)

4.3.1 Positivism

Positivism is a philosophical paradigm that believes that only scientific knowledge can lead to the truth about reality and that events can be empirically observed and then explained with logical analysis (Kaboub, 2008). Positivism philosophy relies on the hypothetico-deductive method to confirm priori hypotheses (Ponterotto, 2005). Hypothetico-deductive method is a circular process that starts with a theory from literature to (1) build testable hypotheses, (2) design an experiment through operationalising variables, (3) conduct an empirical study on the data, and (4) finally, inform the theory and contribute to literature (Park, Konge & Artino, 2020). The priori hypotheses are often stated quantitatively to measure functional relationships between independent variables and dependent variables (Ponterotto, 2005). The positivist inquiry seeks to generate explanations or give causal relationships that could be used to make predictions and control the phenomena in question (Park et al., 2020). The positivist perspective requires the researcher to remain neutral when undertaking research and detached from the research and data to avoid influencing the research findings (Saunders et al., 2009b). This is a plausible position for positivists because of the nature of the data they collect, which is measurable and quantifiable (Saunders et al., 2009b). Positivists maintain that scientific knowledge consists of facts while its ontology considers reality independent of social construction (Antwi & Hamza, 2015). The aim is to build knowledge of a reality independent of the human mind as a way to provide the foundation for human knowledge to validate knowledge developed empirically often through the use of priori hypotheses (Kivunja & Kuyini, 2017; Cuthbertson, Robb & Blair, 2020). Positivists attempt to mimic in the best way possible the scientific methods and procedures testing the carefully controlled without the researcher's emotional or

expectant stance to uncover and explain relationships among variables that could be used as the basis for prediction and control of phenomena (Ponterotto, 2005). Positivists believe in a single truth and objective reality, and this reality can be measured, studied, and understood via methodologically rigorous studies with the research findings independent of the researcher and his or her instruments (Malhotra, 2017; McBride, Misnikov & Draheim, 2022). Positivist research tends to create testable research and generates repeatable results (McBride et al., 2022). Furthermore, positivists restrict knowledge to mainly observations and measurements (Tavakol & Zeinaloo, 2004), and anything beyond that is impossible. The positivism paradigm adopts a quantitative method through the use of statistics, hypothesis testing, model analysis, and experimental methods (Uduma & Sylva, 2015). Results produced from statistical and experimental methods tend to give better insights into the nature of reality but lack external validity (Kaboub, 2008).

Issues and challenges to be considered through the adoption of a positivism research philosophy (Scotland, 2012; Saunders, Lewis & Thornhill, 2012; Alharahsheh & Pius, 2020):

- Incorrect statistical tests can be used, leading to misinterpretation of the results. This could mislead users about the research findings. Also, the results and significance of the study are largely dependent on the sample size.
- Generalisations of the research findings could ignore the intention of individuals and their actions as the researcher is detached from the research.
- Positivism research philosophy relies on the status quo, with more of the research findings being descriptive. This can be challenging for researchers if they seek to gain deeper insight into the issues under research.

The nature of this study requires participants to give their perspectives on other research questions, such as understanding their informational needs. Also, because there is limited literature concerning the use of technology in religious organisations, it would be difficult to rely only on the positivist position.

4.3.2 Interpretivism

Interpretivism is a philosophy examining people's actions to drive meanings and motives through social and cultural participation (Chowdhury, 2014). It looks at people’s behaviours and how they interact with others in the communities. Interpretivism views the generation of knowledge, understanding, and explanation as being attached to the researcher or the participant’s experience (McBride et al., 2022). In terms of the research method, interpretivists tend to use methods such as hermeneutics, case studies, phenomenology, and discourse analysis (McBride et al., 2022).

Interpretivists believe that reality is connected to the actors and developed through the interactions of the organisational elements (Uduma & Sylva, 2015). Interpretive research seeks to create new, richer, in-depth understanding and interpretations of social worlds and contexts (Saunders et al., 2009b). The interpretive paradigm is based on observation and interpretation, where observation entails collecting information about events while interpretation is about making meaning of that information by drawing inferences between the information and some abstract pattern (Antwi & Hamza, 2015). Interpretivism seeks to drive meaning from value-laden and socially constructed perspectives, which requires a personal and flexible approach through deep interactions between the researcher and his or her study participants (Laverty, 2003; Cuthbertson et al., 2020). Interpretivism supports a subjectivist stance that maintains that reality is socially constructed through the interactions between the researcher and the participant (McBride et al., 2022). The participants are central to capturing and describing the experiences, choices and options and how they were influenced (McBride et al., 2022). In information systems (IS) research, interpretive studies are used to develop an understanding of the IS, process, and context which influence an IS (Malhotra, 2017). This study uses the findings from the participants regarding their information needs to develop a pastoral analytics system. Interpretivism research tends to be inductive rather than deductive, as reality is socially constructed and focuses less on a single truth (McBride et al., 2022). However, interpretivism does not prefer conducting research using methods that provide objective or precise information, and as a result, quantitative methods are not their preferred mode but rather prefer to use of qualitative methods (McQueen, 2002; Thanh & Thanh, 2015). This study looks at some aspects that are difficult to research without understanding the context and experience of participants, such as the apostle's experience in the Book of Acts and the use of ICT in the church.

4.3.3 Pragmatism

Pragmatism is a research philosophy that lies between the ontological extremes of positivism and interpretivism (McBride et al., 2022). Pragmatists try to balance the extremes of positivism and interpretivism, facts and values, accurate and rigorous knowledge, and experiences in different contexts (Saunders et al., 2009b). Pragmatic research has been embraced in IS research and has influenced the research to a greater extent (Goldkhul, 2012; Da Silva, Siqueira, Araújo & Dornelas, 2018). Methodologically, pragmatics tend to use mixed methods in conducting research. Pragmatists focus on knowledge that enables change and hold a belief that knowledge is only obtainable through action as pragmatic research is highly focused on doing and, therefore, tends to use methods that encourage change and action, such as action research, design science, and systems dynamics (McBride et al., 2022). Pragmatists do not focus on the research methods but emphasise the research problem and apply all possible approaches available to understand the problem under study (Creswell,

2014). The central principle in pragmatic inquiry is to conduct research driven by the desire to produce knowledge that is useful and actionable to solve existing problems or re-determine indeterminate situations, drawn from the examination of effective habits or ways of acting (Feilzer, 2010; Kelly & Cordeiro, 2020). Pragmatism research design, therefore, encourages researchers to use the philosophical and/or methodological approaches that work best in their context as they seek to understand a particular research problem under investigation (Kaushik & Walsh, 2019). Pragmatists believe that researchers can interpret the world in different ways and that research can be undertaken using different methods to get the entire picture of reality or multiple realities (Saunders et al., 2012). This study looked at church sustainability and growth from different perspectives, such as through interviews, document analysis and church member surveys. The reason was to get a full view of the reality under study.

The philosophical basis for pragmatism research (Morgan, 2007; Creswell, 2014):

- The pragmatism paradigm is not based on a single system of philosophy and reality. This means that researchers in pragmatism research draw liberally from mixed methods of both quantitative and qualitative assumptions when undertaking research.
- Researchers are free to choose the methods, techniques, and procedures of research that best satisfy their needs and objectives in a particular context.
- Pragmatists do not view the world as an absolute unity. Researchers conduct research using many approaches for collecting and analysing data rather than subscribing to a single method.
- Pragmatists consider truth as what works at the time. Therefore, mixed methods, both quantitative and qualitative, are used by the researcher to get a better understanding of the problem under study.
- The pragmatist researchers focus on the research objectives and how they want to achieve them.
- Pragmatists believe that research always occurs in social, historical, and political contexts.
- Pragmatists believe in an external world, which is independent of the mind, as well as what is lodged in the mind.
- Pragmatism research enables mixed methods researchers to use multiple methods with different worldviews, assumptions, and forms of data collection and analysis.

Table 4.1 compares the three research philosophies. Table 4.1 was adapted from Morgan (2007), Saunders et al., (2012), McBride et al., (2022) and Da Silva et al. (2018).

Table 4.1: Comparison of the three research philosophies

	Positivism	**Interpretivism**	**Pragmatism**
Ontology: researcher's view of the nature of reality	Objective reality, external, independent of social actors	The subjective reality, socially constructed, may change, multiple	Objective/subjective, external, multiple, view chosen to enable best answering of research questions
Epistemology: researcher's view regarding what constitutes acceptable knowledge	Knowledge is real and objective, obtainable via measurements and statistics, only observable phenomena can provide credible data and facts.	Knowledge is dependent on beliefs, values and lived experience, subjective meanings, and social phenomena.	Knowledge is obtained by doing and action, either or both observable phenomena and subjective meanings can provide acceptable knowledge dependent upon the research question, makes use of different methods or perspectives to help interpret the data
Methodology and data collection techniques	Highly structured large samples, surveys, experiments, statistical analysis, measurement, quantitative	Small samples, field studies or in-depth investigations, case studies, hermeneutics, phenomenology, qualitative	Mixed methods research, action research, design science, quantitative and qualitative
The connection between theory and data	Deduction	Induction	Abduction
Relationship with the research process	Objective	Subjective	Intersubjective
Inference from the data	Generalisation	Contextual	Transfer

4.4 Research Approach

Two main research approaches that can be used in research are: inductive and deductive.

4.4.1 Inductive approach

Inductive is an approach that mainly makes use of detailed raw data to develop concepts, themes, or a model through the researcher's interpretation of the raw data (Thomas, 2006). The inductive approach is used to analyse qualitative data without structured methodologies for new themes to emerge from the raw data without any restrictions. In a way, the inductive approach allows the theories to build at the end of the study. When conducting a study following an inductive approach, there is no need for a pre-developed framework, model, or guideline, but the findings might be influenced by the limited knowledge of participants (Zalaghi & Khazaei, 2016). The inductive approach is described as the bottom-up reasoning approach as it seeks to reach general conclusions (Janzen, Nguyen, Stobbe & Araujo, 2015). The inductive approach allows researchers to find significant themes contained in raw data without having to impose restraints imposed by the application of structured methodologies (Thomas, 2003). Researchers who adopt the inductive approach should first conduct a systematic investigation and use the findings to develop a framework (Hall, Savas-Hall & Shaw, 2022). This is because the inductive approach assumes that science starts with observations that act as the basis for knowledge generation and also claims that reality impinges directly on lived experiences (Malhotra, 2017). Inductive reasoning, therefore, is a theory-building process as it starts with investigations of specific instances and then seeks to establish generalisations about the problem under study (Hyde, 2000). Figure 4.4 shows the steps of the inductive approach.

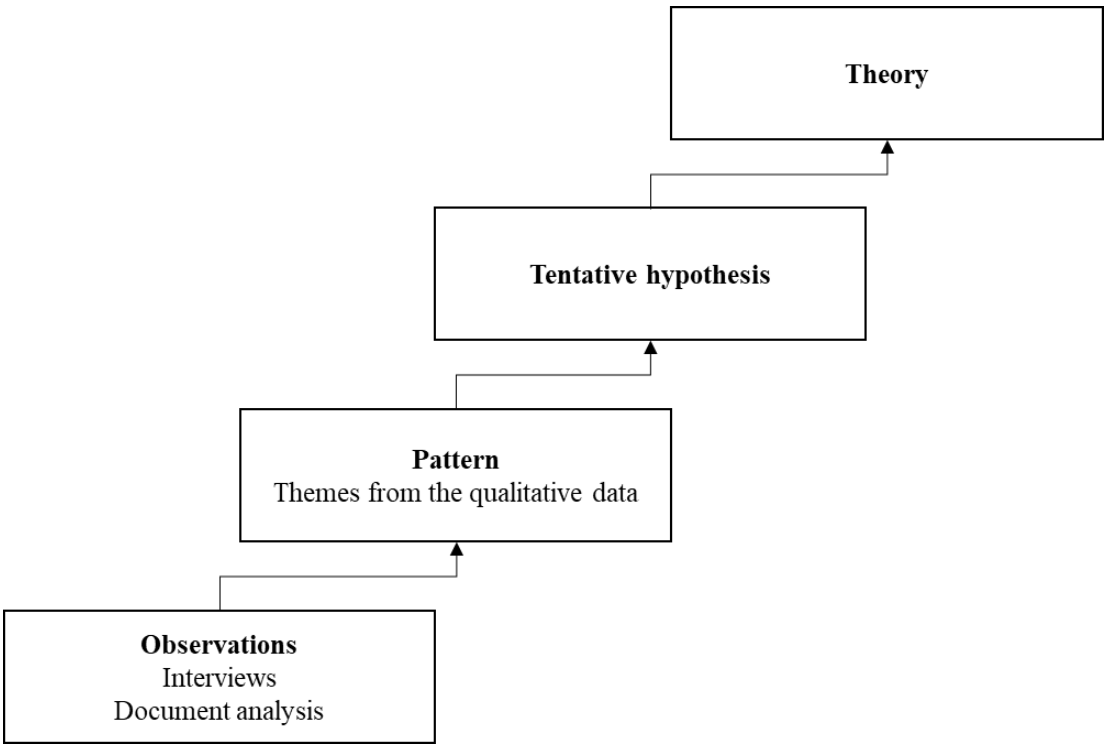

Figure 4.4: Steps of the inductive approach
Adapted from (Malhotra, 2017)

4.4.2 Deductive approach

Deductive is an approach that seeks to test the consistency of the prior assumptions, theories, or hypotheses identified in the research by the researcher (Thomas, 2006). This means that the deductive approach first formulates assumptions and then tests them using structured methods, in contrast to the inductive approach. The deductive approach starts explicitly with tentative hypotheses that form a theory that could be used to answer or explain a particular problem and then observes the data to rigorously test the stated hypotheses (Malhotra, 2017), as shown in Figure 4.5. The deductive approach is, therefore, a theory testing and is assumed to be the top-down approach of reasoning that starts from a general premise to a specific conclusion (Hyde, 2000; Janzen et al., 2015; Hall et al., 2022). However, deductive inferencing may give a rational conclusion even when a generalisation may be untrue (Hall et al., 2022).

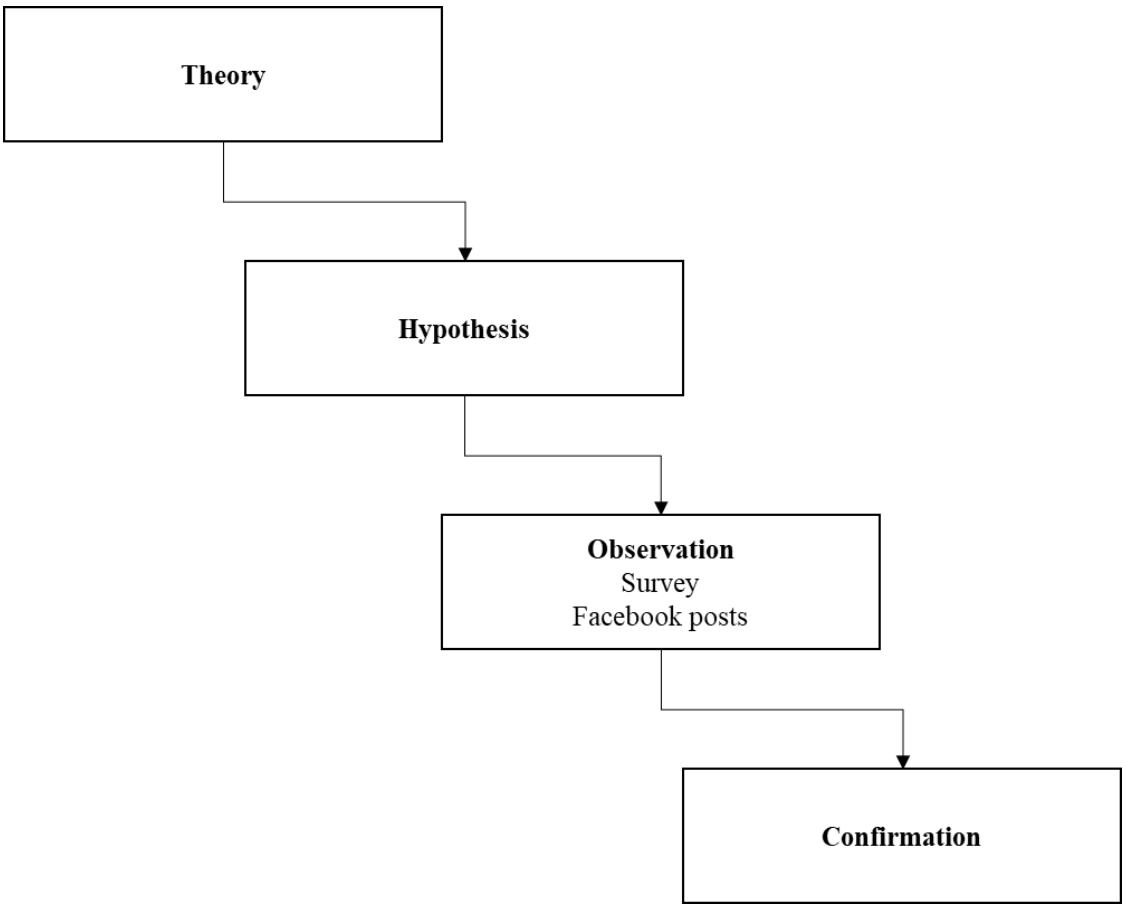

Figure 4.5: Steps of the deductive approach
Adapted from (Malhotra, 2017)

This research applied both inductive and deductive approaches. An inductive approach was used to find new themes from the qualitative data. A deductive approach was used to test the variables using quantitative data. These variables were found in the literature review.

4.5 Research Strategy

A research strategy is a step-by-step plan of action that gives the researcher the direction to conduct the research appropriately to produce the best results (Dinnen, 2014). Different research strategies can be used when conducting research, including surveys, case studies, ethnography, phenomenological studies, grounded theory studies and content analysis. The selection of a research strategy is influenced by the researchers' goals and the nature of the research being undertaken (Benbasat, Goldstein & Mead, 1987; Skinner, Nelson, Chin & Land, 2015). This research study adopted a case study. A case study is a research strategy that researchers use to acquire a comprehensive and multi-faceted understanding of a complex problem in its natural setting (Crowe, Cresswell, Robertson, Huby, Avery, & Sheikh, 2011). A case study was adopted because the researcher wanted to examine a phenomenon in its natural setting by collecting data using multiple methods to gather information from an organisation or entity to generate theories (Benbasat et al.,

1987). A case study is usually used to answer, “how and why?” questions in research in a situation where an in-depth understanding is needed using a holistic lens (Ebneyamini & Moghadam, 2018). A case study is one of the most flexible research strategies that allow the researcher to recollect holistic characteristics of real-life events while examining empirical events (Schell, 1992; Ebneyamini & Moghadam, 2018). A case study research strategy helps researchers to focus their research within the confines of space and time on a specific case as they get opportunities to collect different kinds of data, such as surveys, documents, observations, and interviews, to get an in-depth understanding of an individual or organisation and any interactions (Schoch, 2020). In this research study, the researcher had an opportunity to collect different kinds of data from documents, interviews, surveys, and Facebook posts. The case study research also helps researchers who may want a comprehensive understanding of a particular unit as it allows the researcher to examine a case so they can learn from it (Schoch, 2020). Despite these advantages that come with the case studies, volumes of data generated in a case study may be challenging to organise, analyse, and integrate (Heale & Twycross, 2018).

4.6 Research Design

The researcher adopted a mixed methods design where data was collected and analysed using both quantitative and qualitative methods to have a better understanding of the data (Creswell, 2012). These methods were reviewed in this section.

4.6.1 Quantitative (QUAN) Method

A quantitative research method is an approach that seeks to explain a phenomenon by collecting numerical data and analysing it statistically or using statistical methods (Kamolson, 2007). Quantitative research assumes positivist claims for knowledge development and employs strategies such as experiments and surveys for data collection (Creswell, 2003). Quantitative research from a positivistic paradigm assumes most of the time that hypotheses are derived from a theory or hypothetical construct and are, therefore, deductive in nature (Janzen et al., 2015). Quantitative research tests research hypotheses to determine relationships between the variables under study and measure the frequency of the observations (Hoe & Hoare, 2013). Quantitative researchers use various quantitative analysis techniques ranging from simple descriptive statistics of variables under study to the establishment of statistical relationships among variables using very complex statistical modelling tools (Saunders et al., 2009a; Khalid, Hilman & Kumar, 2012). Quantitative research is good in giving trends across the data sets but not the motivation behind observed behaviours. These knowledge gaps can be filled through qualitative methods like interviews, focus groups, and open-ended surveys (Goertzen, 2017). Quantitative research relies on deductive reasoning, which enables research studies

to be more generalised and describe things more in numbers instead of in-depth words (Thanh & Thanh, 2015; Alharahsheh & Pius, 2020). Quantitative research differs from other designs in that it can test given theories formally using formulated hypotheses and then applying statistical analyses (Watson, 2015). Significant conclusions can be established in quantitative research about a particular population by studying a sample representing the population under study (Creswell, 2003). Quantitative research is generally used when the focus of research is to explain, describe and predict phenomena and relies on larger data sample sizes than qualitative research (Cooper & Schindler, 2006; Khalid et al., 2012). The quantitative research paradigm emphasises the importance of generalisability and reliability (Delice, 2010). It has been noted that quantitative research may not answer some questions that require observational techniques to understand a phenomenon in its natural setting (Kamil, 2004). Also, quantitative research does not provide insight into why people think, feel, or act in certain ways (Goertzen, 2017). In this study, some questions are required to be investigated in the natural settings of the church through interviewing church leaders within the SDA churches located in South Africa. Furthermore, it was important to understand how early churches during the Apostle Paul's time grew and sustained. These reasons motivated the use of mixed methods.

Key characteristics of quantitative research (Goertzen, 2017):

- Uses numerical values to represent information.
- Data are measured and quantified using statistical methods.
- It gives an objective reality.
- Statistical methods are used to evaluate quantitative data.
- Variables are used to represent complex problems.
- Results can be summarised, compared, or generalised.

Advantages of quantitative research

- Research findings generated from quantitative research can be generalised to other specific populations that may be similar.
- Quantitative research uses large data samples to understand a phenomenon, and the findings are representative of a population.
- Research works conducted using quantitative design have research frameworks and methods that can be replicated.
- The use of standard approaches enables the research study to be replicated over time.
- It is easier to compare numerical values in quantitative research.

Disadvantages of quantitative research:

- Quantitative data generally do not provide evidence on why the people under study think, feel, or act as they do.
- It may be difficult to reach specific groups, such as those who might be vulnerable or disadvantaged.
- There are some cases or situations where data collection covers very long periods, which can be time-consuming.

4.6.2 Qualitative (QUAL) Method

Qualitative research is a holistic approach that enables the researcher to have a level of detail through high involvement in real experiences (Williams, 2007), and the researcher uses interpretive claims, as it becomes difficult to generalise the results generated from qualitative research. Qualitative research uses inductive reasoning, and researchers adopt this qualitative research design when they want to acquire an in-depth understanding of certain behaviours and the reasons for the occurrences of those behaviours (Khalid et al., 2012). Quantitative research generates non-numerical data through investigation tools such as interviews, focus group discussions, and observations to get an in-depth description of views, beliefs, and meanings (Tariq and Woodman, 2013). The primary objective of qualitative research is not a generalisation of the findings but to provide a deep interpretation of the phenomena (Cooper & Schindler, 2006; Khalid et al., 2012). Quantitative research is useful in research studies where researchers want to generate theories and explanations of phenomena under consideration (Janzen et al., 2015). A qualitative research method helps researchers to examine and ask questions relating to “how”, “where”, “what”, “when”, and “why” a person under study would act in a certain way toward a specific matter (Oun & Bach, 2014). Furthermore, qualitative research is suitable when the researcher wants to investigate phenomena in a new field of study or intends to ascertain and theorise prominent issues (Jamshed, 2014). Also, researchers could adopt a qualitative method to get an understanding of an entire complex problem that cannot be meaningfully reduced to a few discrete variables and linear cause-and-effect relationships (Forman, Creswell, Damschroder, Kowalski & Krein, 2008). This study seeks to understand church sustainability and growth in the SDA church using the lens of system dynamics. This study could not be conducted using only the quantitative research design as this is a new and complex study. The study also realised the benefits of the qualitative research design.

Advantages of qualitative research

- It allows the researchers to understand the nature and complexity of the phenomenon under study.
- It can be used to conduct research in areas not explored.
- It enables researchers to examine a phenomenon in its natural environment.
- It supports in-depth research works.

4.6.3 Mixed Methods Research Designs

Mixed-method research is a research design that allows the researcher to conduct research using a combination of quantitative and qualitative research methods, techniques, theories, or approaches in a single study (Johnson & Onwuegbuzie, 2007). The purpose and basis of mixed methods research studies are to combine quantitative and qualitative approaches to provide a better understanding of the problem and complex phenomena that could not be understood by using a single approach (Creswell & Plano, 2007; Azorín & Cameron, 2010). Mixed methods could provide a better understanding by triangulating a set of results, thereby enhancing the validity of inferences. Individual research methods have been seen to have different weaknesses and strengths, so the main effect of triangulation will be to overcome the shortcomings of any single method (Azorín & Cameron, 2010). Also, besides triangulation, mixed methods are used to complement findings from one method with the findings from the other, help develop or inform the use of the other method, discover paradoxes and contradictions and extend the scope of inquiry by using different methods for different inquiry components (Greene, Caracelli & Graham, 1989; Azorín & Cameron, 2010). In mixed methods, researchers tend to base their knowledge claims on pragmatic grounds such as consequence-oriented, problem-centred, and pluralistic (Creswell, 2003). The implementation of mixed methods research enables researchers to employ both methods iteratively or simultaneously to create stronger research outcomes than either method individually (Malina, Nrreklit and Selto, 2011). This study employed quantitative and qualitative methods simultaneously, and the results were used to give different perspectives on the phenomena under investigation. This study adopted the concurrent triangulation design (see Figure 4.6) with the objective of corroborating or cross-validating the findings by using both quantitative and qualitative methods (Warfa, 2016). Data collection and analysis for each method were done separately, and the overall results were interpreted to look for data convergence, divergence, contradictions, or any relationship the separate data analyses reveal. The reason for combining these methods is that neither of these methods was sufficient to capture the problem under investigation. This study investigated church growth from four perspectives: church members, church leaders, the Bible, and the sentiments of social media users. These independent methods were used to complement each other to improve the results of the study (Johnson & Onwuegbuzie, 2004). The

mixed methods are used to overcome the weaknesses of the individual methods. For example, the quantitative method is unable to capture the lived experiences of church leaders, while the quantitative method tends to be stronger when dealing with long descriptive narratives rather than statistical values, thereby raising the problem of reliability (Johl, Bruce & Binks, 2012). The mixed methods were therefore used to capitalise on the strengths of the qualitative and quantitative methods while eliminating biases (Creswell, 2003). Table 4.2 presented the similarities and differences between the quantitative and qualitative research designs. The strengths and weaknesses of each method were presented under the quantitative and qualitative research design sections, respectively.

Table 4.2: Similarities and differences between quantitative and qualitative research designs

Key features	**Quantitative research**	**Qualitative research**
Examines	Phenomena	Phenomena
Goal	Measure and determine relationships among values	Get an in-depth understanding of a phenomenon under study
Usually selected when:	○ Large volumes of quantitative data are used to test a theory or verify hypotheses ○ Data can be measured and quantified ○ Researchers want to answer research questions related to "what", "how", "when", and "where" ○ Research is being conducted in a new area ○ There is no uncertainty about the conceptions under study	○ An interpretation is needed ○ Data is non-numeric ○ Researchers want to answer research questions related to the "what" or "how" of a given situation ○ Research is being conducted in an area where there is literature ○ There is uncertainty about the conceptions under study
Format of data	Usually numeric data	Usually text
Format of questions	Closed-ended	Open-ended
General context	○ Tests hypotheses ○ Uses statistical tools such as questionnaires	○ Investigates phenomena to develop theories ○ Uses methods such as interviews, documents for in-depth data
Research process	Sequential and fixed	Iterative and emerging
Sampling	Representative of the population	Purposeful
Data analysis	Deductive	Inductive and interpretive
Findings	○ Reported as frequencies and results of statistical tests ○ Generalised from the study sample to the population represented	○ Reported as themes ○ Generalised to similar settings
Validity	Assessed through expert judgement, statistical tests, and mathematical modelling	Assessed through methodological rigour, researcher skills, experience, and relevance

Source: (Forman et al., 2008; Pollalis and Basias, 2018)

Figure 4.6 shows the implementation of the mixed methods. Data collection and analysis for each method were performed independently. Finally, an overall interpretation of the results was given, as shown in Figure 4.6.

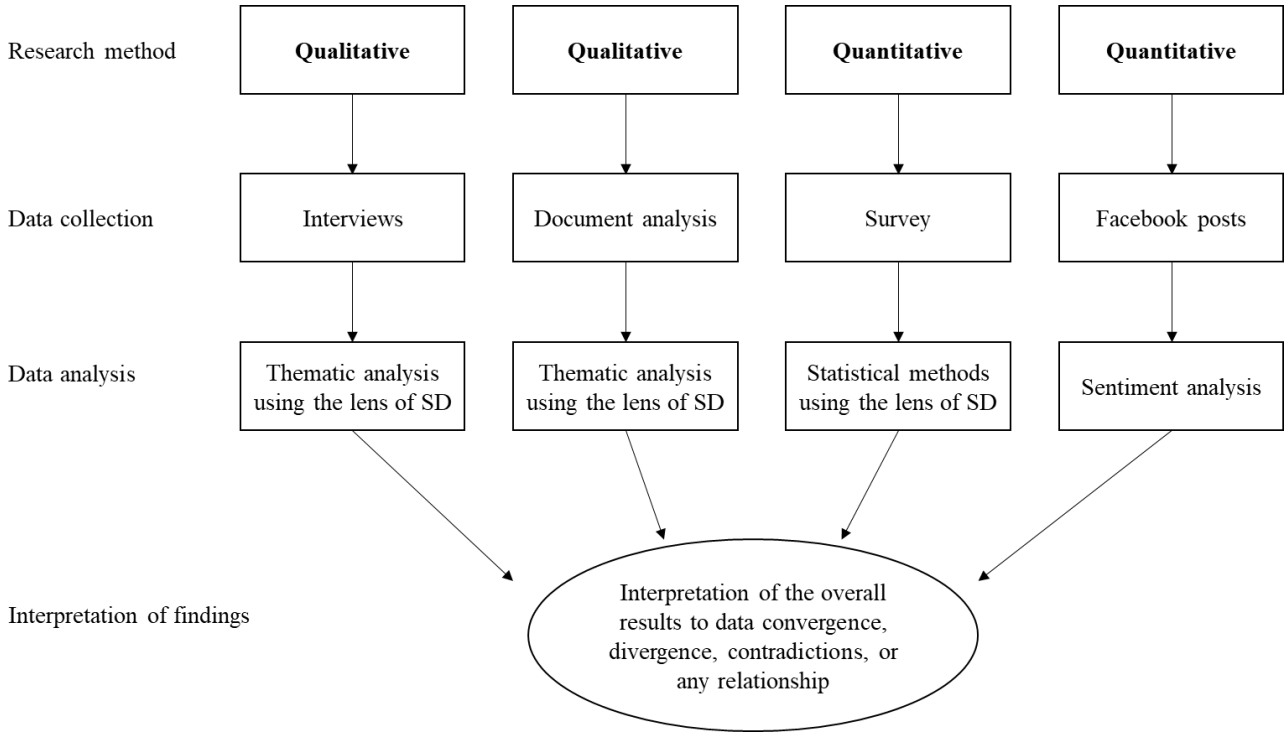

Figure 4.6: Concurrent triangulation design mixed methods

4.7 Population, Sample Size and Sampling Procedures

This section discusses the specifications of the research population, sample size, and sampling procedures adopted in this study.

4.7.1 Population

The target population is a defined population from which the sample data for analysis is selected (Banerjee & Chaudhury, 2010). Selecting the population helps the researcher to create boundaries for the scope of a study to focus on and provide environmental and context cues for the reader (Casteel & Bridier, 2021). This research study targeted SDA members and leaders based in the four Southern African Union (SAU) conferences of the SDA in South Africa. The SAU territories cover Eswatini (the new name for Swaziland – 2018), Lesotho, Namibia, Saint Helena (including Ascension and Tristan da Cunha), and South Africa; comprising the Cape, KwaZulu Natal-Free State, Northern and Trans-Orange Conferences. The SAU territory has 1,388 churches, 189,498 members, and a population of 66,026,000, according to June 2021 statistics (Southern Africa Union Conference, 2021). This research study only focused on church leaders and members in South African conferences: Cape, KwaZulu Natal-Free State, Northern and Trans-Orange Conferences. Qualitative

research included men and women in positions of authority such as pastors, elders, and treasurers. Quantitative research included any SDA member from the age of 18 years.

4.7.2 Sample Size

Sampling is a process, act, or technique employed in research by a researcher to systematically select a relatively smaller number of population-representative from a pre-defined population to serve as subjects in the study (Sharma, 2017). A sample is a subset of the target population used to represent the larger population from which a study is undertaken (Acharya, Prakash, Saxena & Nigam, 2013). Researchers use samples to reduce the costs incurred, the time required to conduct the research, and the manpower needed to undertake a research study (Acharya et al., 2013). The sample size depends on the type of data that is being collected. The sample size for a study adopting the qualitative design depends on the context and partially on the research philosophy employed (Boddy, 2016). A small sample size is recommended in qualitative research design to enable participants to share their lived experiences, perceptions, and beliefs regarding the subject under study (Morse, 2000; Baškarada, 2014). Qualitative data were collected from 12 religious leaders (three elders, three treasurers, and six pastors), determined by data saturation (Fugard & Potts, 2015; Vasileiou, Barnett, Thorpe & Young, 2018). Saturation is a state where the researchers see no additional data or ideas coming from the data to develop properties of the category since similar instances will be repeated over and over (Saunders, Sim, Kingstone, Baker, Waterfield, Bartlam, Burroughs & Jinks, 2018).

On the other hand, quantitative research designs emphasise a relatively large number of people to allow the generalisation of results to the populations (Delice, 2010; Yilmaz, 2013). In quantitative research, 205 SDA members located in South Africa participated in the study. The sample size was calculated using a population size of 131 773, a confidence level of 95%, and a confidence interval of 10% as recommended (Israel, 1992; Taherdoost, 2018).

4.7.3 Sampling Procedure

This section discusses the sampling procedure for quantitative and qualitative research designs separately, as the methods depend on the type of data and sample size required.

i) Quantitative Research

The quantitative research study employed the convenience sampling technique, where 205 responses were collected from church members within the SAU conferences. Convenience sampling is a nonprobability sampling technique where members of the target population that meet the specified practical criteria, such as willingness to participate, easy accessibility, availability, and geographical

proximity, are given the opportunity to participate in the study (Acharya et al., 2013; Etikan, Musa & Alkassim, 2016). The main objective of using the convenience sampling technique is to allow members who are easily accessible to the researcher to participate in the study under investigation (Etikan et al., 2016). In this study, convenience sampling was used since members of the church were geographically dispersed across the SAU conference churches. It would be expensive and time-consuming for the researcher to go around the country collecting the data. The researcher distributed the survey link to the church leaders so they could share it with their church members via their church WhatsApp group and email addresses. Members without access to emails or social platforms were issued printed copies. These copies would be distributed using postal mail.

Advantages of convenience sampling (Bhardwaj, 2019)

- It is very easy to implement and an inexpensive way of collecting data.
- It is useful for pilot studies and hypothesis generation.
- It is convenient to collect data within a very short period.

Disadvantages

- There are chances of high sampling error.

Inclusion and exclusion criteria

The study followed the following inclusion criteria:

- SDA church members
- Age from 18 years
- Both males and females
- Based in South Africa

ii) Qualitative Research

In qualitative research, purposive sampling was used to select the participants for the study. Purposive sampling is also known as judgmental, subjective, or selective sampling. Purposive sampling is a non-probability sampling technique that relies on the researcher's judgement when selecting the units, such as people, events, and organisations to be studied (Sharma, 2017). The purposive sampling technique allows the researcher to deliberately choose the participants based on the qualities they possess (Etikan et al., 2016; Bhardwaj, 2019). This sampling technique is mostly used in qualitative research to help the researcher identify and select with in-depth knowledge concerning the problem under study (Patton, 2014). Purposive sampling enables the researcher to identify and select

individuals or groups of individuals that are experts and well-versed in the phenomenon under study (Creswell & Clark, 2017). The researcher used his judgement to select participants who seemed to be data-rich. These participants were church pastors, elders, and treasurers in the church for at least five years and were exposed to the use of ICT within their congregations.

Advantages of judgmental sampling (Bhardwaj, 2019)

- There can be no hurdles in the selection of participants if the researcher is experienced; therefore, it will be convenient for the researcher.
- It is a time and cost-effective sampling technique.
- The quality of data depends on the respondents. If the researcher finds good participants, he or she will get real-time results as the participants will be knowledgeable about the subject under study.

4.8 Data Collection

Data collection is the process of gathering, evaluating and analysing precise understandings for research using appropriate and relevant research methods (Mazhar, Anjum, Anwar & Khan, 2021). Data collection is an important part of any research as it allows the researcher to collect information that he or she wants to collect about the study under investigation (Abawi, 2017). This requires the researcher to plan data collection to collect the relevant and correct type of data. Table 4.3 shows the data collection plan used in this study to answer the research questions given in Chapter 1.

Table 4.3: Data collection plan

Research question	**Data collection method**	**Source**	**Data type**
SRQ1: What are the levels of ICT adoption and use in the four SAU conference churches?	Survey Interview	Church members Church leaders	Quantitative Qualitative
SRQ2: What factors hinder the use of ICT in the four SAU conference churches?	Survey Interview	Church members Church leaders	Quantitative Qualitative
SRQ3: What are the criteria for selecting ICT systems for use in the four SAU conference churches?	Interview	Church leaders	Qualitative
SRQ4: What are the information needs of church leaders in the four SAU conference churches?	Interview	Church leaders	Qualitative
SRQ5: What models were used by the apostles in the early church to sustain and grow churches?	Document analysis	Bible (Book of Acts)	Qualitative
SRQ6: What is the role and impact of eWOM in the four SAU conference churches?	Public data	Facebook posts	Qualitative
SRQ7: How do ICTs contribute to the sustainability and growth of the four SAU conference churches?	Interview Survey	Church leaders Church members	Qualitative Quantitative

The data collection methods adopted in this research study are discussed in the given order: Section 4.8.1 discusses interviews with church leaders, Section 4.8.2 discusses surveys for church members, Section 4.8.3 discusses document analysis, and Section 4.8.4 discusses data generated through Facebook posts or comments.

4.8.1 Interviews

An interview is a conversation between the interviewer and interviewee to gather descriptions of the life experiences of the interviewee concerning the interpretation of the meanings of the problem under investigation (Alshenqeeti, 2014). Interviews are the most effective way of collecting data if the researcher wants to:

i. collect open-ended qualitative data;

ii. explore or collect in-depth information on participants' experiences, thoughts, feelings, and opinions about a particular topic under study (Interviews are very useful when the problem under investigation is complex and considerable probing is required.); and/or
iii. investigate issues that may be personal and/or sensitive (Easwaramoorthy & Zarinpoush, 2006; DeJonckheere & Vaughn, 2019).

Interviews could be conducted in the form of structured, semi-structured, unstructured, and focus group interviews. The researcher chooses a particular type depending on the research design and need.

1. Structured interview

The interviewer asks the interviewee a set of standard and predetermined questions in a specific order concerning particular topics under study (Easwaramoorthy & Zarinpoush, 2006). The interviewer schedules the order and the structure of the questions before the interviews are conducted (Abawi, 2017). This means that all the participants respond to the same questions in the same order. Structured interviews enable researchers to process information collected in a structured way as the interviewer follows a rigid procedure (Mazhar et al., 2021). In addition, the use of standard questions is intended to minimise the effects of the instrument and the interviewer on the research results (Zhang & Wildemuth, 2009). However, structured interviews are not flexible as new questions cannot be asked during the interview as the interview follows an interview guide (McLeod, 2014).

2. Semi-structured interview

Semi-structured interviews allow the researcher to collect data using a set of predetermined questions, but the interviewer has more freedom to modify the wording and order of questions (Abawi, 2017). This type of interview is useful when the researcher wants to collect in-depth information systematically from several participants or interviewees (e.g. community leaders and teachers) (Easwaramoorthy and Zarinpoush, 2006). Semi-structured interviews consist of numerous fundamental questions that are drafted to assist in defining the areas to be explored, leaving the interviewer or interviewee with the opportunity to diverge to get a more detailed response (Gill, Stewart, Treasure & Chadwick, 2008). In semi-structured interviews, the interviewer has a certain amount of room to adjust the sequence of the questions to be asked and to add questions based on the context of the interviewee's responses, or the interviewee is free to provide more relevant information if he or she feels the need to do so (Zhang & Wildemuth, 2009). Also, the interviewer could make follow-up questions in cases where he or she wants clarity.

This study utilised semi-structured interviews to collect qualitative data from church leaders within the SDA church. The semi-structured interviews were used because they allow the interviewer to discover more important information from participants that may not have been previously perceived as necessary and allow the interviewee to elaborate on essential details (Gill et al., 2008). An interview guide with standard questions was used to guide the researcher. The interview guide was developed to understand:

- the uses and level of use of ICT in the church;
- the informational needs of church leaders; and
- church sustainability and growth.

Figure 4.7 shows the steps in designing the interview guide and conducting interviews

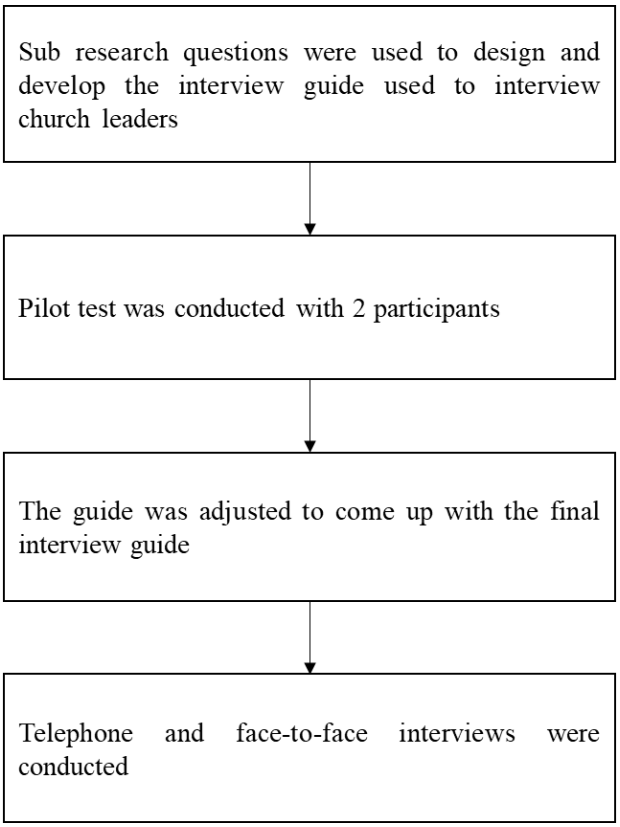

Figure 4.7: Steps in designing the interview guide and conducting interviews
Adapted from (DeJonckheere and Vaughn, 2019)

The researcher used sub-research questions (SRQ1, SRQ2, SRQ3, SRQ4, SRQ7) to develop the interview guide. The interview guide was assessed with 2 participants (church leaders). The interview guide was revised based on the feedback from the pilot interviews, and the final interview guide is in Appendix C.

3. Unstructured Interviews

An unstructured interview is a type of interview that allows the interviewer to give the participant a problem or a topic and have a discussion around the problem or topic under study (Aksu, 2009).

