LIBERTY UNIVERSITY
JOHN W. RAWLINGS SCHOOL OF DIVINITY

THE IMPACT OF ARTIFICIAL INTELLIGENCE IN ONLINE EDUCATION

FOR RECRUITMENT, RETENTION, AND SUSTAINABILITY

OF RELIGIOUS ORGANIZATIONS

A Dissertation-in-Praxis Presented in Partial Fulfillment

of the Requirements for the Degree

Doctor of Education in Christian Leadership

by

Gordon Vaill Barrows

Liberty University, Lynchburg, VA

2024

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APPROVED BY:

Faculty Supervisor

_____   _____

Gary J. Bredfeldt, PhD, Dissertation Supervisor   Date

Collaborating Coach

_____   _____

David Green, Office Manager   Date

New Bethlehem Presbyterian Church

New Bethlehem, PA.

ABSTRACT

This dissertation explored the applicability of AI chatbot technology in the context of a church environment where it was used to promote an accessible and engaging online learning platform for education and ministry training. The primary objective was to develop an AI-powered chatbot to increase recruitment, improve retention, as well as support organizational sustainability as it relates to church membership. The research includes a comprehensive literature review on AI chatbot technology and its relevance to online education within the context of a religious organization. The literature review establishes the fundamentals for a theoretical framework, exploring the association between educational technology, human-computer engagement, and organizational behavior. Leveraging a mixed methods approach, the research collected insights through interviews and surveys with church leaders, members, and educators to assess the attitudes and perceptions in education and ministry training as it relates to the influence of artificial intelligence. The basis of the research involved developing an AI-powered chatbot to promote an online learning platform for the Redbank Valley Church Association in New Bethlehem, PA. The chatbot's platform was powered by artificial intelligence to provide interactive content, personalized learning experiences, and continuous engagement to address the problem of church membership attrition. Overall, this dissertation and its research contributed to religious studies and educational technology by providing insight for religious organizations seeking to understand the challenges and benefits of innovative technologies, ministry training, enhancing educational programs, and supporting church sustainability in the digital era.

Keywords: Artificial Intelligence, Church, Education, Recruitment, Retention

Dedication

After prayer and deep reflection, I dedicate my academic journey to God, family, and my community for their consistent love, guidance, and support. Let this dedication serve as a testament to God's benevolence, the influence of family, as well as the support of a community that has shaped me into a Champion of Christ.

To God, I humbly bow in worship and gratitude for it is through His grace I was called into ministry, filled with the Holy Spirit, and equipped to glorify His name while fulfilling the Great Commission. I wholeheartedly pledge my unwavering devotion to the growth and betterment of His Kingdom.

To my family, I owe a debt of love and gratitude, especially to my father, the Rev. Gordon Barrows Sr., who always demonstrated selfless devotion as he guided me with purpose. To my mother, Monica Barrows, whose commitment, and dedication allowed me to fulfill God's purpose for my life. To my parents, thank you for encouraging me to dedicate myself to the Lord through technology and teaching me: "*I can do all things through Christ who strengthens me.*"

Lastly, to my community, I am wholeheartedly grateful. As Mayor of New Bethlehem, I compassionately love His people with a servant's heart. As the Lead Pastor of St. Mary's Redbank Church and interim pastor of the New Bethlehem First Fellowship Church, I humbly shepherd God's flocks. As the President/CEO of TechReady Professionals, Inc., I serve the Lord through technology and Internet marketing.

Conclusively, this dedication shall serve as a reflection of my commitment to God, family, and community. I pray to be a vessel of God's grace and a means of positive transformation, humbly submitting this dedication in the name of the Father, the Son, and the Holy Spirit. Amen.

Acknowledgments

This dissertation would not have been possible without the invaluable guidance and assistance of several individuals who shared the project's mission and vision. I am very grateful for their inspiration, assistance, and guidance during this divinely inspirational and spiritually fulfilling process.

I first wish to express my deepest gratitude to Dave Green, the Redbank Valley Church Association publicity coordinator, and an influential leader in technology. His insightful guidance and consistent support played a significant impact in the direction of this research project. Dave's knowledge and expertise in technology were crucial to the project's mission and ultimately its success.