Unstructured interviews do not make use of predetermined questions or answers but rely on social interaction between the interviewer (researcher) and interviewee (participant) (Zhang & Wildemuth, 2009). In a way, in unstructured interviews, the researcher does not use any predefined theoretical framework or any hypothesis, but the researcher generates questions from the responses that are provided by the participant during the interview session. Unstructured interviews are useful in situations when the interviewer wants to get the stories behind respondents' experiences or when there is little information about a topic (Easwaramoorthy & Zarinpoush, 2006). However, it has the following three main challenges (Zhang & Wildemuth, 2009):

- Researchers take more time to collect the information needed for the research, especially when it is the researcher's first time entering the field and/or little is known about the setting.
- It may be difficult for the researcher to control the direction of the questions and statements proposed during the interview. There are high chances of diverting from the topic under study.
- It is difficult to analyse data gathered through unstructured interviews since the questions and responses were dependent on the context of the interview. The questions and answers could vary dramatically across multiple interviews making the data difficult to analyse.

4. Focused group discussion or Group Interviews

A group interview is a type of interview where the researcher asks questions to a group of participants selected for a specific purpose due to the amount of knowledge they possess about the topic under investigation (Aksu, 2009). Group interviews are useful when (Dilshad &Latif, 2013):

- The researcher lacks substantial information about the subject or topic under study.
- The researcher intends to find out the people's understanding and experiences about the issue and the reasons behind their particular way of thinking.
- The researcher wants to examine issues that are sensitive such as AIDS.
- The researcher may want to allow marginalised segments of society to express their feelings about the topic under study.

Interviews have the following overall advantages and disadvantages in qualitative research (Abawi, 2017):

Advantages

- Suitable for collecting rich data.
- Higher response rates since it is more personal compared to questionnaire surveys.
- The interviewer has more control over the order and flow of questions.

- Changes can be introduced to the interview schedule based on initial results compared to questionnaire surveys.

Disadvantages

- Data analysis may be hectic if much qualitative data is involved.
- Time-consuming when dealing with a large number of participants.
- There may be a high risk of bias due to fatigue and becoming too involved with interviewees.

Qualitative data was collected telephonically and also face-to-face. The researcher conducted telephone interviews with the participants who were geographically located far from the researcher, and face-to-face were conducted with those who were closer to the researcher. A short discussion about telephone and face-to-face interviews is given.

i. Telephone interview

Telephone interviews are mostly preferred when (Opdenakker, 2006):

- The interviewee's social cues are less or not crucial sources of information for the researcher.
- The interviewer has a small budget.
- The researcher has less time to travel around to conduct interviews.
- The researcher wants access to people on sites with limited or closed access, such as religious communities, prisons, hospitals, and cults.
- The researcher has requested some anonymity.

ii. Face-to-face interviews

Collecting data face-to-face is preferred mostly when (Opdenakker, 2006):

- The social cues of the participant are crucial sources of information for the researcher.
- There is enough budget.
- There is time to travel around to conduct interviews
- The participants stay closer to the researcher.

A) Research participants

Semi-structured interviews were used to collect qualitative data from church leaders. Table 3.4 gives the profile of participants that participated in the research study.

Table 4.4: Profile of Participants

Unique Code	Gender	Position	Age range
P01	Male	Church Elder	25-40
P02	Male	Church Treasurer/Elder	25-40
P03	Male	Church Elder	25-40
P04	Male	Church Elder	40-55
P05	Female	Church Treasurer	25-40
P06	Male	Church Pastor	40-55
P07	Male	Church Pastor	25-40
P08	Male	Church Pastor	40-55
P09	Male	Church Pastor	40-55
P10	Male	Church Treasurer	25-40

Participants consisted of twelve (12) SDA church leaders with experience in church leadership who could speak English and were willing to participate in the study. The researchers interviewed three church elders, three church treasurers, and six church pastors. These participants were found on church and conference websites. The study used the purposive sampling technique to select participants for the study to improve the transferability of the findings in qualitative research (Palinkas *et al.*, 2015). The study participants were composed of 11 males and one female. All participants were over 20 years of age, with one participant between the age of 21 and 30 years, six participants between the ages of 31 and 40 years, and five participants above 40 years old. All pastors interviewed had at least a theology degree and five years in the ministry. One treasurer had a qualification related to the finance field, while the other two had at least master's degrees in non-finance. All elders had formal qualifications and were formally employed. All participants had at least five years of experience in church leadership.

Before data collection, the researchers obtained ethical clearance and permission to collect data. All the interviews were conducted in English for an average of 50 minutes. Participation was voluntary, and interviewees gave their consent to participate in the study. The 12 participants (three elders, three treasurers, and six pastors) were interviewed telephonically using semi-structured interviews, and each interview was recorded. The researchers used deliberate probes and member checking to obtain in-depth information to enhance research credibility.

4.8.2 Questionnaire

A questionnaire is a research instrument consisting of a series of questions and other prompts to gather information from respondents (Abawi, 2017). The questions could be either open-ended or closed-ended, or a combination of both. A questionnaire comprises a predetermined set of questions given to several respondents to complete and is ideal if the researcher wants to get information or responses from many people. Questionnaires are also appropriate for getting information from people who are spread over a wide area and are not easy to contact face-to-face (Mazhar et al., 2021). This study used a structured questionnaire to collect quantitative data from the church leaders. A structured questionnaire is mainly made up of closed questions and pre-coded answers that are quantitatively analysed to produce patterns and trends (Mathers, Fox & Hunn, 2009). Questionnaires cover a large audience; however, poorly constructed questionnaires might bring bias into respondents' responses.

The researcher followed the six steps to design and administer a questionnaire as recommended by Abawi (2017).

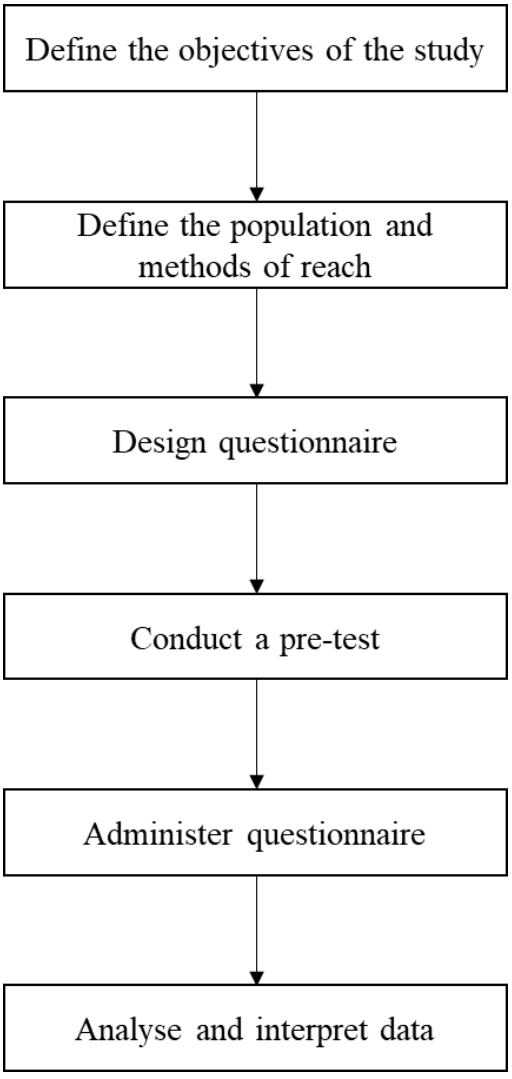

Figure 4.8: Six steps to design and administer a questionnaire

1. Defining the objectives of the study – the researcher defined the goals and objectives of the study. The objectives of the study are specified in Chapter 1. The researcher also specified the research questions to be addressed to meet the set objectives. The researcher further prepared a data collection plan to help in the data collection.

2. Define the target respondents and methods to reach them – the researcher defined the target population as SDA members from South Africa who are 18 years and above.

3. Questionnaire design – the researcher designed the content of the questionnaire addressing the following research questions:
   SRQ1: What are the levels of ICT adoption and use in the four SAU conference churches?
   SRQ2: What factors hinder the use of ICT in the four SAU conference churches?
   SRQ7: How do ICTs contribute to the sustainability and growth of the four SAU conference churches?

The questionnaire used closed-ended questions. A closed-ended questionnaire is a data collection instrument that allows the researcher to ask questions and provide a set of response options for respondents to choose from. Closed-ended questionnaires are mostly used when researchers know different options that could be selected by respondents and also when researchers are interested in a well-defined variable or construct, such as the level of agreement with a given statement (Chiang, Jhangiani & Price, 2015). In this study, the literature reviewed formed the basis for the construction of the questionnaire.

4. Questionnaire pilot testing - to ensure that the questionnaire was clear to all respondents, a pre-test survey was conducted with 20 respondents. Convenience sampling was used in the distribution of the pre-test survey. The questionnaire was peer-reviewed by fellow PhD candidates studying in the field of Information Systems and colleagues lecturing in Computer Science (CS) and Information Systems (IS) to check on the content and the clarity of all questions. Feedback from respondents and peer reviewers was used to develop the final questionnaire instrument distributed to the respondents.

The final questionnaire is provided in Appendix E.

5. Questionnaire administration - the final questionnaire was administered on Google Forms. The Google Form is a free cloud-based data management tool used for designing and developing web-based surveys (Vasantha & Harinarayana, 2016). Google form has the following features:

- Unlimited surveys can be created by the researcher
- Surveys can be responded to by unlimited respondents
- Survey data are automatically contained in Google Excel
- Lots of theme options
- The researcher can add a logo if needed
- The researcher can add images and/or videos
- The researcher can add collaborators
- The survey can be embedded into emails or websites
- Google surveys are free of charge

These features influenced the choice of Google forms as the platform for administering the questionnaires.

6. Results interpretation

The data collected was downloaded as an Excel document and analysed (see Section 3.9).

Advantages and disadvantages of using a questionnaire as a data collection method (Hyman & Sierra, 2016; Connor & Reimers, 2018).

Advantages

- Requires fewer communication skills of the respondent.
- It is the quickest way of getting responses from respondents. Respondents select the best option from the ones provided.
- Closed-ended questionnaires are easy to answer.
- Data collected through closed-ended questions is easy to code, analyse and interpret.
- Easy to administer.

Disadvantages

- It cannot be used to gather in-depth information.
- It is a poor way of getting new insights.
- It is difficult to write well closed-ended questions as the researcher should provide all possible options respondents might choose.
- The answer may not fully reflect the respondent's attitude.

4.8.3 Document Analysis

Document analysis is a systematic way of reviewing or evaluating the contents of written documents that are either printed or electronic (Bowen, 2009). Data from the documents need to be examined and interpreted to drive meaning, gain a better understanding, and develop empirical knowledge (Corbin & Strauss, 2014). The study used the Book of Acts to understand the growth of the early church and its sustainability. The Acts of the Apostles is the fifth book of the New Testament, and many scholars believe it was written by Dr Luke. The Book of Acts of the Apostles gives an account of the founding of the Christian Church and how its message spread to the Roman Empire. It focuses mainly on the progress and development of the Church as a missionary body, fulfilling the command of Jesus to spread the Gospel (Horton, 2001). The book of Acts was used because of its nature of being the Book of missionary work. The Book of Acts records more work on the growth of the early church than any other Book. The study analysed all 28 chapters of the Book of Acts using the thematic analysis technique and generated several themes. After the generation of themes, the study presents a causal loop diagram for the growth and sustainability of the early church. The documents that are targeted for document analysis must meet the criteria of being credible, authentic, meaningful and representative (Dalglish, Khalid & McMahon, 2020). The Book of Acts met these four criterions because the Bible is official. The Bible or its parts is available in the public domain.

Advantages and limitations of document analysis (Yin, 1994; Bowen, 2009):

Advantages

- Document analysis is an effective method since it requires less time to gather data in the form of documents.
- The availability of documents in the public domain makes document analysis an attractive option available to qualitative researchers.
- Document analysis is less costly than other data collection methods and is usually ideal when it is not feasible to collect new data.
- Documents are stable.

  Documents usually include exact names, references, and details of events which make documents valuable in the research process.
- Documents cover a long time, many settings, and events.

Disadvantages

- Documents may contain inefficient information to answer research questions.
- Documents may be difficult to retrieve due to reasons such as a deliberate blockage.

- Researchers may biasedly select an incomplete set of documents.

4.8.4 Facebook Posts/Comments

The data was collected from the Facebook pages of the various SDA churches located in South Africa. The Facebook data was used because its usage among religious organisations is growing fast (Brubaker & Haigh, 2017; Kgatle, 2018). The amount of social media data is huge, and it is strenuous working on the entire dataset. The researcher downloaded data samples from various church Facebook pages to work with a manageable dataset. The researcher targeted a sample of 300 Facebook comments. These were cleaned, and 226 comments were analysed. These comments were manually classified into five themes, namely the quality of service, promotion of events, sentiments from the organisation, sentiments on the organisational structure and operating procedures, and finally, the quality of the medium.

4.9 Data Analysis

Data collection without data analysis will mean nothing. Qualitative and quantitative data were analysed separately using different approaches. Each data analysis method is discussed separately.

4.9.1 Qualitative Data Analysis

Qualitative data analysis is a process by which the researcher classifies, describes, and interconnects data about the phenomena with the researcher's concepts (Graue, 2015). It is important because it gives the researcher insights into people's thoughts and feelings that help to understand the phenomena under study (Sutton & Austin, 2015). The transcribed interview data and document analysis from the Book of Acts were analysed using Atlas-ti. The thematic analysis method was used to analyse the data. Thematic analysis is the process of identifying patterns or themes within qualitative data to identify patterns in the data that are interesting, and using them to address the research questions or say something about the issue under study (Maguire & Delahunt, 2017). The thematic analysis enables researchers to identify, analyse, and report patterns (themes) within the data (Braun & Clarke, 2006). The researcher followed the five steps recommended by Braun and Clarke (2006), shown in Figure 4.9.

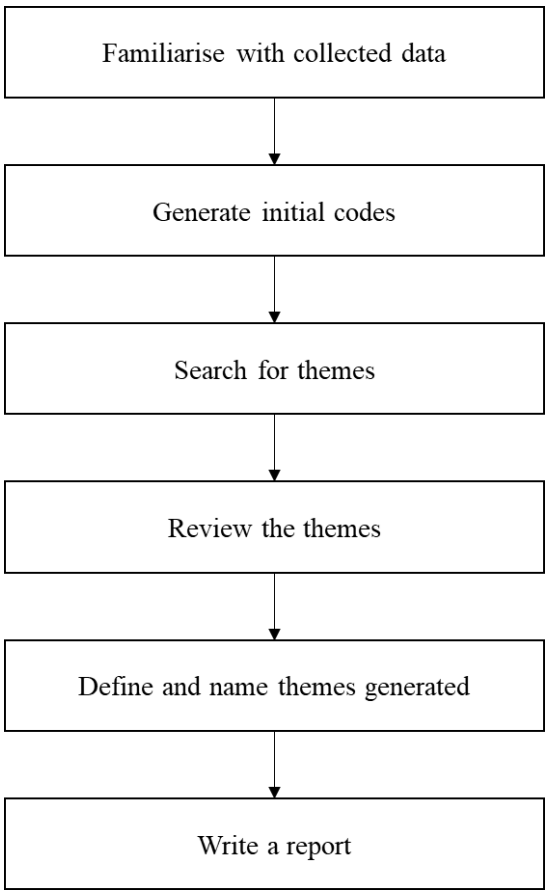

Figure 4.9: Six steps for thematic data analysis
Adapted from (Braun and Clarke, 2006)

The first step for the researcher was to familiarise himself with the data through repeated reading and listening to the audio. To familiarise with the data, the researcher used the following:

- Audio Bible version, printed and electronic Bible (King James Version).
- Transcribed interview data and interview audio.

The second step was coding. Coding is the identification of issues, topics, similarities, and differences revealed within the participants' narratives and interpreted by the researcher (Sutton & Austin, 2015). In this study, the researcher created codes of interest related to the research questions. After creating the initial codes, the researcher revised the codes after thoroughly reading the transcripts.

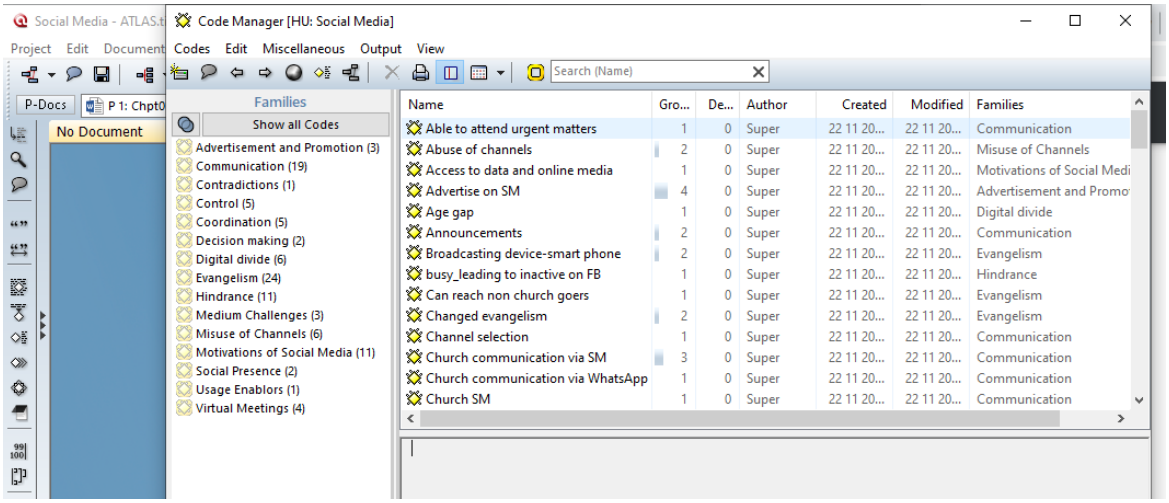

Figure 4.10: Sample code on ICT usage in churches

The third step was theming. Theming is the grouping of codes from one or more transcripts to present the findings of qualitative research coherently and meaningfully (Sutton & Austin, 2015). The researchers sorted the various codes into potential themes and organised all the relevant coded data excerpts within the identified themes.

The fourth step was reviewing themes. First, the researcher re-read all the data extracts that were fed to each theme to ensure that the data forms coherent patterns. After that, the researcher checked the relationships between the themes to make them reflect on the whole data.

The fifth step was to refine the themes discovered and analyse them within the data.

The sixth step was to create the final report. The final report was supported by extracts that were taken from the transcripts.

4.9.2 Quantitative Data Analysis

Quantitative data was collected from the church members and also from the Facebook book pages of some churches in South Africa. The data were analysed separately and differently. Analysis for each type of data is given separately.

i) Data from church members

The data from the church members, collected using a survey, was downloaded into Microsoft Excel to verify the data, cleaned, and coded before being exported for analysis. The study used a sample of 205 respondents. The cleaned data was then exported into Statistical Package for Social Sciences (SPSS) software for quantitative analysis. Data were analysed using means, standard deviations, and ANOVA. Results were presented in the form of tables, graphs, and descriptive statistics.

ii) Data from Facebook

Data were analysed using the sentiment analysis technique. Sentiment analysis is the field of study that analyses people's opinions, sentiments, evaluations, appraisals, attitudes, and emotions concerning entities such as products, services, organisations, individuals, issues, events, topics, and their attributes (Liu, 2012). Sentiment analysis was used because it is easy to classify comments as positive, negative, or neutral. Sentiment analysis was performed in Microsoft Excel using Azure Machine Learning because it has a well-developed and trained model for sentiment classification.

4.10 Research Credibility

This section discusses how data collection techniques and analysis procedures were validated. The validity and reliability of the quantitative data are discussed in Section 4.10.1, and the trustworthiness of qualitative data is discussed in Section 4.10.2.

4.10.1 Quantitative Data Validity and Reliability

a) Validity

Validity measures the extent to which a concept is accurately measured in a quantitative study (Heale and Twycross, 2015). The validity of a questionnaire is ascertained by assessing whether the questionnaire measures what it is intended to measure (Tsang, Royse & Terkawi, 2017). The validity of any research is determined by the accuracy and truthfulness of the scientific findings by demonstrating what exists (Brink, 1993). Validity is concerned with the accurate reflection of the results (Saunders et al., 2009a). Content and construct validity are the two major types of validity that should be considered when a researcher is validating a questionnaire (Rubio, Berg-Weger, Tebb, Lee, & Rauch, 2003; Dixon and Johnston, 2019). Content validity is a qualitative assessment that checks if the domain of the concept is clear and measures fully represent the domain under study (Drost, 2011). A content-valid instrument is usually achieved by incorporating a rational analysis of the instrument by experts familiar with the construct of interest or research subject to review all of the questionnaire items for readability, clarity, and comprehensiveness (Polit & Beck, 2006; DeVon, Block, Moyle-Wright, Ernst, Hayden, Lazzara, Savoy & Kostas-Polston, 2007; Bolarinwa, 2015). Content validity can also be measured through face validity. Face validity is the degree to which the respondents assess the items on the questionnaire and whether they are valid or not (Tsang et al., 2017). On the other hand, construct validity is the degree to which an instrument is developed to measure the construct that it is intended to measure (Bolarinwa, 2015). Construct validity checks how well the researcher has translated a concept, idea, or behaviour into a functioning and operating reality (Drost, 2011). The researcher validated the instruments through:

- Conducted literature analysis on the study. The literature reviewed informed the researcher of the constructs to be measured.
- Used experts in the field of computing to review the questionnaire items. The questionnaire was reviewed by colleagues lecturing CS and IS from different universities. These experts check the instrument for readability, clarity, and comprehensiveness as recommended by (Bolarinwa, 2015). The feedback from these experts was incorporated into the questionnaire. The instrument was further reviewed by a statistician.
- The researcher conducted a pilot test of the questionnaire with 20 respondents to check the structure of the questionnaire and to check if all questions were clear. The feedback from the pilot test was incorporated, and the final questionnaire was developed.

b) Reliability

Reliability refers to the ability of a research method to yield results that are consistent, stable, and can be repeated over different testing periods (Brink, 1993). It is the degree to which data collection techniques produce consistent findings (Saunders et al., 2009a). There are two main types of reliability: external and internal. External reliability is concerned with independent researchers discovering the same phenomena in a similar setting. In contrast, internal reliability checks if other researchers could match the generated constructs with data in the same manner as done by the original researcher (LeCompte & Goetz, 1982). The reliability of the questionnaire was tested using Cronbach's alpha and was found to be 0.773, an acceptable level of reliability.

4.10.2 Qualitative Trustworthiness

Trustworthiness is the degree of confidence in data, interpretation, and methods used to ensure the quality of a qualitative study (Connelly, 2016). Trustworthiness can be measured using credibility, dependability, transferability, and confirmability (Gunawan, 2015).

- Credibility places confidence in judging the truthfulness of the research findings by establishing whether or not the results of the research represent credible information drawn from the participants' original data and is a correct interpretation of the participants' original views (Anney, 2014). Credibility can be ensured through the use of strategies such as prolonged engagement, persistent observation, thick descriptions, peer debriefing, triangulation, external audits, and member checks (Lincoln & Guba, 1985; Creswell & Miller, 2000; Korstjens & Moser, 2018). Table 4.5 shows measures taken to improve the credibility of this study.

- Transferability looks at the degree to which the research findings can be transferred to other settings with other respondents, that is, generalisation in quantitative research (Lincoln & Guba, 1985; Anney, 2014). To ensure transferability, researchers are recommended to collect thick descriptive data that describes the behaviour, experiences, and context to give meaning to those who are outside (Korstjens & Moser, 2018).
- Dependability is the degree to which the findings of the research study could be confirmed by other researchers (Korstjens & Moser, 2018). Researchers are recommended to document the research design and methodology, the details of data collection, and the reflective appraisal of the project (Polit & Beck, 2006; Moon, Brewer, Januchowski-Hartley, Adams & Blackman, 2016).
- Confirmability is the degree to which the findings of an investigation could be confirmed by other researchers (Lincoln & Guba, 1985). Confirmability ensures that data and interpretations of the findings are not fabrications of the researcher's imagination but are purely derived from the data (Korstjens & Moser, 2018).

Table 4.5: Research credibility validation

Validation strategy	**Description and application of this study**
Member checking	Member checking is a technique where the researcher takes the data and interpretations back to the participants in the study so that they can confirm the credibility of the information and narrative account (Creswell & Miller, 2000). Member check feed data, interpretations, and conclusions back to the participants for feedback (Korstjens & Moser, 2018). The researchers conducted member checks (also known as respondent validation) by asking participants to review interview transcripts and also confirm if the final concepts and themes truly reflect the phenomena being investigated to ensure an accurate representation of participants' perspectives or experiences (Long & Johnson, 2000; Thomas, 2017). This helps to ensure that interpretations and conclusions accurately reflect participants' experiences.
Triangulation	This study employed multiple methods to collect data. Data collection involved interviews with church leaders, a questionnaire survey of church members, a document analysis of the Book of Acts, and Facebook posts from the SDA churches.
Rich and thick descriptions	The researcher also included detailed and thick verbatim descriptions of participants' experiences to back the research findings.
Prolonged engagement	The researcher is a member of the SDA church and has been in the church leadership for many years. The researcher is accustomed to the church processes.
Peer review or debriefing	The researcher had a supervisor who monitored all the research processes. Furthermore, expert peer-blind reviews were conducted on the book chapter, conference articles, and a journal article published related to this study.
Audit trail	This study documented the research processes followed in conducting this research.

4.11 Triangulation

Triangulation is the application of multiple methods or data sources to develop a comprehensive understanding of phenomena in qualitative research (Patton, 1999; Carter, Bryant-Lukosius, Dicenso, Blythe & Neville, 2014). Triangulation is a validity procedure that allows researchers to search for convergence among multiple sources of information to form themes or categories in a study (Creswell and Miller, 2000). Triangulation refers to the use of multiple methods or data sources in qualitative research to develop a comprehensive understanding of phenomena (Patton, 1999; Carter et al., 2014). A study by Leech and Onwuegbuzie (2007) strongly encouraged researchers to utilise at least two, if not more, types of data analysis tools to triangulate results to enhance the research findings. Triangulation improves the rigour of the analysis by assessing the integrity of the inferences that one draws from more than one vantage point (Lincoln & Guba, 1985). Triangulation may also help uncover different points of view that can lead to a rich explanation of the research problem that may not be revealed by a single method (Jick, 2016). Triangulation can be achieved using five types of triangulations, namely theory triangulation, data triangulation, investigator triangulation, methodological triangulation, and environmental triangulation. Theory triangulation involves the use of multiple perspectives by using or asking individuals from different disciplines to interpret a single set of data (Guion, Diehl & McDonald, 2011). This type of triangulation may not be feasible and practical in all situations. Furthermore, getting the data interpreted by different people to validate the findings is time-consuming. Data triangulation is a situation where the researcher uses different sources of data to increase the validity of a study (Guion et al., 2011). This type may be easy to implement, and it is practical as the researcher can identify all stakeholders affected by a problem and investigate the problem from different angles. Investigator triangulation entails using several different investigators in the analysis process (Guion et al., 2011). This type requires the investigators to use a similar method to analyse the data. The findings where investigators agree are deemed valid and are considered. Methodological triangulation enables the researcher to use multiple qualitative and/or quantitative methods to study the problem under investigation (Guion et al., 2011). This type of triangulation compares the findings from all the methods employed in the study. Environmental triangulation is a situation where the researcher conducts the research in different locations, settings, and other key factors related to the environment in which the study took place, such as the time, day, or season (Guion et al., 2011). This study employed both data and methodological triangulation. Data triangulation involves the collection of data from various sources of data (Guion et al., 2011). The researcher collected data from different sources such as through interviews with church leaders, a survey questionnaire which was completed by church members, Facebook comments, and document analysis. Method triangulation is the collection of data using multiple methods of data collection

about the same phenomenon (Carter et al., 2014). The researcher employed qualitative and quantitative data methods to collect data regarding the problem under study.

4.12 Research Ethics

Research ethics are acceptable norms of conduct considered when conducting research (Resnik, 2014). Research ethics are crucial as they promote: accurate research findings, values that are essential for work collaboration, a variety of other crucial moral and social values, accountability among researchers, and also assist in building public support for research (Resnik, 2014). The research followed UNISA's policy on research ethics which requires all research involving humans, animals, plants, molecules, and cells to be cleared by the relevant Ethics Review Committee before the commencement of the research. The researcher obtained an ethical clearance certificate before data collection, and the certificate is attached in Appendix A. Also, permission to collect data was given, and a letter is attached in Appendix B

The following principles guided the collection of data for this research: voluntary participation, informed consent, privacy, anonymity, and confidentiality.

Voluntary participation: Participation in the study was voluntary. Participants and respondents were not forced to participate in the study. They were free to withdraw from the study at any time without explanation.

Informed consent: the participants were given complete information about participation in the study. Participants gave their consent before entering the research. Participants and respondents signed informed consent to show their agreement. Informed consent and participant information forms are attached under appendices C, F and G.

Privacy, anonymity, and confidentiality: data collected for the research were kept confidential and were only accessed by the researcher. The researcher did not collect personal information about participants. Instead, the researcher used identification codes to identify participants; the details were kept separately from the data. The researcher stored data in lockable rooms and also in password-protected devices.

4.13 Chapter Summary

This Chapter discussed and justified the philosophical stance, approach, strategy, and design adopted in this study. The Chapter also discussed the specifications of the population, sample size, sampling

procedure, and data collection procedure employed in a single case study. The next Chapter presents the findings from the study.

CHAPTER 5: DATA ANALYSIS AND INTERPRETATION OF RESULTS

5.1 Introduction

The previous Chapter discussed the research methodology and design, data collection and instruments, and data analysis used in this study. This Chapter presents the findings obtained from the qualitative and quantitative research designs. The findings generated from the qualitative research design were presented as codes and themes. On the other hand, results generated from the quantitative research design were presented in the form of tables, graphs, and descriptive statistics. The rest of the Chapter is structured as follows: Section 5.2 gives the demographic information of the participants and respondents, Section 5.3 discusses the level of ICT adoption and usage, Section 5.4 discusses factors that hinder the use of ICT, Section 5.5 discusses the criteria for selecting ICT, Section 5.6 discusses the informational needs of church leaders, Section 5.7 discusses models of sustainability and growth used in the early church, Section 5.8 discusses role and impact of eWOM in churches, Section 5.9 discusses the contribution of ICT towards church sustainability and growth and Section 5.10 presents the Chapter summary.

5.2 Demographic Information of the Research Study

This Section presents the demographic information of respondents and participants of the study. The information of respondents and participants is presented in Table 5.1.

Table 5.1: Demographic information of respondents and participants

	QUALITATIVE (Number of participants) (n= 12)	**QUANTITATIVE (Frequency (%)) (n=205)**
Gender		
Female	1	95 (46.3%)
Male	11	110 (53.7%)
Age groups		
18-24	-	54 (26.3%)
25-34	4	76 (37.1%)
35-44	3	41 (20%)
45-54	5	23 (11.2%)
Above 55	-	11 (5.4%)
Conference		
Cape Conference	3	130 (63.4%)
KwaZulu-Natal Free State Conference	1	15 (7.3%)
Northern Conference	2	16 (7.8%)
Trans Orange Conference	6	44 (21.5%)
Membership/Leadership (in years)/		
0-5 years	0	30 (14.6%)
6-10 years	1	20 (9.8%)
11-15 years	4	20 (9.8%)
16-20 years	4	40 (19.5%)
Above 20 years	3	95 (46.3%)

Table 5.1 shows fewer female church leaders compared to their male counterparts. However, there was a fair gender distribution among church members. The results show a fair representation of different age groups in both qualitative and quantitative research. The results further show that the majority of respondents (63.4%) in the survey were under the Cape conference churches, while the least was under the KwaZulu-Natal Free State conference churches (7.3%). Most respondents (85.4%) have been in the church for more than five years. Also, all the participants who participated in the study have more than five years in leadership positions.

5.3 SRQ1 - What are the Levels of ICT Adoption and Use in the Four SAU Conference Churches?

This section presents results on the level of ICT adoption and uses in the four SAU conference churches. The findings from the qualitative data are presented in Subsection 5.3.1, while the results from the quantitative data are presented in Subsection 5.3.2. This section answers SRQ1.

SRQ1: What is the level of ICT adoption and use in the four SAU conference churches?

5.3.1 Findings from Qualitative Data

In this section, church leaders' data (interviews) was analysed. The following themes emerged from these interviews: computer-mediated communication, evangelism, administration of church records, the platform for promoting church programs, Sabbath activities, and enhancement of worship services through visuals and audio and mobile decision-making.

Table 5.2: Usage and level of Adoption of ICTs in the four SAU conference churches

Themes	**Codes**
Advertisement and Promotion of Church Programs	The motivation for Advertisements and Promotions
	Channels of Advertising and Promotion
	Ways of Advertising
Communication	Type of Program
	Forms of Communication
	Channels of Communication
	Levels of Communication
	Criteria for Channel Selection
Evangelism	Channels of Evangelism
	Motivation for ICT Evangelism
	Devices
	Forms of Evangelism
	Target
Administration of church records	Church documentation
	Storage of church documents
Enhancement of worship services through visuals and audio	Visual aids
	Voice amplification

5.3.1.1 Theme 1: Advertising and Promotion of Church Programs

Participants used ICTs to advertise and promote church programs to members and non-members. The research findings presented the motivations behind advertising and promotions, social media channels used, ways used to advertise, and types of programs being advertised.

i) Motivations for Advertisements and Promotions

Participants indicated that they were motivated to use social media to advertise and promote church programs because most people are on social media platforms. Advertising motivated attendance and created friendship evangelism.

Most people on social media platforms:

> … almost everyone is on social media these days, so churches are supposed to promote programs that will be coming to the following Sabbath. (P01)

Promote church attendance:

> WhatsApp allows us to communicate effectively and better with our church members and with one another about the coming programs to promote attendance. (P10)
>
> And some people who come, come as a result of seeing those advertisements. (P12)

Create friendship evangelism:

> As I have highlighted already that some people became part of our structure just by joining our closing function social networks, and then from there, we became close friends. (P12)

For the success of the church:

All participants pointed out that the promotion of church programs is an activity that is crucial for the success of all programs. Participant P01 said, "Most of the programs will fail because people are supposed to be waiting for the programs to come, but because the church is failing to maximise or to use ICT gadgets, it becomes a big problem." It was highlighted that the promotion of programs helps the leaders to get support from all stakeholders involved. Participants P01 and P09 pointed out that most people use social media, so it will be easy to reach many people to inform them of upcoming church events.

ii) Channels for Advertising and Promotion

Participants indicated that they mainly used WhatsApp, Facebook, and Instagram to advertise and promote church programs, as indicated:

> When we advertise things, we use WhatsApp and Facebook. (P03)
>
> … we promote on WhatsApp, Facebook, and other social media platforms. (P10)
>
> We also have a Facebook account; we have got WhatsApp channels and groups. Our WhatsApp group has one hundred and something members, and we advertise a lot there and also invite people to church activities. (P12)

> We also have an Instagram account; when we have an event, we post on Instagram to promote the event and afterward. (P12)

iii) Ways of Advertising

Participants indicated that they advertised and promoted programs through posters, pictures, videos, and text messages. The advertisements were posted in social media groups and on pages accessible to the public.

Use of posters and pictures:

> We create posters, and then we send them to various platforms to advertise our different programs, so we use them actively. (P03)

> So they take pictures and post them to our social groups. One can always know what is happening at our structure just by visiting our Instagram and Facebook pages. (P12)

iv) Types of Programs

Participants used social media to advertise and promote evangelistic activities such as crusades, weeks of prayer, music days, closing functions, and any other church programs.

> … through social media like Facebook, where we promote events such as crusades. (P10)

> When we do our crusades, our weeks of prayers, our music day, our closing function, and any events, we promote by sending posters on all social network platforms. (P12)

5.3.1.2 Theme 2: Communication

This research established the importance of effective communication in religious organisations to achieve their set goals and objectives. This communication is conducted using various forms of interaction such as synchronous, asynchronous, or real-time. Participants indicated that social media played a crucial role in how religious leaders communicate among themselves, with higher structures, members, the community, and non-members. Communication is discussed under the following codes: forms of communication, channels of communication, levels of communication, and criteria for channel selection.

i) Forms of Communication

Participants communicated in various forms, such as posting pictures and messages in social media groups and on pages, sending documents via emails and social media groups, and conducting meetings on social platforms.

Visual pictures:

> So they take pictures and post them to our social groups. One can always know what is happening at our structure just by visiting our Instagram and Facebook pages. (P12)

> And also use the same platforms to give feedback on the events, like photos and sharing slides. (P10)

Virtual meetings:

> We can do virtual meetings. We can cite important things via WhatsApp, we can share information via email, and as well as just communicate. (P04)
>
> I also have some meetings on WhatsApp with my members. (P11)

Documents:

> They just do the report and send a pdf via WhatsApp or email. (P12)
>
> Before the meeting, we send the agenda through WhatsApp and typed one so that they can see what is on the agenda for the church board, the business, and the district. (P08)

Posting of announcements and messages:

> … actually, we are very dependent on them to make our announcements and for any urgent communication and when we want to do functions. (P12)
>
> … if any Voice of Prophecy student is having challenges with their lessons, they just send a message on WhatsApp. (P01)

ii) Channels of Communication

Participants pointed out the main channels they used to communicate at different levels. These channels included WhatsApp, emails, Facebook, Instagram, and Twitter.

> I communicate with people via email and WhatsApp. (P04)
>
> We mainly use WhatsApp and email. WhatsApp has taken the lead lately. (P02)
>
> We do have Facebook pages for our churches. (P07)
>
> One can always know what is happening at our structure just by visiting our Instagram and Facebook pages. (P12)

iii) Levels of Communication

Social media channels enabled leaders to communicate at different levels, from one-on-one to group communication, such as at the departmental or church level.

Local church level:

> I use them every day to communicate with the Elders, the WhatsApp groups that we have with the Elders … (P10)
>
> We have a WhatsApp group where all departments are there, where announcements and important discussions are held, so this keeps everybody in the loop. (P01)
>
> … at one of the churches here, we centralised our Cell groups; they have a WhatsApp group where they convey information or the church board meetings. (P07)
>
> Our WhatsApp group has one hundred and something church members. (P12)

District level:

> Let me start with WhatsApp because we normally use it for local and district communication. (P08)
>
> There is a zonal WhatsApp group also where they communicate the meetings for Elders and so on. And there is another WhatsApp for the district, which is used in preparation for the camp meeting and so on; it`s very easy to communicate. (P08)

iv) Criteria for Channel Selection

Participants presented criteria that they had used in selecting communication channels at different levels. The criteria included the speed of the channels, the response time expected, the urgency of the message, accessibility of the channel to the recipient, efficiency, and control mechanism of the channels.

Speed, expected response time and urgency of the message:

> It is generally agreed among leaders that WhatsApp is the fastest communication channel, so that is one that we use. (P01)
>
> We used to use emails, but people rarely check their emails; people are always on WhatsApp with their phones, so I think that is the main reason why the criteria changed to WhatsApp. (P02)
>
> When a matter is urgent, we can quickly run it through at different levels. We can use WhatsApp when communicating as Elders or the church board, so it makes things very effective. (P10)

Accessibility of the channel to the recipient:

> You would find that some want me to call, for those with emails I do emails, and for those with WhatsApp, I do WhatsApp. (P09)

Efficiency and control mechanism:

> They know the importance of how WhatsApp allows us to communicate effectively and better with our church members. P10
>
> … for me, WhatsApp tends to be more practical and has a wider reach than all other social media platforms, which are also not controllable, like Facebook. Facebook is a bit more difficult to control. (P06)
>
> WhatsApp is now developed so that when you create a group whereby the admin can always be the one who is posting, so because we mainly use WhatsApp, those are the challenges that we face as well. (P02)

5.3.1.3 Theme 3: Evangelism

The mission of the SDA church is to make disciples for Christ, as commissioned in Matthew 28, verses 19 and 20. The research findings showed that ICTs are very useful to church leaders when planning and conducting evangelism activities. All the interviewed participants were optimistic about the usefulness of the internet in the preaching and spreading of the word of God. It was highlighted that the availability of the internet had exposed the churches to social media platforms and websites where information can be obtained. Participants pointed out the role social media platforms have played in church evangelism activities. This theme will be discussed under the following codes: channels of evangelism, motivation for ICT evangelism, forms of evangelism, and target.

i) Channels of Evangelism

Participants presented various social media channels they used to perform evangelistic activities. The findings reflected that leaders mainly used social networking or messaging and media-sharing sites to evangelise. There was little usage of other categories of social media such as wiki, blogs, and RSS.

Social networking sites or instant messaging:

> … I try by all means to maximise WhatsApp as much as possible. I do this by forwarding, creating, or generating spiritual oriented messages. (P01)
>
> You can just take a sermon in your church and spread it out to those people via email, Skype, or Facebook. (P04)
>
> But I am aware of fellow Pastors and colleagues that utilize Twitter very well for evangelistic purposes. (P06)
>
> We have what we call WhatsApp ministry; sermons get recorded on WhatsApp, and they know if say it's a revival week, we would be having seven messages that are recorded that are WhatsApp friendly, then we listen to them on WhatsApp. (P09)

Media-sharing sites:

> Many churches have YouTube accounts, hey. I am aware also of the communication desk at the TOC that travels around a lot, sometimes with the President and sometimes with the elected officers, to capture sermons, and those sermons are uploaded on YouTube. (P06)
>
> And as I said, every time I stand to preach when I am invited somewhere, there is usually someone who is recording, and nine out of ten times, those messages end up on YouTube. (P06)
>
> I do recordings for HOPE channels and Life Destiny TV, I have a YouTube Channel, and I also have a Facebook Channel where I share my sermons. (P07)
>
> We have a YouTube Account, and some of the videos have got 1000 views already. (P12)

ii) Motivation for ICT Evangelism

Support

Social media evangelism enables leaders to support members, as pointed out by participant P01, who said, "if any Voice of Prophecy student is having challenges with their lessons, they just send a message on WhatsApp."

Large Audience

Participants pointed out that social media evangelism covers a large audience, as messages can reach people simultaneously, there is real-time access to messages, messages can be shared on multiple channels, and social media have the potential to reach non-churchgoers on social media platforms.

Real-time access and reaching a large number of people simultaneously:

> … you can reach many people at the same time, for instance, if people are in a group. (P02)
>
> So my point is people who could not make it to Church X, everyone had real-time access to the sermon. To me, that was very good. (P01)

When a church is not using ICT, it might lose its broader audience, such as potential members who can become part of the church; for example, the community might not know who we are, so that is negative if we do not use it. (P10)

Multi-channel access and potential of reaching non-members:

Yes, they are following up on YouTube though a greater number of them follow me on Facebook. I have used Facebook more for even counselling, a lot of people, even those who are non-Adventists, come there, and we end up talking outside the platform. (P07)

If we only rely on hard copies of posters that we put around campus, we have limited our reach to only people on campus and to only people who pay attention to notice boards. But when we go ahead and share, for example, on our Facebook, it means that everyone else who is following the VUT Facebook account will also be able to see those things. (P12)

I must confess that you later realize that many people will not come to your church no matter how much you preach, but if you use social media and have some small evangelism nuggets, you can impact them where they are. (P06)

Efficiency

Participants indicated that social media are efficient in terms of the scope of content that can be shared, audiences that can be reached, and speed of transmission of messages.

Scope of content shared:

… it has changed the whole efficiency in terms of sending bulk and large files. (P04)

Large audience:

For me, as a Pastor, it brings efficiency; you can reach a broader audience through evangelism. (P10)

I use WhatsApp. I use Facebook especially; I put updates there. For example, whenever I am in church for a certain program, I do live coverage on Facebook. (P04)

Quick decision-making:

… now we take decisions on WhatsApp chat groups, let's say on a board meeting group, decisions can be made quickly. (P02)

If we do not use or encourage the use of social media, what will happen is that we will have to rely on traditional methods, which sometimes are time-consuming, for example, waiting for a church board that will take time to deal with a matter while can just quickly table it and get people`s opinion and vote on the matter using the WhatsApp groups. (P10)

But right now, what happens at my church within five minutes, everyone else around the world knows in terms of information sharing movement and so forth. So it`s now easy to just share the gospel. It`s no longer like gathering a lot of people in a field and just talking to them about the Bible. (P04)

Accessibility of Data and Devices

Participants indicated that they use social media evangelism to target people with access to data and devices such as smartphones.