Additionally, I wish to acknowledge and express my sincerest gratitude to Matthew Green, a fellow team member at TechReady Professionals, Inc. as well as an aspiring technology enthusiast. His innovative ideas and passion led to thought-provoking conversations that influenced the dissertation's objective. Matthew's passion for technology and commitment to excellence was an inspiration that motivated me to think beyond the boundaries of my research.

Moreover, a special acknowledgment is given to Dr. Gary Bredfeldt, professor of divinity at Liberty University and my well-respected academic advisor. Dr. Bredfeldt's expertise, constructive feedback, and meticulous guidance have been invaluable in the composition of this dissertation's academic consistency and merits. His guidance has been of great importance throughout this ambitious endeavor.

Lastly, may this research dissertation represent the power of mentorship, collaboration, and divine guidance in the pursuit of knowledge, and may it remind others of our social responsibility to make a meaningful contribution to our communities and the Kingdom of God.

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Artificial Intelligence (AI)

Liberty University (LU)

CHAPTER ONE: THE PROBLEM IN PRAXIS

Introduction

As congregations dwindle across the country and more people identify as religiously unaffiliated, churches are facing a membership attrition problem and struggling to sustain their organization (Lemos et al., 2019). Smith et al. (2021) have suggested one potential solution is to leverage artificial intelligence technology into online education programs to improve membership recruitment and retention efforts. However, due to the ever-changing nature of artificial intelligence platforms, a gap was discovered in the research and an opportunity to investigate the potential benefits and drawbacks of using artificial intelligence in online education, particularly in the context of organizational sustainability. Therefore, this study addresses the effectiveness of artificial intelligence in online education to mitigate the problem of church membership attrition and support organizational sustainability through recruitment and retention.

The first chapter is titled the 'Problem in Praxis' and it provides an introduction, overview, and foundational framework for the praxis project. The first chapter additionally provides awareness of a problem that necessitates the project, establishes a brief literature framework on which the project was substantiated, frames the project within the context of a specific organization, and introduces the collaborating organization where the project was implemented.

The Strategic Problem

The general problem that was addressed is the attrition of church membership and the effectiveness of leveraging artificial intelligence to support online education while promoting organizational sustainability through recruitment and retention. Decreased membership

enrollment can lead to reduced organizational performance where Moser and Nel (2019) discovered membership recruitment and retention are crucial to religious organizations that rely on the participation of their members for worship services and ministry-related activities. Fowler et al. (2020) share that declining membership enrollment can adversely affect organizational culture and morale in religious organizations leading to reduced organizational sustainability. Furthermore, lower levels of online learning and distance education resources are associated with decreased membership enrollment where church communities were more effective in meeting the educational needs of their congregants through the appropriate use of technology (Dogan et al., 2023). Higher use of AI-powered online education for recruitment and retention is linked to increased levels of membership enrollment where personalized feedback administered through an AI-powered learning platform resulted in significantly higher levels of engagement when compared to non-personalized learning resources (Tran & Nguyen, 2021). Schumann et al. (2020) additionally support that Christian education can have a profound impact on the well-being and social connectedness of church attendees where it enhances their social connection in both a digital and physical environment. The specific problem that was addressed is the attrition of membership enrollment for the Redbank Valley Church Association, an interdenominational para-church organization located in western Pennsylvania, and the effectiveness of leveraging artificial intelligence to support online education while promoting organizational sustainability through recruitment and retention.

Problem and Response: Program, Process, or Product

The following highlights provide awareness of a problem that necessitates the project by indicating a gap between existing literature and concepts in online Christian education. Declining membership enrollment in religious organizations is related to decreased organizational

performance (Moser & Nel, 2019). Fowler et al. (2020) share that declining membership enrollment can adversely affect organizational culture and morale in religious organizations, leading to reduced organizational sustainability. Secondly, another concept supports the idea that less frequent use of online education for recruitment and retention is linked to decreased membership enrollment (Dogan et al., 2023). The third concept indicates more frequent use of digital discipleship for recruitment and retention is associated with increased levels of membership enrollment (Tran & Nguyen, 2021).