Data:

> We have got a large portion of people who at work have access to vast amounts of data and are looking for sermons online. Some of these people may not go to your tent or buy your DVD, but the moment you record and upload your DVD on your YouTube channel, some of these people at work can put on headphones and download that message. Effectively they become a part of your crusade when they were physically not present. (P06)

Device:

> We can use our phones for sharing information on different platforms, either Facebook, WhatsApp, or Twitter; people use all those things for in-reach and out-reach as well. (P02)
>
> … as soon as you have your phone in your hand, there is always a message that is passing through either on WhatsApp, Instagram, or Facebook; there is always a message that talks about God. (P01)

Attract people to church services and/or programmes:

Participants, such as P01, P04, P05, and P12, indicated that ICTs benefit the church, especially when conducting evangelism crusades. Participants pointed out that ICTs are used to attract people to church services and are useful during crusade meetings as they help presenters of the message to engage with the audience. It was noted that there are ICTs that are crucial when conducting a crusade, such as a projector, computer, PowerPoint presentations, and public address (PA) system. Participant P10 said, "Things like a projector are so wonderful when doing a crusade because people like looking at what you are talking about …"

iii) Forms of Evangelism

Participants indicated that they evangelised through various forms, such as sending spiritual messages and sharing pictures and recordings on social media platforms.

Messages:

> Facebook, but I try by all means on the little time that I get to send messages that are spiritually oriented to try and spread the Gospel of Christ. (P01)

Pictures and recordings:

> I share all my pictures and recordings. I take pictures each time there is a church program. (P04)
>
> … they are following up on YouTube though a greater number of them follow me on Facebook. (P07)
>
> When I was still on Facebook, I utilised it heavily to capture events like crusades and give information and pictures. (P04)
>
> … have some small evangelism nuggets; you can impact them where they are. (P08)

iv) Target

The research findings showed that participants' ICT evangelism targets youths, any person with access to social media platforms, people who do not go to church, and those living in areas where it is difficult to reach them, like those living in closed-up areas.

Young generation:

> In the SDA church, I can say that if we look at the younger generation, they use social media a lot while the older folks do not use it much, but some, because of the nature of their jobs, are forced to use it. (P03)

Non-members and those difficult to reach:

> A good number of people who follow us on these platforms are not Adventists. For example, when we go to our closing function have a lot of people who are not Adventists but just friends. They also join to see how we do things. (P12)

> I must confess that you later realise that many people will not come to your church no matter how much you preach, but if you use social media and have some small evangelism nuggets, you can impact them where they are. (P06)

> It helps because an area like area X is a closed-up area. There are different races in the area, and it`s difficult to go and knock on people`s doors so that you can study with them, so we have employed social media channels to reach these people … It makes more impact than sticking posters on the road. Nowadays, fewer people look at those things, but if you work online, that is where they spend their time. They spend their time on Facebook and WhatsApp. (P07)

5.3.1.4 Theme 4: Administration of Church Records

Like any other organisation, the SDA church is not immune to administrative work. It was seen from the participants that the church has a lot of documentation, such as departmental reports, church membership, agendas and minutes, correspondences from various stakeholders, budgets, and plans. Some pastors oversee several churches, and this complicates the administration work. ICT improves significantly on the administration side of an organisation. Participant P06 said,

> I would usually use it for my admin outside of the church, just to be able to capture it. Right now, I am pastoring eight churches, and all of that information cannot be written with pen and paper, so I will end up using ICT tools.

Some participants indicated that church administration tasks might be tedious if done manually. Participants such as P05 and P11 indicated that using ICT has improved how leaders perform their administration activities. It was established that most leaders use Microsoft Office products such as Word and Excel. It was pointed out by participants that ICTs are used to capture, process, and store information. Some participants, such as P07, indicated that they make use of cloud storage such as Dropbox and OneDrive. Most of the participants pointed out that ICTs help them retrieve information quickly and provide secure storage of data.

5.3.1.5 Theme 5: Enhancements of Worship Services through Visuals and Audio

Participants indicated that ICTs enhance worship services primarily in two aspects, namely, visually and amplifying voices. Most participants showed that they use ICTs such as projectors, computers, PowerPoints, and PA systems during their worship services. Most of the participants indicated that they use projectors to beam song lyrics and Bible verses, play video clips, and display reports and quotations from various Christian books. Participant P05 pointed out that ICTs help when presenting

difficult Biblical concepts such as time prophecy. Participant P12 said, “it also helps with attention; you cannot lose them because people enjoy looking at the screen and seeing what you are talking about. Like when you are teaching the state of the dead, you can even show the coffin there and all that so it keeps the attention.” Another important use of ICT during worship services is the amplification of voices, especially when there is a broad audience. Most participants pointed out that the PA system has dramatically improved how the message is delivered to the audience.

5.3.2 Results from Quantitative Data

This subsection presents the results from the church members' data collected across South Africa. The overall reliability of the 38 variables measured on a Cronbach Alpha test was 0.773, which is an acceptable level. The respondents were asked to indicate the devices they own, and the results are presented in Table 5.3.

Table 5.3: Devices owned by respondents

Devices	Frequency	Percent
Smartphone	191	93.2%
Laptop	112	54.6%
Desktop	54	26.3%
Tablet	68	33.2%
TV	114	55.6%
Radio	53	25.9%

Table 5.3 shows that the majority of the respondents (93.2%) who participated in the study own a smartphone compared to any other device. The results show that a significant percentage of respondents have at least own a mobile device.

The respondents were asked to indicate the social media platforms they were using; the results are presented in Table 5.4.

Table 5.4: Social media platforms used by the respondents

Platform	Frequency	Percent
Facebook	167	81.5%
WhatsApp	201	98.0%
Twitter	69	33.7%
Skype	39	19.0%
YouTube	118	57.6%
Badoo	2	1.0%

Table 5.4 shows that the majority of the respondents were using WhatsApp (98%) and Facebook (81.5%) platforms, while Badoo (1%) was the least used platform. A significant percentage of respondents (57.6%) used YouTube. The results show significant use of social media by church members, especially platforms like WhatsApp, Facebook, and YouTube.

Results presented in Table 5.5 show the frequency of the use of ICT when church and spiritual-related activities. A 5-point Likert scale (most of the time = 5, often =4, sometimes = 3, rarely = 2, and never = 1) was used.

The results in Table 5.5 show how often the church members have used ICT to perform church or spiritual-related activities. The mean score of 4.21 and above indicates that church members use it most of the time. The results show that most of the time (mean of 4.31), church members use online tools such as WhatsApp and Facebook to interact with each other. The results further show that church members often use (mean of 3.67) their phones and/or computers for spiritual things such as studying their Bibles. Church members sometimes study their Sabbath school lessons on digital devices such as phones and computers (mean of 3.33) and search the Internet for additional information regarding their spirituality (mean of 3.22). Church members rarely visit the church website(s) for announcements and additional information (mean of 2.33) and also listen to spiritual messages on the radio owned by the church (mean of 2.36).

Table 5.5: Use of ICT when performing church activities

Statement	Never f (%)	Rarely f (%)	Sometimes f (%)	Often f (%)	Most of the time f (%)	Mean	Std. Deviation
Use your phone and/or computer for spiritual things such as studying the Bible.	10 (4.9%)	30 (14.6%)	43 (21.0%)	56 (27.3%)	66 (32.2%)	3.67	1.207
Study your Sabbath school lesson on digital devices such as phones and computers.	31 (15.1%)	25 (12.2%)	55 (26.8%)	33 (16.1%)	61 (29.8%)	3.33	1.406
Search the Internet for additional information regarding your spirituality	35 (17.1%)	29 (14.1%)	43 (21.0%)	51 (24.9%)	47 (22.9%)	3.22	1.396
Study the Spirit of Prophecy (SoP) on any digital device.	50 (24.4%)	34 (16.6%)	41 (20.0%)	33 (16.1%)	47 (22.9%)	2.97	1.493
Visit the Church website(s) for announcements and additional information	80 (39.0%)	39 (19.0%)	44 (21.5%)	23 (11.2%)	19 (9.3%)	2.33	1.338
Use emails to communicate with other church members	64 (31.2%)	48 (23.4%)	40 (19.5%)	20 (9.8%)	33 (16.1%)	2.56	1.429
Use other online tools (Whatsapp, Messenger, Facebook) to interact with other church members	7 (3.4%)	11 (5.4%)	22 (10.7%)	37 (18.0%)	128 (62.4%)	4.31	1.079
Browse, download, and upload spiritual material from church websites	64 (31.2%)	28 (13.7%)	40 (19.5%)	40 (19.5%)	33 (16.1%)	2.76	1.475
Evangelise to other people using ICTs	43 (21.0%)	49 (23.9%)	55 (26.8%)	32 (15.6%)	26 (12.7%)	2.75	1.299
Watch spiritual programmes on the TV owned by SDA	44 (21.5%)	40 (19.5%)	44 (21.5%)	29 (14.1%)	48 (23.4%)	2.99	1.464
Listen to spiritual messages on the radio owned by SDA	85 (41.5%)	49 (23.9%)	19 (9.3%)	16 (7.8%)	36 (17.6%)	2.36	1.510

5.4 SRQ2 - What Factors Hinder the Use of ICT in the Four SAU Conference Churches?

This section shows the results from qualitative and quantitative data regarding factors that hinder the usage of ICTs in the four SAU conference churches. This section answers SRQ2.

SRQ2: What Factors Hinder the Use of ICT in the Four SAU Conference Churches?

5.4.1 Results from Qualitative Data

This section presents findings from church leaders' data (interviews). Despite the benefits that come with ICT, participants pointed out challenges that discourage leaders from using ICT, such as the circulation of content, improper content, diverting the purpose of the groups, irreverent use of social media platforms, flooding the groups with media content, and not seeing the importance of ICT.

Circulation of improper content and diverting its purpose:

> People just circulate other funny things, but for us, we just want to look at the positive side of things. I think ICT has enabled the gospel to go forward. (P01)
>
> The major challenges, in general, are misuse and abuse because if you are talking of WhatsApp channels that can be used, for instance, we can create a group that is strictly meant for communication purposes, but you find that it ends up being used for different purposes even though sometimes. (P02)
>
> … we are trying to use it as a platform to share evangelism, then you see political things and jokes are also being shared, so those are the challenges we face. (P04)

Participants were concerned about the kind of content posted by other members of the community in these groups that are designed to support church members.

Irreverent use and Flooding media content:

> Sometimes I see people on social media during services. What is pathetic is that this is not only done by youth but by elderly people alike. It is so surprising that people have such the audacity to chat with other people during service. It is very irreverent, and it is disturbing both to the person using their phone and to those around them. (P05)
>
> There is another platform that I used to be on where people were complaining about space in their phones where things like pictures and videos are posted. (P02)

Participants show that social media could be challenging if used during worship services. Some participants were uncomfortable using social media during worship services as they viewed it as irreverent. Furthermore, there was the issue of flooding content being posted in these groups leading to limited space in the devices.

Not seeing the importance:

> However, if you are a Pastor who is hardworking in terms of preparing your messages, you will know that you can bring the same images to people`s minds just by using the Bible. (P06)
>
> … you see, at times, the reason why some will be resistant is that the convenience part of ICT if it is not properly explained, and if there is no engagement, then some people will not see the need. (P09)

Participants mentioned a lack of information regarding the importance of ICT in church environments. This could be the church leaders themselves or church members who may not see the importance of ICT.

Financial and Generational challenges

> You find some churches where there are many old people and a few young people and where they cannot afford to use ICTs because of financial problems. (P08)
>
> I can say that if we look at the younger generation, they use it a lot while the older folks do not use it much, but some, because of the nature of their jobs, are forced to use it. (P03)

The composition of church membership can be a challenge to the use of ICT. It seems like a church is challenged when the membership composition is balanced as old people cannot use ICT as young people and, on the other hand, may not be able to afford ICTs, especially if they are not working.

5.4.2 Results from Quantitative Data

The quantitative data from the SDA church members were analysed and the findings are presented. In Table 4, respondents were asked to indicate factors that hinder them from using ICT to perform religious activities using a Likert scale of 1 to 5 (Definitely Not = 1; Probably Not = 2, Possibly = 3, Probably = 4, Definitely = 5). In addition, the research looked at the impact of the factor on the age groups of the SDA members in South Africa.

Table 5.6: Factors that hinder ICT use

Factor	Age Range	Mean	Std	F-Value	Sig
Lack of ICT skills	18–24	2,67	1,479	2,559	0,040
	25–34	2,37	1,431		
	35–44	2,39	1,412		
	45–54	3,00	1,508		
	> 54	3,64	1,502		
Lack of funds to buy the ICTs	18–24	2,69	1,703	3,737	0,006
	25–34	2,93	1,628		
	35–44	2,29	1,553		
	45–54	3,91	1,703		
	54	2,91	1,814		
My device(s) does limit me	18–24	1,93	1,257	4,312	0,002
	25–34	2,53	1,579		
	35–44	1,63	1,135		
	45–54	2,13	1,766		
	> 54	3,18	1,601		
Limited by data bundles	18–24	2,63	1,674	2,605	0,037
	25–34	2,84	1,575		
	35–44	2,39	1,243		
	45–54	3,61	1,672		
	> 54	2,45	1,214		

Table 5.6 shows that a lack of ICT skills had an impact on the members of the SDA church in South Africa (M = 2,59; SD = 1,475; F = 2,559; p = 0,040). It can be seen that members who belonged to the age groups between 25 to 44 years were probably not limited by ICT skills to perform church activities. The groups that were limited by a lack of ICT skills were those who were 45 years and above, with a mean of 3 and above.

Secondly, it can be seen that funds to buy ICTs has an impact on the age of church members (M = 2,91; SD = 1,695; F = 3,737; p = 0,006). It can be seen that those between 35 and 44 years (M = 2,29; SD = 1,553) were not limited by funds to buy ICTs compared to other age groups. Those who are above 54 (M = 2,91; SD = 1,814) and those who are 25 to 34 years (M = 2,93; SD = 1,628) had a slight difference in their mean values. The finding showed that funds to buy ICTs in the SDA church in South Africa mostly affect those who are 45 to 54 years old (M = 3,91; SD = 1,703).

Thirdly, it can be seen that those aged between 35 and 44 (M = 1,63; SD = 1,135) were least limited by their devices when performing activities, followed by those 18 to 24 (M = 1,93; 1,257). The age groups that are limited by their devices when performing activities are those who are 25 to 34 (M = 2,53; SD = 1,579) and those above 54 years (M = 3,18; SD = 1,601). The overall mean was low (M = 2,18; SD = 1,489; F = 4,312; p = 0,002).

Lastly, it can be seen that data bundles affect different age groups (M = 2.76; SD = 1,561; F = 2,605; p = 0,037). It can be seen that most age groups are limited by data bundles with those who are 45 to 54 years (M = 3,61; SD = 1,672) followed by those who are 25 to 34 (M = 2,84; SD = 1,575) and 18 to 24 years (M = 2,63; SD = 1,674). The least limited by data bundles are those who are aged between 35 and 44 (M = 2,39; SD = 1,243) and those above 54 years (M = 2,45; SD = 1,214).

Therefore, these factors impact negatively on the use of ICTs by church leaders and members. The rate at which church members and leaders participate in evangelism using ICTs depends on these factors presented.

5.5 SRQ3 - What are the Criteria for Selecting ICT Systems for Use in the Four SAU Conference Churches?

This section answers SRQ3, and it discusses some criteria highlighted by the research that should be included in future ICT developments in religious organisations. The church leaders' data (interviews) showed that leaders consider ICTs less detrimental to the church, cost-effective ICTs, speedy, and the effectiveness of the ICTs, durability of the ICTs, security of the ICTs, and quality of output of the ICTs.

SRQ3: What are the Criteria for Selecting ICT Systems for Use in the Four SAU Conference Churches?

5.5.1 Theme 1: Less Detrimental Technologies

Most participants indicated that they consider ICTs less detrimental to the church. For example, participant P04 said, "… holistic package with no disturbances." It was established that ICTs are not bad on their own but depend on how they are used as they come with extra baggage that has nothing to do with the church, such as secular advertisements that comes with online material and on social media. This extra baggage can divert people from focusing on spiritual things, carrying them away into the secular world. Participant P04 highlighted that the ICTs adopted should align with the Bible and the doctrine of the church. Therefore, future ICT developers must include religious people during the development process to meet the users' expectations. Participant P04 said, "… it has to be predominantly Biblical and also all the fundamental things that we believe like the SOP, the Bible, and the scriptures." To design worthwhile ICTs, developers must employ the most appropriate interaction style and interface for the intended users. The users must be involved in the whole process of development rather than developers creating what they deem best for the users.

5.5.2 Theme 2: Cost Effectiveness

The cost of buying ICTs was also considered a factor when considering ICTs to purchase. It was noted from all participants that the SDA church relies on tithes and offerings from members, and therefore funding is limited. Most of the participants pointed out that the availability of the funds depends on the affordability of the members of the local churches. Participants P02, P05, and P07 added that maintenance of the ICTs should also be considered when adopting them. Therefore, future developments must have religious organisations in mind when developing ICTs for use. Religious organisations are non-profit organisations, and some struggle financially. Therefore, ICT practitioners need to find better ways of developing ICT solutions for religious organisations that are cost-effective and, at the same time, meet the needs of the users.

5.5.3 Theme 3: Speed and Effectiveness of the Technology

The speed and effectiveness of the ICTs were indicated as another factor to consider when adopting ICTs in religious organisations. Most of the participants pointed out that leaders need to consider ICTs that are fast and effective in performing the required tasks. For instance, emails are used to send bulk messages to several recipients instantly. For example, participant P01 said, "It is the fastest mode of communication lately, and you can reach many people at the same time, for instance, if people are in a group." Participant P02 added, "it is generally agreed that WhatsApp is the fastest communication channel, so that is one that we use. We used to use emails, but people rarely check their emails. They are always on WhatsApp with their phones, so I think that is the main reason why the criteria changed

to WhatsApp.” Participant P10 added that ICTs should eliminate tedious and strenuous processes encountered by leaders when performing their duties.

5.5.4 Theme 4: Durability of the Technology

Durability refers to ICTs that have a long life in the organisation. Participants indicated that it is essential for leaders to consider ICTs that are durable when adopting ICTs in religious organisations. All participants indicated that they consider the durability of the ICTs when adopting ICTs for use in churches. Some participants added that the ICTs should be maintainable so they can last long; for example, participant P02 said, “… ICT which is genuine and last long in the organisation."

5.5.5 Theme 5: Security of Data

Participants highlighted data security as another criterion to consider when implementing ICTs in religious organisations. Most participants indicated that they work with confidential data, such as discussions in minutes, and that they use cloud storage services to store their data. Participants had concerns regarding the storage of data so that sensitive data can be accessed by authorised people only. Data security proved to be a crucial criterion for leaders when adopting ICTs. It is, therefore, crucial for ICT practitioners to consider data security in all future ICTs development. Users need assurance that their data is secured.

5.5.6 Theme 6: Quality of the Output of the Technology

Participants indicated that they consider ICTs that produce quality output, such as printers, projectors, applications, and communication devices. These considerations pose a challenge to future ICT designers and developers to develop products that meet all the characteristics or aspects expected from display devices. Such characteristics include excellent quality resolution, readable output, number of users supported, the layout of the output, and graphics involved in the display device. ICT practitioners need to consider users during the development of ICTs for religious organisations to benefit more from these technologies.

5.6 SRQ4 - What are the Informational Needs of Church Leaders in the Four SAU Conference Churches?

This section answers SRQ4. The findings were generated from church leaders’ data (interviews). Five themes arose from the analysed data: informational needs of church leaders, the format of the information, frequency of information reporting, levels of information reporting, and information system need.

SRQ4: What are the Informational Needs of Church Leaders in the Four SAU Conference Churches?

5.6.1 Theme 1: Information Needs of Church Leaders

Research findings showed that church leaders are concerned about church finance information, membership information, mission information, and visitors' information.

5.6.1.1 Church Financial Information

Participants showed that church finance information is crucial to church leaders. Participants pointed out that different applications were being used to capture church finances in the form of tithes, offerings, and expenses. Church treasurers used different applications to process church finances, such as Microsoft Excel, SDA receipts, and accounting packages.

> … that is an SDA receipt for capturing information as well as for preparing receipts for individuals and other types of reports for reporting purposes. (P02)

> We do our record keeping using a computer application, so our treasurers use it for receipt of our tithes and offerings. (P03)

In some circumstances, church leaders were trained in using accounting packages for church finance management.

> We are also trained in a few accounting packages for the sake of church finance management. (P07)

Participants showed that reporting on church finance is important in the SDA church. Treasurers pointed out that they mainly use Microsoft Excel for report creation.

> I prepare reports in Microsoft Excel. (P02)

However, participants pointed out a need for up-to-date church finance information that could be used for decision-making purposes. Leaders would like to plan in terms of church finances and make informed decisions regarding the use of church finances. One participant said, "We would want to have a live record-keeping that will be more professional, and it will also help in planning and budgeting once the church has a more accurate record." This shows the importance of up-to-date church finance information.

5.6.1.2 Membership information

Church leaders showed that tracking and maintaining accurate membership information is essential in the SDA church. The findings show that church leaders monitor the growth of church membership. Religious leaders work with church clerks who are responsible for managing church membership records. Church leaders, especially Pastors, monitor the membership growth of each church they preside over while other leaders monitor respective churches. There are aspects such as the number of disciplined and baptised members that help leaders track membership growth.

> We have a reporting template; we do a report every month where you monitor your church membership. Of course, you will be working closely with the church clerk so that when I report to the conference, I report something which the church has reported. For instance, if church A has 97 members at the beginning of the quarter and at the end of the quarter, they discipline 3, that will give us 94, so my report should reflect that, and I do that on a template that I have on my laptop. (P09)

> … for example, instead of capturing member details in a book, we capture them on a software system where the details are stored in a cloud. (P04)

Participant P12 added:

> I think if we use ICT more within the SDA church, our statistics will become more accurate. We will know exactly how many members we have. (P12)

This shows the importance of digital records within the church environment.

5.6.1.3 Missionary information

Participants pointed out the importance of missionary information, such as Bible studies conducted by the church and visitations. Church leaders provide reports regarding mission activities performed.

> … the typed one, the monthly report, the Bible studies conducted, the visitations. We type first; then we send it to the conference. (P08)

> …. following up on Bible students, getting feedback regarding the lessons that they are doing for VOP. (P02)

Church leaders use this missionary information to make a decision, such as determining areas that need missionary work.

> And also, for evangelism purposes, you would know which area needs more missionary work. (P12)

This shows that missionary information is crucial to church leaders as they plan on church growth.

5.6.1.4 Church visitors' information

Church leaders were interested in visitors' information within their churches. Results showed that there was a deliberate recording of visitors' information in some churches. This information is used by church leaders to keep in touch with visitors and to be able to track them.

> We are supposed to move with the times. Recently I was telling the Interest Coordinators that it`s high time we stop these papers that they give to visitors to fill in and whatnot, there should be someone with a tablet at the door, and everything is synchronised the moment they enter their name, a message of welcome is sent to them, and it goes into our database. (P07)

Furthermore, some congregations receive high volumes of visitors during their worship services, and these visitors' details are captured.

> You will notice that on a typical day, we get about 15 to 20 visitors. We take all their names, where they come from, their church, their address, and their phone number, so when the year ends, we will be having roughly over 2000 of those names. (P07)

Participants pointed out the need to record visitors' information digitally as they handle large volumes of visitors' data, especially in this 21st century.

5.6.2 Theme 2: Format of Information

Participants stated that they present information mainly in a graphical and statistical format. Church leaders used mainly Microsoft Excel to present their information, especially church finance reports. Church finance was presented mainly in statistical and graphical forms.

> … that is where I play around with the information to come up with a graph or a pie chart or a bar graph or a line graph, whatever the case may be. So mainly it`s Microsoft Excel. (P02)

> We are not exactly professionals, so we often use Excel to keep our records for Tithes and Offerings and to make those graphs. When giving feedback to the church, we just project those graphs. (P12)

Mainly membership information was presented in statistical format:

> … statistical report because the Conference wants every church clerk to have a laptop to capture details of members. (P08)

Participants pointed out the importance of graphical and statistical reports to the church leaders.

5.6.3 Theme 3: Frequency of Information Reporting

Results showed that church leaders provide monthly and quarterly reports. In these reports, church leaders monitor important information, such as the growth of membership and church finances.

> I need to report at the month-end when I do my monthly ministerial report. (P06)

> We have a reporting template; we do a report every month where you monitor your church membership and finance. (P09)

> … all departments need to send their quarterly reports. (P12)

Participants show that reporting was done periodically depending on the level of reporting ranging from monthly to quarterly.

5.6.4 Theme 4: Levels of Information Reporting

Church leaders generate a report at different levels. These reports are generated from various departments of the church, and they are used to make decisions at the department and church board levels and also sent to the Conference offices.

> … say, for example, the Conference has missed my report of a specific month … (P09)

> … first will be in a Board setting … (P06)

5.6.5 Information System Need

This section presents themes on the information system needs of the church leaders within the four SAU conference churches. Participants need efficient ICT solutions, systems with access to information, systems that enable accurate records, systems that enable continuity of information, and systems that enable data integration and consolidation.

5.6.5.1 Theme 1: Efficiency

Participants stressed the effort that is needed when processing church finances. It was highlighted that some churches receive considerable amounts in the form of tithes and offerings that are strenuous to deal with manually. Participants pointed out the need for an information system that is effective and efficient in processing church finances.

> For example, receipting and recording tithes and offerings will be very strenuous. Some people return huge amounts of tithes and offerings just to imagine sitting down and doing all the calculations manually and making sure that all the monies will be huge work without ICT. It`s easy to make mistakes, and if one is dealing with huge amounts of money, it will be so difficult to trace and see where one has made a mistake. (P05)

Participant P02 added that it is difficult for treasurers in some churches to deal with church finances manually. The participant described a situation when they had a problem with their computer system.

> … without even the ability to run our reports and our receipts, for instance, right now, we have a problem with receipts that we have been facing for the past two months because the software has not been compatible with the hardware. ICT is indispensable. We cannot do without it. That's the truth; otherwise, everything may just be at a standstill. (P02)

Participants further expressed the need for a convenient reporting system with adequate information to aid the decision-making process.

> Church clerks and treasurers use many of these things. It is so beautiful to receive reports and financial reports through these things than on paper. It is more convenient. (P11)

> So not using it is a challenge because our churches feel stuck on a traditional road, but decisions need to be taken in formal church business meetings, and we need to discuss matters when we have adequate information. (P10)

5.6.5.2 Theme 2: Accessibility of Information and Ease of Retrieval

The results showed that pastors run several churches, which influences the rate at which they access information. Pastors need to access information regarding all the churches they are running, while church leaders need access to only the church they are part of. All church leaders need a system that makes it easy for these leaders to retrieve information. The results show that church leaders stored digital information in the cloud for easier retrieval.

> Right now, I am pastoring eight churches, and all of that information cannot be written with a pen and paper; I will end up losing it. So then, I would end up using such equipment to ensure that data is stored in a safe place that is easily retrievable. (P06)

> … even the cash book that is utilised is electronic because it helps to capture and facilitate information. (P06)

5.6.5.3 Theme 3: Accurate Records

Participants pointed out the need for an information system that produces quick and accurate reports. These records should be accurate at the church level as well as at the Conference level.

> So the church would submit, and then it will be loaded to the system so that when we report saying we got 17 million Adventists worldwide, that thing will be an accurate record because it will be supported by data coming down from the local church up to the General Conference." (P09)

> "ICT enables us for quick and more accurate record-keeping. (P12)

5.6.5.4 Theme 4: Leaders require a system that enables continuity of information

Participants highlighted the need for an information system that enables the continuity of data and information. The results showed that church leaders were concerned about permanent record keeping of church data such as finance and membership data. This, in a way, helps even when there is a new officer in the department. It will be easy for whoever joins the department to continue with what was done.

> We capture them on a software system, where members will be on the cloud. When the next church clerk comes, they will be able to see that these are the members. When the financial report is given, we can store it, and when the new treasurer comes, they do not need to do the physical handover but can view the historical report that has already been stored on the cloud. (P10)

> Those membership details get lost, but if all these things are done in such a way, maybe online, whereby we can be able to get all those things, it will help, so without such a system, it is difficult to administer all those names. (P07)

5.6.5.5 Theme 5: Data Integration and Consolidation of Reports

Church leaders had challenges extracting and consolidating information from different departments as they received separate reports. There was, however, a need for church leaders to have an information system that provides integrated data from all the departments for a better understanding of the church. The participants had no technical knowledge of the type of system they needed but could explain their information needs.

> We receive reports from departments, but it is always difficult to put together the information. (P03)

> It will help us to have all these reports consolidated. (P08)

5.7 SRQ5 - What Models were used by the Apostles in the Early Church to Sustain and Grow Churches?

The study used the Book of Acts to understand the growth of the early church and its sustainability. The book of Acts was used because of its nature of being the Book of missionary work. The Book of Acts records more work on the growth of the early church than any other Book. The study analysed all 28 chapters of the Book of Acts using the thematic analysis technique and generated several themes. After the generation of themes, the study presents a causal loop diagram for the growth and sustainability of the early church. This section answers SRQ5.

SRQ5: What Models were used by the Apostles in the Early Church to Sustain and Grow Churches?

The themes in sub-sections 5.7.1.1 to 5.7.1.8 are well grounded in System Dynamics thinking. The CLDs were used to show the causal effects of different variables extracted from the Bible. Qualitative data in the form of verses from the Book of Acts were used to show the causal effects of different variables.

5.7.1 Themes generated from the book of Acts

The research study analysed the data using the six steps recommended by Braun and Clarke (Braun and Clarke, 2006). The first step was for the researcher to become familiar with the data. This was done by going through the text of the chapters of the Book of Acts and also listening to the audio versions. At this stage, notes were taken down. The second step was to generate initial codes. The following initial codes were generated:

Table 5.7: Initial Codes from the Book of Acts

Codes
Noising of the Pentecost
Spreading of the might of the apostles
Invitations of friends and family members
Effects of sermons on the hearers
Calls for the hearers to walk with God
Response to the sermons
Approaches to spreading the Word of God
Word of God as an agent of church growth
Level of dispersion of members
Fellowship
Breaking of bread
Church members pray together
Sharing of resources among the believers
Contribution of resources to the church
Neglecting other members in the distribution of resources
Threats to the preachers
Counter-attack sermons
Stir up people against believers
Miracles performed to the community
Giving to the needy
Report back all evangelistic activities to the church
The positive impact of reports to the church members
Impact of evangelistic activities on church members
Contradicting teachings
Conflict management

The codes and themes generated from the Book of Acts are presented in Table 5.8

Table 5.8: Codes and Themes from the Book of Acts

Codes	**Themes**
Noising of the Pentecost	Noising of Religious Gatherings and Events
Spreading of the mighty of the apostles	
Invitations of friends and family members	
Effects of sermons on the hearers	Delivery of Sermons or Word of God
Calls for the hearers to walk with God	
Response to the sermons	
Approaches to spreading the Word of God	
Word of God as an agent of church growth	
Level of dispersion of members	
Fellowship	Prayer and Fellowship of Church Members
Breaking of bread	
Church members pray together	
Sharing of resources among the believers	Attending to the Needs of Church Members
Contribution of resources to the church	
Neglecting on other members in the distribution of resources	
Threats to the preachers	Suppression of the Gospel
Counter-attack sermons	
Stir up people against believers	
Miracles performed to the community	Meeting the Needs of the Community
Giving to the needy	
Report back all evangelistic activities to the church	Reporting, Feedback, and Encouraging of Members
The positive impact of reports to the church members	
Impact of evangelistic activities on church members	
Contradicting teachings	Conflict resolution
Conflict management	

5.7.1.1 Theme 1: Noising of Religious Gatherings and Events

The new testament church in the Book of Acts grew by attracting a multitude of people to their evangelism events and gatherings. The Pentecost Festival is an example of one of the first events organised by the apostles, which was noised to multitudes of people far and wide. This is evidenced in Acts 2:6, which says, "Now when this was noised abroad, the multitude came together ..." Many people responded to the invitation, and as a result, multitudes of people from all over the world attended the Pentecost festival. This helped spread the Word of God to different people in the ministry of the early church. Besides formal church events and programmes, the work of the church, such as performing miracles, was spread through word of mouth to different cities and many people believed through hearing the mighty works of the apostles. This is supported in Acts 9:42, "And it was known throughout all Joppa; and many believed in the Lord." In addition, believers contributed to church growth by inviting people, especially their relatives, and friends, to hear the word of God. For example, in Acts 10:24, Cornelius invited his close relatives and friends so that they could hear the apostle Peter preaching in his house. Many people attended this event, and they responded to the message shared by the apostle Peter. Figure 5.1 shows the causal effect of noisy church events and/or programmes on church membership.

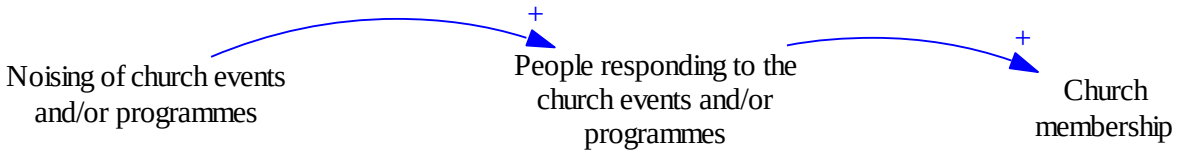

Figure 5.1: The causal effect of noisy church events and/or programmes on church members

5.7.1.2 Theme 2: Delivery of Sermons or Word of God

The Book of Acts shows the power of the Word of God in growing the church. The sermons by the apostles in different gatherings or one-on-one with individuals contributed to the growth of the early church. Acts 2:37 shows the contribution of the sermon by apostle Peter towards the growth of the church during the Pentecost festival, where the people were touched by the message, "… they were pricked in their heart, and said unto Peter and to the rest of the apostles, men and brethren, what shall we do?" Peter responded to their question in Acts 2:38 and said, "… repent, and be baptized every one of you in the name of Jesus Christ for the remission of sins, and ye shall receive the gift of the Holy Ghost." Acts 2:9-10 gives an idea of those who attended the Pentecost event by saying, "Parthians, and Medes, and Elamites, and the dwellers in Mesopotamia, and in Judaea, and Cappadocia, in Pontus, and Asia, Phrygia, and Pamphylia, in Egypt, and in the parts of Libya about Cyrene, and strangers of Rome, Jews and proselytes." Acts 2:41 shows the impact of the Pentecost

festival on the membership of the early church, "Then they that gladly received his word were baptized: and the same day there were added unto them about three thousand souls." Besides sharing the Word of God in public gatherings, the apostles also visited people's houses preaching and teaching the Word of God. Acts 5:42 said, "And daily in the temple, and in every house, they ceased not to teach and preach Jesus Christ." The book of Acts shows the impact of the Word of God on the growth of the church. This is pointed out in Acts 6:7, which says, "And the Word of God increased; and the number of the disciples multiplied in Jerusalem greatly; and a great company of the priests were obedient to the faith." The issue of persecution also contributed to the spreading of the Word of God, as people fled areas where there was persecution. They were scattered in various places, as pointed out in Acts 8:4, "therefore they that were scattered abroad went everywhere preaching the word." Other examples of the causal effect of the Word of God on church membership in the early church:

> And some of them were men of Cyprus and Cyrene, which, when they came to Antioch, spake unto the Grecians, preaching the LORD Jesus. And the hand of the Lord was with them: and a great number believed, and turned unto the Lord. (Acts 11:20-21)

Figure 5.2 shows the causal effect of the delivery of sermons or the Word of God on church membership.

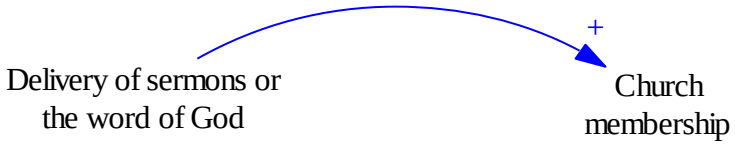

Figure 5.2: Causal effect of the delivery of sermons or the word of God on church membership

5.7.1.3 Theme 3: Prayer and Fellowship of Church Members

To keep the members that were added to the church, the church maintained a prayer life for the believers and fellowship with one another. In addition, the apostles continued teaching the believers the doctrine of the church and supported the church members. Here are some verses that support this:

> And they continued steadfastly in the apostles' doctrine and fellowship, and in the breaking of bread, and in prayers. (Acts 2:42)
>
> Peter, therefore, was kept in prison: but prayer was made without ceasing of the church unto God for him. (Acts 12:5)
>
> And when he had considered the thing, he came to the house of Mary, the mother of John, whose surname was Mark; where many were gathered together praying. (Acts 12:12)

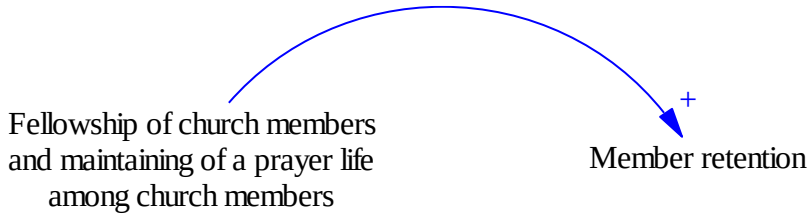

Figure 5.3: Causal effect of the fellowship of church members on member retention

5.7.1.4 Theme 4: Attending the Needs of Church Members

As a church continues to grow, it becomes difficult to address the needs of all the church members. Normally, church members support the church with their resources, which, in turn, can support other church members. Acts 4:34-35 says,

> Neither was there any among them that lacked: for as many as were possessors of lands or houses sold them, and brought the prices of the things that were sold, and laid them down at the apostles' feet: and distribution was made unto every man according as he had need.

This church started well, but challenges came with the increased membership. The church failed to attend fairly to the needs of the members. Acts 6:1 says, "and in those days, when the number of the disciples was multiplied, there arose a murmuring of the Grecians against the Hebrews, because their widows were neglected in the daily ministration." This could lead to other members leaving the church, thereby decreasing church membership.

Figure 5.4 shows the causal effect of attending to the needs of church members on membership retention.

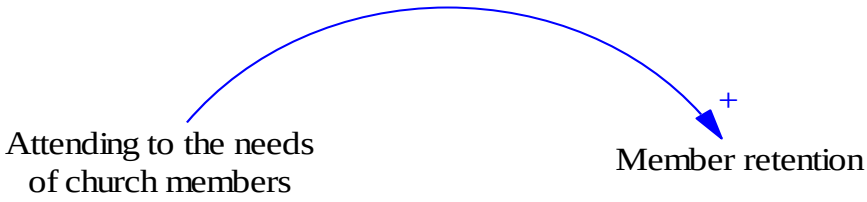

Figure 5.4: Causal effect of attending to the needs of church members on membership retention

5.7.1.5 Theme 5: Suppression of the Gospel

There is evidence in the book of Acts of areas where the preaching of the Word of God was restricted, and it was difficult for apostles and believers to spread the Word of God in those places. In some instances, preachers were arrested and/or beaten so they could not preach of Word of God to the public. Acts 4:2-3 records, "being grieved that they taught the people, and preached through Jesus the resurrection from the dead. And they laid hands on them, and put them in hold unto the next day: for it was now eventide." Besides punishing the preachers, there were also cases of people preaching contradicting messages to counterattack the Word of God preached by the apostles. Acts 13:45 says, "but when the Jews saw the multitudes, they were filled with envy, and spoke against those things which were spoken by Paul, contradicting and blaspheming." Some were not believing who was stirring the minds of those responding to the messages, so they could not receive the messages from the apostles. Acts 14:2 records, "but the unbelieving Jews stirred up the Gentiles, and made their minds evil affected against the brethren." These situations created unfavourable environments for

preaching the Word of God. Figure 5.5 shows the causal effect of suppression of the Word of God on reaching non-church members.

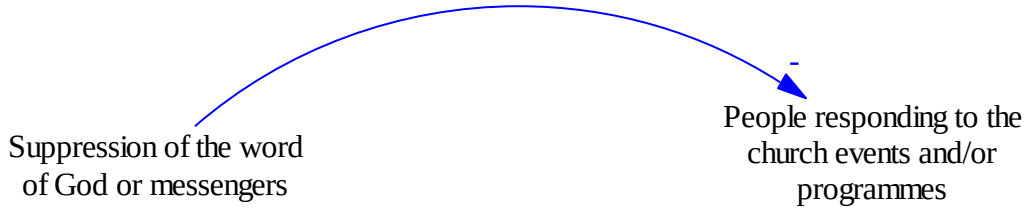

Figure 5.5: Causal effect of suppression of the Word of God on the people responding to church activities

5.7.1.6 Theme 7: Meeting the Needs of the Community

As a growth strategy, the church was also seen addressing the needs of the communities, for example, through the healing of people. People would come to church because their needs were being satisfied. Acts 3: 6,9 states, “Then Peter said, silver and gold have I none; but such as I have to give I thee: in the name of Jesus Christ of Nazareth rise up and walk. And all the people saw him walking and praising God.” Also, there was support for those in need of goods as recorded in Acts 2: 45 saying, “And sold their possessions and goods, and parted them to all men, as every man had need.” Figure 5.6 shows the causal effect of addressing the needs of communities on church membership.

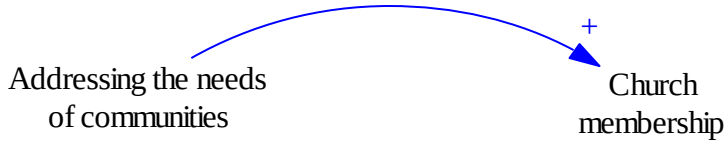

Figure 5.6: Causal effect of addressing the needs of communities on church membership

5.7.1.7 Theme 7: Reporting, Feedback and Encouraging Members

The book of Acts shows the importance of reporting back to the church. The apostles and missionaries would minister at different places and then report back to the church. Acts 15:4 records, “and when they were come to Jerusalem, they were received of the church, and of the apostles and elders, and they declared all things that God had done with them.” Also Acts 21:19 supports this by saying, “and when he had saluted them, he declared particularly what things God had wrought among the Gentiles by his ministry.” Reporting helped in the building of trust between the leaders and the members. Also, the church would know the work being performed by other believers and encourage members. Acts 11: 22-23 records, “Then tidings of these things came unto the ears of the church which was in Jerusalem: and they sent forth Barnabas, that he should go as far as Antioch. Who, when he came, and had seen the grace of God, was glad, and exhorted them all, that with the purpose of heart, they

would cleave unto the Lord." Acts 14:22 says, "confirming the souls of the disciples, and exhorting them to continue in the faith, and that we must through much tribulation enter into the kingdom of God." Acts 15:3 also says, "and being brought on their way by the church, they passed through Phenice and Samaria, declaring the conversion of the Gentiles: and they caused great joy unto all the brethren." Figure 5.7 shows the causal effect of reporting on church and evangelism activities on membership retention.

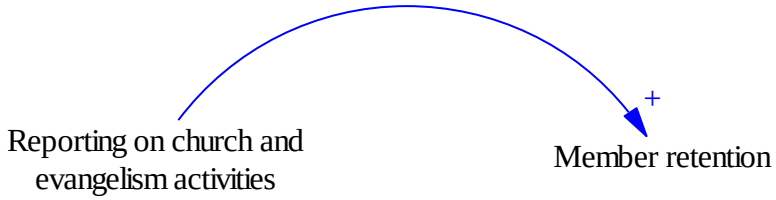

Figure 5.7: Casual effect of reporting on church activities on membership retention

5.7.1.8 Theme 8: Conflict resolution

Acts 15: 1-2 shows some that occurred to the apostles. There were conflicting doctrines within the church as some believed that non-Jews were to be circumcised while others believed that it was unnecessary.

> And certain men which came down from Judaea taught the brethren, and said, Except ye be circumcised after the manner of Moses, ye cannot be saved. (Acts 15:1)

The apostle had to find church leaders to resolve the issue:

> When therefore Paul and Barnabas had no small dissension and disputation with them, they determined that Paul and Barnabas, and certain other of them, should go up to Jerusalem unto the apostles and elders about this question. (Acts 15:2)

Failure to resolve conflicts leads to divisions that impact the retention of church members. Figure 5.8 shows the causal effect of conflict resolution on membership retention.

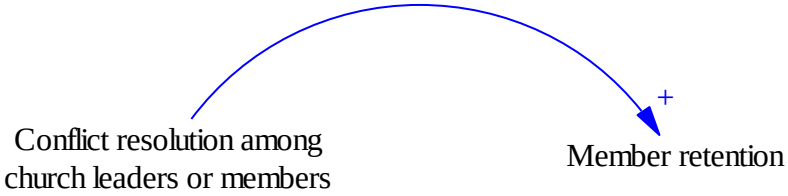

Figure 5.8: Causal effect of conflict resolution in the church on membership retention

5.7.2 Causal Loop Diagram for Church Growth and Sustainability of the Early Church

A causal loop diagram in Figure 5.9 was developed using the themes generated in section 5.7.1. A short description of each causal loop is provided.

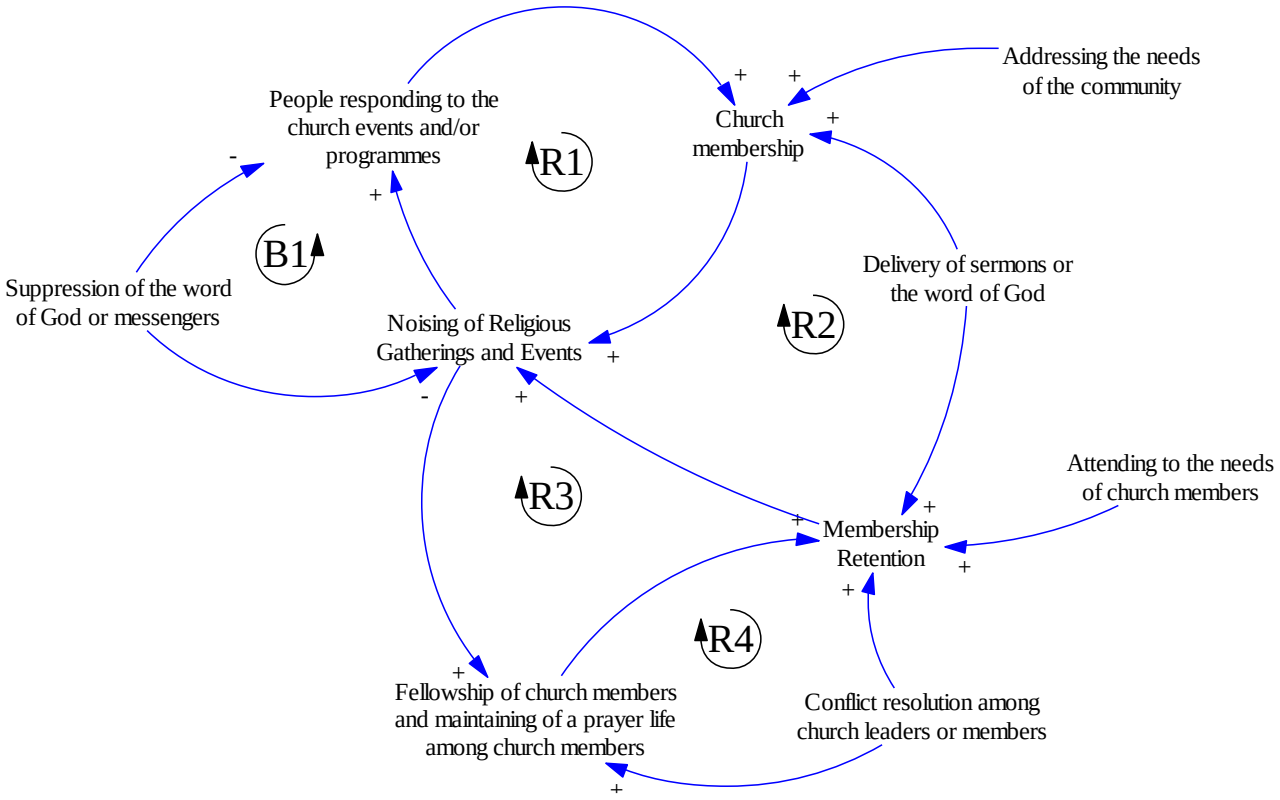

Figure 5.9: Causal Loop Diagram for Church Growth and Sustainability of the Early Church

5.7.2.1 Reinforcing Loop (R1)

The R1 loop shows that the noise of church events and/or programmes increases the number of people who respond to church events and/or programmes. The church should implement strategies that promote church events and/or programmes to attract many people. When there are high numbers of people responding to church events, there are high chances of having people who decide to join the church. Increasing church membership may mean many people noising the church events and/or church programmes.

5.7.2.2 Reinforcing Loop (R2)

R2 loop shows that delivering sermons or spreading the Word of God improves membership retention and increases church membership. Churches could implement strategies that promote the delivery of sermons or the Word of God to non-members and church members. Good member retention and having more church members may influence the coverage of noising of church events and/or programmes. Reaching many people could increase church membership as people are converted to church members.

5.7.2.3 Reinforcing Loop (R3)

R3 shows a positive impact of noisy church events and/or programmes on the fellowship of church members. This means that when churches promote their events and/or programmes, many people get involved in those events, such as prayer sessions. Therefore, having good fellowship and good church prayer life for members could assist in the retention of church members. In addition, members retained could improve the noising of church events and/or programmes, thereby improving the fellowship among the church members.

5.7.2.4 Reinforcing Loop (R4)

R4 shows that conflict resolution among believers improves the fellowship of church members. Good fellowship among church members, in turn, improves the retention of church members. In another way, if the church fails to manage and resolve conflicts, this will cause fights leading to affected people leaving the church. Again, this affects the retention of church members.

5.7.2.5 Balancing loop (B1)

B1 shows a balancing loop. An increase in the suppression of the sermons or the Word of God decreases the number of people who responds to church events and/or programmes. This could limit the number of people who could be willing to spread the Word of God. Also, suppression of the Word of God could decrease the number of people who may participate in the noising of church events and/or programmes.

5.8 SRQ6 - What is the Role and Impact of eWOM in the Four SAU Conference Churches?

This section answers SRQ6. The data from the Facebook pages of the SAU conference churches were analysed. Figure 5.10 shows the overall average score of all sentiments that were processed. The results show a positive average of 79% of all the sentiments and a negative average score of 28%. Neutral sentiments had an average of 54%. The results show a high positive average score, meaning users are making positive comments on the church's Facebook pages.

SRQ6: What is the Role and Impact of eWOM in the Four SAU Conference Churches?

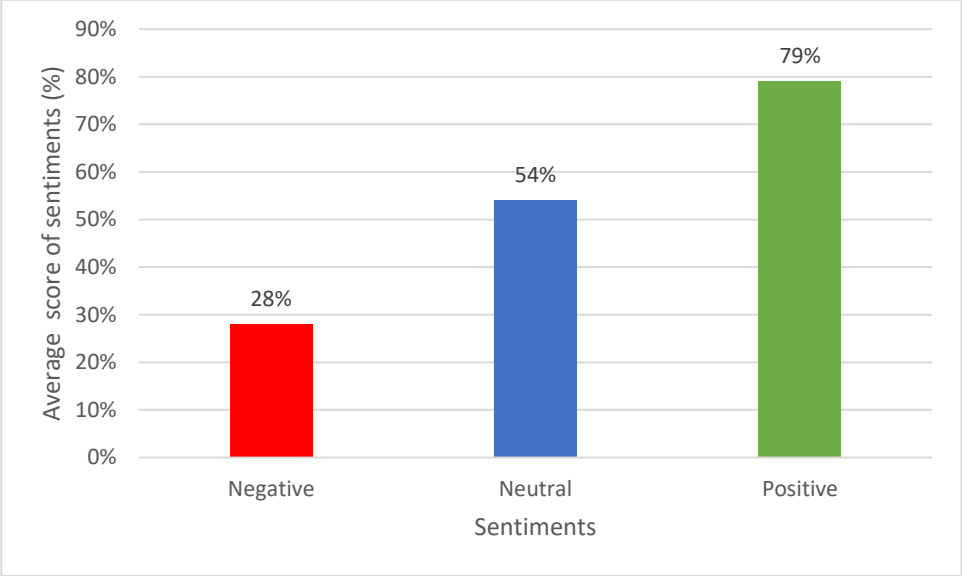

Figure 5.10: Overall Sentiments on the SDAs

Sentiments were categorised into five categories, namely, quality of service, promotion of events, sentiments from the organisation, sentiments on the organisation structure and operating procedures, and finally, quality of the medium. The categories are presented in Table 5.9.

Table 5.9: Categories of sentiments from the Facebook Pages of the SDA churches

Category	**Sample of Comments**
Quality of service	God is using His pastors to interpret His word. Thank you, baruti, for blessing us very informative session.
Promotion of events	I look forward to this great event. I missed it ... Oooh.
Sentiments from the organisation	We would like to apologise for the connection problems we just experienced. We are happy that it has been fixed. Thank you for your patience. Thank you for joining us tonight.
Sentiments on the organisational structure and operating procedures	TOC is truly my home. Just not sure why we're not making use of the female speakers?
Quality of medium	The audio is terrible, don't know whether other Pastors are talking Much better, Thank you

Under quality of service, users commented on issues such as the quality of presentations, music and programs conducted. The category of promotion of events was made up of sentiments about promotional material posted on Facebook pages. The church leadership expressed their sentiments. The category of organizational structure and operating procedures included sentiments about the

organization, its structures, and its operating procedures. Finally, the category of quality of the medium considered sentiments concerning the quality of the medium used to provide the Service, such as the quality of the sound in presentations. The findings are presented in Figure 5.11. The results show a high positive average score in all categories, with sentiments from the category referring to the organisation having the highest average score of 91%. Sentiments from the company category had a negative average score of 0%, while other categories had negative average scores below 35%. This shows that users express more positive sentiments about the church in those five categories.

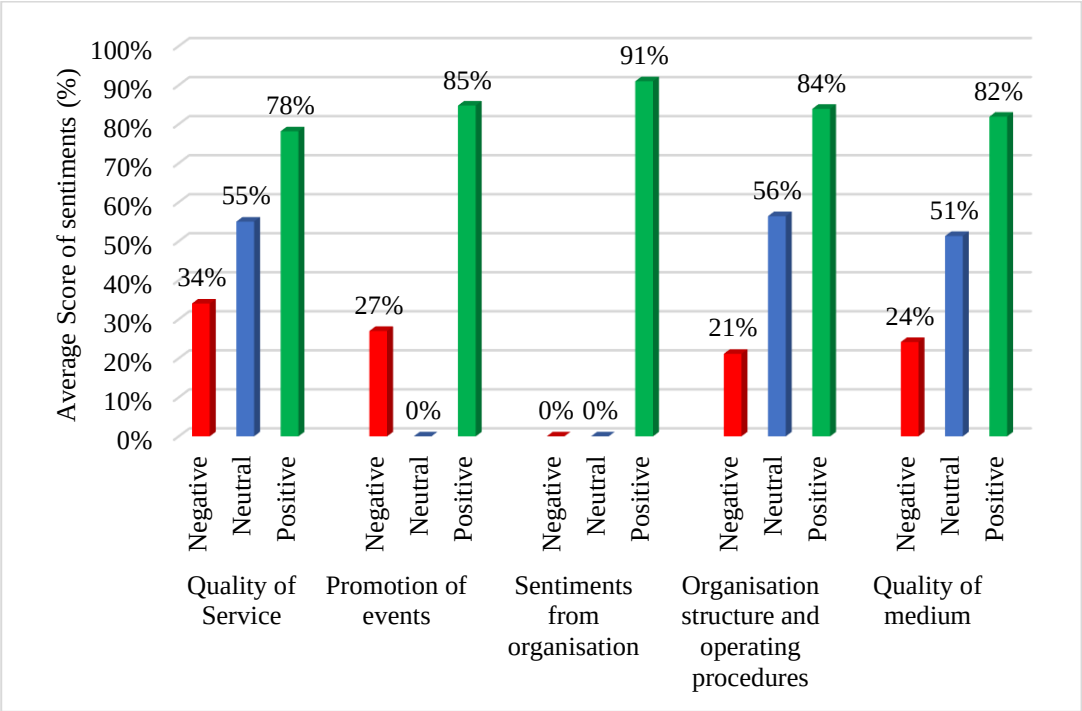

Figure 5.11: Sentiment Categories in Religious Organisations

5.9 SRQ7 - How do ICTs Contribute to the Sustainability and Growth of the Four SAU Conference Churches?

This section presents results on the value of ICT on church sustainability and growth of the four SAU conference churches. The following SRQ is answered:

SRQ7: How do ICTs Contribute to the Sustainability and Growth of the Four SAU Conference Churches?

5.9.1 Themes on Church Sustainability

The research findings from church leaders' data are presented under three themes: support for church leaders, support for church members, and challenges within online communities. A CLD for church sustainability is presented in sub-section 5.9.1.4.

5.9.1.1 Support Church Leaders

The findings show that online technologies have enabled church leaders to create online communities that support the different needs of the church. Online technologies were used to form online communities that meet the needs of different church communities. All participants were part of various online communities within their respective churches. This shows a high level of usage of online technologies in addressing the church needs of leaders and members. Participants indicated the need to regularly engage as a community of leaders at different levels and to keep the members engaged. Participant P01 showed the importance of online communities of leaders within a church by saying, "for example, we have a WhatsApp group where all departments are, where announcements and important discussions are held, so this keeps everybody in the loop. Imagine if we did not have the technology, the amount of effort and difficulties that I would have to go through to make sure that I spread whatever message that I want to spread to all the different departments." Participant P10 said, "I use WhatsApp groups every day for communication with the Elders." This shows that the use of online communities improves the level of interaction among church leaders, as shown in Figure 5.12.

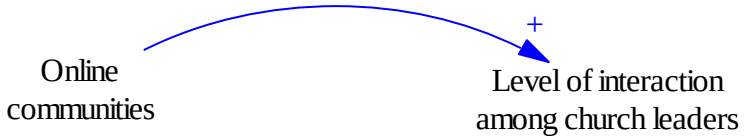

Figure 5.12: The causal effect of online communities on the level of interaction among leaders

Participants further showed that online technologies were not only being used to meet the communication needs of local leaders' congregations but also of zonal and district leaders. This was supported by participant P08, "there is a zonal WhatsApp group also where they communicate the meetings for Elders and so on. And there is another WhatsApp for the district which is used in preparation for the camp meetings and so on; it`s very easy to communicate." This shows that online communities can improve the coordination of leaders at zone and district levels, as shown in Figure 5.13.

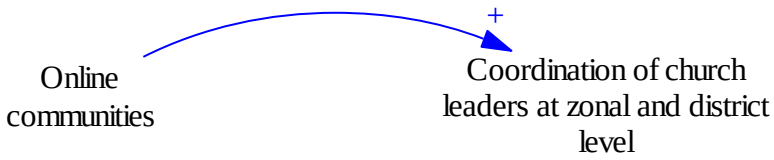

Figure 5.13: The causal effect of online communities on the coordination of church leaders at different levels

Online technologies have changed how church leaders discuss and vote on issues and the frequency of the discussions. The majority of participants showed that they rarely rely on physical board meetings. Participants revealed they could navigate better in this dynamic environment through online technologies. This was supported by participant P10 who said, "if we do not use or encourage the use of social media what will happen is that we will have to rely on traditional methods which sometimes are time consuming, for example, to wait for a church board that will take time to deal with a matter while we are able to just quickly table it and get people`s opinion and vote on the matter in our WhatsApp groups." Participant P02 also said, "now we take decisions on WhatsApp chat groups so board meeting decisions can be made quickly." Participants were also excited about the use of online technologies as they could discuss important church issues in a timely manner. This was supported by participant P04 who said, "we can discuss important issues via WhatsApp, we can share information on email and as well as just communicating." The use of online technologies enables church leaders to prepare for their meetings as the meeting agenda could be sent in their WhatsApp groups well in advance. Participant P08 said, "before the meeting, we send the agenda through the WhatsApp, typed one so that they can see what is on the agenda for the church board, the business and the district." Figure 5.14 shows the causal effect of online communities on the quality of decisions made by church leaders when there is a high level of interaction among church leaders.

Figure 5.14: The causal effect of online communities on the coordination of church leaders at different levels

5.9.1.2 Support Church Members

Besides supporting decision-making, church leaders could interact better with the church members through online technologies. Church leaders showed that the use of online technologies in the religious environment had enabled them to minister better to the spiritual needs of their congregations. This was supported by participant P04, "I`m the one who set up that one, as well as the WhatsApp church group, which I use to share all my pictures, my PowerPoint presentations, and sermons that I

preach elsewhere I also share with all the other people." Participant P08 said, "sermons get recorded on WhatsApp, and they know if say it's a revival week, we would be having seven messages that are recorded that are WhatsApp friendly then we send to them on WhatsApp." Through the use of online technologies, church leaders had the privilege to share spiritual messages with their members in these groups without waiting for physical services. Participant P01 supported this point by saying, "these days I am enjoying the book 'Steps to Christ'; I think Chapter 10 talks about the privilege of prayer. After reading, I easily generate messages from there and send them to 5 or 6 people or 5 or 6 groups and that way, I find that it is more effective to reach people because everyone has a phone on them, and everyone can access these messages." Figure 5.15 shows the causal effect of online communities on sharing spiritual content with members within online communities.

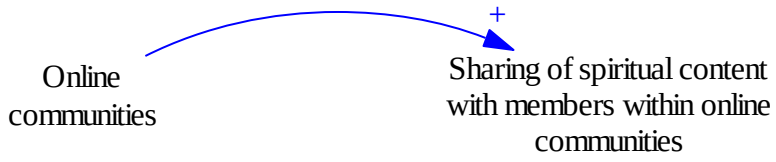

Figure 5.15: The causal effect of online communities on the sharing of spiritual content with members

Church leaders also showed that online technologies were necessary for their daily interactions with members of their respective churches. Participant P10 said, "so I use it most of the time; we do that with the churches, like my churches, they have their own Facebook Group so that we can interact daily." Church members are kept informed of the church programmes in these online communities being used by church leaders. Participant P12 agreed, "our WhatsApp group has one hundred and something members, a lot of communication for advertisement and also to invite people for church activities." Besides online communities, church members could conduct meetings and services on virtual platforms such as Zoom. The use of these platforms helped in situations where it was difficult for members to meet. For example, Participant P07 said, "it was hard for us to meet on Fridays and discuss the Sabbath lesson with the teachers, so I introduced them to Zoom, where we now discuss the lesson online." Figure 5.16 shows the causal effect of online communities on the level of interaction among church members.

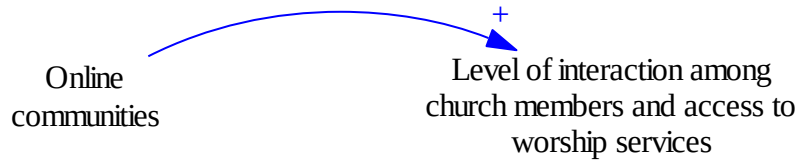

Figure 5.16: The causal effect of online communities on the level of interaction among church members

5.9.1.3 Challenges within Online Communities

Regardless of the benefits of the use of online communities within a religious context, some members have not understood its importance. This hinders the use of these technologies within religious organisations. Participant P10 said, “they did know the importance of how WhatsApp allows us to communicate effectively and better with our church members and with one another about what is the program coming in the following week, what is happening in the community, all of those things.”

These online communities tend to be abused by other people as they are used for purposes other than the intended purpose. Sometimes it is difficult to control the use of these technologies. Participant P04 said, “for example, on WhatsApp groups, the church sets a WhatsApp group, but within that group, it is a no man`s land, we are trying to use it as a platform to share evangelism, then you see political things and jokes are also being shared, so those are the challenges we face.” This requires church leaders to implement policies that govern content sharing within these communities. Sharing content with members in online communities is affected by the principles or practices of the church leaders and members, as shown in Figure 5.17.

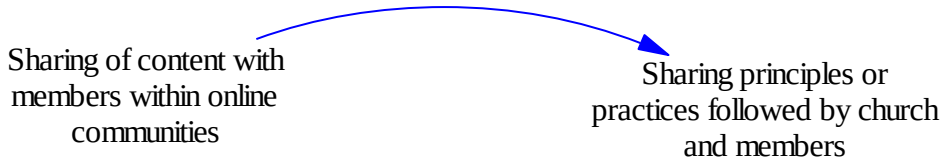

Figure 5.17: The causal effect of sharing content with online communities on sharing practices

Participants also mentioned the issue of infighting within these groups that may affect the church in the end. For example, participant P08 said, “there was an issue with the Pastors, and we were still discussing it as Pastors, but whilst we were still discussing the issue, someone posted it on Facebook.”

5.9.1.4 Causal Loop Diagram on Church Sustainability

The authors used variables identified from the qualitative data (church members) and literature review to develop the causal loop diagram. Figure 5.18 shows the church sustainability CLD and member retention, which consists of six main causal loops (five reinforcing (R) loops and one balancing (B) loop). This is the outcome of the conceptual framework presented in Figure 3.9. The reinforcing loops have exponential growth, while the balancing loop tries to bring a system to the desired state and keep it there. These main causal loops are discussed in this section.

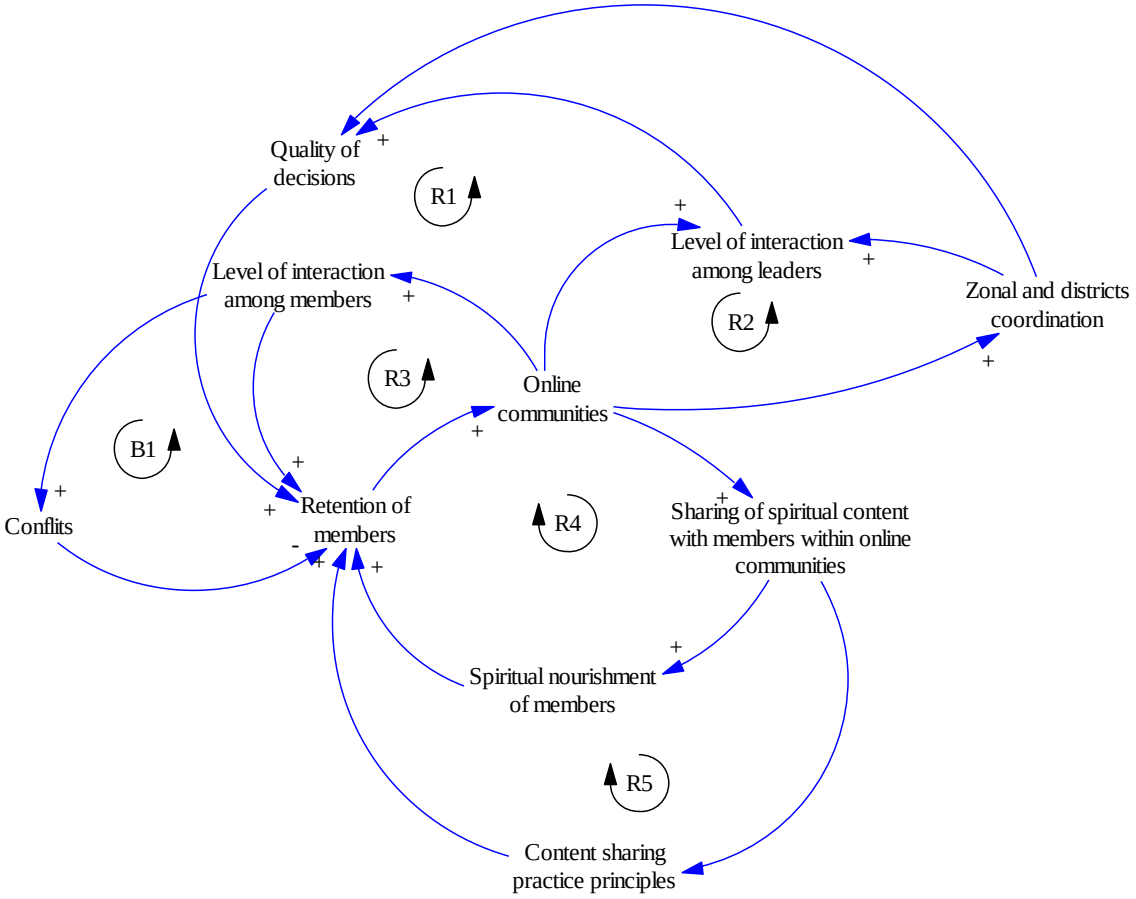

Figure 5.18: Causal Loop Diagram showing Church Sustainability

i) Reinforcing Loop 1 (R1)

The use of online communities could improve the interaction levels among church leaders. Good interactions among church leaders could lead to quality decisions as decisions are made timeously. Quality decisions could satisfy the needs of church members leading to higher retention of members. More members could lead to more online communities that address the needs of different church members. When online communities increase, they reach a specific size, and then they break into yet smaller unregulated or regulated communities (Plant, 2004).

ii) Reinforcing Loop 2 (R2)

Having online communities that support the needs of zonal and district church leaders improves church leaders' interaction level. With online communities, the leaders that form the zonal and district leadership can interact online.

iii) Reinforcing Loop 3 (R3)

The use of online communities improves interaction among church members within these online communities. Quality interactions among members tend to improve the retention of members. When members interact well amongst themselves, they feel part of the church family. When members feel part of the church family, they tend to stay in that particular church. Therefore, more online communities can be formed as more members are retained in the church.

iv) Reinforcing Loop 4 (R4)

The use of online communities in the church can improve the sharing of spiritual content among members of online communities. Sharing spiritual content with church members can address the members' spiritual needs, leading to improved retention of members. The more members are retained, the more online communities can be created to address the different needs of members.

v) Reinforcing Loop 5 (R5)

If a church uses online communities, it can improve how church leaders share spiritual content with church members. The success of this sharing depends on complying with the sharing principles agreed upon with the members; for example, sharing inappropriate content in a church group could discourage other members from belonging to a particular group. These sharing principles could either positively or negatively affect member retention. If there is chaos within a group, people tend to leave such groups. The more the church retains more members, the more online communities will be required to manage these numbers.

vi) Balancing loop 1 (B1)

Interactions among church members in online communities could cause conflicts if not properly managed. When there are conflicts among church members, this can affect the retention of members, with some members leaving the church. Low retention levels could also affect the level of interaction as they could cause a lack of trust among members.

5.9.2 ICTs Toward Growth of the SAU Conference Churches

First, the findings from the quantitative data are presented. The next section presents the findings from the qualitative data. Finally, the development of the church growth causal loop diagram is presented.

5.9.2.1 Quantitative Approach

This section presents the research findings from the quantitative data (church members). Table 5.10 shows the distribution of respondents on social media across different age groups.

Table 5.10: Distribution of Participants on Social Media by Age Group

Social Media Platform		**Age**					**Total**
		18–24	***25–34***	***35–44***	***45–54***	***> 54***	
Facebook	% within age	42 (79.2%)	65 (85.5%)	35 (85.4%)	22 (95.7%)	3 (27.3%)	167
WhatsApp	% within age	52 (98.1%)	75 (98.7%)	40 (97.6%)	23 (100%)	11 (100%)	201
Twitter	% within age	20 (37.7%)	27 (35.5%)	15 (36.6%)	7 (30.4%)	0 (0.0%)	69
Skype	% within age	6 (11.3%)	15 (19.7%)	15 (36.6%)	2 (8.7%)	1 (9.1%)	39
YouTube	% within age	42 (79.2%)	44 (57.9%)	21 (51.2%)	10 (43.5%)	1 (9.1%)	118
Badoo	% within age	2 (3.8%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	2
Total	Count	53	76	41	23	11	205

The results in Table 5.10 show that almost all respondents across all age groups had WhatsApp. Facebook had at least 79.2% for ages 18 to 54 and only 27.3% for those above 54. The results show that respondents between the ages of 25 and 34 used social media more than any other group, while those above 54 used social media the least, except for WhatsApp. The findings show the importance of religious organisations using multiple social media channels to reach as many as possible, thereby improving membership growth.

In Table 5.11, the fixed-effects model of the ANOVA (one-way) test was conducted to assess the impact of an independent variable on a dependent variable using $p < 0.05$ for a statistically significant difference.

Null Hypothesis ($H0_1$): Age and ICT skills (dependent) of church members have no significance on social media evangelism (independent) in the SDA church.

Alternative Hypothesis (Ha_1): Age and ICT skills (dependent) of church members have significance on social media evangelism (independent) in the SDA church.

Participants were asked to indicate on a 5-point Likert scale how often they evangelise using ICTs (Never = 1, Rarely = 2, Sometimes = 3, Often = 4, All the time = 5).

Table 5.11: One-way ANOVA of ICT use on age and ICT skills

Variable	Category	M	Std	F-value	Sig
Age	18–24	2.57	1.297	5.575	0.00
	25–34	2.62	1.233		
	35–44	3.02	1.294		
	45–54	3.61	1.196		
	Above 54	1.73	0.905		
	Total	2.75	1.299		
ICT Skill	Basic	2.22	1.123	12.415	0.00
	Intermediate	2.62	1.245		
	Advance	3.34	1.290		
	Total	2.75	1.299		
Overall Average		2.75	1.299	8.995	0.00

Results in Table 5.11 show a positive significant impact on personal characteristics (age and ICT skills) and social media evangelism in the SDA church at $p < 0.05$, a high overall mean of 2.75, and a standard deviation of 1.299. It can be seen that those within the age groups of 45 to 54 (M = 3.61; SD = 1.196) and 35 to 44 (M = 3.02; SD = 1.296) often used social media in evangelism. Those who were aged 45 to 54 frequently used ICTs to evangelise. It can be seen that those who are above 54 years old had the lowest mean (M = 1.73; SD = 0.905), meaning that participants rarely or never used ICTs in evangelism. The findings showed that the use of ICTs in evangelism varied with age.

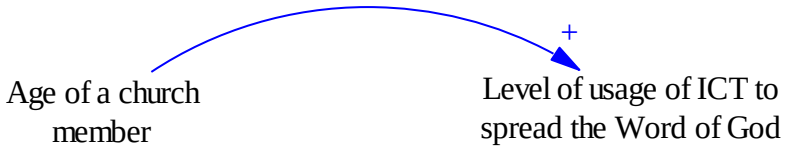

Figure 5.19: The causal effect of age on the level of usage of ICT to spread the Word of God

Table 5.11 further shows that members with advanced ICT skills (M = 3.34; SD = 1.290) often used social media to evangelise. On the other hand, those with basic ICT skills had the least mean (M = 2.22; SD = 1.123), indicating that they rarely used social media in the ministry. Therefore, the hypothesis that age and ICT skills of church members have no significance on social media evangelism in the SDA church is rejected, and the alternative, that age and ICT skills of church members have a significance on social media evangelism in the SDA church, is accepted. This means that young people and those with ICT skills likely contribute toward church evangelism compare to old people and those without ICT skills.

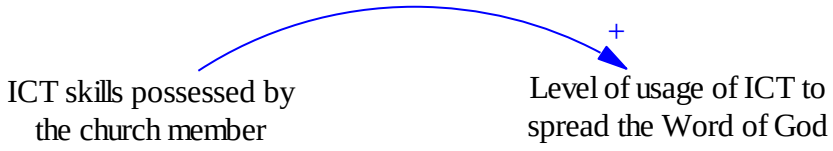

Figure 5.20: The causal effect of ICT skills possessed by the church member on the level of usage of ICT to spread the Word of God

In Table 5.12, participants were asked to indicate how often they used online tools to interact with other members using a Likert scale of 1 to 5 (Never = 1, Rarely = 2, Sometimes = 3, Often = 4, All the time = 5). The research only considered platforms with a $p < 0.05$, as shown in Table 5.12.

$H0_2$: There is no significance between social media and frequency of use among SDA members

Ha_2: There is a significance between social media and frequency of use among SDA members

Table 5.12: One-way ANOVA of social media on social interaction

Social Activity	Platform	Mean	Std	F-Value	Sig
Use other online tools (WhatsApp, Messenger, Facebook) to interact with other church members	Facebook	4.400	0.938	7.02	0.01
	WhatsApp	4.350	1.029	20.42	0.00
Overall Average		4.375	0.984	13.72	0.01

Table 5.12 shows a positive significance between social activities and social media. The overall average of the impact is high (M = 4.375; SD = 0.9835; F = 13.718; p = 0.005). It can be seen that members of the SDA in South Africa often interact online using Facebook (M = 4.40; SD = 0.938; F = 7.017; p = 0.009) and WhatsApp (M = 4.35; SD = 1.029; F = 20.419; p < 0,1). Therefore, the hypothesis that there is no significance between social media and frequency of use among SDA members is rejected, and the alternative, which states that social media and frequency are significant of use among SDA members, is accepted. This means that SDA members positively use social media to interact with other members as a way of retention.

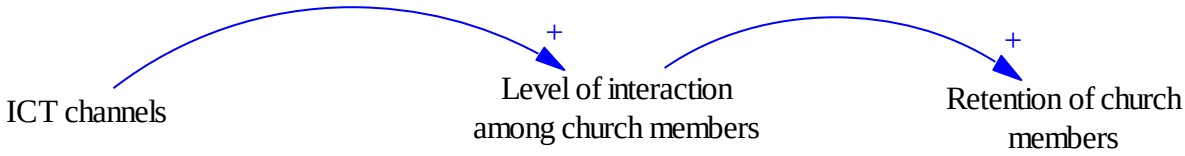

Figure 5.21: The causal effect of ICT channels on the level of interaction among members leading to retention

5.9.2.2 Qualitative Approach

This section presents the research findings from the qualitative data (church leaders). Table 5.13 shows the codes and themes generated from the research findings on how social media contributes to membership growth in religious organisations.

B) Themes and Codes on Church Growth Using Technologies

Table 5.13: Themes and Codes on Church Growth Using Technologies

Themes	Codes
Evangelism as a strategy for membership growth	• Sharing of messages on social media platforms • Share messages on the status • Sharing of media content on media sharing sites • Social media as a tool to reach out to those in different situations
Impact of Social Media Evangelism	• The church can reach out to non-members • Availability and accessibility of content
Promoting and advertising the church and its programmes	• Promote church activities • Advertise church activities
Spiritual connection of members	• Personal Bible studies • Church in-reach programmes
Challenges of using Social Media in Growing Church Membership	• Abuse of social media channels • Content flooding • Infights on social media platforms

i) Evangelism as a Strategy of Membership Growth

The research findings show that evangelistic activities play a crucial role in church growth. Participants pointed out that they used social media to share messages, share media content, and reach out to those in challenging situations.

Sharing of Messages on Social Media Platforms

> These days I am enjoying the book Steps to Christ, the chapter on prayer. I can just easily generate a message from there and send it to 5 or 6 people or 5 or 6 groups, and that way, I find that it is more effective to reach people because everyone has a phone on them, and everyone can access these messages. (P01)
> Yes, we can use our phones for sharing information on different platforms, either Facebook, WhatsApp, or Twitter; people use all those things for in-reach and out-reach as well. (P02)
> As long as you have your phone in your hand, there is always a message that is passing through either on WhatsApp, Instagram or Facebook. There is always a message that talks about God. So to me, I find that technology has brought a big impact as far as evangelism is concerned. (P01)

Share of Messages on Status

> I share all my pictures and recordings. I take pictures every time there is a programme in church and share those pictures with everyone else … on Facebook, on WhatsApp, and also on my status. (P04)
> WhatsApp is a very personal device because it's on my phone, and I control who gets to see my statuses because you can only see my statuses if you are a saved contact on my phone, and I have got saved contacts in my phone that are not Adventist, so I utilise WhatsApp a lot for evangelistic purposes. (P06)

Sharing of Media Content on Media Sharing Sites

Yes, I have used YouTube. Not my one, but at the departmental level called ZASA, so I have used YouTube, yes. (P04)

You can just take a sermon in your church and spread it out to those people via email, Skype, or Facebook. (P04)

I will make an example: if you go to YouTube, you discover that we have got a large portion of members who at work have access to vast amounts of data and are looking for sermons online. These are people who may not go to your tent and buy your DVD, but the moment you record and upload your DVD on your YouTube channel, some of these people at work can put on headphones and download that message. (P06)

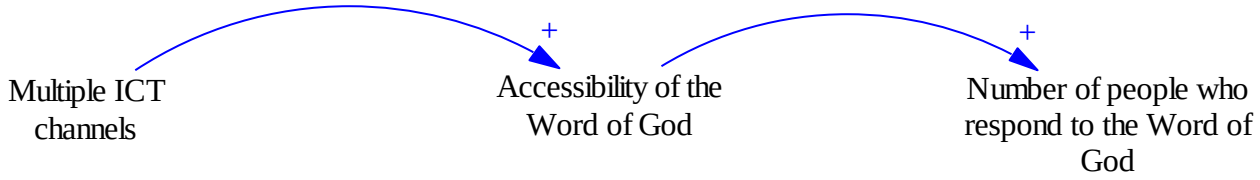

Figure 5.22: The causal effect of multiple ICT channels on the accessibility of the Word of God

Social Media as a Tool to Reach out to those in Different Situations

Social media has enabled religious organisations to reach out to people of different social statuses, non-churchgoers, and those living in closed communities that are difficult to penetrate in face-to-face evangelism.

Some people are difficult to reach because of their social statuses, like those with high profiles. Through the use of ICTs, these people can also be preached to by making the word of God available on various platforms which are within their spheres. (P05)

It helps because an area like place X is a closed-up area. There are a lot of races in the area, and it's difficult to go and knock on people's doors so that you can study with them, so we have employed ICT channels and online channels to be able to reach these people, so they have helped even the way we share the programme, we share it online, and we share the posters online. Social media are working as a tool for us to get more members because a lot of non-Adventists, especially on Facebook, I think the viewers of the things I post there, 60% were non-Adventists. (P07)

I must confess that you later realise that many people will not come to your church no matter how much you preach, but if you use social media and have some small evangelism nuggets, you can impact them where they are. (P06)

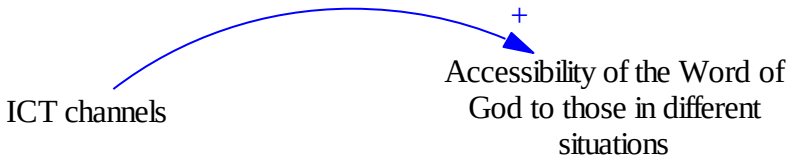

Figure 5.23: The causal effect of ICT channels on the accessibility of the Word of God to those in situations

ii) Impact of Social Media Evangelism

Social media evangelism has made the Word of God easily accessible to members and non-members via various social media platforms.

The church can reach out to non-members

The internet also is working; we have several people who are not Adventists who just go and study the Sabbath or about our doctrine on the internet, and they join the church. I know people who joined the church through the internet. (P08)

A good number of people who follow us on these platforms are not Adventists. For example, when we go for our closing function … who are not Adventists but just friends also join to see how we are doing with the arrangement, logistics, and … eventually, some of them become our church members. We have a good number now who are part of our structure. They are not yet baptised, but they are active members of the structure. It has been almost a year now, and we are hoping that …. but then they are very active members who are also part of the social network group. (P12)

Availability and Accessibility of Content

It's only a few churches where you see them using the ICTs, where they put the sermon online, on YouTube, on Facebook and all these other platforms, and it has an impact because even non-members can listen to those sermons and services of the church and even also get the Bible Study books, and the books of Ellen E. White, they can download and read at their own pleasant time. (P10)

We have a YouTube account, and some of the videos have got 1000 views already. We just had a crusade these past few months, but it has a thousand views already. (P12)

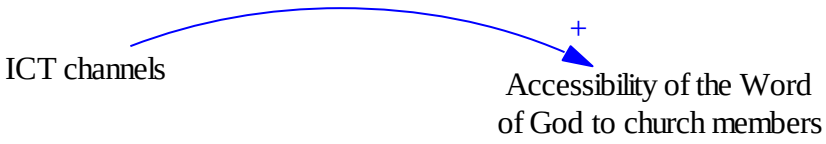

Figure 5.24: The causal effect of ICT channels on the accessibility of the Word of God to members

iii) Promotion and Advertisement of Church Activities and Programmes

Social media evangelism has made the Word of God easily accessible to members and non-members via various social media platforms.

Promote evangelistic programmes

When we do our crusades, our weeks of prayers, our music day, our closing function, and any events, we promote by sending posters on all social network platforms. And some people who come, come as a result of seeing those advertisements. (P12)

So far, maybe through social media like your Facebook when you promote the events that are coming up, like crusades and also send messages to different people that we have. (P10)

Figure 5.25: The causal effect of ICT channels on the accessibility of the Word of God to non-church members

Advertise church activities

We create posters, and then we send them to various platforms to advertise our different programmes, so we use them actively. (P03)

iv) Spiritual Connection of Church Members

Participants saw the need for members of the church to be constantly revived and to study the Word of God, as this has a ripple effect on how they share messages with others. This was highlighted by two participants when they said:

> When people grow spiritually when they read those Ellen White books and their Bibles more when the Bible is more accessible through reading it anytime and anywhere, on your phone or laptop, and when people read the SOP, if you read more of that, you will understand your mission better. Once you understand your mission better, the great commission as a Christian, as an Adventist, you will be able to carry it through. Otherwise, how can you carry through a mission which you do not understand, which you do not even know? So it will make people more evangelistic, and this can bring more souls to the church hence membership growth. (P12)

> These days I am enjoying the book Steps to Christ, the chapter on prayer. I can just easily generate a message from there and send it to 5 or 6 people or 5 or 6 groups, and that way, I find that it is more effective to reach people because everyone has a phone on them, and everyone can access these messages. (P01)

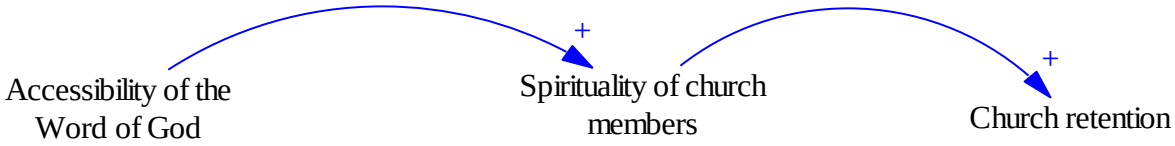

Figure 5.26: The causal effect of accessibility of the Word of God on the spirituality of church members leading to retention

v) Challenges of using Social Media in Growing Church Membership

Participants pointed out some challenges, such as abuse of social media channels, content flooding, and infighting on social media platforms that hinder the use of social media as a tool for promoting membership in religious organisations.

Abuse of Social Media Channels

> The major challenges, in general, are misuse and abuse because if you are talking of WhatsApp channels that can be used, for instance, we can create a group that is strictly meant for communication purposes, but you find that it ends up being used for other different purposes. (P02)

Content Flooding

> Yes, for example, there is another platform that I used to be on where people were complaining about space in their phones where things like pictures and videos are posted. (P02)

> For example, on WhatsApp groups, the church sets up a WhatsApp group, but within that group, it is a no man's land; we are trying to use it as a platform to share evangelism, then you see political things and jokes are also being shared, so those are the challenges we face. (P04)

Infighting on Social Media Platforms

> There was an issue with the pastors, and they were still discussing it as pastors, but we found that it ends up going to Facebook and the world; the majority saw the Adventists fighting on WhatsApp. So that's one of the negatives to the growth of the church if it is not properly used. (P08)

C) Development of the Church Growth Causal Loop Diagram

The causal loop diagram was developed from the variables identified from the quantitative data, qualitative data, and literature review.

Development Stages of Church Membership

Church membership can develop in three stages, as shown in Figure 5.27. First, the churches grow from people who may not have heard about the Word of God. These people may hear the Word of God through word of mouth, by receiving an email from a friend, and by seeing messages on social media such as Twitter, Facebook, and WhatsApp. There are several ways for these people to hear or read the Word of God. Once non-members hear or read the Word of God, they become non-members who have heard the Word of God. These people can be converted to become church members. This can happen when these people have been convinced by members directly, stayed on social media, and then decided to join a particular church, visit a church, or visit a church website. This conversion adds to the church membership. Finally, church members may backslide, becoming people who have heard the Word of God. This may happen if a member had issues with the other member(s), church ministers, disliked the congregation, etc. This decreases church membership.