Outcomes of an AI-powered chatbot to support online ministry training include the following theories. The social learning theory suggests that people learn by imitating and observing the behavior of those around them whereas an AI-powered virtual assistant or chatbot could communicate the importance of participating in ministry training and share useful information to get involved in various church activities (Bandura, 1977). Bandura (1977) also implies that by observing the behavior of those around them, such as a chatbot, website visitors may be more likely to engage in similar behavior, resulting in increased engagement, higher participation, and improved retention. The intended output and outcomes of the social learning theory can be used to promote valuable engagement and opportunities for members of a religious organization to communicate the benefits of belonging to the group such as community, emotional support, and spiritual growth. Online education as it relates to artificial intelligence can be used through the social learning theory to answer questions and engage participants which can lead to improved membership recruitment and retention.

The second theory that was used in the study is the Cognitive Load Theory. The Cognitive Load Theory states that people have a limited capacity for processing information which can be applied to online education by leveraging AI-powered resources to simplify

complex information and reduce cognitive load (Sweller, 1999). Sweller (1999) further shares that people have a higher likelihood of joining and remaining part of a religious organization if they develop a deeper understanding of the religious organization's materials. The intended output and outcomes of the cognitive load theory can be used to deliver short, digestible lessons on ministry training, as well as church practices and policies. Religious organizations can potentially increase membership recruitment and retention through artificial intelligence by simplifying the barriers to entry and reducing the lack of imperfect information as it relates to the fear of the unknown.

The third theory that was included in the study is the self-determination theory. The self-determination theory suggests that people are more likely to engage in activities that align with their values and beliefs where an AI-powered online education system for church membership recruitment and retention can be used to personalize their learning experience (Deci & Ryan, 2013). Deci and Ryan (2013) additionally share tailoring the learning experience to a person's specific needs may increase motivation to engage with the church community. The intended output and outcomes of the self-determination theory include using artificial intelligence to personalize the learning experience based on a person's interests and preferences. Religious organizations can increase the likelihood that members will engage in church activities if the AI-powered learning management system offers personalized recommendations for church events and programs, which can ultimately lead to increased membership recruitment and retention.

Overall, the social learning theory, cognitive load theory, and self-determination theory suggest the use of artificial intelligence in online education where an AI-powered chatbot can support ministry training and be a useful tool for church membership recruitment and retention. Specifically, artificial intelligence can model behavior, simplify complex information, and

personalize the learning experience, addressing the decline in enrollment and engaging participants in a more meaningful manner.

Defining Reality: The Current Need

This section discusses, in greater depth, the nature of the problem and rationale for addressing the attrition of church membership and the effectiveness of leveraging artificial intelligence to support online education while promoting organizational sustainability through recruitment and retention. The rationale includes relevant data, previous studies, organizational concerns, and biblical imperatives while presenting realities that mandate change and a preferred future for the Redbank Valley Church Association.

Over the last several decades there has been a steady decline in enrollment for religious organizations fueled by changing demographics, societal shifts, and competition from other church-related organizations (Lemos et al., 2019). Smith et al. (2021) suggest religious organizations must find innovative ways to recruit and retain their members using artificial intelligence (AI) in online education. The rationale for addressing church membership recruitment and retention supported by using artificial intelligence in online education includes relevant data, previous studies, organizational concerns, and biblical imperatives.

Concerning relevant data, a study conducted by the Pew Research Center indicates that 65% of adults in America identify as Christians which has declined by approximately 12% over the past ten years (Mitchell, 2020). This data emphasizes the need for religious organizations to find new resources to improve engagement with current and potential members. Smith et al. (2021) share that one solution is to use artificial intelligence in online education to personalize and make the learning experience more engaging. Furthermore, another study found personalization can increase member retention rates by up to 15% while improving efficiency by

up to 20%, resulting in cost savings to a religious organization's bottom line (Verhoef et al., 2015). This data stresses the potential of artificial intelligence in personalizing communication and engagement for members of religious organizations by using AI to analyze member data and preferences, resulting in potentially more relevant and meaningful interactions. This data can also lead to increased recruitment and retention of church members, thereby addressing the decline in membership enrollment for religious organizations.

Factoring in previous studies, Moreira and Rocha (2019) found a chatbot program improved membership recruitment and retention of church members by providing personalized biblical guidance, while individuals who engaged with the chatbot reported they experienced improved levels of biblical knowledge and spiritual well-being. This study indicates the potential of using artificial intelligence to personalize spiritual guidance and support for members of religious organizations, providing creative ways to communicate with their members while also sharing relevant and timely resources through AI-powered chatbots and virtual assistants. Another study found a personalized recommendation system based on artificial intelligence and machine learning algorithms improved member recruitment and retention in an online religious community (Yang & Gao, 2021). Yang and Gao (2021) also shared the AI system was able to identify the interests and preferences of current and potential members by personalizing content and resources based on their individual preferences. This study emphasizes the potential of AI-based recommendation systems in providing personalized content and resources to new and potential members of a religious organization. This study further addresses declining church enrollment by sharing the innovative use of artificial intelligence to improve recruitment and retention efforts.

Considering organizational concerns, the general concerns include religious organizations facing declining revenue, difficulty in maintaining their facilities, as well as a lack of volunteers (Fowler et al., 2020; Jones, 2021). The Redbank Valley Church Association is an interdenominational para-church organization serving the Redbank Valley community in New Bethlehem, Pennsylvania where churches within the association are closing due to declining enrollment (Gareis, 2022; Redbank Valley Church Association, 2022).

Narrowing the scope even further, the Redbank Valley Church Association (2022) also shares the Redbank Valley United Methodist Ministry is a cooperative of several United Methodist churches that are considered members of the Church Association. The Redbank Valley Church Association, and specifically the Redbank Valley United Methodist Ministry Cooperative is experiencing the trickledown effect of the national problem of the United Methodist denomination splitting over concerns with their stance on Lesbian, Gay, Bisexual, and Transgender (Gilliland & Krull, 2022; Shimron & Miller, 2023).

By capitalizing on the use of artificial intelligence in online education, churches can keep their members better informed of their organizational concerns while improving membership recruitment and retention (Vinichenko et al., 2020). Furthermore, Vinichenko et al. (2020) share that AI-powered online education platforms can address organizational concerns by generating revenue through donations or course fees, reducing the costs associated with maintaining physical facilities, as well as attracting and retaining volunteers who would benefit from online education. Addressing organizational concerns using artificial intelligence to support online ministry training may support improvements in church membership recruitment and retention, while empowering Christian leaders with the knowledge, values, and skills essential to glorifying God, fulfilling The Great Commission, and becoming disciples of Christ.

From a biblical perspective, several scriptural imperatives support the use of artificial intelligence in online education to improve church membership recruitment and retention. In the book of Matthew, scriptures teach that believers are to "go and make disciples of all nations," where using AI to support online education can allow religious organizations to reach individuals who may not be able to attend traditional in-person services, thereby fulfilling this biblical imperative (*English Standard Version Bible*, 2009, Matthew 28:19-20). This biblical imperative encourages the need to spread the gospel to all people, implying that churches should seek innovative and effective ways to reach a wider audience such as using artificial intelligence in online education as an effective tool to achieve this objective.

Furthermore, the book of Matthew also shares the parable of the talents which teaches the importance of using resources wisely and effectively such as investing in AI-powered online education platforms that religious organizations can use to reach more people while promoting spiritual growth and community engagement (*English Standard Version Bible*, 2009, Matthew 25:14-30). This parable emphasizes the importance of using available resources and talents to effectively produce a fruitful outcome such as using artificial intelligence in online education to provide quality ministry education for the recruitment and retention of members.

Another biblical imperative that teaches the importance of being innovative and adaptable when reaching people can be found in the book of Corinthians where the Apostle Paul shares "I have become all things to all people so that by all possible means, I might save some" (*English Standard Version Bible*, 2009, 1ˢᵗ Corinthians 9:22). This scripture emphasizes the need for the church to be adaptable in its approach for outreach ministry while utilizing all possible means to share the gospel message.