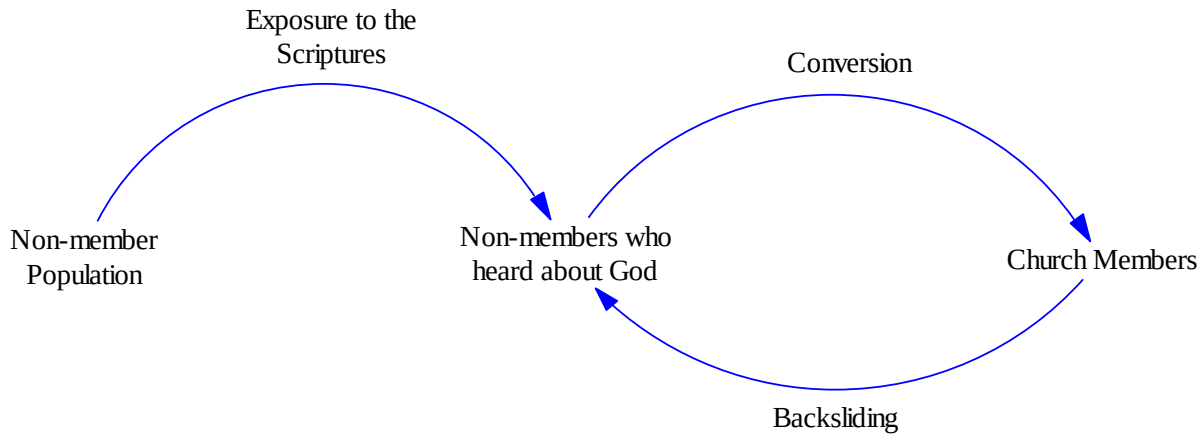

Figure 5.27: Development Stages of Church Membership

D) Causal Loop Diagram

Figure 5.28 shows the church growth CLD, which consists of 12 main causal loops, including five reinforcing (R) and two balancing (B) loops. Church growth is another outcome of the conceptual framework presented in Figure 3.9. The reinforcing loops have exponential growth, while the balancing loops try to bring a system to the desired state and keep it there. The individual causal loops are under the rest of this section.

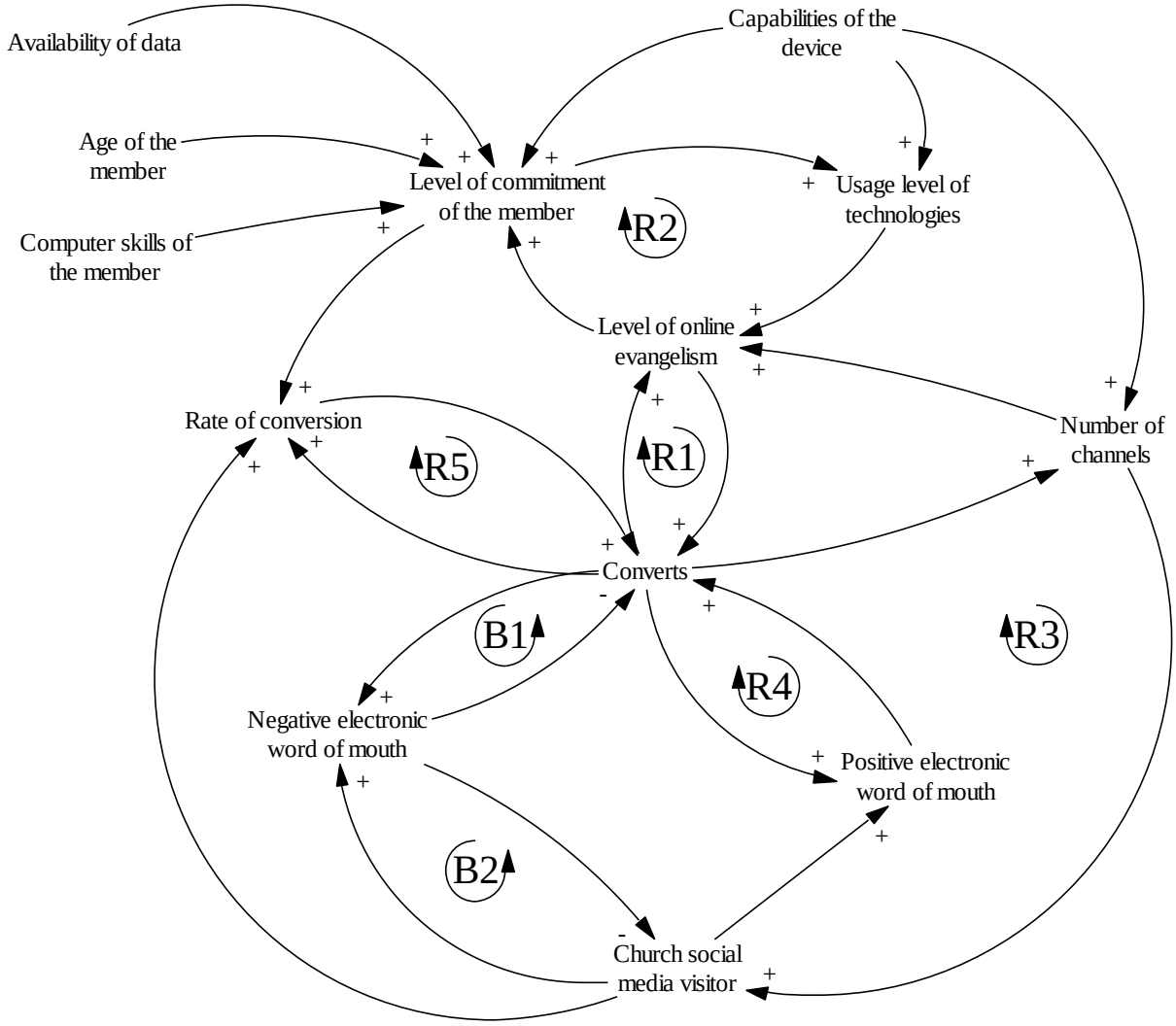

Figure 5.28: Causal Loop Diagram showing Church Growth

i) Loop Number 1 (Reinforcing Loop)

A reinforcing loop is a causal loop that reinforces itself and increases the value of the stock. If religious organisations intensify the level of online evangelism, it broadens the reach leading to an increase in the number of converts. An increase in the number of converts will lead to an increase in the level of evangelism. The assumption is that when people are converted, they become enthusiasts, participating in the recruitment of others using technologies and word of mouth. As the number of converts increases, these converts can commit themselves to evangelism, which in turn increases the level of evangelism.

ii) Loop Number 2 (Reinforcing Loop)

If there is a commitment from the church leaders and members, this will increase the usage level of online technologies, which, in turn, increases the level of online evangelism. The level of commitment can be influenced by the level of computer skills possessed by the member, the member's age,

availability of data, and devices. These factors were revealed in the findings of the quantitative research. When there is a high level of commitment, the usage level of technologies tends to increase. A high-level usage of technologies tends to increase the level of online evangelism. For religious organisations to increase the level of online evangelism, there should be a high level of commitment, and people should be willing to use technologies.

iii) Loop Number 3 (Reinforcing Loop)

Having many different social media channels can lead a church to an increase in the number of people visiting the church's social media platforms. A high number of people visiting a church on social media platforms can lead to an increase in the number of positive electronic word of mouth (eWOM). A high number of positive electronic word of mouth may lead to an increase in the number of converts. Positive electronic word of mouth influences web visitors in making decisions about joining a church or not. A high number of converts may lead to an increase in the number of channels being used to reach online visitors.

iv) Loop Number 4 (Reinforcing Loop)

The number of converts is determined by the rate of conversion. If the conversion rate is high, many people convert to church members. The conversion rate, in turn, is increased when many converts participate in recruiting new members.

v) Loop Number 5 (Balancing loop)

An increase in the negative eWOM on religious organisation platforms will likely decrease the number of converts to the church as negative comments give people a sense of doubt about the authenticity of the organisation. People can use eWOMs to make decisions on whether they can join the church or not. When the number of converts decreases, this might increase the number of negative eWOM on the church's social media platforms. When people leave the church – dissatisfied with the organisation and its services – they leave negative eWOM that can discourage new visitors who may want to join the organisation.

vi)Loop Number 6 (Balancing loop)

A high number of negative electronic word of mouth has a high chance of decreasing the number of people who visit church social media platforms. A reduction in the number of visitors to the church's social media platforms can lead to an increase in the number of negative eWOM.

5.9.3 Impact of ICTs on the SAU Conference Churches

This section discusses the impact of ICT on religious organisations under the following sections: economic impact, spiritual impact, and impact on performance.

5.9.3.1 Economic impact

Participants highlighted that ICT enabled church leaders to electronically access and share some church material, such as books, Bibles, sermons, and Bible commentaries, free of charge. It was pointed out that the cost of purchasing church materials in hard copies or on discs is relatively high. Participants pointed out that ICTs enable them to download some material free of charge online compared to when using hard copies purchased from bookshops, which reduces the costs incurred by the church or an individual. All participants indicated that they have access to some platforms where they can upload or download material at no cost, such as WhatsApp and YouTube. For example, participant P04 said, "… whatever material that I want, whether its pdf, PowerPoint presentations or word documents, there is a website where I can download all those things free of charge." In addition, ICTs enable the church to access various Bible versions online for free. It will not be financially viable to purchase all hard copies of church material for all church members, but with ICTs, all members will have the material in various versions free of charge.

5.9.3.2 Spiritual impact

The mission of the SDA church is to spread the Gospel to all nations and languages so that people can have a strong relationship with God. The participants highlighted that they hold evangelistic campaigns to reach non-members. Most participants indicated that they use ICTs such as projectors and PowerPoint presentations to make the messages appealing to the audience. Participant P06 added that ICTs enable presenters to interact with the audience and provide visual aids that help with the more natural absorption of messages. Participant P07 highlighted that ICTs enable kids to absorb messages easily as they are graphical beings. Participant P07 further highlighted that ICTs had assisted greatly during worship services. It was noted that churches with ICTs broadcast song lyrics during worship services, which has improved the music's quality. Participant P07 said, "Generally, I have visited churches that do not broadcast songs during worship, etc., the quality of music is lower than those who project all the words and everything, so it would help."

5.9.3.3 Impact on performance

It was seen that ICT had improved the way church leaders perform their operations, such as church membership, preparation of reports, and delivery of sermons and presentations. The data analysed showed that ICTs are significantly improving the operations of the churches that have adopted them.

Participant P01 indicated that ICTs enable church ministers to search for material online such as Bibles, Bible commentary, and books. This makes material accessibility much easier compared to the time before the introduction of technology in the church environment. Participant P04 highlighted that ICTs enable people in the ministry to share the gospel through material such as pictures and PowerPoint presentations with the rest of the world. It was highlighted by most of the participants that sharing and accessing material is now much faster with the use of ICTs. It was noted that ICTs can enable sharing of large and bulk material, such as videos and books, as indicated by participant P04 who said, "I can share large volumes of books, for example, like three volumes of the encyclopedia can be shared as pdf and people can just have those things right in their pockets, they do not have to carry bags and bags and loads and loads."

Furthermore, all participants indicated that record keeping is crucial as they carry out their different roles in the church environment. All the participants indicated that they use ICTs for record-keeping tasks. Participant P08 highlighted that the church introduced a system used to manage membership, which helps the church to give accurate records. Participant P08 said, "… in the past, it was difficult to do it, but with the system, it is easier because if you say, for instance, TOC, where I am currently employed, has 50 thousand members, who won't be an estimate but an accurate record because data is available to support those figures."

5.10 Chapter Summary

This chapter presented findings from the quantitative and qualitative methods. The results showed the contributions of ICT toward church sustainability and growth.

The next Chapter discusses the research findings presented in Chapter 4.

CHAPTER 6: DISCUSSION

6.1 Introduction

The previous chapter analysed and presented the results from both qualitative and quantitative research methods. This Chapter discusses the findings presented in Chapter 5. The discussion answers the following sub-questions asked in Chapter 1:

SRQ1: What are the levels of ICT adoption and use in the four SAU conference churches?

SRQ2: What factors hinder the use of ICT in the four SAU conference churches?

SRQ3: What are the criteria for selecting ICT systems for use in the four SAU conference churches?

SRQ4: What are the information needs of church leaders in the four SAU conference churches?

SRQ5: What models were used by the apostles in the early church to sustain and grow churches?

SRQ6: What is the role and impact of eWOM in the four SAU conference churches?

SRQ7: How do ICTs contribute to the sustainability and growth of the four SAU conference churches?

6.2 Discussion of Findings

This Section discusses the findings of this study based on the seven sub-questions that guided this study. The conceptual framework elaboration will be presented first to guide the discussion. The conceptual model presented in Figure 3.9 has three (3) main entities (church leaders, church members, and non-church members) that interact with ICTs. The interaction between these main entities and ICTs is governed by the environment and beliefs surrounding these entities. The use of ICT by these main entities is governed by the following factors:

- Perceived usefulness of ICT and benefits of ICT to church leaders, church members, and non-church members
- Rate of technology adoption
- Technology risk assessment
- Media richness

System dynamics was used to understand the causal effects of various variables on church growth and sustainability. The output of this conceptual framework is church growth, member retention, and church sustainability. There are, however, undesirable outcomes such as content flooding in online communities and fights within church social media groups that need to be mitigated to experience desirable outcomes. If these challenges are not mitigated, they could lead to church members leaving the church.

6.2.1 Level of Adoption and Use of ICTs within the Four SAU Conference Churches

The findings showed that the level of adoption and use of ICTs such as social media by church leaders and members of the four SAU conference churches was high. The results showed that 93.2% of church members owned a smartphone, and of this, 98% and 81.5% were on WhatsApp and Facebook, respectively. This shows a high level of adoption and use of social media, especially WhatsApp. These findings align with Ogunsole and Raji (2019)'s findings showing WhatsApp as the most commonly used social media platform among churches in Ibadan for conducting religious activities. The findings showed that church members often used (mean of 3.67) their electronic devices for spiritual activities such as studying their Bibles. A study by Hutchings (2015) showed that some users use digital Bibles because it is easier to access for users with restricted sight or learning difficulties as they can zoom in to read comfortably or listen to audio forms. This shows that ICTs have enabled people to have more access to the Bible compared to the old days before the adoption of ICT in religious circles. Furthermore, the findings showed that church members sometimes (mean of 3.33) studied their Sabbath school lessons on digital devices and searched the Internet for additional information regarding their spirituality (mean of 3.22). The study by Smith and Smith (2001) confirms the use of the Internet as a research tool for sermons and Bible studies. Social media users are also motivated to fulfil faith-based information and entertainment needs by accessing faith-based posts (Brubaker & Haigh, 2017). The use of the Internet may translate to the growth of church membership as churches could have virtual or online members. These online members could become part of the church. As expected, the findings in this research demonstrated that the use of online tools such as WhatsApp, Messenger, and Facebook to interact with other church members had a significant impact on the growth of the church since the non-church members are also using the same WhatsApp or Facebook groups. The findings are supported by Baraybar-Fernández, Arrufat-Martin and Rabira-Garcia (2020). This could benefit the retention of church members as members could feel part of the church community.

The study also assessed the use of social media among church leaders. The findings showed that all church leaders who participated in the study were at least using WhatsApp for different religious activities. As literature has already shown, the results from the research showed that platforms, such as WhatsApp, were fairly cheap and with an easy learning curve, which probably allowed the church elders, who are predominantly outside the Net-generation bracket, to adopt them easily. Another finding showed that church leaders mainly used WhatsApp for most of their religious activities because of its immediacy of feedback. The immediacy of feedback is one of the factors used to measure the degree of richness of a medium, and the study confirmed it as an important factor among religious leaders. The researcher used the Honeycomb functionality framework in Figure 2.11 and

the Uses and Gratifications Theory to understand the uses and functions of social media among church leaders within the four SAU conference churches. The research discusses seven dimensions related to social media usage among church leaders and religious organisations. The findings showed that social media changed how church leaders run religious organisations. Church leaders reported using social media to form various groups in communities, such as communities of departmental leaders, elders, the church executive board, and church, zonal and district communities. These communities served different purposes and allowed relevant activities to occur in closed societies. Conversations within closed communities were kept confidential and restricted to these communities. Closed communities were meant for church leaders to discuss and share confidential information that was meant for church leaders, such as financial matters. The use of online communities enabled church leaders to continue with church business even during the lockdown period when people were not allowed to gather due to COVID-19. Online technologies have symbol variety capabilities in that the platforms allow data and voice to be transited over the channel. Technologies with symbol variety capabilities allow the sender to use more than one representation of the information or to match the symbol to the type of information (Spencer & Hiltz, 2003). Furthermore, the study showed media synchronicity as another capability of these online technologies that the churches were using as the leaders could work together on activities that require all users to be available in real-time. Media synchronicity is seen as a power capability needed in online communities (Dennis, Fuller & Valacich, 2008; Hassell & Limayem, 2011). In a study by Orgunsole and Raji (2019), social media was found to be helpful to churches as it reduced physical meetings and gatherings in churches, as meetings and prayers could be held through various social media platforms. There were, however, challenges in these communities, as some community members were circulating inappropriate and irrelevant content and flooding these groups with media content. Through online communities, church leaders were able to discuss and vote on issues. Participants indicated the need for an online presence during such meetings where voting takes place. Some social media platforms have features that allow users to show their online presence, such as giving a thumbs up on WhatsApp. The church leaders chose channels with a variety of signs and symbols to convey a message and diverse language formats, especially when taking decisions. An example could be the use of a thumbs up to show support for the board resolutions or thumbs down to show disapproval. This shows that media richness is important to church leaders when selecting and using a particular channel, especially in cases of meetings that require voting. Regardless of these capabilities of the technology, there could be hitch-hikers, social-loafers, or sucker effects among online communities (Kerr, 1983; Dzvapatsva, 2020). However, these behaviours were not pointed out in the data. Online meetings, especially on social media, may require members to reveal their identities, such as their names and the leadership positions they occupied, to the communities to which they belong. In closed communities, the leaders are added

to the groups based on their identity to avoid adding the wrong people. This differs from public platforms where people just visit a site and comment without revealing their identities. Online visitors may include those not using their real identification details. In situations like these, it will be difficult for users to know the social standing of other users. However, this study did not find such scenarios where there were hidden identities within the online groups for the church. Interaction among users is not at a personal level in most instances. The social standing of leaders was seen to be crucial in church leadership communities, as they deal with confidential and sensitive information in various groups, such as member discipline and church finance. Their social standing can also lead to negative or positive sentiments from the users who may happen to know them. Visitors may not know the social standing of others in the interaction process.

The study showed that social media platforms were used for sharing content related to religious activities. There were, however, situations where other content not related to religious activities was posted. The findings showed that church leaders were using social media to share their adverts for church events, sermons, pictures, and evangelistic activities. Social media have been used in various areas to bring awareness to events and campaigns (Al-Dmour, Masa'deh, Salman, Abuhashesh & Al-Dmour, 2020). The sharing of relevant and up-to-date content attracts people to social media platforms (Bakhshi, Shamma & Gilbert, 2014; Silva et al., 2020). The church leaders shared the content on social media at different levels, ranging from one-on-one to public members, in the form of messages, documents, pictures, and videos. The content was shared privately with individuals, communities, or the public, depending on the nature of the content. Confidential content was shared with the relevant closed communities, while general content was shared on public platforms.

Conversations among leaders took place individually, in closed communities, and on public platforms, such as when inviting members and non-members to a church program. The study showed that church leaders were using social media to maintain relationships among church members, encourage members in the faith, share faith, share information, and evangelise. The findings were confirmed in these studies (Wyche, Hayes, Harvel & Grinter, 2006; Kgatle, 2018). Specific criteria determined the leaders' choice of a conversation channel, such as the speed of the channel, response rate, channel accessibility, efficiency and effectiveness of the channel, the urgency of the message, and control mechanisms of the channel. The leaders conducted these conversations through messages, posters, virtual meetings, reports, and documents.

Social media was used to satisfy the gratifications of church leaders, and a summary of these gratifications is given in Table 6.1.

Table 6.1:Uses and Gratifications of Church Leaders

Technology	**Gratifications**
Social media	Relationship maintenance, fellowship, keeping in touch with old friends/current friends, posting/looking at pictures, post-church events and programmes, post social functions, sharing information, evangelism, encouraging members in the faith, sharing the faith, retention of members

6.2.2 Factors Hindering the Use of ICT in the Four SAU Conference Churches

The study found several factors that hinder the use of ICT in the four SAU conference churches. These factors include a lack of ICT skills and knowledge of ICT, lack of resources, age, beliefs, and content flooding in social media groups.

i. Lack of ICT skills and knowledge of ICT

The findings showed a lack of ICT skills and understanding of the role of ICT on both church members and leaders. Research by Hung, Tsai and Chou (2016) pointed out the importance of ICT skills of the employees in the adoption of new technologies. The study showed that church members from the age of 45 years (mean of 3.00) had limited ICT skills. Computer skill has been considered one of the most influential factors affecting computer usage (Veen, 1995). Some church leaders pointed out that there were challenges in congregations as church members resisted the adoption of ICT due to ignorance of its benefits. Users tend to adopt a technology if it benefits the organisation (Maduku et al., 2016). This is also supported by the TAM's perceived usefulness, which refers to the degree to which an individual believes that using a particular technology would improve his or her job performance (Davis, 1989). Furthermore, there was a lack of dedicated and skilled ICT personnel to operate technologies in different congregations consistently; for example, live streaming was only done when specific individuals were available. This means using ICTs in some congregations was not a collective decision but was based on those who see the need and have the capabilities to use the ICTs.

ii. Lack of resources

The study showed a lack of financial resources and ICT infrastructure among the congregations. The study found that some congregations depended on the personal ICTs of individuals; for example, some church leaders reported using their smartphones to live stream church services. This implies that there were other congregations with no dedicated ICT devices due to a lack of resources. These

results confirm the results by Ossai-Ugbah (2011), which pointed out a lack of resources in the Baptist church. A study by Chairoel, Widyarto and Pujani (2015) showed that resources available within an organisation influence the adoption of new technology. The findings showed that finance to buy ICTs and data bundles mostly negatively affected church members aged 45 to 54 years. Interestingly, members within the age group of 35 to 44 years had ICT skills and finance.

iii. Age

The findings established that the personal characteristics (age and ICT skills level) of members contribute to how members use ICTs in the SDA church. The ICT usage was found to be significantly inversely proportional to the age at $p< 0.05$. This meant that older church members were more likely not to use ICTs in church activities. Most church leaders attributed the use of ICT in the church to the youth, especially when they ran the programmes for that day. The findings were consistent with those made in past studies (Bakkabulindi, Sekabembe, Shopi & Kiyingi, 2011; Umar & Jalil, 2011) that concluded that ICT usage is inversely proportionally related to age. The study found that church members who were above 55 years were rarely using ICTs for evangelism because of a lack of ICT skills and limitations posed by their devices. There was also a relationship between ICT skills and the use of ICTs to evangelise. This finding is also supported by previous studies such as (Umar and Jalil, 2012). The findings showed that church members with advanced ICT skills used ICTs most of the time to evangelise, while those with basic skills used them rarely.

iv. Beliefs

The study showed that believers had different beliefs regarding the use of ICT in the church. An individual's belief influences his or her attitude toward a new technology (LaCaille, 2020). The theory of planned behaviour supports this. The study showed that some people believe that ICT is useful in the church, while others believe ICTs should not be used. There were, however, some people who believe that ICT should be used reverently. The study confirms the findings obtained by Magezi (2015), which identified three identities of pastors; technology embracer, cautious embracer of technology, and technology objector.

v. Flooding of content posted and diverting purposes of the groups

Church leaders pointed out the challenge of flooding the online communities with content and/or diverting the purpose of the group. For example, users started a group meant for departmental leaders and then ended up being used for other purposes, such as posting political content. The issue of content flooding in social media groups has been noted by several studies (Sari & Putri, 2019; Damayanti & Sibarani, 2020). Flooding of social media groups and posting content that has nothing

to do with the purpose of the group discourage people from belonging to these communities, or they could miss important information.

6.2.4 What are the Information Needs of Church Leaders in the Four SAU Conference Churches?

The research study examined the information needs of the SDA church leaders in South Africa. To examine the information needs of the church leaders, the research followed the suggestion by Devadason and Pratap (1996), who suggested understanding the information needed, when it is needed, the role of the information, the frequency of information delivery, and the format in which it is needed to make optimal decisions. The results showed that church leaders need the information to make decisions at different levels, starting at the department level, executive board level, church level, and all higher structures of the SDA, which depend on quality information from church departments. This shows the importance of having accurate, up-to-date, and consolidated information for decision-makers. The results further showed that church leaders depend on church finance, membership, missionary and church visitors' information to make effective and efficient decisions. This information tends to come in different formats, making it difficult for church leaders to have a single view of the organisation, thereby affecting the decision-making process. There were no standardised reporting formats among church leaders in the SDA. It seems like church leaders were using their experience from work or school to prepare reports within their relevant areas. For example, some treasurers used accounting packages for reporting, while some used Microsoft Excel to create their statistics and graphs. This creates challenges when new members take over due to different systems that are in place and may not be easy to integrate. The higher offices of the SDA church rely on the information from local SDA congregations; therefore, the information from lower offices needs to be accurate to improve the quality of decisions at higher offices, such as the local Conference and the Union Conference.

There was a need for church leaders to have an information system that could process the informational needs of church leaders and provide consolidated information with a single view to assist church leaders in their decision-making process.

6.2.5 Models Used by the Apostles in the Early Church to Sustain and Grow Churches

The findings of this study showed that the early church grew and was sustained by the following models:

- Promotion of religious gatherings and events through word of mouth (WOM): the findings showed that church members were involved in spreading the word to non-members about

church programmes and events. People would attend these church programmes and events in large numbers, and many were converted and became church members. Several research studies support the importance of WOM, especially in marketing (Gildin, 2003; Havaldar & Dash, 2009). The use of ICTs in religious organisations has changed the way churches promote religious events and programmes. ICT is crucial because churches promote their events just like other organisations (Runtuwene, Lapian & Pandowo, 2018). The results showed a high level of social media in the promotion of church events and programmes.

- Delivery of the Word of God to members and non-members: the findings showed the importance of delivering the Word of God as a way of growing and sustaining the church. The findings showed that most people joined the early church because of the relevant sermons that pricked their hearts. ICT has enabled churches to extend their reach using social media. The findings showed that the four SAU conference churches distribute sermons via different channels and formats, such as audio and videos.
- Facilitation of fellowship of members and enabling members to pray: the apostles promoted fellowship among church members. The fellowship promoted oneness among the believers and enabled believers to pray together. The use of ICT has enabled believers in this 21st century to fellowship online via social media, especially during the COVID-19 era, as people could not gather due to government restrictions in curbing the pandemic. The findings showed that the four SAU conference churches used online technologies such as Zoom to enable members to fellowship and pray together. Furthermore, a study by Wyche et al., (2006) confirmed that churches use technology to create intimate relationships among members.
- Understanding and addressing the needs of church members and community: the early church was known for addressing the needs of the church members and community. This was a way of retaining church members and reaching new members. The findings showed that ICT, especially social media, was used to address some of the needs of church members and the community, such as fellowship and communication. The church leaders used online communities to enable church members to fellowship together. For example, other churches had groups with church members. These online communities would enable church leaders to communicate quickly with the relevant people. If a church member needs help, the message is communicated or shared with the rest of the church members instantly, whether on a Saturday, Monday, or any other day. He or he does not have to wait until church day when there is a problem.
- Creation and maintenance of reliable reporting systems: the early church leaders reported on the church activities such as evangelism, baptisms, and mission achieved. This motivated the

members, and they did more work. Also, there was support from church leaders and members because of the reports given to the support. The findings showed that most churches were using ICTs to create and generate reports in the form of Excel. These reports were presented using PowerPoint presentations and projectors.

- Conflict resolution: there is evidence of conflicts in the early church but at the same time evidence of conflict resolutions. Failure to resolve conflicts negatively affects the church and decreases church membership. ICT could be used in churches to resolve conflicts by analysing sentiments posted by church members or leaders to check for potential conflicts. If potential conflicts are identified, the responsible people can take the necessary steps to address them.

These findings agree with the findings by Kim (2011), which identified eight essential ministries for church growth. These include preaching, worship service, pastoral care, management and administration, teaching, the fellowship of believers, deeds of mercy, and witness.

6.2.6 Contributions of ICTs Towards Church Sustainability and Growth

The results show the value of online technologies in creating online communities that help address the needs of different church leaders and members. Online communities were necessary for addressing the communication needs of church leaders and enabling the church leaders to minister to the needs of the members. A study by (Bolu, 2012) showed that communication is vital for church sustainability. Using ICTs, the church leaders could address their communication needs as they could interact and coordinate church activities which the researcher presumes helped sustain churches, especially during the COVID-19 pandemic. Some churches or organisations whose communication was not consistent collapsed due to the pandemic. Leaders were able to meet online despite COVID-19 lockdowns via online platforms. Furthermore, church leaders could minister to the needs of members using ICTs. For example, church leaders could deliver sermons, conduct prayer sessions, and fellowships with members. These results were also confirmed by Masoga (2020). Most of the ICTs used were affordable, for example, WhatsApp and Facebook. It should also be noted that some people who never used to belong to a church for any reason managed to join different churches as services were now available in the comfort of their homes. This study is not sure whether these members would continue to worship with others when services moved face-to-face. Nonetheless, the current study concurs with the findings of the literature that the use of these technologies could be sustainable for churches as the technologies are accessible and costs minimal. Given the minimal disruption confirmed by church leaders, this study strongly suggests that ICTs made great contributions towards the growth and sustainability of the SDA church, particularly in times of pandemic.

Church leaders were able to create online communities comprised of departmental leaders, thus improving the coordination of church departments. However, it could be difficult for church leaders who have not yet adopted ICT to coordinate church events, especially when there are restrictions such as a lockdown. The findings from this study maintain that it might be challenging for church leaders to depend on physical gatherings to coordinate activities, especially in this dynamic environment. Through these online communities, church leaders could plan together as leaders. Consequently, the consolidation of church programmes improved, and the communication channels related to church programs and activities helped to garner support from other church leaders.

Furthermore, there was better collaboration among church leaders because they could easily work together. The use of online communities successfully brought all departmental leaders together for collaboration purposes, which aided church leaders in getting on the same page with their planning. For instance, the department responsible for evangelism could work hand in hand with the department responsible for church membership and retention of church members. According to this study, online communities may sustain churches by facilitating plans, coordinating activities, and tracking outcomes in real-time, as many church members can be contacted at once. Using ICTs effectively means the smooth running of church activities.

Church leaders could also share information among themselves in online communities. The consistent sharing of relevant information among church leaders within these online communities could lead to the creation of rich knowledge among church leaders that could assist in decision-making. For example, most participants pointed out that they have a group with all departmental leaders where each leader posts information about his or her departments, such as plans of events, challenges faced, and collaborations needed. The quality of decisions could have an impact on the stability of religious organisations. Besides the interaction of church leaders within a local congregation, online communities enabled church leaders at zonal and district levels to interact concerning activities. Church leaders from various assemblies that form part of zonal or district committees used online communities for easier coordination of their activities.

The use of online technologies proves beneficial to religious leaders, most of whom have multiple church responsibilities. Navigating around all their church responsibilities might be stressful in some situations as some have both local church responsibilities as well as zonal and/or district responsibilities. This could be challenging when relying on physical interactions as interactions between religious leaders could be restricted. Restricted interactions could compromise the quality of decisions as some decisions could be made late or with minimal information.

Besides supporting church leaders, online technologies could prove beneficial in retaining church members. With online communities, church leaders were able to maintain consistent interaction with church members with different needs, such as the community of youths, couples, women's ministries, etc. The consistent connection between church leaders and members is crucial; for example, the apostle Paul from the Bible would send traditional letters to different believers, such as letters to the believers in Rome and Thessalonica. These letters were meant to encourage fellow believers while the apostle Paul was in other locations. That way, the apostle would retain believers in the faith.

The same responsibility of member retention through nurturing still relies on church leaders. Church leaders are expected to take care of church members, especially the newly baptised members, by teaching them biblical truths, nurturing, guiding them in moral behaviour, and introducing them to principles of church leadership and management (Harelimana, 2014) (Kiage, 2014). Online technologies can enable religious leaders to perform these functions effectively and efficiently; for example, church leaders could post devotionals to church members within their online communities.

A study by Corley (2018) concluded that building relationships among believers, praying together, assimilation, and hospitality among believers were important factors in attracting and retaining church members. Church leaders could use online technologies to build relationships among believers and address the spiritual needs of members, such as conducting prayers in various social media groups. The findings of this study show that most church leaders were able to feed their congregations spiritually. The researcher believes that churches that do not use online technologies may have a high chance of a decline in membership, especially during times of crisis, such as the COVID-19 pandemic, as members lack support and encouragement. Moreover, in some instances, believers struggling to meet on Fridays to conduct Bible studies for different reasons managed to conduct their services online via Zoom. This shows the potential of online technologies in supporting the survival of religious organisations as technologies enable believers to be connected. From the results and the discussion, it can be argued that online technologies have the potential to sustain churches.

Besides church sustainability, church leaders also need their churches to grow. The goal of religious organisations is to convert non-members. These non-members might be new to the Word of God or might be people who have heard or read the Word of God but have not yet accepted to belong to a denomination. With the adoption of online technologies, church services could be conducted purely online or blended online worship where members could worship via an online and face-to-face medium. For example, some churches adopted online, blended worship during the COVID-19 era

(Sugimura, 2022). There is a potential for blended online worship to cater for people with different disabilities, such as the elderly, sick people, and caregivers. The results from the study showed that the growth of religious organisations depends on church members. Friendship evangelism is key to the growth of religious organisations (Lim, 2016). The more a church member recruits new members, the more the church grows. Results show that a change in the number of new members influences the rate of conversion of non-members. This implies that the more the church member recruits new members, the more these new members take part in the recruitment of others. New members tend to recruit their close circles such as friends and family members.

The recruitment of new members is influenced by the member's level of commitment. The level of commitment by members to recruiting other members is essential in intensifying the level of evangelism. This commitment is influenced by the computer skills level of the member, the age of the member, and the availability of data to use social media. These were informed by the results presented in Tables 4.11 and 4.5. This finding agrees with the idea that enthusiasts are active in recruiting other members for some time, and then they become inactive (Hayward, 2002). Participants pointed out the need for members to keep revived to be able to evangelise to others even in an online environment. We need to acknowledge the possibility of some members who left the church due to challenges in the adoption of ICT. Not only that, but some also believe that using ICT for church practices goes against the church's ethics, and most likely, the faces that just disappeared during the pandemic could have been due to such factors.

Alternative means of growing the church could be having attractive (high-quality products such as sermons) social media platforms that could attract a large number of positive electronic word of mouth (eWOM). Positive eWOM, in turn, attracts more visitors to church social media platforms. When these visitors are impressed by the church services, this could also increase the positive eWOMs on the church's social media platforms. These eWOM messages could influence church visitors when deciding on joining the church or not. Positive eWOMs tend to encourage visitors to join, whereas negative eWOMs discourage visitors from joining the church. Negative eWOMs dissuade people from visiting church social media platforms. Visitors who find unattractive church services or products tend to increase the number of negative eWOMs. Positive eWOM translates to church growth, while negative eWOM translates to a decrease in the number of converts. A decline in the number of converts may translate to a high number of negative eWOMs on the church's social media platforms.

Furthermore, a church could use multiple social media channels to target different people, as the results in Table 4.10 showed that the majority of people use some platforms while other platforms are used by very few people. Having multichannel ensures that the church has broadened its base to reach a large audience. Religious organisations can use various social media channels such as YouTube, Facebook, and WhatsApp to reach many people.

6.3 Proposed Church e-Dashboard

This study proposes a digital dashboard that enables executives to receive consolidated information for improved and effective decision-making. E-Dashboards can benefit religious leaders as they can be presented with all information relevant to effective decision-making. The current state showed that leaders were not receiving consolidated information from different departments. Figure 6.1 depicts the systems architecture for religious organisations, which can be used to implement a digital pastoral analytics dashboard successfully. Religious organisations have departments that generate data such as membership, visitors, mission, and financial data. These departments collect data through various devices, such as PCs and smartphones, which are integrated into a data warehouse. The data is prepared before analysis is carried out. The cleaned data is fed into the system for analysis. The analysis phase requires predictive modelling techniques using artificial intelligence for descriptive, predictive, and prescriptive purposes. The consolidated information is then displayed on the digital pastoral analytics dashboard of religious leaders.

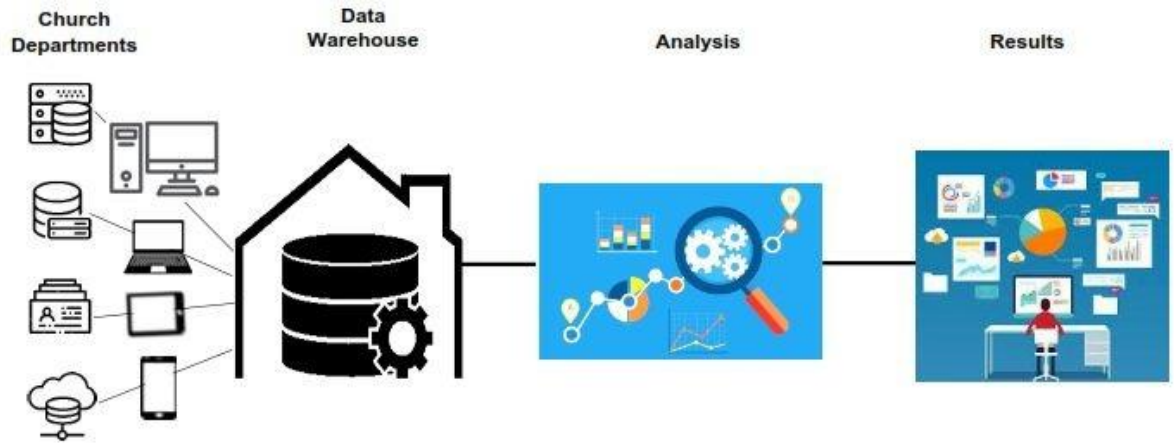

Figure 6.1: Systems Architecture for Religious Enterprise

Table 6.2 indicates the KPIs measurements for religious organisations extracted from the interviews and church reports. It shows three church KPIs, metrics for each KPI, and performance indicators. The researchers also used various church reports accessible on the internet to frame Table 6.2.

Table 6.2: Church Key Performance Indicators Measurements

Church KPIs	**Metrics**	**Performance Indicator**
Church Finance	Tithes Offerings Expenses	Show church income Indicate growth finances
Membership	Membership at the beginning Active members Baptism Profession of faith Deaths Dropped Inactive members Visitors Membership at the end Active children	Indicate growth in Membership
Mission Goals	Bible studies conducted Evangelist campaigns Number of members involved in witnessing Voice of prophecy enrolments Voice of prophecy graduations Preachers trained Number of training	Show Progress

Figures 6.2 to 6.7 depicts prototypes of dashboard pages that can be implemented in religious organisations to provide executives with consolidated information. The research findings showed that there is a lack of consolidated data from various church departments on the part of church leaders. Instead, findings showed that church leaders receive separate reports from departments, which leaves them with fragmented, unconsolidated information. To make decisions easily, religious leaders need access to the most important information on a single screen – a gap the proposed e-Dashboard could easily fill. The proposed prototype of the digital pastoral dashboard can be accessed at https://church-dashboard-1b2eb.web.app/.

Figure 6.2 shows the login page of the dashboard to allow only authorised users to access the information.

Figure 6.2: Prototype for Digital Dashboard for Religious Organisations (Main)

Figure 6.3 shows the login page of the dashboard to allow only authorised users to access the information.

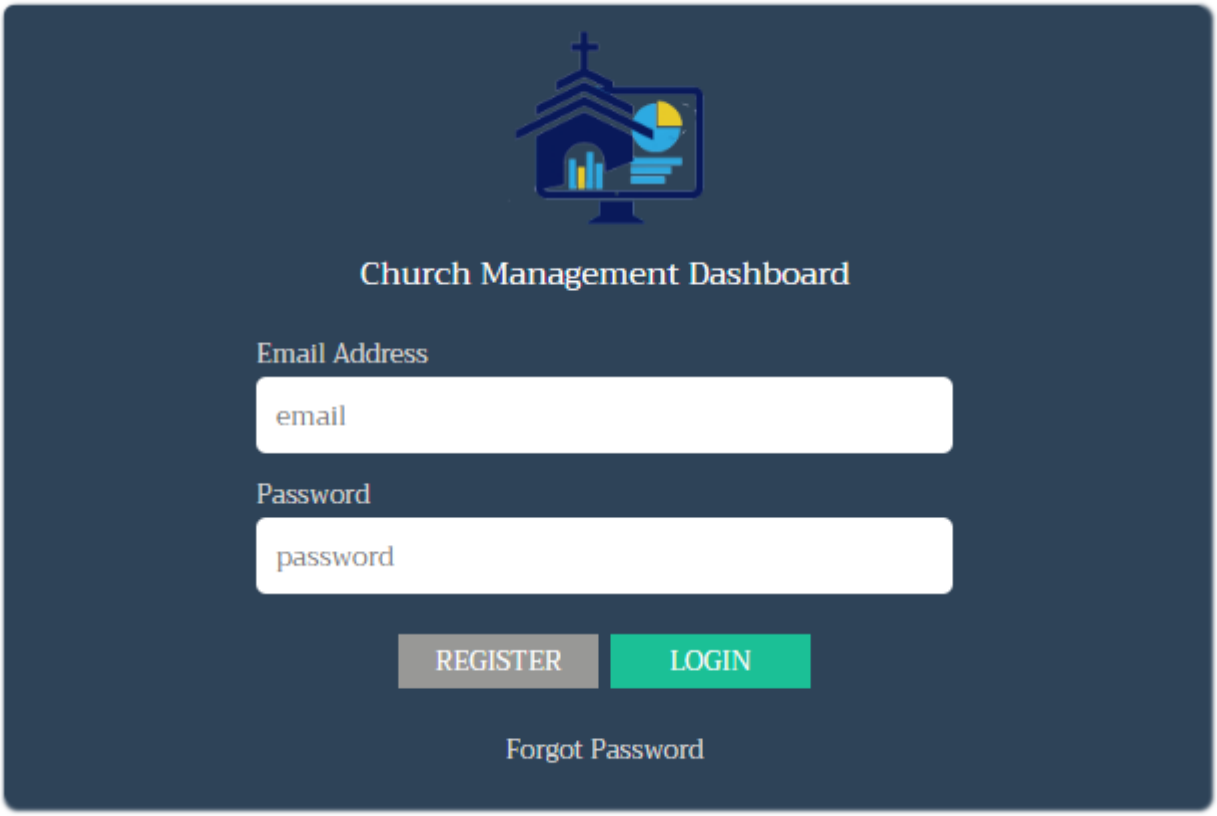

Figure 6.3: Login form

Figure 6.4 shows the main page of the dashboard with the overview report of the church.