Overall, the biblical imperatives of the Great Commission, the Parable of the Talents, and the need to be adaptable in outreach ministry support the use of technology such as artificial intelligence in online education for membership recruitment and retention. By using technology to support online ministry training, churches can potentially reach a wider audience, provide quality education, and attract and retain members, thereby addressing the decline in enrollment and fostering organizational sustainability.

Overall, embracing the potential of artificial intelligence in online education and ministry training allowed the Redbank Valley Church Association to create a vibrant and engaged community of believers who attract and retain disciples of Christ. This strategic approach reversed the declining enrollment trend and will ensure organizational sustainability for churches in the Redbank Valley area to thrive for years to come.

Defining a Preferred Future: The Visionary Focus

The preferred future for the Redbank Valley Church Association is a thriving community of churches that are vibrant centers of worship and service supported by actively engaged members. To achieve this preferred future, the Association needs to address the declining enrollment of its member churches by adopting innovative strategies, including membership recruitment and retention using artificial intelligence to support online education and ministry training. Artificial intelligence can support the creation and promotion of personalized education programs which can aid individuals in better understanding the scriptures and bolstering their Christian faith (Ouyang & Jiao, 2021). Ouyang and Jiao (2021) further share that this approach can attract and retain members of religious organizations as it provides a convenient and flexible way for people to learn and engage with their church community. Furthermore, online education and ministry training can help connect members who are geographically dispersed, allowing

them to engage in a virtual community (Seo et al., 2021). Seo et al. (2021) further share that

engagement in a virtual community can provide emotional support and spiritual encouragement,

resulting in members feeling more connected to their faith and church community both in a

digital and physical sense. The preferred future can be further defined by a vision statement,

purpose statement, objectives, outputs, and outcomes.

Vision Statement

The vision is to leverage the power of AI chatbot technology to promote an accessible

and engaging online learning platform that supports education and ministry training, leading to

increased recruitment, retention, and sustainability of church membership.

Purpose Statement

The purpose of this AI-powered chatbot program is to test and apply the affordance

theory, the theory of planned behavior, and the process virtualization theory as a means of

improving recruitment, retention, and organizational sustainability in addressing the problem of

church membership attrition for the Redbank Valley Church Association in New Bethlehem, PA.

Objectives

Several objectives to be attained through the implementation of an AI-powered chatbot

program to support online education and ministry training include the following:

1. Develop an AI-powered chatbot that can model user behavior and support a personalized learning experience based on the individual's specific needs and interests.

2. Promote an accessible and user-friendly online learning management system that simplifies complex information and provides helpful learning resources such as links to tutorials, enrollment/contact information, and answers to frequently asked questions.

3. Use the chatbot's AI capabilities to track user progress while offering helpful feedback and recommendations to explore further ministry training opportunities.

4. Foster the development of a recruitment/retention strategy that leverages the chatbot's capabilities to engage members while providing them with relevant and timely

information about ministry training resources supported by the Redbank Valley Church Association.

5. Leverage user data in the decision-making process to evaluate the effectiveness of the chatbot in improving recruitment, retention, and organizational sustainability for churches within the Redbank Valley Church Association.

Outputs

The immediate deliverables from the implementation of an AI-powered chatbot to support online education and ministry training include the following outputs. First, the development of a chatbot to promote an online learning platform provided immediate access to educational resources and training materials for existing church members while also simplifying complex information and personalize the learning experience to cater to the specific needs and interests of the individual user (Ouyang & Jiao, 2021). The first output was measured and assessed both qualitatively through surveys and interviews, as well as quantitatively through usage analytics, retention rates, and membership growth. Secondly, an AI-powered chatbot can track user progress and offer helpful feedback and recommendations for additional ministry training opportunities to support immediate improvements in the recruitment and retention of member participation in church programs and activities (Johnson et al., 2021). The second output was measured and assessed both qualitatively through surveys and interviews, as well as quantitatively through recruitment/retention rates, membership growth, and usage analytics. Thirdly, fostering the development of a recruitment/retention strategy that leverages the Chatbot's AI capabilities resulted in immediate growth when attracting new members where users were provided with timely and relevant information about the Redbank Valley Church Association programs and activities (Seo et al., 2021). The third output was measured and assessed both qualitatively through surveys and interviews, as well as quantitatively through membership growth, recruitment/retention rates, and usage analytics. Lastly, leveraging user data

in the decision-making process provided immediate insights into the effectiveness of the chatbot's capabilities to improve recruitment, retention, and organizational sustainability while identifying areas for improvement to better serve the needs of the church community (De Vreede et al., 2021). Overall, the immediate deliverables from the implementation of an AI-powered chatbot to support online education and ministry training provided immediate benefits for the Redbank Valley Church Association when addressing the problem of church membership attrition and improving recruitment, retention, and overall organizational sustainability.