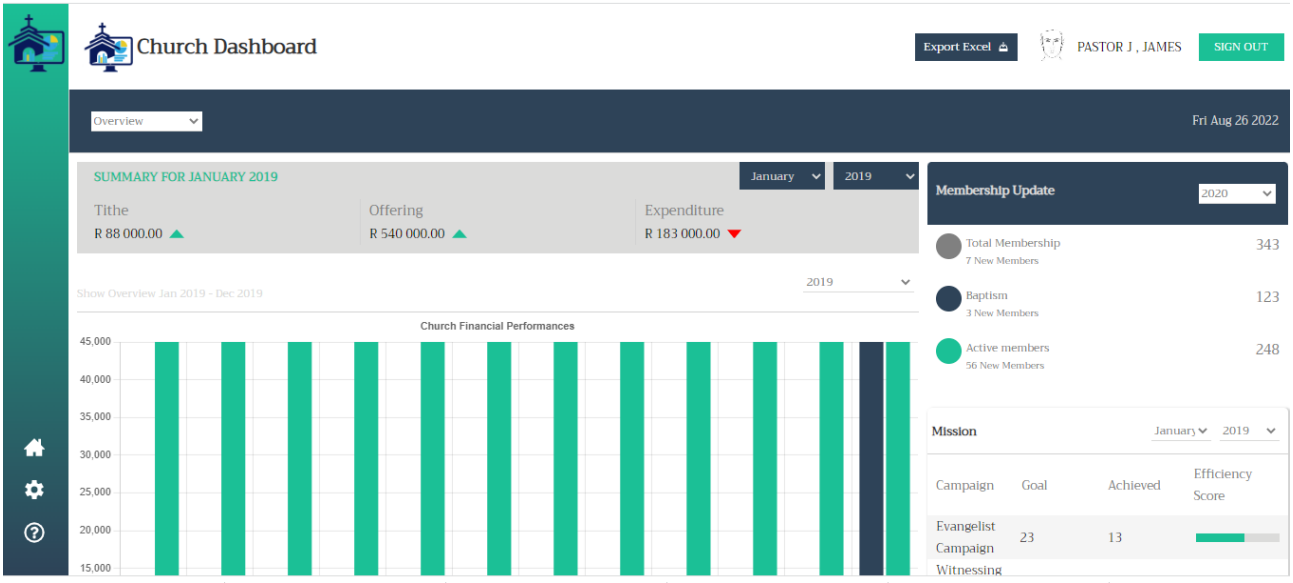

Figure 6.4: Prototype for Digital Dashboard for Religious Organisations (Overview Page)

To get the full report on the church finances, users will click on the Church Finance tab on the main page of the dashboard, and the report is presented in Figure 6.5.

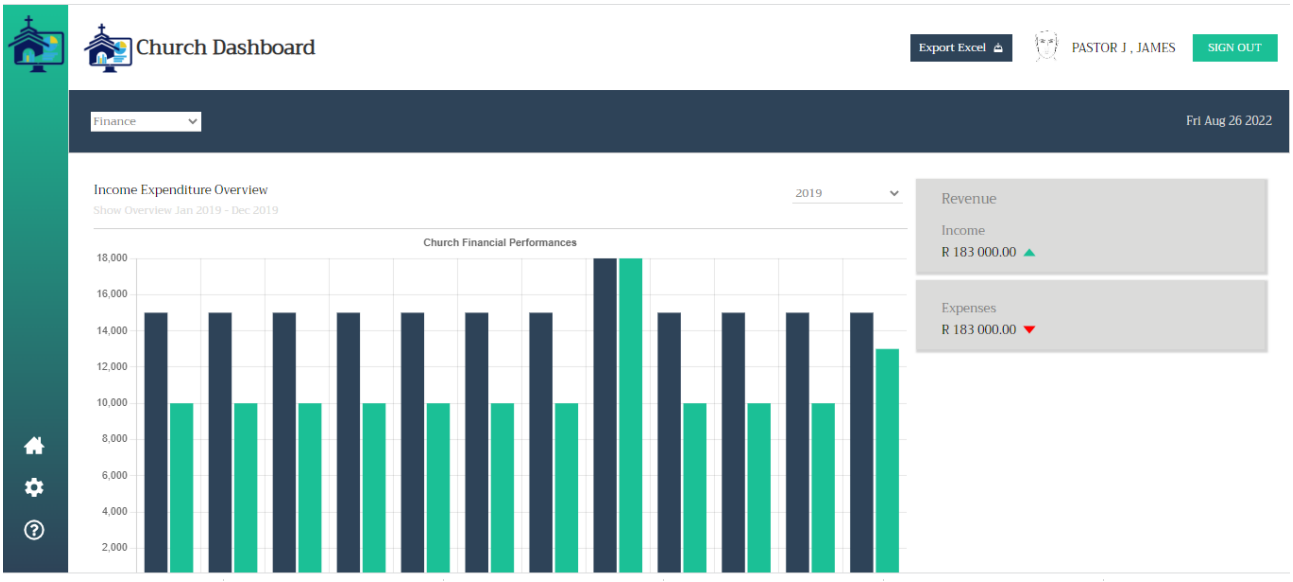

Figure 6.5: Prototype for Digital Dashboard for Religious Organisations (Church Finance Page)

The membership report is presented in Figure 6.6.

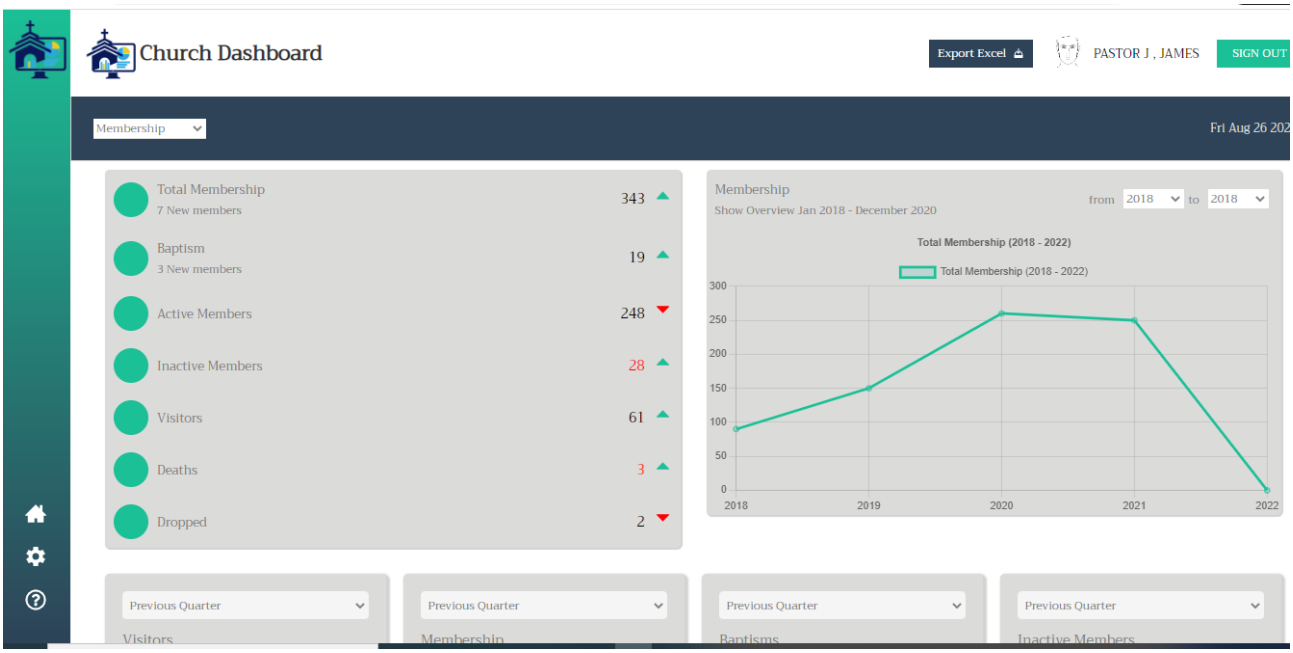

Figure 6.6: Prototype for Digital Dashboard for Religious Organisations (Membership Page)

The mission report is presented in Figure 6.7.

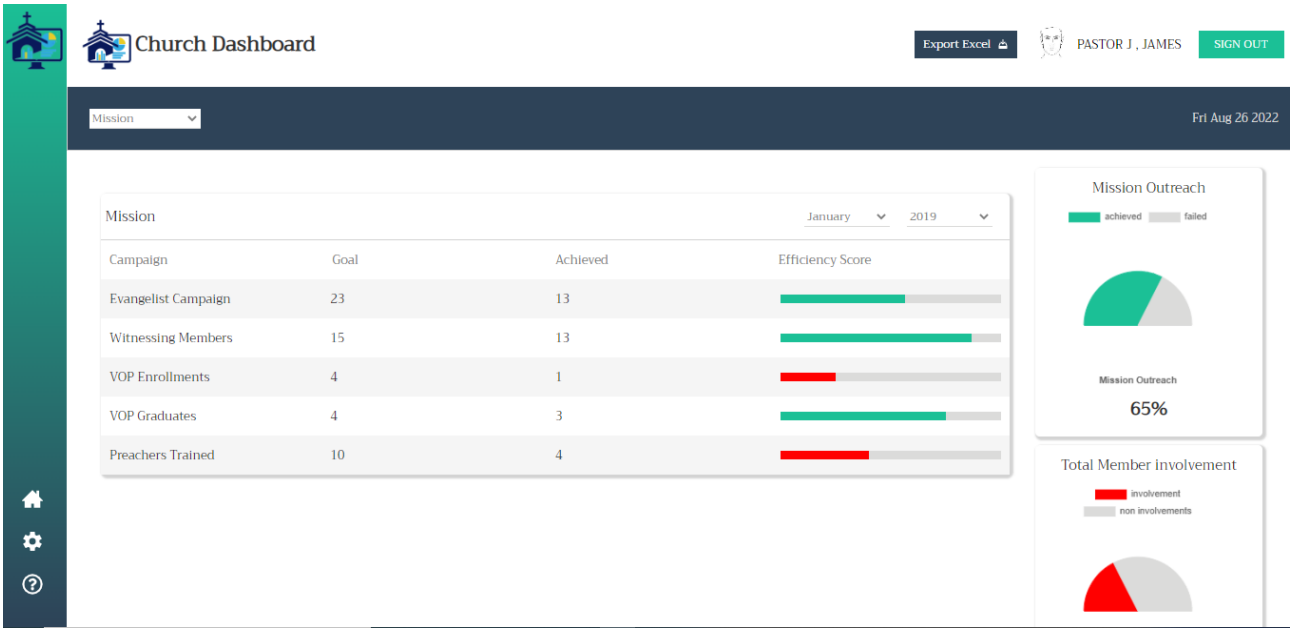

Figure 6.7: Prototype for Digital Dashboard for Religious Organisations (Mission Page)

The digital dashboard was developed based on the KPIs selected from the church reports data. The research findings showed key areas of the organisation: church membership, church finances, and mission work (evangelism). Religious leaders showed interest in the membership aspects, such as the growth rate, visitors, disciplined members, and missing members from the church. Church finance was another important area as leaders needed to track church tithes, offerings, and the faithfulness of members. Another important area was evangelism. The religious leaders showed that they were interested in evangelism activities, such as the number of new members in the church, interests registered, and other evangelism activities. The dashboard will provide consolidated information with the KPI of the organization so that leaders will have complete information regarding the organisation. This will help them address areas that are lagging.

The digital dashboard is composed of the following pages: login, main, church finance, membership, and mission page (as shown in Figures 6.2 through 6.7). The login will be used to restrict access to the dashboard. The main page gives a consolidated report for the three KPIs. It provides an overview of the church's performance in terms of church finances, membership, and mission work. The main page has three tabs: church finance, membership, and mission. These tabs enable users to view a detailed report regarding a specific church KPI.

6.4 Summary of findings

To sum up, addressing church growth and sustainability through ICT utilisation must be preceded by the effectiveness and adoption of these technologies from all stakeholders. While there were some

grey areas in the usage of ICTs, the findings were satisfactory to warrant the application of ICTs in religious organisations. Perhaps, like other institutions, there could be a need for an ICT policy within a religious organisation that could successfully steer all stakeholders in the right direction concerning usage and implementation. This study asserts that the findings were credible as most of these have been well supported by the literature.

CHAPTER 7: CONCLUSIONS, CONTRIBUTIONS AND LIMITATIONS

7.1 Introduction

Chapter 6 discussed the findings of the study. This Chapter concludes the thesis. The research aimed to evaluate the impact of ICT on church sustainability and growth of the four Southern Africa Union (SAU) conference churches. This Chapter gives the contributions, limitations, and conclusion of this study. The rest of the Chapter is structured as follows: Section 7.2 provides the summary of the study, Section 7.3 gives the limitations of the study, 7.4 discusses the contribution of the study, Section 7.5 discusses future work, and finally, Section 7.6 concludes the study.

7.2 Summary of the Study

The study evaluated the impact of ICT on church sustainability and growth of the four Southern Africa Union (SAU) conference churches. The SAU conference churches of the SDA church were used as the case study. The thesis consists of five chapters. Chapter 1 introduced the study. The primary objective of the studies was:

To evaluate the impact of ICT on church sustainability and growth in the four SAU conference churches.

This study was conducted to answer the main research question:

What is the impact of ICT on church sustainability and growth of the four SAU conferences?

The sub-objectives achieved and sub-research questions answered are presented in Table 7.1.

Table 7.1: Sub-objectives and sub-research questions

Sub-research objectives	**Sub-research questions**
To explore the level of ICT adoption and use in the four SAU conference churches.	What are the levels of ICT adoption and use in the four SAU conference churches?
To explore factors that hinder the adoption and use of ICT in the four SAU conference churches.	What factors hinder the use of ICT in the four SAU conference churches?
To determine the criteria for selecting ICT systems for use in the four SAU conference churches	SRQ3: What are the criteria for selecting ICT systems for use in the four SAU conference churches?
To examine the informational needs of church leaders in the four SAU conference churches to develop a prototype pastoral analytics that can be used to provide religious leaders with consolidated reports on the organisation's key performance indicators (KPI).	What are the informational needs of church leaders in the four SAU conference churches?
To explore growth and sustainable models used by the apostles in the early church to apply them in this 21st century to improve church sustainability and growth.	What models were used by the apostles in the early church to sustain and grow churches?
To determine the role and impact of eWOM in the four SAU conference	What is the role and impact of EWOM in the four SAU conference churches?
To explore the contributions of ICT toward church sustainability and growth.	How do ICTs contribute to the sustainability and growth of the four SAU conference churches?

Chapter 2 discusses the literature review. The literature reviewed presented limited studies on the impact of ICT on the sustainability and growth of churches. Chapter 4 provided a detailed research methodology of the study. The study adopted the pragmatism research philosophy, and a single case study of the SDA church was used to understand the impact of ICT on church sustainability and growth. The research applied both inductive and deductive approaches. Data was collected using concurrent qualitative and quantitative methods. Qualitative data were analysed thematically using Atlas-ti, while quantitative data was analysed using SPSS version 26. The results from both qualitative and quantitative methods are presented in Chapter 5. The findings from the qualitative data included extracts from the participants to support the interpretations. The study found ICT to be

important in promoting evangelism and administration of church records through advertising, promoting, general communication, retention of church members and communicating church programs, thereby growing and sustaining the church. The findings are discussed in Chapter 6. The discussions were controlled by literature.

7.3 Limitations of the Study

This study was conducted using a single case study of the SAU conference churches of the SDA church. The SDA church was chosen because it is one of the churches that has adopted ICT, and few studies have investigated the use of ICT in the SDA church. However, the study used a relatively small sample size of 204 church members who completed the survey and 12 church leaders who were interviewed. This affects the generalisability of the results to other contexts. Furthermore, the study used a convenience sampling technique to find church members to complete the survey. This could not represent all the members of a congregation.

The study could not validate the pastoral analytics dashboard that was developed due to time constraints.

7.4 Future work

The study used a single case of the SDA church to investigate the adoption and use of ICT in churches. This means that the data collected could not represent all religious organisations. However, rich data could be obtained from several churches. To get richer findings, other studies could extend the study to other religious organisations.

The pastoral analytics dashboard could be tested in other religious organisations using data from religious leaders.

7.4 Contributions of the Study

This section discusses the contributions of this research to the theoretical body of knowledge and practical contribution to the IS field. The contributions are discussed under the relevant sub-headings.

7.4.1 Theoretical Contributions

This study contributed to the existing body of knowledge in the form of literature on the impact of ICT on church sustainability and growth. The study also added a voice to the system dynamics theory, its use, and its application in religious organisations. Very few research studies have studied the use of ICT on church sustainability and growth using the lens of system dynamics. The system dynamics theory highlighted how church leaders can make better decisions when dealing with fundamental issues on church sustainability and growth using CLDs. Church leaders can use the model results to

communicate essential findings about church sustainability and growth. This has been a grey area in the field of IS. The study also identified factors that hinder the use of ICT within the four SAU conference churches of the SDA church from the perspective of church leaders and members. Furthermore, the study also identified sustainable growth models using system dynamics used by the Apostles in the early church and applied them to the 21st-century churches.

7.4.2 Practical Contributions

Practically, the proposed pastoral analytics dashboard could provide religious leaders with up-to-date information to make informed decisions, especially in a dynamic environment. Religious leaders are concerned about church finances, mission work, and membership growth. The use of a pastoral analytics dashboard could help religious leaders understand the key performance areas of their organisations, leading to better and improved decisions. In addition, the pastoral analytics dashboard would enable church leaders to utilise large volumes of data that were going unused.

7.5 Policy implications

Church leaders could develop ICT policy to give parameters on which to operate ICTs and measures to govern their use. The creation of an ICT policy within the church environment could help in controlling the use of ICTs and provide good usage practices. It could be difficult to control ICT usage in religious organisations without a clear ICT policy, for example, it could be beneficial for church members to know the implications of violating the ICT usage rules. A good ICT policy could help in controlling the posting of messages in online communities and church data usage. This could help the church capitalise on ICT usage for church sustainability and growth.

Church leaders could be educated on the benefits and usefulness of ICT in religious organisations. The study findings showed that there are church leaders who have not fully understood the benefits and usefulness of ICT in religious organisations. This could be due to a lack of exposure to ICTs or perceived beliefs about ICT usage in religious circles. The government could encourage religious leaders to make use of ICTs to grow and sustain churches as church growth contributes to societies especially the youths as religion helps to instill the right morale, discipline and acceptable behaviour in people.

Governments could empower people on ICT usage. Governments could ensure that people have access to ICTs to promote sharing and dissemination of information among people using sound technology. When people have access to ICT, it could be easy to share the Word of God, thereby, growing churches.

7.6 Conclusions

The purpose of the study was to evaluate the impact of ICT on church sustainability and growth within the four SAU conference churches. The study showed a high level of usage of ICT, especially social networking or messaging and media-sharing sites, among SDA leaders. The study showed that ICT plays a crucial role in the development and implementation of various ICTs in religious organisations. The research presented uses of ICT in a religious organisation such as communication, study, research, evangelism, promotion of church programs, enhancements of worship services, and administration. The use of ICT in religious organisations relieves leaders from using strenuous processes in their day-to-day operations. All participants interviewed were very positive about the impact of ICTs on religious organisations. The study showed the use of ICT had significantly impacted four aspects: social, economic, spiritual, and the performance of church leaders. The research also presented some criteria that can be used for future ICT developments in religious organisations. This includes the creation of technologies that are less detrimental to the church and people's lives, cost-effective products, speed, and effective products, durability, the security of data and quality output, and the development of a data-informed and spirit-led system for a religious organisation. Creating such artifacts would enhance ICT development in any religious environment.

The study showed that social media was the most used ICT. The most frequently used social media platforms were WhatsApp, Facebook, and YouTube. Little use was made of other categories of social media such as wiki, blogs, and RSS. Social media enabled religious leaders to create online closed communities for leaders, such as communities of elders, departmental leaders, the church board executive, and district church communities where conversations and decision-making took place. Research findings showed that social media had assisted religious leaders in the areas of advertising and promotion of church programs, general communication, and evangelism. In addition, social media platforms such as Facebook, YouTube, and Twitter have enabled users to comment on religious leaders' online media content. This provides religious leaders with feedback on the quality of services provided. The research findings showed a high positive average sentiment score in feedback from the users. The use of social media in religious organizations has benefited leaders through immediate feedback, media synchronicity, accessibility of multi-purpose channels, the ability to share messages in different formats, as well as low cost in communication, marketing, and promoting church programs.

Despite these benefits of ICT in religious organisations, the research findings showed that some people tend to circulate improper content, divert the purpose of the groups, irreverently use and flood

the social media groups with media content unrelated to the group. The research study concluded that successful implementation and use of ICT at the church management level requires trustworthy leaders, as they deal with confidential issues in various online communities, skilled people in the use of ICTs, good ICT usage practice, and a positive attitude to ICT. Furthermore, the study found that members play a crucial role in growing churches. Technologies are just enablers for members to perform their activities. Moreover, the quality of services or products on the church's social media platforms encourages or discourages web visitors leading to either positive or negative eWOMs.

REFERENCES

Abawi, K. (2017) Data Collection methods Questionnaire & Interview, Training in Sexual and Reproductive Health Research, Geneva Workshop.

Absanto, G. (2013) 'Analysis of Business Growth Strategies and their Contribution to Business Growth', International Journal of Economics, Commerce and Management, I(1), pp. 1–14.

Abualrob, A.A. and Kang, J. (2016) 'The barriers that hinder the adoption of e-commerce by small businesses: Unique hindrance in Palestine', Information Development, 32(5), pp. 1528–1544. doi: 10.1177/0266666915609774.

Acharya, A.S., Prakash, A., Saxena, P. and Nigam A. (2013) 'Sampling: why and how of it?', Indian Journal of Medical Specialities, 4(2). doi: 10.7713/ijms.2013.0032.

Adedeji, A.G.M. (2012) 'Religious Functions in Poverty Alleviation and Development of a Nation', Journal of Global Intelligence & Policy, 5(7), pp. 16–26.

Adventist Review (2020) 'Using the Internet and Mobile Devices for Spiritual Growth'. Available at: https://adventistreview.org/using-the-internet-and-mobile-devices-for-spiritual-growth/.

Ajibade, P. (2018) 'Technology acceptance model limitations and criticisms: Exploring the practical applications and use in technology-related studies, mixed-method, and qualitative researches', Library Philosophy and Practice.

Akinsola, S. and Munepapa, J. (2021) 'Utilisation of e-collaboration tools for effective decision-making: A developing country public-sector perspective', SA Journal of Information Management, 23(1), pp. 1–7. doi: 10.4102/sajim.v23i1.1099.

Aksu, H.H. (2009) 'Questionnaires and Interviews in Educational Researches', Journal of Graduate School of Social Sciences, 13(1), pp. 201–216.

Albarracin, D., Johnson, B.T., Fishbein, M. and Muellerleile, P.A. (2001) 'Theories of reasoned action and planned behavior as models of condom use: a meta-analysis'. Psychological bulletin, 127(1), p.142.

Al-Dmour, H., Masa'deh, R., Salman, A., Abuhashesh, M. and Al-Dmour, R. (2020) 'Influence of social media platforms on public health protection against the COVID-19 pandemic via the mediating effects of public health awareness and behavioral changes: Integrated model', Journal of Medical Internet Research, 22(8), pp. 1–15. doi: 10.2196/19996.

Al-Swidi, A., Huque, S.M.R., Hafeez, M.H. and Shariff, M.N.M. (2014) 'The role of subjective norms in theory of planned behavior in the context of organic food consumption', British Food Journal, 116(10), pp. 1561–1580. doi: 10.1108/BFJ-05-2013-0105.

Alassiri, A.A., Muda, M.B., Ghazali, R.B. and Ahamefula, U.C. (2014) 'Usage of Social Networking Sites and Technological Impact on the Interaction- Enabling Features', International Journal of Humanities and Social Science, 4(4), pp. 46–61.

Alharahsheh, H.H. and Pius, A. (2020) 'A Review of key paradigms: positivism VS interpretivism', Global Academic Journal of Humanities and Social Science, 2(3), pp. 39–43. Available at: https://www.researchgate.net/publication/338244145.

Ali, O. and Soar, J. (2018) Technology Innovation Adoption Theories, Technology Adoption and Social Issues. IGI Global. doi: 10.4018/978-1-5225-5201-7.ch037.

Alshamaileh, Y.Y. (2013) An empirical investigation of factors affecting cloud computing adoption among SMEs in the north east of England, (Doctoral dissertation, Newcastle University).

Alshenqeeti, H. (2014) 'Interviewing as a Data Collection Method: A Critical Review', English Linguistics Research, 3(1). doi: 10.5430/elr.v3n1p39.

Amanze, P.O. and Wogu, C.N. (2015) 'Internet Evangelism : An Effective Method for Soul-winning in the Seventh-day Adventist Church in Nigeria', Asia-Africa Journal of Mission & Ministry, 11, pp. 149–170.

Angeles, R. (2014) 'Using the Technology-Organization-Environment Framework for Analyzing Nike's "Considered Index" Green Initiative, a Decision Support System-Driven System', Journal of Management and Sustainability, 4(1), pp. 96–113. doi: 10.5539/jms.v4n1p96.

Anney, V.N. (2014) 'Ensuring the Quality of the Findings of Qualitative Research: Looking at Trustworthiness Criteria', Journal of Emerging Trends in Educational Research and Policy Studies, 5(2), pp. 272–281. doi: 10.3109/08941939.2012.723954.

Antwi, S.K. and Hamza, K. (2015) 'Qualitative and Quantitative Research Paradigms in Business Research: A Philosophical Reflection', European Journal of Business and Management, 7(3), pp. 217–225. Available at: https://iiste.org/Journals/index.php/EJBM/article/view/19543.

Apiyo, R.O. and Kiarie, D. (2018) 'Role of ICT tools in supply chain performance', International Journal of Supply Chain Management, 3(1), pp. 17–26. Available at: https://www.iprjb.org/journals/index.php/IJSCM/article/view/598.

Armitage, C.J., Conner, M. and Norman, P. (1999) 'Differential effects of mood on information processing: evidence from the theories of reasoned action and planned behaviour', European Journal

of Social Psychology, 29, pp. 419–433. doi: 10.1002/(sici)1099-0992(199906)29:4<419::aid-ejsp933>3.3.co;2-c.

Arn, C. (2007) 'Evangelism or Disciple-making?', Journal of the American Society for Church Growth, 18(3), pp. 13–22.

Arthur, J. and Rensleigh, C. (2015) 'The use of online technologies in the small church', SA Journal of Information Management, 17(1), pp. 1–6. doi: 10.4102/sajim.v17i1.630.

Austin, L. (2014) 'Faith-Based Community Radio and Development in the South Pacific Islands.', Media International Australia (8/1/07-current), (150), pp. 114–121. Available at: http://search.ebscohost.com/login.aspx?direct=true&db=ufh&AN=97081660&site=ehost-live.

Awa, H.O., Ojiabo, O.U. and Emecheta, B.C. (2015) 'Integrating TAM, TPB and TOE frameworks and expanding their characteristic constructs for e-commerce adoption by SMEs', Journal of Science and Technology Policy Management, 6(1), pp. 76–94. doi: 10.1108/JSTPM-04-2014-0012.

Azami-Aghdash, S., Tabrizi, J.S., Sadeghi-Bazargani, H., Hajebrahimi, S. and Naghavi-Behzad, M. (2015) 'Developing performance indicators for clinical governance in dimensions of risk management and clinical effectiveness', International Journal for Quality in Health Care, 27(2), pp. 110–116. doi: 10.1093/intqhc/mzu102.

Azar, S.L., Machado, J.C., Vacas-De-Carvalho, L. and Mendes, A. (2016) 'Motivations to interact with brands on Facebook - Towards a typology of consumer-brand interactions', Journal of Brand Management, 23(2), pp. 153–178. doi: 10.1057/bm.2016.3.

Azorín, J.M. and Cameron, R. (2010) 'The application of Mixed Methods in Organisational Research: A literature review', Electronic Journal of Business Research Methods, 8(2), pp. 95–105. doi: 10.4236/jis.2012.33026.

Badmos, K. (2014) 'Effects of social media on the church', in Paper presented at the 2014 Annual Conference of Theological friends and fellows, pp. 1–17.

Baek, K., Holton, A., Harp, D. and Yaschur, C. (2011) 'The links that bind: Uncovering novel motivations for linking on Facebook', Computers in Human Behavior, 27(6), pp. 2243–2248. doi: 10.1016/j.chb.2011.07.003.

Baker, J. (2012) 'The Technology–Organization–Environment Framework', in Information systems theory, pp. 231–245. doi: 10.1007/978-1-4419-6108-2.

Bakhshi, S., Shamma, D.A. and Gilbert, E. (2014) 'Faces engage us: Photos with faces attract more likes and comments on Instagram', Conference on Human Factors in Computing Systems - Proceedings, (April 2014), pp. 965–974. doi: 10.1145/2556288.2557403.

Bakkabulindi, F., Sekabembe, B., Shopi, J. and Kiyingi, G. (2011) 'Effect of Qualification in ICT, Age and Income on Use of Computers among Postgraduate Students in Makerere University School of Education', Journal of Science and Sustainable Development, 2(1). doi: 10.4314/jssd.v2i1.67558.

Banerjee, A. and Chaudhury, S. (2010) 'Statistics Without Tears: Populations and Samples', Industrial Psychiatry Journal, 19(1), pp. 60–65. doi: 10.4103/0972-6748.77642.

Baraybar-Fernández, A., Arrufat-Martín, S. and Rubira-García, R. (2020) 'Religion and social media: Communication strategies by the Spanish episcopal conference', Religions, 11(5). doi: 10.3390/rel11050239.

Barczyk, C. and Duncan, D. (2011) 'Social Networking Media as a Tool for Teaching Business Administration Courses', International Journal of Humanities and Social Science, 1(17), pp. 267–276.

Baškarada, S. (2014) 'Qualitative Case Study Guidelines', The Qualitative Report, 19(40), pp. 1–18. doi: 10.46743/2160-3715/2014.1008.

Beal, V. (2016) 'What is videoconferencing?'. Available at: http://www.webopedia.com/TERM/V/videoconferencing.html.

Belleau, B.D., Summers, T.A., Xu, Y. and Pinel, R. (2007) 'Theory of reasoned action: Purchase intention of young consumers'. Clothing and Textiles Research Journal, 25(3), pp.244-257

Benbasat, I., Goldstein, D.K. and Mead, M. (1987) 'The Case Research Strategy in Studies of Information Systems', MIS Quarterly, 11(3), pp. 369–386. Available at: https://www.jstor.org/stable/248684?seq=1#page_scan_tab_contents.

Berger, J. (2016) 'Religious Organizations', Global Encyclopedia of Public Administration, Public Policy, and Governance. doi: 10.1007/978-3-319-31816-5.

Bergin, R. (2016) Media richness theory, Center for Homeland Defense and Security.

Bhardwaj, P. (2019) 'Types of sampling in research', Journal of the Practice of Cardiovascular Sciences, 5(3), p. 157. doi: 10.4103/jpcs.jpcs_62_19.

Boaheng, I. (2014) 'Early Christian missions in West Africa: Implications for rethinking the great commission', Journal of Church and Theology, 18, pp. 7–26.

Boddy, C.R. (2016) 'Sample size for qualitative research', Qualitative Market Research, 19(4), pp. 426–432. doi: 10.1108/QMR-06-2016-0053.

Bolarinwa, O.A. (2015) ‘Principles and methods of validity and reliability testing of questionnaires used in social and health science researches’, Nigerian Postgraduate Medical Journal, 22(4), p. 195. doi: 10.4103/1117-1936.173959.

Bolu, C.A. (2012) ‘The church in the contemporary world: Information and communication technology in church communication for growth: A case study’, Journal of Media and Communication Studies, 4(4), pp. 80–94. doi: 10.5897/jmcs11.087.

Bouhnik, D., Deshen, M. and Gan, R. (2014) ‘WhatsApp Goes to School : Mobile Instant Messaging between Teachers and Students’, Journal of Information Technology Education: Research, 13, pp. 217–231. doi: 10.1016/j.iheduc.2016.06.001.

Bowen, G.A. (2009) ‘Document Analysis as a Qualitative Research Method’, Qualitative Research Journal, 9(2), pp. 27–40.

Braun, V. and Clarke, V. (2006) ‘Using thematic analysis in psychology’, Qualitative Research in Psychology, 3(2), pp. 77–101. doi: 10.1191/1478088706qp063oa.

Brezavšček, A., Šparl, P. and Žnidaršič, A. (2017) ‘Factors influencing the behavioural intention to use statistical software: The perspective of the Slovenian students of social sciences’, Eurasia Journal of Mathematics, Science and Technology Education, 13(3), pp. 953–986. doi: 10.12973/eurasia.2017.00652a.

Brink, H.I.L. (1993) ‘Validity and Reliability in Qualitative Research’, Curationis, 16(2), pp. 35–38. doi: 10.4102/curationis.v16i2.1396.

Brown, S., Venkatesh, V. and Bala, H. (2006) ‘Household technology use: Integrating household life cycle and the model of adoption of technology in households’, Information Society, 22(4), pp. 205–218. doi: 10.1080/01972240600791333.

Brubaker, P.J. and Haigh, M.M. (2017) ‘The religious facebook experience: uses and gratifications of faith-based content’, Social Media and Society, 3(2). doi: 10.1177/2056305117703723.

Bruner, R.F. (2004) Applied Mergers and Acquisitions, John Wiley and Sons. New York.

Budiselić, E. (2011) ‘The Impartation of the Gifts of the Spirit in Paul’s Theology’, Kairos, 5(2), pp. 245–270.

Campbell, H. (2005) ‘Making space for religion in Internet studies’, Information Society, 21(4), pp. 309–315. doi: 10.1080/01972240591007625.

Carter, N., Bryant-Lukosius, D., Dicenso, A., Blythe, J. and Neville, A.J. (2014) 'The use of triangulation in qualitative research', Oncology Nursing Forum, 41(5), pp. 545–547. doi: 10.1188/14.ONF.545-547.

Casteel, A. and Bridier, N.L. (2021) 'Describing populations and samples in doctoral student research', International Journal of Doctoral Studies, 16, pp. 339–362.

Chairoel, L., Widyarto, S. and Pujani, V. (2015) 'ICT adoption in affecting organizational performance among Indonesian SMEs', The International Technology Management Review, 5(2), p. 82. doi: 10.2991/itmr.2015.5.2.3.

Chew, F. (1994) 'The Relationship of Information Needs to Issue Relevance and Media Use', Journalism Quarterly, 71(3), pp. 676–688. doi: 10.1177/107769909407100318.

Chhachhar, A.R., Qureshi, B., Khushk, G.M. and Ahmed, S. (2014) 'Impact of Information and Communication Technologies in Agriculture Development', Journal of Basic and Applied Scientific Research, 4(1), pp. 281–288.

Chiang, I.C.A., Jhangiani, R.S. and Price, P.C. (2015) 'Constructing survey questionnaires', in Research Methods in Psychology-2nd Canadian Edition. Available at: https://opentextbc.ca/researchmethods/chapter/constructing-survey-questionnaires/.

Chiluwa, I. (2012) 'Online Religion in Nigeria: The Internet Church and Cyber Miracles', Journal of Asian and African Studies, 47(6), pp. 734–749. doi: 10.1177/0021909611430935.

Chiu, C.Y., Chen, S. and Chen, C.L. (2017) 'An Integrated Perspective of TOE Framework and Innovation Diffusion in Broadband Mobile Applications Adoption by Enterprises', Economics and Social Sciences (IJMESS) (IJMESS), 6(1), pp. 14–39. Available at: http://hdl.handle.net/10419/157921http://creativecommons.org/licenses/by-nc/3.0/www.econstor.euhttp://www.ijmess.com.

Chowdhury, M.F. (2014) 'Interpretivism in Aiding Our Understanding of the Contemporary Social World', Open Journal of Philosophy, 4(4), pp. 432–438. doi: 10.4236/ojpp.2014.43047.

Chukwudi, J.H., Izang, A.A., Ogu, E.C. and Monday, M.E. (2016) 'The use of ICT and Social Networking Websites as a Tool for Evangelism: the Role of Division of Spiritual Life', in Proceedings of the 2nd Interdisciplinary Conference of TASUED-UCC 2016, pp. 116–134.

Činčala, P.A. (2016) 'Building a Vibrant, Healthy, Growing Church', in Faculty Publications, pp. 1–18. Available at: https://digitalcommons.andrews.edu/pubs/231.

Collins, B.W. and Sturgill, A. (2013) 'The Effects of Media Use on Religious Individuals' Perceptions of Science', Journal of Media and Religion, 12(4), pp. 217–230. doi: 10.1080/15348423.2013.845043.

Connelly, L.M. (2016) 'Trustworthiness in Qualitative Research', Medsurg Nursing, 25(6), pp. 435–436.

Connor, D.S. and Reimers, S. (2018) 'Comparing the use of open and closed questions for Web-based measures of the continued-influence effect', Behavior Research Methods, pp. 1426–1440. doi: 10.3758/s13428-018-1066-z.

Cooper, D.R. and Schindler, P.S. (2006) Business Research Methods. 9th edn, Business Research Methods. 9th edn. USA: McGraw-Hill. Available at: http://130.209.236.149/headocs/31businessresearch.pdf.

Corbin, J. and Strauss, A. (2014) Basics of qualitative research: Techniques and procedures for developing grounded theory. 3rd edn, Sage publications. 3rd edn. Los Angeles: Sage Publications Inc. Available at: http://ejournals.library.ualberta.ca/index.php/cjuce-rcepupp.1-3.

Corley, A.W. (2018) Factors associated with attracting and retaining church membership: A phenomenological study, Dissertations.

Creswell, J. (2003) Research Design. 2nd edn, Research Design: Qualitative, Quantitative, and Mixed Methods Approaches. 2nd edn. Thousand Oaks: Sage Publications. doi: 10.1017/CBO9781107415324.004.

Creswell, J. and Plano, C. V (2007) Designing And Conducting Mixed Methods Research. Thousand Oaks: Sage.

Creswell, J.W. (2012) Educational Research: Planning, Conducting, and Evaluating Quantitative and Qualitative Research, Pearson. doi: 10.1017/CBO9781107415324.004.

Creswell, J.W. (2013) 'Steps in Conducting a Scholarly Mixed Methods Study', DBER Speaker Series, p. 54. Available at: http://digitalcommons.unl.edu/dberspeakers.

Creswell, J.W. (2014) Research design : qualitative, quantitative, and mixed methods approaches. 4th edn, SAGE Publications. 4th edn. SAGE Publications.

Creswell, J.W. and Clark, V.L.P. (2017) Designing and Conducting Mixed Methods Research, Designing and conducting mixed methods research. Sage Publications. doi: 10.1111/j.1753-6405.2007.00096.x.

Creswell, J.W. and Miller, D.L. (2000) 'Determining Validity in Qualitative Inquiry', Theory Into Practice, 39(3), pp. 124–130. doi: 10.1207/s15430421tip3903.

Crowe, S., Cresswell, K., Robertson, A., Huby, G., Avery, A. and Sheikh, A. (2011) 'The case study approach', BMC Medical Research Methodology, 11(100), pp. 1–9. doi: 10.1186/1471-2288-11-100.

Currie, D.J., Smith, C. and Jagals, P. (2018) 'The application of system dynamics modelling to environmental health decision-making and policy - A scoping review', BMC Public Health, 18(1), pp. 1–11. doi: 10.1186/s12889-018-5318-8.

Cuthbertson, L.M., Robb, Y.A. and Blair, S. (2020) 'Theory and application of research principles and philosophical underpinning for a study utilising interpretative phenomenological analysis', Radiography, 26(2), pp. e94–e102. doi: 10.1016/j.radi.2019.11.092.

Daft, R.L. and Lengel, R.H. (1984) Information richness: A new approach to managerial behavior and organizational design, Research in Organizational Behavior.

Daft, R.L. and Lengel, R.H. (1986) 'Organizational information requirements, media richness and structural design', Management Science, 32(5), pp. 554–571.

Dalglish, S.L., Khalid, H. and McMahon, S.A. (2020) 'Document analysis in health policy research: The READ approach', Health Policy and Planning, 35(10), pp. 1424–1431. doi: 10.1093/heapol/czaa064.

Damayanti, I.D. and Sibarani, B.L. (2020) 'WhatsApp with Preservice Teacher Learning Experiences in the Midst of COVID-19 Pandemic', Language, Education, and Policy for the Changing Society: Contemporary theory and research. Available at: https://www.researchgate.net/profile/Ika-Damayanti/publication/349683000_WHATSAPP_WITH_PRESERVICE_TEACHER_LEARNING_EXPERIENCES_IN_THE_MIDST_OF_COVID-19_PANDEMIC/links/604adaf145851543166f2bec/WHATSAPP-WITH-PRESERVICE-TEACHER-LEARNING-EXPERIENCES-IN-THE-MI.

Davis, F.D. (1989) 'Perceived usefulness, perceived ease of use, and user acceptance of information technology', MIS Quarterly: Management Information Systems, 13(3), pp. 319–339. doi: 10.2307/249008.

Dearing, J.W. and Cox, J.G. (2018) 'Diffusion of innovations theory, principles, and practice', Health Affairs, 37(2), pp. 183–190. doi: 10.1377/hlthaff.2017.1104.

DeJonckheere, M. and Vaughn, L.M. (2019) 'Semistructured interviewing in primary care research: A balance of relationship and rigour', Family Medicine and Community Health, 7(2), pp. 1–8. doi: 10.1136/fmch-2018-000057.

Delafrooz, N., Rahmati, Y. and Abdi, M. (2019) 'The influence of electronic word of mouth on Instagram users: An emphasis on consumer socialization framework', Cogent Business and Management, 6(1), pp. 1–14. doi: 10.1080/23311975.2019.1606973.

Delice, A. (2010) 'The sampling issues in quantitative research', Educational Sciences: Theory & Practices, 10(4), pp. 2001–2018.

Dennis, A.R., Valacich, J.S., Speier, C. and Morris, M.G. (1998) 'Beyond media richness: An empirical test of media synchronicity theory', Proceedings of the Hawaii International Conference on System Sciences, 1, pp. 48–57. doi: 10.1109/hicss.1998.653082.

Dennis, A.R., Fuller, R.M. and Valacich, J.S. (2008) 'Media , tasks , and communication processes : a theory of media synchronicity', MIS Quarterly, 32(3), pp. 575–600.

Dennis, A.R. and Kinney, S.T. (1998) 'Testing Media Richness Theory in the New Media: The Effects of Cues, Feedback, and Task Equivocality', Information Systems Research, 9(3), pp. 256–274. doi: 10.1287/isre.9.3.256.

Denova, R. (2022) Christianity, World History Encyclopedia. Available at: https://www.worldhistory.org/Nephthys/ (Accessed: 14 August 2022).

Deshmuks, A. (2022) Mapped: The World's Major Religions, Visual Capitalist. Available at: https://www.visualcapitalist.com/mapped-major-religions-of-the-world/ (Accessed: 14 August 2022).

Devadason, F.J. and Pratap, L.P. (1996) 'A Methodology for the Identification of Information Needs of Users', in 62nd IFLA General Conference - Conference Proceedings. Available at: http://www.ifla.org/IV/ifla62/62-devf.htm.

DeVon, H.A., Block, M.E., Moyle-Wright, P., Ernst, D.M., Hayden, S.J., Lazzara, D.J., Savoy, S.M. and Kostas-Polston, E. (2007) 'A psychometric toolbox for testing validity and reliability', Journal of Nursing Scholarship, 39(2), pp. 155–164. doi: 10.1111/j.1547-5069.2007.00161.x.

Dilshad, R.M. and Latif, M.I. (2013) 'Focus Group Interview as a Tool for Qualitative Research: An Analysis', Pakistan Journal of Social Sciences, 33(1), pp. 191–198. doi: 10.11975/j.issn.1002-6819.2018.07.030.

Dinnen, J. (2014) Phase #2: Clearly Define Your Research Strategy, Effective Marketing Research Process. Available at: http://www.mackenziecorp.com/phase-2-clearly-define-research-strategy/ (Accessed: 8 September 2017).

Dixon, D. and Johnsto, M. (2019) ‘Content validity of measures of theoretical constructs in health psychology: discriminant content validity is needed’, British Journal of Health Psychology, 24(3), pp. 477–484.

Drahoova, M. and Balco, P. (2016) ‘The benefits and risks of enterprise social networks’, Proceedings - 2016 International Conference on Intelligent Networking and Collaborative Systems, IEEE INCoS 2016, pp. 15–19. doi: 10.1109/INCoS.2016.76.

Drew, C. (2022) What is media richness theory? Examples, pros & cons, Helpful Professor. Available at: https://helpfulprofessor.com/media-richness-theory/ (Accessed: 10 August 2022).

Drost, E.A. (2011) ‘Validity and Reliability in Social Science Research’, Education Research and Perspectives, 38(1), pp. 105–123.

Dubravac, I. and Bevanda, V. (2015) ‘Mobile Business Intelligence Adoption (Case of Croatian SMEs)’, in Proceedings of the 16th International Conference on Computer Systems and Technologies - CompSysTech ’15, pp. 136–143. doi: 10.1145/2812428.2812461.

Durmaz, Y. and Ilhan, A. (2015) ‘A Theoretical Approach to Purpose and Type of Strategy’, International Journal of Business and Management, 10(4). doi: 10.5539/ijbm.v10n4p210.

Dzvapatsva, G.P. (2020) Contextualisation of Instructional Time utilising Mobile Social Networks for Learning Efficiency: A Participatory Action Research Study for Technical Vocational Education and Training Learners in South Africa.

Easwaramoorthy, M. and Zarinpoush, F. (2006) ‘Interviewing for research’, Canada volunteerism initiative, 6, pp. 1–2. doi: 10.1109/APAP.2011.6180454.

Ebneyamini, S. and Sadeghi Moghadam, M. R. (2018) ‘Toward Developing a Framework for Conducting Case Study Research’, International Journal of Qualitative Methods, 17(1), pp. 1–11. doi: 10.1177/1609406918817954.

Edirisingha, P.A. (2012) Interpretivism and Positivism (Ontological and Epistemological Perspectives), Prabash78. Available at: https://prabash78.wordpress.com/2012/03/14/interpretivism-and-postivism-ontological-and-epistemological-perspectives/ (Accessed: 7 September 2017).

Edmiston, J. (2007) Internet Evangelism & Cyber Missions and their Impact upon How we will do Missions in the 21st Century. Available at: https://www.cybermissions.org/articles/21stC_missions.pdf (Accessed: 21 November 2017).

El-Shinnawy, M. and Markus, M.L. (1997) ‘The poverty of media richness theory: Explaining people’s choice of electronic mail vs. voice mail’, International Journal of Human Computer Studies, 46(4), pp. 443–467. doi: 10.1006/ijhc.1996.0099.

Erasmus, J.C. (2007) ‘Religion As Agent for Social Transformation: a Case Study From the Western Cape’, Scriptura 96, pp. 372–390. doi: 10.7833/96-0-1163.

Erkan, I. and Evans, C. (2016) ‘The influence of eWOM in social media on consumers’ purchase intentions: An extended approach to information adoption’, Computers in Human Behavior, 61, pp. 47–55. doi: 10.1016/j.chb.2016.03.003.

Etikan, I., Musa, S.A. and Alkassim, R.S. (2016) ‘Comparison of Convenience Sampling and Purposive Sampling’, American Journal of Theoretical and Applied Statistics, 5(1), p. 1. doi: 10.11648/j.ajtas.20160501.11.

Farzin, M. and Fattahi, M. (2018) ‘eWOM through social networking sites and impact on purchase intention and brand image in Iran’, Journal of Advances in Management Research. doi: 10.1108/JAMR-05-2017-0062.

Feilzer, M.Y. (2010) ‘Doing mixed methods research pragmatically: Implications for the rediscovery of pragmatism as a research paradigm’, Journal of Mixed Methods Research, 4(1), pp. 6–16. doi: 10.1177/1558689809349691.

Felder, C. (2011) The Potential Role of Business Intelligence in Church Organizations. Walden University of Technology.

Ferry, D.L., Kydd, C.T. and Sawyer, J.E. (2001) ‘Measuring facts of media richness’, Journal of Computer Information Systems, 41(4), pp. 69–78.

Fishbein, M. and Ajzen, I. (1975) Belief, attitude, intention and behaviour: An introduction to theory and research. MA: Addison-Wesley. doi: 10.2307/2065853.

Forman, J., Creswell, J. W., Damschroder, L., Kowalski, C. P. and Krein, S. L (2008) ‘Qualitative research methods: Key features and insights gained from use in infection prevention research’, American Journal of Infection Control, 36(10), pp. 764–771. doi: 10.1016/j.ajic.2008.03.010.

Francis, B. M. (2012) The use of information and communication technologies to educate laity: A case study., Electronic Theses and Dissertations. Available at: http://gateway.proquest.com/openurl?url_ver=Z39.88-2004&rft_val_fmt=info:ofi/fmt:kev:mtx:dissertation&res_dat=xri:pqm&rft_dat=xri:pqdiss:3491089%5Cnhttp://ovidsp.ovid.com/ovidweb.cgi?T=JS&PAGE=reference&D=psyc9&NEWS=N&AN=2012-99210-138.

Fred, B.J. (2015) The Development and Implementation of a Community-Based Evangelism Model in the Word of Life Seventh-day Adventist Church in Memphis, TN.

Frost, J.K. and Youngblood, N. E. (2014) ‘Online Religion and Religion Online: Reform Judaism and Web-Based Communication’, Journal of Media and Religion, 13(2), pp. 49–66. doi: 10.1080/15348423.2014.909190.

Fugard, A.J.B. and Potts, H.W.W. (2015) ‘Supporting thinking on sample sizes for thematic analyses: a quantitative tool’, International Journal of Social Research Methodology, 18(6), pp. 669–684. doi: 10.1080/13645579.2015.1005453.

Ghazisaeidi, M., Safdari, R., Torabi, M., Mirzaee, M., Farzi, J. and Goodini, A. (2015) ‘Development of performance dashboards in healthcare sector: Key practical issues’, Acta Informatica Medica, 23(5), pp. 317–321. doi: 10.5455/aim.2015.23.317-321.

Ghobakhloo, M. and Tang, S. H. (2013) ‘The role of owner/manager in adoption of electronic commerce in small businesses: The case of developing countries’, Journal of Small Business and Enterprise Development, 20(4), pp. 754–787. doi: 10.1108/JSBED-12-2011-0037.

Gildin, S.Z. (2003) ‘Understanding the power of word-of-mouth’, Revista de Administração Mackenzie, 4(1), pp. 92–106. Available at: https://ac.els-cdn.com/S2212567115005249/1-s2.0-S2212567115005249-main.pdf?_tid=eb39dd4c-ac6b-4262-a5f9-dae6cac51ebc&acdnat=1540948507_b8ea8b180517d2c6c57a66b867327933%0Ahttp://linkinghub.elsevier.com/retrieve/pii/S2212567115005249.

Gill, P., Stewart, K., Treasure, E. and Chadwick, B. ‘Methods of Data Collection in Qualitative Research: Interviews and Focus Groups’, British Dental Journal, 204(6), pp. 291–295. doi: 10.1038/bdj.2008.192.

Goertzen, M.J. (2017) ‘Introduction to Quantitative Research’, Library Technology Reports, 53(4), pp. 12–18. doi: 10.4135/9781452274881.n1.

Goldkhul, G. (2012) ‘Pragmatism vs interpretivism in qualitative information systems research’, European Journal of Information Systems, 21(2), pp. 135–146.

Graf-Vlachy, L. and Buhtz, K. (2017) ‘Social influence in technology adoption research: A literature review and research agenda’, Proceedings of the 25th European Conference on Information Systems (ECIS), pp. 2331–2351.

Grandon, E.E. and Mykytyn, P.P. (2004) ‘Theory-based instrumentation to measure the intention to use electronic commerce in small and medium sized businesses’, Journal of Computer Information Systems, 44(3), pp. 44–57. doi: 10.1080/08874417.2004.11647581.

Grant, C. and Osanloo, A. (2016) ‘Understanding, Selecting, and Integrating a Theoretical Framework in Dissertation Research: Creating the Blueprint for Your “House”’, Administrative issues journal: connecting education, practice, and research, 4(2), pp. 12–26. doi: 10.5929/2014.4.2.9.

Graue, C. (2015) ‘Qualitative data analysis’, International Journal of Sales, Retailing & Marketing, 4(9), pp. 5–14. doi: 10.1017/S0890060400000937.

Greene, J.C., Caracelli, V.J. and Graham, W.F. (1989) ‘Toward a Conceptual Framework for Mixed-Method Evaluation Designs’, Educational Evaluation and Policy Analysis, 11(3), pp. 255–274. doi: 10.3102/01623737011003255.

Greenhow, C. (2011) ‘Youth, learning, and social media’, Journal of Educational Computing Research, 45(2), pp. 139–146.

Groh, J.E. and Johnson, P. (1977) A History of Christianity, The American Historical Review. doi: 10.2307/1849954.

Guion, L.A., Diehl, D.C. and McDonald, D. (2011) ‘Triangulation: establishing the validity of qualitative studies: FCS6014/FY394, Rev. 8/2011’, Edis, 2011(8), pp. 3–3. Available at: http://edis.ifas.ufl.edu/fy394.

Gunawan, J. (2015) ‘Ensuring Trustworthiness in Qualitative Research’, Belitung Nursing Journal, 1(1), pp. 10–11.

Gutzler, M.D. (2014) ‘Big Data and the 21st Century Church Data is King’, Wiley Periodicals and Dialog, pp. 23–29. doi: 10.1111/dial.12085.

Hadaway, C.K. (1993) ‘Is evangelism related to church growth?’, in Roozen, D. A. and Hadaway, C. K. (eds) Church and Denominational Growth. TN: Abingdon Press, pp. 169–187.

Hall, J.R., Savas-Hall, S. and Shaw, E.H. (2022) ‘A deductive approach to a systematic review of entrepreneurship literature’, Management Review Quarterly, (0123456789). doi: 10.1007/s11301-022-00266-9.

Halton, C. (2021) Diffusion of Innovations Theory, Investopedia. Available at: https://www.investopedia.com/terms/d/diffusion-of-innovations-theory.asp (Accessed: 2 August 2022).

Hamelink, C.J. (1997) ‘For Social Development New Information and Communication Technologies, Social Development and Cultural Change’, UNRISD Discussion Paper No. 86, pp. 1–37.

Hammett, J.S. (1999) ‘The Great Commission and Evangelism in the New Testament’, Journal of the American Society for Church Growth, 10(3), pp. 3–14.

Hansen, J.A. (1992) ‘Innovation, firm size, and firm age’, Small Business Economics, 4(1), pp. 37–44. doi: 10.1007/BF00402214.

Harelimana, J.K. (2014) ‘Membership Retention in a Growing Church: The Case in the Seventh-day Adventist Church’, Asia-Africa Journal of Mission and Ministry, 10, pp. 53–67.

Harris, W.B. and Roland, D. (2014) ‘Information Needs of Church Worship Leaders’, Journal of Religious and Theological Information, 13(1–2), pp. 35–52. doi: 10.1080/10477845.2014.921537.

Hassell, M.D. and Limayem, M. (2011) ‘A portfolio of media: Effects of media synchronicity on communication performance’, in Thirty Second International Conference on Information Systems, pp. 1672–1681.

Haupt, R., Scholtz, B. and Calitz, A. (2015) ‘Using Business Intelligence to Support Strategic Sustainability Information Management’, in Proceedings of the 2015 Annual Research Conference on South African Institute of Computer Scientists and Information Technologists - SAICSIT ’15, pp. 1–11. doi: 10.1145/2815782.2815795.

Havaldar, K.K. and Dash, M. (2009) ‘A Study on the Importance of Word-of-Mouth Communication to Business Buyers’, SSRN Electronic Journal. doi: 10.2139/ssrn.1934170.

Hayward, J. (1999) ‘Mathematical modeling of church growth’, Journal of Mathematical Sociology, 23(4), pp. 255–292. doi: 10.1080/0022250X.1999.9990223.

Hayward, J. (2002) ‘A dynamic model of church growth and its application to contemporary revivals’, Review of Religious Research, 43(3), pp. 218–241. doi: 10.2307/3512330.

Hayward, J. (2005) ‘A general model of church growth and decline’, Journal of Mathematical Sociology, 29(3), pp. 177–207. doi: 10.1080/00222500590889721.

Heale, R. and Twycross, A. (2015) ‘Validity and reliability in quantitative studies’, Evidence-Based Nursing, 18(3), pp. 66–67. doi: 10.1136/eb-2015-102129.

Heale, R. and Twycross, A. (2018) ‘What is a case study?’, Evidence-Based Nursing, 21(1), pp. 7–8. doi: 10.1136/eb-2017-102845.

Hendrickson, A.R., Massey, P.D. and Cronan, T.P. (1993) ‘On the test-retest reliability of perceived usefulness and perceived ease of use scales’. MIS quarterly, pp.227-230

Hennig-Thurau, T., Gwinner, K.P., Walsh, G. and Gremler, D.D. (2004) ‘Electronic word-of-mouth via consumer-opinion platforms: what motivates consumers to articulate themselves on the internet?’, Journal of Interactive Marketing, 18(1), pp. 38–52.

Hoe, J. and Hoare, Z. (2013) 'Understanding quantitative research: part 1', Nursing Standard, 27(15–17), pp. 52–57. Available at: www.nursing-standard.co.uk.

Holden, M.T. and Lynch, P. (1996) 'Choosing the Appropriate Methodology: Understanding Research Philosophy', The marketing review, 4(4), pp. 397–409. doi: 10.1061/(asce)0733-9372(1996)122:1(4).

Homer, J.B. and Hirsch, G.B. (2006) 'System dynamics modeling for public health: Background and opportunities', American Journal of Public Health, 96(3), pp. 452–458. doi: 10.2105/AJPH.2005.062059.

Hope Channel (2018) Hope Channel. Available at: http://www.hopetv.org/about/ (Accessed: 5 July 2018).

Horton, S. M. (2001) 'Acts', The Complete Biblical Library, 6.

Hudson, S., Huang, L., Roth, M.S. and Madden ,T.J. (2016) 'The influence of social media interactions on consumer-brand relationships: A three-country study of brand perceptions and marketing behaviors', International Journal of Research in Marketing, 33(1), pp. 27–41. doi: 10.1016/j.ijresmar.2015.06.004.

Hung, S.Y., Tsai, J.C.A. and Chou, S.T. (2016) 'Decomposing perceived playfulness: A contextual examination of two social networking sites', Information and Management, 53(6), pp. 698–716. doi: 10.1016/j.im.2016.02.005.

Hutchings, T. (2015) 'E-Reading and the Christian Bible', Studies in Religion/Sciences Religieuses, 44(4), pp. 423–440. doi: 10.1177/0008429815610607.

Hyde, K. F. (2000) 'Recognising deductive processes in qualitative research', Qualitative Market Research: An International Journal, 3(2), pp. 82–90. doi: 10.1108/13522750010322089.

Hyman, M. R. and Sierra, J. J. (2016) 'Open- versus close-ended survey questions', Business Outlook, 14(2).

Ijiekhuamhen, O.P., Edewor, N. and Emeka-Ukwu, U. (2016) 'Elderly People and their Information Needs', Library Philosophy and Practice. doi: 10.1007/978-1-349-20264-5_3.

Ishola-Esan, H. (2014) 'The Use of Basic Skills of Administration for Church Growth', Asia-Africa Journal of Mission And Ministry, 10(2), pp. 111–126.

Israel, G. D. (1992) Determination of sample size.

Jamshed, S. (2014) 'Qualitative research method-interviewing and observation', Journal of Basic and Clinical Pharmacy, 5(4), pp. 87–88. doi: 10.4103/0976-0105.141942.

Janzen, R., Nguyen, N., Stobbe, A. and Araujo, L. (2015) 'Assessing the value of inductive and deductive outcome measures in community-based programs: Lessons from the City Kidz evaluation', Canadian Journal of Program Evaluation, 30(1), pp. 41–63. doi: 10.3138/cjpe.30.1.41.

Jeavons, T.H. (1994) 'Stewardship Revisited: Secular and Sacred Views of Governance and Management', Nonprofit and Voluntary Sector Quarterly, 23(2), pp. 107–122. doi: 10.1177/089976409402300203.

Jere, J.N. and Ngidi, N. (2020) 'A technology, organisation and environment framework analysis of information and communication technology adoption by small and medium enterprises in Pietermaritzburg', SA Journal of Information Management, 22(1), pp. 1–9. doi: 10.4102/sajim.v22i1.1166.

Jick, T.D. (2016) 'Mixing Qualitative and Quantitative Methods : Triangulation in Action', Administrative Science Quarterly, 24(4), pp. 602–611.

Jo, C., Kim, D.H. and Lee, J.W. (2021) 'Sustainability of religious communities', PLoS ONE, 16(5), pp. 1–23. doi: 10.1371/JOURNAL.PONE.0250718.

Johl, S.K., Bruce, A. and Binks, M. (2012) 'A study on the use of Mixed Method Approach via Sequential Procedure to Investigate Corporate Governance in Corporate Entrepreneurship Among the 100 U.K Financial Times Stock Exchange (FTSE) Companies', African Journal of Business Management, 6(21), pp. 6369–6377. doi: 10.5897/AJBM11.1771.

Johnson, R.B. and Onwuegbuzie, A. (2004) 'Mixed Methods Research: A Research Paradigm Whose Time Has Come', Educational Researcher, 33(14), pp. 14–26. doi: 10.3102/0013189X033007014.

Johnson, R.B. and Onwuegbuzie, A.J. (2007) 'Toward a Definition of Mixed Methods Research', Journal of Mixed Methods Research, 1(2), pp. 112–133. doi: 10.1177/1558689806298224.

Kaboub, F. (2008) 'Positivist paradigm', Encyclopedia of Counselling, 2(Part 2), p. 343. doi: http://dx.doi.org/10.4135/9781412963978.

Kahai, S.S. and Cooper, R.B. (2003) 'Exploring the core concepts of media richness theory: The impact of cue multiplicity and feedback immediacy on decision quality', Journal of Management Information Systems, 20(1), pp. 263–299. doi: 10.1080/07421222.2003.11045754.

Kamil, M.L. (2004) 'The current state of quantitative research', Reading Research Quarterly, 39(1), pp. 100–107.

Kamolson, S. (2007) 'Fundamentals of quantitative research', Language Institute Chulalongkorn University, 1(3), pp. 1–20. Available at: http://www.culi.chula.ac.th/e-Journal/bod/Suphat

Sukamolson.pdf%5Cnhttp://isites.harvard.edu/fs/docs/icb.topic1463827.files/2007_Sukamolson_Fundamentals of Quantitative Research.pdf.

Kaplan, A.M. and Haenlein, M. (2010) 'Users of the world, unite! The challenges and opportunities of Social Media', Business Horizons, 53(1), pp. 59–68. doi: 10.1016/j.bushor.2009.09.003.

Karnik, M., Oakley, I., Venkatanathan, J., Spiliotopoulos, T. and Nisi, V. (2013) 'Uses & gratifications of a facebook media sharing group', Proceedings of the ACM Conference on Computer Supported Cooperative Work, CSCW, pp. 821–826. doi: 10.1145/2441776.2441868.

Kasirye, F. (2021) 'The Importance of Needs in Uses and Gratification Theory', Advance. Available at: /articles/preprint/The_Importance_of_Needs_in_Uses_and_Gratification_Theory/14681667/1.

Katz, E., Blumler, J.G. and Gurevitch, M. (1974) 'Utilization of mass communication by the individual', The uses of mass communications: current perspectives on gratifications research, pp. 19–31.

Katz, E., Haas, H. and Gurevitch, M. (1973) 'On the Use of the Mass Media for Important Things', American Sociological Review, 38(2), pp. 164–181.

Kaushik, V. and Walsh, C.A. (2019) 'Pragmatism as a research paradigm and its implications for Social Work research', Social Sciences, 8(9). doi: 10.3390/socsci8090255.

Kelly, L.M. and Cordeiro, M. (2020) 'Three principles of pragmatism for research on organizational processes', Methodological Innovations, 13(2). doi: 10.1177/2059799120937242.

Kerr, N.L. (1983) 'Motivation losses in small groups: A social dilemma analysis', Journal of Personality and Social Psychology, 45(4), pp. 819–828. doi: 10.1037/0022-3514.45.4.819.

Kgatle, M.S. (2018) 'Social media and religion: Missiological perspective on the link between Facebook and the emergence of prophetic churches in southern Africa', Verbum et Ecclesia, 39(1).

Khalid, K., Hilman, H. and Kumar, D. (2012) 'Get along with quantitative research process', International Journal of Research in Management, 2(2), pp. 15–29.

Kiage, P.G. (2014) A Strategy to Increase the Retention of Members in the Nyaguta District, Dissertation Projects DMin.

Kietzmann, J.H., Hermkens, K., McCarthy, I.P. and Silvestre, B.S. (2011) 'Social media? Get serious! Understanding the functional building blocks of social media', Business Horizons, 54(3), pp. 241–251. doi: 10.1016/j.bushor.2011.01.005.

Kim, T.H. (2011) Building up the church and church growth in Korean churches through the koinonia of a small group ministry, Doctoral dissertation, University of Pretoria.

Kim, Y. and Crowston, K. (2011) 'Technology adoption and use theory review for studying scientists' continued use of cyber-infrastructure', Proceedings of the American Society for Information Science and Technology, 48(1), pp. 1–10. doi: 10.1002/meet.2011.14504801197.

King, W.R. and He, J. (2006) 'A meta-analysis of the technology acceptance model', Information and Management, 43(6), pp. 740–755. doi: 10.1016/j.im.2006.05.003.

Kivunja, C. and Kuyini, A.B. (2017) 'Understanding and Applying Research Paradigms in Educational Contexts', International Journal of Higher Education, 6(5), p. 26. doi: 10.5430/ijhe.v6n5p26.

Koehrsen, J. (2018) 'Religious agency in sustainability transitions: Between experimentation, upscaling, and regime support', Environmental Innovation and Societal Transitions, 27, pp. 4–15. doi: 10.1016/j.eist.2017.09.003.

Koradia, Z., Premi, A., Balachandran, C. and Seth, A. (2010) 'Using ICTs to Meet the Operational Needs of Community Radio Stations in India', in ACM DEV '10: Proceedings of the First ACM Symposium on Computing for Development.

Korstjens, I. and Moser, A. (2018) 'Series: Practical guidance to qualitative research. Part 4: Trustworthiness and publishing', European Journal of General Practice, 24(1), pp. 120–124. doi: 10.1080/13814788.2017.1375092.

Ku, Y.C., Chen, R. and Zhang, H. (2013) 'Why do users continue using social networking sites? An exploratory study of members in the United States and Taiwan', Information and Management, 50(7), pp. 571–581. doi: 10.1016/j.im.2013.07.011.

Ku, Y.C., Chu, T.H. and Tseng, C.H. (2013) 'Gratifications for using CMC technologies: A comparison among SNS, IM, and e-mail', Computers in Human Behavior, 29(1), pp. 226–234. doi: 10.1016/j.chb.2012.08.009.

Kudeshia, C., Sikdar, P. and Mittal, A. (2016) 'Computers in Human Behavior Spreading love through fan page liking: A perspective on small scale entrepreneurs', Computers in Human Behavior, 54, pp. 257–270. doi: 10.1016/j.chb.2015.08.003.

Kuek, A. and Hakkennes, S. (2020) 'Healthcare staff digital literacy levels and their attitudes towards information systems', Health Informatics Journal, 26(1), pp. 592–612. doi: 10.1177/1460458219839613.

Labuschagne, C., Brent, A. C. and Van Erck, R.P.G. (2005) 'Assessing the sustainability performances of industries', Journal of Cleaner Production, 13(4), pp. 373–385. doi: 10.1016/j.jclepro.2003.10.007.

LaCaille, L. (2020) ‘Theory of Reasoned Action’, in Encyclopedia of Behavioral Medicine, pp. 2231–2234.

LaMorte, W.W. (2019a) Diffusion of innovation theory, Boston University School of Public Health. Available at: https://sphweb.bumc.bu.edu/otlt/mph-modules/sb/behavioralchangetheories/behavioralchangetheories4.html%0Ahttps://sphweb.bumc.bu.edu/otlt/MPH-Modules/SB/BehavioralChangeTheories/BehavioralChangeTheories4.html.

LaMorte, W.W. (2019b) The theory of planned behavior, Boston University School of Public Health. doi: 10.1016/0749-5978(91)90020-T.

Land, G. (2011) ‘Sabbatarians’, Encyclopedia of Christianity Online. Available at: http://0-dx.doi.org.oasis.unisa.ac.za/10.1163/2211-2685_eco_S.1.

Laverty, S.M. (2003) ‘Hermeneutic Phenomenology and Phenomenology: A Comparison of Historical and Methodological Considerations’, International Journal of Qualitative Methods, 2(3), pp. 21–35.

LeCompte, M.D. and Goetz, J.P. (1982) ‘Problems of Reliability and Validity in Ethnographic Research’, Review of Educational Research, 52(1), pp. 31–60. doi: 10.3102/00346543052001031.

Lecoure, J.S. and Carroll, W.R. (2009) ‘ICT Processes for Virtual Academic Research Teams (VART) in Academia’, Encyclopedia of Information Communication Technology, pp. 390–395. doi: 10.4018/9781599048451.ch052.

Lee, C.S. and Ma, L. (2012) ‘News sharing in social media: The effect of gratifications and prior experience’, Computers in Human Behavior, 28(2), pp. 331–339. doi: 10.1016/j.chb.2011.10.002.

Lee, O. (2000) ‘The role of cultural protocol in media choice in a Confucian virtual workplace’, IEEE Transactions on Professional Communication, 43(2), pp. 196–200. doi: 10.1109/47.843646.

Lee, Y.J. (2018) ‘Is your church “liked” on Facebook? Social media use of Christian congregations in the United States’, Nonprofit Management and Leadership, 28(3), pp. 383–398. doi: 10.1002/nml.21291.

Leech, N.L. and Onwuegbuzie, A. J. (2007) ‘An Array of Qualitative Data Analysis Tools: A Call for Data Analysis Triangulation’, School Psychology Quarterly, 22(4), pp. 557–584. doi: 10.1037/1045-3830.22.4.557.

Legris, P., Ingham, J. and Collerette, P. (2003) ‘Why do people use information technology? A critical review of the technology acceptance model’, Information and Management, 40(3), pp. 191–204. doi: 10.1016/S0378-7206(01)00143-4.

Lie, S. (2018) ‘How best to evangelize to nonbelievers: Cultural persuasion in American and Chinese Indonesian evangelical Christian discourse on relational evangelism’, Journal of International and Intercultural Communication, 11(1), pp. 42–57. doi: 10.1080/17513057.2017.1349920.

Lim, D. (2016) ‘Asia’s House Church Movements Today’, Asian Missions Advance, 52, pp. 7–12.

Lin, H.F. (2007) ‘Predicting consumer intentions to shop online: An empirical test of competing theories’, Electronic Commerce Research and Applications, 6(4), pp. 433–442. doi: 10.1016/j.elerap.2007.02.002.

Lincoln, Y.S. and Guba, E.G. (1985) Naturalistic Inquiry, The A-Z of Social Research. California: Sage. doi: 10.4135/9781412986281.n232.

Lippert, S.K. and Govindarajulu, C. (2006) ‘Technological, Organizational, and Environmental Antecedents to Web Services Adoption’, Communications of the IIMA, 6(1).

Liu, B. (2012) Sentiment Analysis and Opinion Mining, Morgan & Claypool Publishers. doi: 10.1142/9789813100459_0007.

Long, T. and Johnson, M. (2000) ‘Rigour, reliability and validity in qualitative research’, Clinical Effectiveness in Nursing, 4(1), pp. 30–37. doi: 10.1054/cein.2000.0106.

Lowrey, T.M. (1991) ‘The use of diffusion theory in marketing: a qualitative approach to innovative consumer behavior’. ACR North American Advances.

Maduku, D.K., Mpinganjira, M. and Duh, H. (2016) ‘Understanding mobile marketing adoption intention by South African SMEs: A multi-perspective framework’, International Journal of Information Management, 36(5), pp. 711–723. doi: 10.1016/j.ijinfomgt.2016.04.018.

Magezi, V. (2015) ‘Technologically Changing African Context and Usage of Information Communication and Technology in Churches: Towards Discerning Emerging Identities in Church Practice (A Case Study of Two Zimbabwean Cities)’, HTS Teologiese Studies / Theological Studies. doi: 10.4102/hts.v71i2.2625.

Magsamen-Conrad, K., Dowd, J., Abuljadail, M., Alsulaiman, S. and Shareefi, A. (2016) ‘Life-Span Differences in the Uses and Gratifications of Tablets: Implications for Older Adults’, Computers in human behavior, 52, pp. 96–106. doi: 10.1016/j.chb.2015.05.024.Life-Span.

Maguire, M. and Delahunt, B. (2017) ‘Doing a Thematic Analysis: A Practical, Step-by-Step Guide for Learning and Teaching Scholars’, All Ireland Journal of Higher Education, 9(3). doi: 10.1109/TIA.2014.2306979.

Mahmodabadi, A.D., Langarizadeh, M., Mehrjardi, M.H.M. and Emadi, S. (2019) 'Development of managerial key performance indicators for a hospital pharmacy digital dashboard', Iranian Journal of Pharmaceutical Research, 18(4), pp. 2124–2130. doi: 10.22037/ijpr.2019.1100822.

Malhotra, G. (2017) 'Strategies in Research', International Journal of Advance Research and Development, 2(5), pp. 172–180. Available at: www.ijarnd.com.

Malina, M.A., Nrreklit, H.S.O. and Selto, F.H. (2011) 'Lessons learned: Advantages and disadvantages of mixed method research', Qualitative Research in Accounting and Management, 8(1), pp. 59–71. doi: 10.1108/11766091111124702.

Markus, M.L. (1994) 'Electronic Mail as the Medium of Managerial Choice', Organization Science, 5(4), pp. 502–527. doi: 10.1287/orsc.5.4.502.

Martin, L.A. (1997) The First Step, Massachusetts Institute of Technology. Available at: https://ocw.mit.edu/courses/sloan-school-of-management/15-988-system-dynamics-self-study-fall-1998-spring-1999/readings/step.pdf (Accessed: 1 May 2021).

Masoga, M.A. (2020) 'Effectiveness of WhatsApp homiletics in the era of COVID-19 in South Africa', Pharos Journal of Theology, 101, pp. 1–16.

Matangira, L. (2018) 'Nearly 60% of South Africans now have access to the internet', EWN Eyewitness News. Available at: https://ewn.co.za/2018/02/05/nearly-60-of-south-africans-now-have-access-to-the-internet.

Mathers, N., Fox, N. and Hunn, A. (2009) 'Surveys and Questionnaires', National Institute for Health Research, pp. 2–48.

Maxwell, J. (2005) 'Qualitative research design: An interactive approach', Sage, Thousand Oaks, CA.

Mazhar, S.A., Anjum, R., Anwar, A.I. and Khan, A.A. (2021) 'Methods of Data Collection: A Fundamental Tool of Research', Journal of Integrated Community Health, 10(1), pp. 6–10. doi: 10.24321/2319.9113.202101.

McBride, K., Misnikov, Y. and Draheim, D. (2022) 'Discussing the Foundations for Interpretivist Digital Government Research', in Public Administration and Information Technology, pp. 121–147. doi: 10.1007/978-3-030-92945-9_6.

McChesney, A. (2017) Propelled by Total Member Involvement, Adventist Church Tops 20 Million Members, Seventh-day Adventist world church. Available at: https://news.adventist.org/en/all-news/news/go/2017-03-01/propelled-by-total-member-involvement-adventist-church-tops-20-million-members/ (Accessed: 28 July 2017).

McLeod, S. (2014) The Interview Research Method, Simply Psychology. Available at: www.simplypsychology.org/interviews.html (Accessed: 3 July 2022).

McQueen, M. (2002) Language and Power in Nonprofit / For-Profit Relationships : A Grounded Theory of Inter-sectoral Collaboration.

Medrado, A. (2013) 'Community and Communion Radio: Listening to Evangelical Programmes in a Brazilian Favela', Communication, Culture & Critique, 6(3), pp. 396–414. doi: 10.1111/cccr.12018.

Mehrad, J. and Tajer, P. (2016) 'Uses and gratification theory in connection with knowledge and information science: A proposed conceptual model', International Journal of Information Science and Management, 14(2), pp. 1–14.

Mendoza, C. and Bescos, P.L. (2001) 'An explanatory model of managers' information needs: implications for management accounting', European Accounting Review, 10(2), pp. 257–289. doi: 10.1080/713764598.

Menon, D. and Meghana, H.R. (2021) 'Unpacking the uses and gratifications of Facebook: A study among college teachers in India', Computers in Human Behavior Reports, 3, p. 100066. doi: 10.1016/j.chbr.2021.100066.

Metaxiotis, K. (2009) 'Exploring the rationales for ERP and knowledge management integration in SMEs', Journal of Enterprise Information Management, 22(1–2), pp. 51–62. doi: 10.1108/17410390910922822.

Miller, M.M. and Strongman, K.T. (2002) 'The Emotional Effects of Music on Religious Experience: A Study of the Pentecostal-Charismatic Style of Music and Worship', Psychology of Music, 30(1), pp. 8–27. doi: 10.1177/0305735602301004.

Miller, Z.D. (2017) 'The Enduring Use of the Theory of Planned Behavior', Human Dimensions of Wildlife, 22(6), pp. 583–590. doi: 10.1080/10871209.2017.1347967.

Minishi-Majanja, M.K. and Kiplang'at, J. (2013) 'The diffusion of innovations theory as a theoretical framework in Library and Information Science research', South African Journal of Libraries and Information Science, 71(3), pp. 211–224. doi: 10.7553/71-3-586.

Mission Statement of the Seventh-day Adventist Church (2009) Seventh-day Adventist Church. Available at: http://www.adventist.org/information/official-statements/documents/article/go/0/conserving-membership-gains/ (Accessed: 3 August 2017).

Mohsenzadeh, F. and Isfandyari-Moghaddam, A. (2009) 'Application of Information Technologies in Academic Libraries', The Electronic Library, 27(6), pp. 986–998. doi: 10.1108/02640470911004075.

Moon, K., Brewer, T.D., Januchowski-Hartley, S.R., Adams, V.M. and Blackman, D.A. (2016) 'A Guideline to Improve Qualitative Social Science Publishing in Ecology and Conservation Journals', Ecology and Society, 21(3). doi: 10.5751/ES-08663-210317.

Moon, W.J. (2020) 'Alternative financial models for churches and church plants: When tithes and offerings are not enough', Great Commission Research Journal, 12(1), pp. 19–42.

Morgan, D.L. (2007) 'Paradigms Lost and Pragmatism Regained: Methodological Implications of Combining Qualitative and Quantitative Methods', Journal of Mixed Methods Research, 1(1), pp. 48–76. doi: 10.1177/2345678906292462.

Morse, J.M. (2000) 'Determining Sample Size', Qualitative Health Research, 10(1), pp. 3–5. doi: 10.1177/104973200129118183.

Moyo, M. (2021) A cloud business intelligence security evaluation framework for small and medium enterprises (Doctoral dissertation).

Mwenje, J. (2016) 'Financial sustainability of Pentecostal churches in Zimbabwe', Journal of Sustainable Development in Africa, 18(1), pp. 73–82.

Nabavi, E., Daniell, K.A. and Najafi, H. (2017) 'Boundary matters: the potential of system dynamics to support sustainability?', Journal of Cleaner Production, 140, pp. 312–323. doi: 10.1016/j.jclepro.2016.03.032.

Negash, S. (2004) 'Business Intelligence', Communications of the Association for Information Systems, 13(15), pp. 177–195. doi: 10.1007/978-3-642-35560-8.

Ngwenyama, O.K. and Lee, A.S. (1997) 'Communication richness in electronic mail: critical social theory and the contextuality of meaning', MIS Quarterly, 21(2), pp. 145–166. doi: 10.2307/249417.

Nicholas, D. (2000) Assessing Information Needs Tools, Techniques and Concepts for the Internet Age. 2nd edn. London: Aslib.

Oakley, R.L. (2015) 'Examining the Role of Business Intelligence in Non-Profit Organizations to Support Strategic Social Goals', in 2015 48th Hawaii International Conference on System Sciences Examining, pp. 4641–4650. doi: 10.1109/HICSS.2015.553.

Objantoro, E. (2018) 'Religious Pluralism And Christian Responses', Evangelikal: Jurnal Teologi Injili dan Pembinaan Warga Jemaat, 2(1), pp. 1–9. doi: 10.46445/ejti.v2i1.94.

Ogunsole, K. and Raji, D.A. (2019) 'Qualitative study of the use of social media by church personnel for religious activities in Ibadan Nigeria', African Journal for the Psychological Study of Social Issues, 22(3).

Olson, D.V.A. (1989) ‘Church Friendships: Boon or Barrier to Church Growth?’, Journal for the Scientific Study of Religion, pp. 432–447.

Olushola, T. and Abiola, J.O. (2017) ‘The Efficacy of Technology Acceptance Model: A Review of Applicable Theoretical Models in Information Technology Researches’, Quest Journals Journal of Research in Business and Management, 4(11), pp. 70–83. Available at: www.questjournals.org.

Ooga, E.M. (2019) ‘Examining the Current Established Structures That Run SDA Church Programs in Nakuru East and West Sub-Counties’, Editon Consortium Journal of Arts, Humanities and Social Studies (ECJAHSS), 1(1), pp. 33–40.

Oosthuizen, A. and Lategan, L. (2016) ‘“Managing the household of God” The contribution from management sciences to the sustainability of the church as an organization’, Stellenbosch Theological Journal, 1(2), pp. 551–568. doi: 10.17570/stj.2015.v1n2.a26.

Opdenakker, R. (2006) ‘Advantages and Disadvantages of Four Interview Techniques in Qualitative’, Qualitative Social Research, 7(4). Available at: http://www.qualitative-research.net/index.php/fqs/article/view/175.

Oliveira, T. and Martins, M.F. (2011) ‘Literature review of information technology adoption models at firm level’. Electronic Journal of Information Systems Evaluation, 14(1), pp. 110-121.

Ortiz-Ospina, E. (2019) ‘The rise of social media - Our World in Data’, Our World in Data. Available at: https://ourworldindata.org/rise-of-social-media.

Osawaru, K. (2010) ‘The Impact of Information and Communication Technology (ICT) in Nigerian University Libraries’, Multidisciplinary Journal of Research Development, 15(4), pp. 1–6.

Ossai-Ugbah, N.B. (2011) ‘The Use of Information and Communication Technologies in Nigerian Baptist Churches’, International Journal of Science and Technology Education Research, 2(3), pp. 49–57.

Otieno, O.C., Liyala, S., Odongo, B.C. and Abeka, S.O. (2016) ‘Theory of Reasoned Action as an Underpinning to Technological Innovation Adoption Studies’, World Journal of Computer Application and Technology, 4(1), pp. 1–7. doi: 10.13189/wjcat.2016.040101.

Oun, M.A. and Bach, C. (2014) ‘Qualitative research method summary’, Journal of Multidisciplinary Engineering Science and Technology, 1(5), pp. 152–158.

Page, R., Hynes, F. and Reed, J. (2019) ‘Distance is not a barrier: the use of videoconferencing to develop a community of practice’, Journal of Mental Health Training, Education and Practice, 14(1), pp. 12–19. doi: 10.1108/JMHTEP-10-2016-0052.

Palinkas, L.A., Horwitz, S.M., Green, C.A., Wisdom, J.P., Duan, N. and Hoagwood, K. (2015) 'Purposeful sampling for qualitative data collection and analysis in mixed method implementation research', Adm Policy Ment Health, 42(5), pp. 533–544. doi: 10.1007/s10488-013-0528-y.Purposeful.

Park, N., Kim, Y.C., Shon, H.Y. and Shim, H. (2013) 'Factors influencing smartphone use and dependency in South Korea', Computers in Human Behavior, 29(4), pp. 1763–1770. doi: 10.1016/j.chb.2013.02.008.

Park, Y.S., Konge, L. and Artino, A.R. (2020) 'The Positivism Paradigm of Research', Academic Medicine, 95(5), pp. 690–694. doi: 10.1097/ACM.0000000000003093.

Patton, M. Q. (1999) 'Enhancing the quality and credibility of qualitative analysis.', Health services research, 34, pp. 1189–208. Available at: http://www.ncbi.nlm.nih.gov/pubmed/10591279%0Ahttp://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=PMC1089059.

Patton, M.Q. (2014) Qualitative research & evaluation methods: Integrating theory and practice. Sage publications.

Pelley, B. (2014) Emerging ChMS Trends For Reporting Data, Churchteams. Available at: https://www.churchteams.com/ct/emerging-chms-trends-for-reporting-data (Accessed: 16 October 2017).

Perrin, A. (2015) 'Social Media Usage: 2005-2015', Pew Research Center, pp. 1–11. Available at: www.pewinternet.org/2015/10/08/social-networking-usage-2005-2015/.

Pew Research Center (2016) Choosing a New Church or House of Worship, Pew Research Center. Available at: https://www.pewforum.org/2016/08/23/choosing-a-new-church-or-house-of-worship/.

Phua, P.L., Wong, S.L. and Abu, R. (2012) 'Factors Influencing the Behavioural Intention to use the Internet as a Teaching-Learning Tool in Home Economics', Procedia - Social and Behavioral Sciences, 59, pp. 180–187. doi: 10.1016/j.sbspro.2012.09.263.

Pillay, J. (2020) 'COVID-19 Shows the Need to Make Church More Flexible', Transformation, 37(4), pp. 266–275. doi: 10.1177/0265378820963156.

Piñeros, R.A. and Gomez, L.L. (2017) 'How can information and communication technologies (ICT) improve decisions of renewal of products and services and quest and selection of new suppliers?', Revista Espacios, 38(39).

Plant, R. (2004) 'Online communities', Technology in Society, 26(1), pp. 51–65. doi: 10.1016/j.techsoc.2003.10.005.

Polit, D.F. and Beck, C.T. (2006) 'The Content Validity Index: Are You Sure You Know What's Being Reported? Critique and Recommendations', Research in Nursing & Health, 29(5), pp. 489–497. doi: 10.1002/nur.

Pollalis, Y. and Basias, N. (2018) 'Quantitative and Qualitative Research in Business Technology: Justifying a Suitable Research Methodology', Review of Integrative Business and Economics Research, 7(1), pp. 91–105. Available at: http://buscompress.com/journal-home.html%0Ahttps://search.proquest.com/docview/1969776018?accountid=10286&rfr_id=info%3Axri%2Fsid%3Aprimo.

Ponterotto, J.G. (2005) 'Qualitative research in counseling psychology: A primer on research paradigms and philosophy of science', Journal of Counseling Psychology, 52(2), pp. 126–136. doi: 10.1037/0022-0167.52.2.126.

Potnis, D.D. (2015) 'Addressing Data Collection Challenges in ICT for Development Projects', International Journal of Information Communication Technologies and Human Development, 7(3), pp. 36–55. doi: 10.4018/ijicthd.2015070104.

Pourmand, G., Doshmangir, L., Ahmadi, A., Noori, M., Rezaeifar, A., Mashhadi, R., Aziminia, R., Pourmand, A. and Gordeev, V.S. (2020) 'An application of the theory of planned behavior to self-care in patients with hypertension', BMC Public Health, 20(1), pp. 1–8. doi: 10.1186/s12889-020-09385-y.

Pratt, Z. (2016) What is a Church?, imb.org. Available at: https://www.imb.org/2016/11/15/what-is-a-church/ (Accessed: 1 September 2022).

Ramanigopal, C.S., Palaniappan, G. and Mani, A. (2012) 'Business Intelligence for Competence in Consumer Packaged Good Industry', International Journal of Marketing and Technology, 2(5), pp. 84–105.

Ravhengani, M. (2010) Effective new members retention strategy must go beyond programs, Adventist.news. Available at: https://adventist.news/news/effective-new-members-retention-strategy-must-go-beyond-programs (Accessed: 10 January 2022).

Resnik, D.B. (2014) What is Ethics in Research & Why is it Important?, National Institute of Environmental Health Services. Available at: http://www.niehs.nih.gov/research/resources/bioethics/whatis/ (Accessed: 12 September 2017).

Revere, L. and Kovach, J. (2011) 'Online technologies for engaged learning: A meaningful synthesis for educators', Quarterly Review of Distance Education, 12(2), p. 113.

Richards, G., Yeoh, W., Chong, A.Y.L. and Popovic, A. (2014) 'An Empirical Study of Business Intelligence Impact on Corporate Performance Management', Proceedings of the Pacific Asia Conference on Information Systems, pp. 1–16. Available at: https://dro.deakin.edu.au/eserv/DU:30066567/yeoh-empiricalstudy-2014.pdf.