Outcomes

The intended changes or transformations that resulted from the implementation of an AI-powered chatbot to support online education and ministry training for the Redbank Valley Church Association led to several long-term benefits.

One of the most prominent changes that occurred is the transformation of how churches engage with their members and community. Leveraging the chatbot's AI capabilities can offer a personalized and interactive learning experience that caters to the specific needs and interests of new and existing members (Ouyang & Jiao, 2021). Ouyang and Jiao (2021) also share that this personalized learning environment can lead to a more informed and engaged membership that is empowered with the tools to better support ministry programs, events, and activities.

Additionally, fostering the development of an improved recruitment/retention strategy may lead to a more diversified church membership where the chatbot can interact with potential members and provide them with timely and relevant information about church activities to attract individuals who may have previously felt disconnected or excluded from the church community (Seo et al., 2021). Seo et al. (2021) further discuss how this improvement in diversity can

potentially lead to a more inclusive and diverse membership that better depicts the local community of believers.

From a long-term perspective, the implementation of an AI-powered chatbot can also lead to improvements in overall organizational sustainability by providing better access to educational resources and ministry training (De Vreede et al., 2021). De Vreede et al. (2021) further share that improvements in accessibility and engagement can cultivate a culture of continuous learning and spiritual development, leading to church members who are better equipped to lead and support ministry events, programs, and activities.

Overall, the intended changes or transformations that resulted from the implementation of an AI-powered chatbot to support online education and ministry training for the Redbank Valley Church Association led to significant changes and long-term benefits, specifically when addressing the problem of church membership attrition by improving recruitment, retention, and organizational sustainability. An AI-powered chatbot can transform the way a church interacts with its community to foster a more inclusive and better-informed membership that is empowered with the knowledge, values, and skills essential to glorifying God, fulfilling the Great Commission, and supporting long-term ministry events, programs, and activities.

<div align="center">**The Collaborating Organization, Team, and Coach**</div>

Organizational Description, Mission, Vision

The following section focuses on an organizational description, mission, and vision, for the Redbank Valley Church Association in New Bethlehem, Pennsylvania as the collaborating organization involved in the praxis project.

Organizational Description

Incorporated in 2008, the Redbank Valley Church Association is an interdenominational para-church organization serving the Redbank Valley community in New Bethlehem, Pennsylvania (Redbank Valley Church Association, 2022). Redbank Valley Church Association (2022) additionally shares the Redbank Valley Church Association is open to members of all denominations and comprised of representatives from various churches who work faithfully to answer God's call to support diversity while fostering opportunities to serve and worship the Kingdom of God in the Redbank Valley community.

Organizational Mission Statement

The mission of the Redbank Valley Church Association is to promote and enhance the Kingdom of God through the Gospel of Jesus Christ by serving as a unifying force among participating churches to foster and support religious, charitable, and educational pursuits that celebrate diversity and provide opportunities for worship and service in the Redbank Valley community (Redbank Valley Church Association, 2022). Redbank Valley Church Association (2022) further shares the Redbank Valley Church Association fulfills its mission by (a) operating a food pantry for the Redbank Valley area, (b) organizing ecumenical worship services among participating churches, (c) managing collaborative scholarship fund for local high school students, (d) coordinating volunteers for general community support, events, and activities, as well as (e) providing other forms of religious, educational, or charitable assistance, services, resources, and programs that support its mission as deemed appropriate by the board of directors.