Robertson, T.S. (1967) 'The process of innovation and the diffusion of innovation'. Journal of Marketing, 31(1), pp.14-19

Rogers, E.M. (1983) Diffusion of innovations. 3rd edn, An Integrated Approach to Communication Theory and Research, Third Edition. 3rd edn. doi: 10.4324/9780203710753-35.

Van Rooyen, M. and Van Doorslaer, L. (2021) 'News translation as collaboration in multilingual community radio stations in South Africa', Language and Intercultural Communication, 21(3), pp. 411–425. doi: 10.1080/14708477.2021.1883046.

Vasileiou, K., Barnett, J., Thorpe, S. and Young, T. (2018) 'Characterising and justifying sample size sufficiency in interview-based studies: systematic analysis of qualitative health research over a 15-year period', BMC Medical Research Methodology, 18(1), pp. 1–18.

Rubio, D.M., Berg-Weger, M., Tebb, S.S., Lee, E.S. and Rauch, S. (2003) 'Objectifying content validity: Conducting a content validity study in social work research', Social work research, 27(2), pp. 94–104. doi: 10.1016/b0-12-227055-x/00351-5.

Ruggiero, T.E. (2000) 'Uses and Gratifications Theory in the 21st Century', Mass Communication & Society, 3(1), pp. 3–37. doi: 10.4324/9781315679402-4.

Runtuwene, K., Lapian, J.S.L.H.V and Pandowo, M. (2018) 'Church Marketing: the Effect of Promotional Strategies on Church Growth in Manado', Jurnal EMBA: Jurnal Riset Ekonomi, Manajemen, Bisnis dan Akuntansi, 6(3), pp. 1348–1357.

Sackey, E. O. (1990) 'An Approach to Seventh-Day Adventist Radio Evangelism In Ghana', Seventh-day Adventist Theological Seminary, pp. 1–224.

Sahay, B.S., Mohan, R. and Maini, A. (2004) 'Strategies for building a sustainable competitive edge', International Journal of Innovation and Learning, 1(3).

Sambo, F. and Bankole, F.O. (2016) 'A normative process model for ICT business continuity plan for disaster management in small, medium and large enterprises', International Journal of Electrical and Computer Engineering, 6(5), pp. 2425–2431. doi: 10.11591/ijece.v6i5.11461.

Sargeant, K.H. (2000) Seeker Churches: Promoting Traditional Religion in a Nontraditional Way. NJ: Rutgers University Press.

Sari, F.M. and Putri, S.N. (2019) 'Academic Whatsapp Group: Exploring Students' Experiences in Writing Class', Teknosastik, 17(2), p. 56. doi: 10.33365/ts.v17i2.324.

Saunders, B., Sim, J., Kingstone, T., Baker, S., Waterfield, J., Bartlam, B., Burroughs, H. and Jinks, C. (2018) 'Saturation in qualitative research: exploring its conceptualization and operationalization', Quality and Quantity, 52(4), pp. 1893–1907. doi: 10.1007/s11135-017-0574-8.

Saunders, M., Lewis, P. and Thornhill, A. (2009a) Research Methods for Business Students, Pearson Education Limited. doi: 10.1007/s13398-014-0173-7.2.

Saunders, M., Lewis, P. and Thornhill, A. (2009b) 'Understanding research philosophies and approaches', in Research methods for business students, pp. 106–135. Available at: https://www.researchgate.net/publication/309102603_Understanding_research_philosophies_and_approaches.

Saunders, M., Lewis, P. and Thornhill, A. (2012) Research Methods for Business Students. 6th edn. Pearson Education Limited. Available at: www.pearson.com/uk%0Ahttps://www.amazon.com/Research-Methods-for-Business-Students/dp/1292208783/ref=sr_1_2?dchild=1&qid=1614706531&refinements=p_27%3AAdrian+Thornhill+%2F+Philip+Lewis+%2F+Mark+N.+K.+Saunders&s=books&sr=1-2&text=Adrian+Thornhill+%2F+Phili.

Schell, C. (1992) 'The Value of the Case Study as a Research Strategy', Manchester Business School, 2(1), pp. 1–15. doi: 10.1002/joom.1065.

Schiff, J.L. (2014) 9 Common BI Software Mistakes (and How to Avoid Them), IDG Communications. Available at: https://www.cio.com/article/2464167/business-intelligence/9-common-bi-software-mistakes-and-how-to-avoid-them.html (Accessed: 15 October 2017).

Schmitz, J. and Fulk, J. (1991) 'Organizational colleagues, media richness, and electronic mail: a test of the social influence model of technology use', Communication Research, 18(4), pp. 487–523.

Schoch, K. (2020) 'Case study research', Research design and methods: An applied guide for the scholar-practitioner, pp. 245–258. Available at: https://us.sagepub.com/sites/default/files/upm-assets/105275_book_item_105275.pdf (accessed 16 July 2021).

Schultze, Q.J. (1988) 'Evangelical Radio and the Rise of the Electronic Church, 1921-1948', Journal of Broadcasting & Electronic Media, 32(3), pp. 289–306. doi: 10.1080/08838158809386703.

Schweizer, E. (1967) 'Dying and rising with christ', New Testament Studies, 14(1), pp. 1–14. doi: 10.1017/S0028688500018476.

Scotland, J. (2012) 'Exploring the philosophical underpinnings of research: Relating ontology and epistemology to the methodology and methods of the scientific, interpretive, and critical research paradigms', English Language Teaching, 5(9), pp. 9–16. doi: 10.5539/elt.v5n9p9.

Sebetci, Ö. (2018) 'Enhancing end-user satisfaction through technology compatibility: An assessment on health information system', Health Policy and Technology, 7(3), pp. 265–274. doi: 10.1016/j.hlpt.2018.06.001.

Septiana, E., Prasetyo, W. and Sulistiyo, A.B. (2022) 'Church Accountability Perspective in a Tithing Offering (Case Study on the Lumajang Congregation GKJW Church)', Scholars Journal of Economics, Business and Management, 9(1), pp. 6–13. doi: 10.36347/sjebm.2022.v09i01.002.

Seufert, S., Guggemos, J. and Sailer, M. (2021) 'Technology-related knowledge, skills, and attitudes of pre- and in-service teachers: The current situation and emerging trends', Computers in Human Behavior, 115, p. 106552. doi: 10.1016/j.chb.2020.106552.

Seventh-day Adventist Church (2019) Southern Africa Union Conference, ASTR office of archives, statistics and research. Available at: http://www.adventiststatistics.org/view_Summary.asp?FieldID=D_SID.

Seventh-day Adventist World Church Interesting Facts and Figures (2016) General Conference of Seventh-day Adventists. Available at: http://documents.adventistarchives.org/Statistics/Other/InterestingFacts2017.pdf (Accessed: 19 July 2018).

Seventh-day Adventist World Church Statistics 2015 (2016) Seventh-day Adventist World Church. Available at: https://www.adventist.org/en/information/statistics/article/go/-/seventh-day-adventist-world-church-statistics-2015/ (Accessed: 28 July 2017).

Seventh-day Adventists - The Heritage Continues (2006) General Conference of Seventh-day Adventists. Available at: https://web.archive.org/web/20061206202842/http://www.adventist.org/world_church/facts_and_figures/history/index.html.en (Accessed: 28 July 2017).

Shabiralyani, G., Hasan, K.S., Hamad, N. and Iqbal, N. (2015) 'Impact of Visual Aids in Enhancing the Learning Process Case Research: District Dera Ghazi Khan', Journal of Education and Practice, 6(19), pp. 226–233.

Sharma, G. (2017) 'Pros and cons of different sampling techniques', International journal of applied research, 3(7), pp. 749–752.

Shimp, T.A. and Kavas, A. (1984) 'The theory of reasoned action applied to coupon usage'. Journal of consumer research, 11(3), pp.795-809.

Shore, M. H. (2006) 'Preaching Mission : Call and Promise in Matthew 28 : 16-20', Word & world, 26(3), pp. 322–328.

Sider, R. (2018) 5 Reasons Churches Suffer Management Chaos, Lewis Center for Church Leadership. Available at: https://www.churchleadership.com/leading-ideas/5-reasons-churches-suffer-management-chaos/.

Da Silva, H.C.C., De Oliveira Siqueira, A., Araújo, M.A.V. and Dornelas, J.S. (2018) 'Let ' s be Pragmatic : Research in Information Systems with Relevance and Rigor', International Journal of Business Management and Economic Research, 9(4), pp. 1314–1321. Available at: www.ijbmer.com.

Silva, S.C., Feitosa, W., Duarte, P. and Vasconcelos, M. (2020) 'How to increase engagement on social media using the honeycomb model: A case study in a Portuguese HR company', Revista de Gestao, 27(2), pp. 153–167. doi: 10.1108/REGE-02-2019-0030.

Simon, S.J. and Peppas, S.C. (2004) 'An examination of media richness theory in product Web site design: An empirical study', Info, 6(4), pp. 270–281. doi: 10.1108/14636690410555672.

Singarimbun, K. (2021) 'E-Churchas a Virtual Service Communities During COVID-19 Pandemics', Jurnal Komunikasi Ikatan Sarjana Komunikasi Indonesia, 6(1), pp. 6–106.

Sircar, A. and Rowley, J. (2020) 'How are U.K. churches using social media to engage with their congregations?', Journal of Public Affairs, 20(1), pp. 1–10. doi: 10.1002/pa.2029.

Skinner, R., Nelson, R.R., Chin, W.W. and Land, L. (2015) 'The Delphi method research strategy in studies of information systems', Communications of the Association for Information Systems, 37, pp. 31–63. doi: 10.17705/1cais.03702.

Smart, A. (no date) Business Intelligence, InterWorks. Available at: https://www.interworks.com/resources/case-studies/lifechurch (Accessed: 15 October 2017).

Smith, K.L. and Smith, V.L. (2001) 'The impact of the internet on parish ministry: A survey and annotated list of web resources', Journal of Religious and Theological Information, 4(1), pp. 9–24. doi: 10.1300/J112v04n01_04.

South Africa: Adventist World Radio Opens Regional Office, Studio (2003) Adventist.org. Available at: https://news.adventist.org/en/all-news/news/go/2003-03-10/south-africa-adventist-world-radio-opens-regional-office-studio/ (Accessed: 29 December 2017).

Southern Africa Union Conference (2021) adventistyearbook.org. Available at: https://www.adventistyearbook.org/entity?EntityID=12959 (Accessed: 1 July 2022).

Spanos, Y.E., Prastacos, G. P. and Poulymenakou, A. (2002) 'The relationship between information and communication technologies adoption and management', Information and Management, 39(8), pp. 659–675. doi: 10.1016/S0378-7206(01)00141-0.

Spencer, D.H. and Hiltz, S.R. (2003) 'A field study of use of synchronous chat in online courses', Proceedings of the 36th Annual Hawaii International Conference on System Sciences, HICSS 2003. doi: 10.1109/HICSS.2003.1173742.

Spencer, R., Pryce, J.M. and Walsh, J. (2014) 'Philosophical approaches to qualitative research', The Oxford Handbook of Qualitative Research, pp. 81–98. doi: 10.1093/oxfordhb/9780190847388.013.13.

Statista (2018) Number of monthly active Facebook users worldwide as of 4th quarter 2018 (in millions), Statista.com. Available at: https://www.statista.com/statistics/264810/number-of-monthly-active-facebook-users-worldwide/ (Accessed: 26 February 2019).

Statista (2019) Digital population in South Africa as of January 2019 (in millions), Statista.com. Available at: https://www.statista.com/statistics/685134/south-africa-digital-population/ (Accessed: 26 February 2019).

Sternam, J.D. (2002) System Dynamics: Systems Thinking and Modeling for a Complex World, MIT Sloan School of Management.

Straub, E.T. (2009) 'Understanding technology adoption: Theory and future directions for informal learning', Review of Educational Research, 79(2), pp. 625–649. doi: 10.3102/0034654308325896.

Sugimura, T. (2022) "One Another" Ministry for Those Worshiping at Home, SOLA Network.

Sutton, J. and Austin, Z. (2015) 'Qualitative research: Data collection, analysis, and management', Canadian Journal of Hospital Pharmacy, 68(3), pp. 226–231. doi: 10.4212/cjhp.v68i3.1456.

Swani, K., Milne, G. and Brown, B.P. (2013) 'Spreading the word through likes on Facebook: Evaluating the message strategy effectiveness of Fortune 500 companies', Journal of Research in Interactive Marketing, 7(4), pp. 269–294. doi: 10.1108/JRIM-05-2013-0026.

Talwar, S., Dhir, A., Singh, D., Virk, G.S. and Salo, J. (2020) 'Sharing of fake news on social media: Application of the honeycomb framework and the third-person effect hypothesis'. Journal of Retailing and Consumer Services, 57, p.102197.

Taherdoost H (2018) ‘Determining Sample Size; How to Calculate Survey Sample’, International Journal of Economics and Management Systems, 2, pp. 237–239. Available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3224205.

Takahashi, Y. (2015) ‘System Dynamics’, in Encyclopedia of Information Science and Technology. 3rd edn. IGI Global, pp. 1261–1272. doi: 10.4018/978-1-4666-5888-2.ch120.

Taques, F.H., López, M.G., Basso, L.F. and Areal, N. (2021) ‘Indicators used to measure service innovation and manufacturing innovation’, Journal of Innovation and Knowledge, 6(1), pp. 11–26. doi: 10.1016/j.jik.2019.12.001.

Tariq, S. and Woodman, J. (2013) ‘Using Mixed Methods in Health Research.’, Journal of the Royal Society of Medicine Short Reports, 4(6), pp. 1–8. doi: 10.1177/2042533313479197.

Tavakol, M. and Zeinaloo, A.A. (2004) ‘Medical Research Paradigms: Positivistic Inquiry Paradigm versus Naturalistic Inquiry Paradigm’, Journal of Medical Education, 5(2), pp. 75–80. Available at: http://scholar.google.com/scholar?hl=en&btnG=Search&q=intitle:Medical+Research+Paradigms:+Positivistic+Inquiry+Paradigm+Versus+Naturalistic+Inquiry+Paradigm#2.

Taylor, P. (2015) ‘The Importance of Information and Communication Technologies (ICTs): An Integration of the Extant Literature on ICT Adoption in Small and Medium Enterprises’, International Journal of Economics, Commerce and Management, 3(5), pp. 274–295.

Thanh, N.C. and Thanh, T.T. (2015) ‘The Interconnection Between Interpretivist Paradigm and Qualitative Methods in Education’, American Journal of Educational Science, 1(2), pp. 24–27. Available at: http://www.aiscience.org/journal/ajes.

Thomas, D.R. (2003) ‘A general inductive approach for qualitative data analysis’, pp. 1–11. doi: 10.1097/00003727-200701000-00009.

Thomas, D.R. (2006) ‘A General Inductive Approach for Analyzing Qualitative Evaluation Data’, American Journal of Evaluation, 27(2), pp. 237–246. doi: 10.1177/1098214005283748.

Thomas, D.R. (2017) ‘Feedback from research participants: are member checks useful in qualitative research?’, Qualitative Research in Psychology, 14(1), pp. 23–41. doi: 10.1080/14780887.2016.1219435.

Tichaawa, T.M., Mhlanga, O. and Sicwebu, S. (2017) ‘The impact of information communication technologies (ICTs) on tourism businesses in East London, South Africa’, Acta Universitatis Danubius …, 13(3), pp. 18–29. Available at: https://www.ceeol.com/content-files/document-743271.pdf.

Tidd, J., Bessant, J. and Pavitt, K. (1997) Managing innovation: Integrating technological, organizational and market change. 3rd edn. John Wiley & Sons Ltd.

Tomalin, E. (2018) 'Religions, poverty reduction and global development institutions', Palgrave Communications, 4(1). doi: 10.1057/s41599-018-0167-8.

Tsang, S., Royse, C.F. and Terkawi, A.S. (2017) 'Guidelines for developing, translating, and validating a questionnaire in perioperative and pain medicine', Saudi Journal of Anaesthesia, 11(5), pp. S80–S89. doi: 10.4103/sja.SJA_203_17.

Tung, G.J., Vernick, J.S., Reiney, E.V. and Gielen, A.C. (2012) 'Legislator voting and behavioral science theory: a systematic review'. American Journal of Health Behavior, 36(6), pp.823-833.

Uduma, I.A. and Sylva, W. (2015) 'A Critique of the Adequacy of Positivist and Interpretivist Views of Organisational Studies for Understanding The 21st Century Organisation(s)', International Journal of Business and Management Review, 3(8), pp. 44–52.

Umar, I.N. and Jalil, N.A. (2011) 'Age-related differences in ICT access and confidence among pre-service teachers', ASCILITE 2011 - The Australasian Society for Computers in Learning in Tertiary Education, pp. 21–32.

Umar, I.N. and Jalil, N.A. (2012) 'ICT Skills, Practices and Barriers of Its Use Among Secondary School Students', Procedia - Social and Behavioral Sciences, 46, pp. 5672–5676. doi: 10.1016/j.sbspro.2012.06.494.

Utterback, J.M. (1971) 'The process of technological innovation within the firm', Academy of Management Journal, 14(1), pp. 75–88. Available at: http://dx.doi.org/10.1016/j.jaci.2012.05.050.

Vasantha, R.N. and Harinarayana, N.S. (2016) 'Online survey tools : A case study of Google Forms Online', in Scientific, Computational & Information Research Trends in Engineering. Available at: https://www.researchgate.net/publication/326831738.

Veen, W. (1995) 'Factors affecting the use of computers in the classroom: four case studies', Integrating information technology into education, pp. 169–184. doi: 10.1007/978-0-387-34842-1_17.

Venter, M.I. (2005) 'Business Intelligence (BI) Initiatives: Failures Versus Success', Interdisciplinary Journal, 4(1), pp. 149–163. Available at: http://reference.sabinet.co.za/webx/access/electronic_journals/interim/interim_v4_n1_a13.pdf.

Verma, N. and Voida, A. (2016) 'Mythologies of Business Intelligence', in Proceedings of the 2016 CHI Conference Extended Abstracts on Human Factors in Computing Systems - CHI EA '16, pp. 2341–2347. doi: 10.1145/2851581.2892379.

Vuori, V. (2006) ‘Methods of defining business information needs’, Proceedings of the International Conference on Electronic Business (ICEB).

Walters, J.P., Archer, D.W., Sassenrath, G.F., Hendrickson, J.R., Hanson, J.D., Halloran, J.M., Vadas, P. and Alarcon, V.J. (2016) ‘Exploring agricultural production systems and their fundamental components with system dynamics modelling’, Ecological Modelling, 333, pp. 51–65. doi: 10.1016/j.ecolmodel.2016.04.015.

Wanda, P. and Stian, S. (2015) ‘The Secret of my Success: An exploratory study of Business Intelligence management in the Norwegian Industry’, Procedia Computer Science, 64(1877), pp. 240–247. doi: 10.1016/j.procs.2015.08.486.

Wang, Y. and Rodgers, S. (2010) ‘Electronic word of mouth and consumer generated content: From concept to application’, Handbook of Research on Digital Media and Advertising: User Generated Content Consumption, pp. 212–231. doi: 10.4018/978-1-60566-792-8.ch011.

Warfa, A.R.M. (2016) ‘Mixed-methods design in biology education research: Approach and uses’, CBE Life Sciences Education, 15(4). doi: 10.1187/cbe.16-01-0022.

Watson, H.J. and Wixom, B.H. (2007) ‘The Current State of Business Intelligence’, IEEE Computer Society, 40(9), pp. 96–99. doi: 10.1109/MC.2007.331.

Watson, R. (2015) ‘Quantitative research’, Nursing standard, 29(31), p. 44. doi: 10.7748/ns2013.06.27.43.59.s52.

Wei, O.J. and Ismail, H.B. (2009) ‘Adoption of technology among businesses: The strategic adoption’, Journal of Innovation and Business Best Practices, 1(1), pp. 1–8.

Westerlund, M. and Leminen, S. (2012) ‘Categorizing the Growth Strategies of Small Firms’, Technology Innovation Management Review, pp. 5–9. Available at: https://doaj.org/article/37533f7a928d48dc85294090f648f8ff.

De Wet, W., Koekemoer, E. and Nel, J.A. (2016) ‘Exploring the impact of information and communication technology on employees’ work and personal lives’, SA Journal of Industrial Psychology, 42(1), pp. 1–11. doi: 10.4102/sajip.v42i1.1330.

Which Reporting and Business Intelligence Programs does the Church Use (no date) Web site of The Church of Jesus Christ of Latter-day Saints. Available at: https://tech.lds.org/faq/9-general/147-which-reporting-and-business-intelligence-programs-does-the-church-use (Accessed: 15 October 2017).

White, P., Tella, F. and Ampofo, M.D. (2016) 'A missional study of the use of social media (facebook) by some Ghanaian pentecostal pastors', Koers, 81(2), pp. 1–8. doi: 10.19108/KOERS.81.2.2250.

Wielhouwer, P.W. (2004) 'The impact of church activities and socialization on African-American religious commitment', Social Science Quarterly, 85(3), pp. 767–792. doi: 10.1111/j.0038-4941.2004.00244.x.

Williams, C. (2007) 'Research Methods', Journal of Business & Economic Research, 5(3), pp. 65–72. doi: 10.1093/fampract/cmi221.

Williams, R. (2008) 'What is Christianity?', Islam and Christian–Muslim Relations, 19(3), pp. 325 – 332.

Wilson, B.R. (2017) 'The Depiction of Church Growth in Acts', Journal of the Evangelical Theological Society, 60(2), pp. 317–332. Available at: https://search-proquest-com.ezproxy.regent.edu/docview/1964553500/fulltextPDF/D5E30159B0CE4128PQ/1?accountid=13479.

Witman, P.D. and Sparkman, N. (2010) 'The Church Online-The Impact of Online Social Networks on Church Congregations', in SAIS 2010 Proceeding, pp. 7–12.

Worancha, G. (2012) 'Factors Affecting Church Growth in East Central Africa Region: The Adventist Concern', Asia-Africa Journal of Mission & Ministry, 5(19), pp. 20–40.

Wright, B., Schwager, P.H. and Donthu, N. (2008) 'Application of media richness theory to data collection', Journal of Applied Business Research, 24(1), pp. 137–142. doi: 10.19030/jabr.v24i1.1374.

Wright, N.T. (1998) 'Jesus and the Identity of God', Ex auditu, 14, pp. 42–56.

Wyche, S.P., Hayes, G.R., Harvel, L.D. and Grinter, R.E. (2006) 'Technology in Spiritual Formation: An Exploratory Study of Computer Mediated Religious Communications', in Proceedings of the 2006 20th Anniversary Conference on Computer Supported Cooperative Work, pp. 199–208. doi: 10.1145/1180875.1180908.

Wyche, S.P. (2008) Church share: investigating technology use and adoption among culturally different religious groups church share : investigating technology use and adoption among culturally different religious. Georgia Institute of Technology, 1.

Yamauchi, L.A., Ponte, E., Ratliffe, K.T. and Traynor, K. (2017) 'Theoretical and Conceptual Frameworks Used in Research on Family-School Partnerships'. School Community Journal, 27(2), pp.9-34

Yan, M., Filieri, R. and Gorton, M. (2021) ‘Continuance intention of online technologies: A systematic literature review’, International Journal of Information Management, 58, pp. 1–13. doi: 10.1016/j.ijinfomgt.2021.102315.

Yeboah, J. and Ewur, G.D. (2014) ‘The Impact of Whatsapp Messenger Usage on Students Performance in Tertiary Institutions in Ghana’, Journal of Education and Practice, 5(6), pp. 157–164. doi: 10.5958/2393-8005.2016.00013.9.

Yilmaz, K. (2013) ‘Comparison of Quantitative and Qualitative Research Traditions : epistemological , theoretical , and methodological differences’, European Journal of Education, 48(2), pp. 311–325.

Yin, R.K. (1994) Case study research: Design andmethods. 2nd edn, Sage. 2nd edn. Thousand Oaks. Available at: https://doc1.bibliothek.li/acc/flmf044149.pdf.

Yoon, T.E. (2009) An empirical investigation of factors affecting organizational adoption of virtual worlds. The Florida State University.

Zahid, M., Alam, J., Ashraf, M., Malik, B.T. and Hoque, M. (2013) ‘Information communication technology (ICT) for disabled persons in Bangladesh: Preliminary study of impact/outcome’, IFIP Advances in Information and Communication Technology, pp. 652–657. doi: 10.1007/978-3-642-38862-0_48.

Zaidi, Z. and Larsen, D. (2018) ‘Commentary: Paradigms, Axiology, and Praxeology in Medical Education Research’, Academic Medicine, 93(11 S), pp. S1–S7. doi: 10.1097/ACM.0000000000002384.

Zalaghi, H. and Khazaei, M. (2016) ‘The Role of Deductive and Inductive Reasoning in Accounting Research and Standard Setting’, Asian Journal of Finance & Accounting, 8(1), p. 23. doi: 10.5296/ajfa.v8i1.8148.

Zhang, Y. and Wildemuth, B.M. (2009) ‘Unstructured interviewing’, Applications of social research methods to questions in information and library science, pp. 222–231. doi: 10.4135/9781412982740.n2.

Zhong, B., Yang, F. and Chen, Y.L. (2015) ‘Information empowers vegetable supply chain: A study of information needs and sharing strategies among farmers and vendors’, Computers and Electronics in Agriculture, 117, pp. 81–90. doi: 10.1016/j.compag.2015.07.009.

Žukauskas, P., Vveinhardt, J. and Andriukaitienė, R. (2018) ‘Philosophy and Paradigm of Scientific Research’, in Management culture and corporate social responsibility, pp. 121–139. Available at: http://dx.doi.org/10.1039/C7RA00172J%0Ahttps://www.intechopen.com/books/advanced-

biometric-technologies/liveness-detection-in-biometrics%0Ahttp://dx.doi.org/10.1016/j.colsurfa.2011.12.014.

Appendix A: Ethical Clearance for the Study

UNISA

UNISA COLLEGE OF SCIENCE, ENGINEERING AND TECHNOLOGY'S (CSET) RESEARCH AND ETHICS COMMITTEE

07 December 2018

Ref #: 072/CM/2018/CSET_SOC
Name: Mr Courage Matobobo
Student #: 49116762
Staff #:

Dear Mr Courage Matobobo

Decision: Ethics Approval for 5 years
(Humans involved)

RECEIVED
2018 -12- 07

Researchers: Mr Courage Matobobo, 25 Marlin Crescent, Strandfontein, Cape Town, 7794, 49116762@mylife.unisa.ac.za, +27 84 467 6794

Project Leader(s): Prof Felix O. Bankole, bankofo@unisa.ac.za, +27 11 670 9476

Working title of Research:

An Evaluation of the Impact of Information and Communication Technology (ICT) on the Growth of Four Southern African Union (SAU) Conferences of the SDA Church

Qualification: PhD in Information Systems

Thank you for the application for research ethics clearance by the Unisa College of Science, Engineering and Technology's (CSET) Research and Ethics Committee for the above mentioned research. Ethics approval is granted for a period of five years, from 07 December 2018 to 07 December 2023.

1. The researcher will ensure that the research project adheres to the values and principles expressed in the UNISA Policy on Research Ethics.
2. Any adverse circumstance arising in the undertaking of the research project that is relevant to the ethicality of the study, as well as changes in the methodology, should be communicated in writing to the Unisa College of Science, Engineering and Technology's (CSET) Research and Ethics Committee. An amended application could be requested if there are substantial changes from the existing proposal, especially if those changes affect any of the study-related risks for the research participants.

Open Rubric

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3. The researcher(s) will conduct the study according to the methods and procedures set out in the approved application.
4. Any changes that can affect the study-related risks for the research participants, particularly in terms of assurances made with regards to the protection of participants' privacy and the confidentiality of the data, should be reported to the Committee in writing, accompanied by a progress report.
5. The researcher will ensure that the research project adheres to any applicable national legislation, professional codes of conduct, institutional guidelines and scientific standards relevant to the specific field of study. Adherence to the following South African legislation is important, if applicable: Protection of Personal Information Act, no 4 of 2013; Children's act no 38 of 2005 and the National Health Act, no 61 of 2003.
6. Only de-identified research data may be used for secondary research purposes in future on condition that the research objectives are similar to those of the original research. Secondary use of identifiable human research data requires additional ethics clearance.
7. No field work activities may continue after the expiry date (07 December 2023). Submission of a completed research ethics progress report will constitute an application for renewal of Ethics Research Committee approval.
8. Permission to conduct this research should be obtained from the IT Director of the Southern African Union (SAU) prior to commencing field work.
9. Field work activities may only commence from the date on this ethics certificate.

Note:

The reference number 072/CM/2018/CSET_SOC should be clearly indicated on all forms of communication with the intended research participants, as well as with the Unisa College of Science, Engineering and Technology's (CSET) Research and Ethics Committee.

Yours sincerely

Dr. B Chimbo

Chair: Ethics Sub-Committee SoC, College of Science, Engineering and Technology (CSET)

Prof I. Osunmakinde

Director: School of Computing, CSET

Prof B. Mamba

Executive Dean: CSET

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Appendix B: Letter for Permission to Collect Data

Seventh-day Adventist Church

SOUTHERN AFRICA UNION CONFERENCE

To Whom It May Concern,

My name is Brian Stepanek, I am the I.T. director for the Southern Africa Union Conference of the Seventh Day Adventist church.

Mr. Courage Matobobo approached the Seventh Day Adventist Church in order to use a survey to study the effects of I.T. in the church as a whole.

After looking at the survey, and consulting with our division head office I was told I could give the go ahead to Mr. Matobobo to send out the survey.

The study will include a web survey, and personal one on one interviews with pastors and leaders.

Thank you,

Brian Stepanek

28/11/2018

Appendix C: Interview Guide

Interview guide

Title: An Evaluation of the Impact of Information and Communication Technology (ICT) on the Growth of four Southern African Union (SAU) Conferences of the SDA Church

Interview questions on the use and benefits of ICTs

Background knowledge

- How long have you been a member of the SDA church?
- What is your role(s) in the SDA church?
- On a scale 1 to 10, how would you rate your level of ICT competence?

Questions regarding the use of ICT in the SDA

- How often do you use ICTs in Church?
- In what ways do you use ICTs in Church?
- What are your thoughts on working with ICTs within the Church environment?
- Do you think ICTs improve the way the Church operate?
- What are some of the challenges of not using ICTs in Church if any?
- How do you judge ICTs' effect on the Church?
- Do you think the Church operate better with ICTs or without any ICTs?
- Are there any challenges that hinder the use and adoption of ICTs within the Church? If Yes, please explain.

Appendix D: Participant information sheet for the Interviews

UNISA university of south africa

PARTICIPANT INFORMATION SHEET

Ethics clearance reference number:
Research permission reference number (if applicable):

28 October 2018

Title: An Evaluation of the Impact of Information and Communication Technology (ICT) on the Growth of four Southern African Union (SAU) Conferences of the SDA Church

Dear Prospective Participant

My name is Courage Matobobo and I am doing research with Felix O Bankole, a professor in the School of Computing towards a PhD in information Systems at the University of South Africa. We are inviting you to participate in a study entitled, "An Evaluation of the Impact of Information and Communication Technology (ICT) on the Growth of four Southern African Union (SAU) Conferences of the SDA Church".

The aim of the study is to evaluate the impact of ICTs currently used on the growth of the SDA Church in South Africa.

My research is targeting SDA church decision makers residing in South Africa. I am interviewing about 12 decision makers within the church. I identified decision makers such as conference leaders and local church leaders such as elders, treasurers and church clerks in various SDA churches. I searched for your contact details from at least one of the following sources: your local church clerk, church members, church website or a friend. You will not be eligible to participate in the interview if you are younger than 18 years.

The study involves interviews to be conducted by church decision makers. The interviews focus on use of ICTs and adoption challenges within the SDA church. The interviews will take around 45 minutes to complete.

Participating in this study is voluntary and you are under no obligation to consent to participation. If you do decide to take part, you will be given this information sheet to keep and

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be asked to sign a written consent form. You are free to withdraw at any time and without giving a reason.

There are no foreseeable negative risks involved in this research. The only foreseeable inconvenience is your time requested by the researcher for the interviews. All the information you will provide in this research will be treat as highly confidential and your name will never be used in any report of this research study without your consent.

You have the right to insist that your name will not be recorder anywhere and that no one, apart from the researcher and identified members of the research team, will know about your involvement in this research OR your name will not be recorded anywhere and no one will be able to connect you to the answers you give. Your answers will be given a code number or a pseudonym and you will be referred to in this way in the data, any publications, or other research reporting methods such as conference proceedings.

Your answers may be reviewed by people responsible for making sure that research is done properly, including the transcriber, external coder, and members of the Research Ethics Review Committee. Otherwise, records that identify you will be available only to people working on the study, unless you give permission for other people to see the records.

Your anonymous data may be used for other purposes, such as a research report, journal articles and/or conference proceedings. A report of the study may be submitted for publication, but individual participants will not be identifiable in such a report.

Hard copies of your answers will be stored by the researcher for a minimum period of five years in a locked cupboard for future research or academic purposes; transcribed electronic information will be stored on a password protected computer. Future use of the stored data will be subject to further Research Ethics Review and approval if applicable. Hard copies will be shredded and/or electronic copies will be permanently deleted from the hard drive of the computer through the use of a relevant software programme.

There is no incentive in participating in this research as participation is voluntary. Furthermore, there are no foreseeable costs that will be incurred by the participant in this research study.

This study has received written approval from the Research Ethics Review Committee of the School of Computing, Unisa. A copy of the approval letter can be obtained from the researcher if you so wish.

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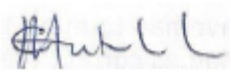
If you would like to be informed of the final research findings, please contact Courage Matobobo on 0844676794 or couragemat@gmail.com.

Should you have concerns about the way in which the research has been conducted, you may contact Professor Felix Bankole, bankofo@unisa.ac.za or 011 670 9476. Contact the research ethics chairperson of the School of Computing Ethics Committee at socethics@unisa.ac.za. Alternatively, you can report any serious unethical behaviour at the University's Toll Free Hotline 0800 86 96 93.

Thank you for taking time to read this information sheet and for participating in this study.
Thank you.



Courage Matobobo
UNISA PhD Candidate

Appendix E: Anonymous survey and questionnaire for church members

Ethical clearance #:

Research permission #:

COVER LETTER TO AN ONLINE ANONYMOUS WEB-BASED SURVEY

Dear Prospective participant,

You are invited to participate in a survey conducted by Courage Matobobo under the supervision of Felix Olu Bankole, a Professor in the School of Computing towards a PhD in Information Systems at the University of South Africa.

The survey you have received has been designed to study the use and impact of information and communication technologies in the SDA church. You were selected to participate in this survey because you are a member of the SDA church and you are proficient in English. You will not be eligible to complete the survey if you are younger than 18 years. By completing this survey, you agree that the information you provide may be used for research purposes, including dissemination through peer-reviewed publications and conference proceedings.

It is anticipated that the information we gain from this survey will help us to evaluate the impact of ICTs in the SDA Church. You are, however, under no obligation to complete the survey and you can withdraw from the study prior to submitting the survey. The survey is developed to be anonymous, meaning that we will have no way of connecting the information that you provide to you personally. Consequently, you will not be able to withdraw from the study once you have clicked the send button based on the anonymous nature of the survey. If you choose to participate in this survey it will take up no more than 20 minutes of your time. You will not benefit from your participation as an individual, however, it is envisioned that the findings of this study will improve the use and deployment of ICTs in the SDA church for better management of the Church. We do not foresee that you will experience any negative consequences by completing the survey. The researcher(s) undertake to keep any information provided herein confidential, not to let it out of our possession and to report on the findings from the perspective of the participating group and not from the perspective of an individual.

The records will be kept for five years for audit purposes where after it will be permanently destroyed, hard copies will be shredded and electronic versions will be permanently deleted

from the hard drive of the computer. You will not be reimbursed or receive any incentives for your participation in the survey.

The research was reviewed and approved by the Research Ethics Review Committee of the School of Computing, Unisa. The primary researcher, Courage Matobobo, can be contacted 0844676794. The study leader, Prof Felix O Bankole, can be contacted during office hours at 011 670 9476 or bankofo@unisa.ac.za. Should you have any questions regarding the ethical aspects of the study, you can contact the chairperson of the School of Computing Ethics Committee at socethics@unisa.ac.za. Alternatively, you can report any serious unethical behaviour at the University's Toll Free Hotline 0800 86 96 93.

You are making a decision whether or not to participate by continuing to the next page. You are free to withdraw from the study at any time prior to clicking the send button.

Information and Communication Technology (ICT) Usage Survey for Church members

A survey on the use and impact of ICTs within the Seventh-day Adventist Church in South Africa - by Courage Matobobo

*Required

1. **1.1 Choose your age group** *
Mark only one oval.

- ◯ 18-24
- ◯ 25-34
- ◯ 35-44
- ◯ 45-54
- ◯ Above 55

2. **1.2 Choose your gender** *
Mark only one oval.

- ◯ Male
- ◯ Female

3. **1.3 Choose the conference you belong to** *
Mark only one oval.

- ◯ Cape Conference
- ◯ KwaZulu-Natal Free State Conference
- ◯ Trans Orange Conference
- ◯ Northern Conference

4. **1.4 How long have you been in the SDA Church?** *
Mark only one oval.

- ◯ 0-5 years
- ◯ 6-10 years
- ◯ 11-15 years
- ◯ 16-20 years
- ◯ Above 20 years

5. **1.5 What is your level of ICT competence** *
Mark only one oval.

- ◯ Basic
- ◯ Intermediate
- ◯ Advanced

6. **1.6 Which ICT device(s) do you own** *

Tick all that apply.

- [ ] Smart Phone
- [ ] Laptop
- [ ] Desktop
- [ ] Tablet
- [ ] TV
- [ ] Radio
- [ ] None

7. **1.7 Which of the following application(s) do you have on your device(s)** *

Tick all that apply.

- [ ] E.G White Writings
- [ ] Bible(s)
- [ ] Hymn Book(s)
- [ ] Sabbath School Lesson
- [ ] SDA Beliefs
- [ ] Bible commentary
- [ ] None

8. **1.8 Which of the following social media platform(s) do you use?** *

Tick all that apply.

- [ ] Facebook
- [ ] Whatsapp
- [ ] Twitter
- [ ] Skype
- [ ] YouTube
- [ ] Badoo
- [ ] None

9. **1.9 Do you have access to Internet?** *

Mark only one oval.

- ◯ Yes
- ◯ No

10. **1.10 How much time do you spend on the Internet per day?** *

Mark only one oval.

- ◯ Do not use Internet
- ◯ Up to 1 hour
- ◯ Between 1 hour to 2 hours
- ◯ More than 2 hours

Use and activities related to spiritual things

11. **2 How often do you do the following when at Church, home or any place?** *
Mark only one oval per row.

	Never = 1	Rarely = 2	Sometimes = 3	Often = 4	Most of the time = 5
Use your phone and/or computer for spiritual things such as studying the Bible?	◯	◯	◯	◯	◯
Study your Sabbath school lesson on digital devices such as phones and computers?	◯	◯	◯	◯	◯
Search the Internet for additional information regarding your spirituality	◯	◯	◯	◯	◯
Study the Spirit of Prophecy (SoP) on any digital device?	◯	◯	◯	◯	◯
Visit Church website(s) for announcements and additional information	◯	◯	◯	◯	◯
Visit your conference website for any updates	◯	◯	◯	◯	◯
Use emails to communicate with other church members	◯	◯	◯	◯	◯
Use other online tools (Whatsapp, Messenger, Facebook) to interact with other church members	◯	◯	◯	◯	◯
Browse, download and upload spiritual material from church websites	◯	◯	◯	◯	◯
Evangelise to other people face-to-face	◯	◯	◯	◯	◯
Evangelise to other people using ICTs	◯	◯	◯	◯	◯
Watch spiritual programmes on the TV owned by SDA	◯	◯	◯	◯	◯
Listen to spiritual messages on the radio owned by SDA	◯	◯	◯	◯	◯

ICTs within your local church

12. **3.1 Which ICTs are used within your local Church?** *
Tick all that apply.

- [ ] Projector
- [ ] Laptop
- [ ] PA System
- [ ] Desktop Computer
- [ ] Printer
- [ ] None

13. **3.2 Choose the uses of a projector at your local church** *
Tick all that apply.

- [ ] Does not use or own a projector
- [ ] Displaying Song Lyrics (Hymnal)
- [ ] Showing announcements
- [ ] PowerPoint presentations during worship services
- [ ] Showing video clips

14. **3.3 How often are ICTs used within your Church?** *
Mark only one oval.

- ◯ Never = 1
- ◯ Rarely = 2
- ◯ Sometimes = 3
- ◯ Often = 4
- ◯ Every worship service = 5

15. **3.4 Do you have people who operate various ICTs within your Church?** *
Mark only one oval.

- ◯ Yes
- ◯ No

ICTs adoption challenges

16. **4.1 Do some of these challenges hinder you from using ICTs during worship services?** *
Mark only one oval per row.

	Definitely = 5	Probably = 4	Possibly = 3	Probably Not = 2	Definitely Not = 1
Lack of IT skills	◯	◯	◯	◯	◯
Not accepted within my local church	◯	◯	◯	◯	◯
Lack of funds to buy the ICTs	◯	◯	◯	◯	◯
No need of using ICTs	◯	◯	◯	◯	◯
Unavailability of appropriate ICTs	◯	◯	◯	◯	◯
Not comfortable using ICTs for spiritual purpose	◯	◯	◯	◯	◯
My device(s) does limit me	◯	◯	◯	◯	◯
Limited by data bundles	◯	◯	◯	◯	◯
Limited by time	◯	◯	◯	◯	◯
I prefer to use my traditional material like printed/hard copies of the Bible, Quarterly lesson, hymnal, etc.	◯	◯	◯	◯	◯

17. **4.2 Please provide any information you think is vital regarding the use of ICTs**

Appendix F: Consent to Participate in this Study - Survey

UNISA university of south africa

CONSENT TO PARTICIPATE IN THIS STUDY

I, _____ (participant name), confirm that the person asking my consent to take part in this research has told me about the nature, procedure, potential benefits and anticipated inconvenience of participation.

I have read (or had explained to me) and understood the study as explained in the information sheet.

I have had sufficient opportunity to ask questions and am prepared to participate in the study.

I understand that my participation is voluntary and that I am free to withdraw at any time without penalty (if applicable).

I am aware that the findings of this study will be processed into a research report, journal publications and/or conference proceedings, but that my participation will be kept confidential unless otherwise specified.

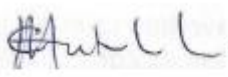
I agree to the reviewing of this research instrument (survey).

I have received a signed copy of the informed consent agreement.

Participant Name & Surname..... (please print)

Participant Signature..... .Date.....

Researcher's Name & Surname: Courage Matobobo

Researcher's signature:  Date 29 October 2018

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Appendix G: Consent to participate in this study - Interview

CONSENT TO PARTICIPATE IN THIS STUDY

I, _____ (participant name), confirm that the person asking my consent to take part in this research has told me about the nature, procedure, potential benefits and anticipated inconvenience of participation.

I have read (or had explained to me) and understood the study as explained in the information sheet.

I have had sufficient opportunity to ask questions and am prepared to participate in the study.

I understand that my participation is voluntary and that I am free to withdraw at any time without penalty.

I am aware that the findings of this study will be processed into a research report, journal publications and/or conference proceedings, but that my participation will be kept confidential unless otherwise specified.

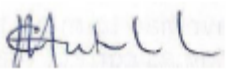
I agree to the recording of the interview.

I have received a signed copy of the informed consent agreement.

Participant Name & Surname..... (please print)

Participant Signature..... .Date.....

Researcher's Name & Surname: Courage Matobobo

Researcher's signature:  Date 29 October 2018

Appendix H: Proofreading and editing certificate

Certificate of Editing

This is to certify that the dissertation

Church Technological Growth and Sustainability: Insight from System Dynamics

by

Courage Matobobo

has been proofread and edited for English language usage.

Date: 16 September 2022

LHugo

Lianne Hugo

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