Organizational Vision Statement

The vision of the Redbank Valley Church Association is to create a community of believers and foster the family of God where churches from all denominations work together to answer God's call to serve and worship (Redbank Valley Church Association, 2022). Redbank

Valley Church Association (2022) additionally shares the Redbank Valley Church Association fulfills its vision by organizing worship services throughout the year to promote times of collaborative worship opportunities which include; (a) hosting community Lenten services on the six Wednesdays of Lent, (b) organizing a community Easter Sunrise worship service, (c) coordinating a baccalaureate service for the graduating class of the Redbank Valley High School, (d) leading a community hymn sing during the Summer, (e) supporting the Festival of Music at the Clarion County Fair, as well as (f) hosting a community Thanksgiving service.

Organizational Setting and Demographics

The following section focuses on the organizational setting and demographics of the Redbank Valley Church Association in New Bethlehem, Pennsylvania as the collaborating organization involved in the praxis project.

Organizational Setting

The organizational setting for the implementation of an AI-powered chatbot that promotes online education for the Redbank Valley Church Association is within a religious organization that seeks to engage its church members and the broader community of believers through educational opportunities and ministry training (Redbank Valley Church Association, 2022). Redbank Valley Church Association (2022) further shares the Redbank Valley Church Association is a community-based organization that serves as a unifying hub for religious and community activities among the community of churches in the Redbank Valley area. The Redbank Valley Church Association is comprised of churches from various denominations who share a common faith and desire to support a community of believers in their spiritual journey and walk with Christ (Redbank Valley Church Association, 2022). Therefore, the organizational

context for this project fulfills the need for community engagement and educational opportunities for ministry training.

Furthermore, the implementation of an AI-powered chatbot that promotes online education and ministry training can address the problem of church attrition, which is a common challenge faced by many religious organizations (Doehne & Rost, 2021). The web-based chatbot was programmed on the Redbank Valley Church Association's existing website to provide a personalized and interactive learning experience that caters to the specific needs and interests of each user, supporting effective communication while making it easier for members to learn about church programs and ministry training opportunities (Yang & Gao, 2021). Moreover, Yang and Gao (2021) share that chatbots can support church recruitment and retention efforts by attracting new members and providing relevant information to cultivate a sense of community and belonging. Efforts to support church recruitment and retention align with the Redbank Valley Church Association's broader mission/vision of fostering a welcoming and inclusive community that serves the needs of its church members and the Redbank Valley community (Redbank Valley Church Association, 2022).

Overall, the organizational setting for the implementation of an AI-powered chatbot that promotes online education for the Redbank Valley Church Association is within a religious organization that seeks to engage its church members and the broader community of believers through educational opportunities and ministry training (Redbank Valley Church Association, 2021). The web-based AI-powered chatbot addressed the challenge of church attrition while improving recruitment, retention, and overall organizational sustainability through a personalized and interactive learning environment that catered to the specific needs and interests of its users

for promoting online education and ministry training opportunities (Doehne & Rost, 2021; Yang & Gao, 2021).

Organizational Demographics

The organizational demographics for an AI-powered chatbot that promotes online education for the Redbank Valley Church Association are diverse and inclusive, reflecting the organization's commitment to serving an interdenominational range of church members within the Redbank Valley community (Redbank Valley Church Association, 2022).

The Redbank Valley Church Association is comprised of members of all ages and backgrounds, with a range of spiritual interests and ministerial needs (Redbank Valley Church Association, 2022). The Church Association serves a small rural community with an aging population of less than 5,000 predominantly middle-class, college-educated citizens who identify as Caucasian Anglo-Saxon and mostly lean towards a republication political persuasion (U.S. Census Bureau, 2020). The chatbot's AI capabilities allow for a personalized and interactive learning experience that can be catered to meet the specific needs and interests of each user (Yang & Gao, 2021). Yang and Gao (2021) further share that Chatbot's inclusivity and personalization are particularly important to the Redbank Valley Church Association as its mission/vision seeks to engage church members from diverse backgrounds while supporting their spiritual journey and walk with Christ.

Concerning age demographics, the Redbank Valley Church Association serves members across different generations, varying from youth to senior citizens (U.S. Census Bureau, 2020). The AI-powered chatbot was programmed to meet the specific needs and interests of different age groups, providing age-appropriate educational and ministry training resources that are accessible and engaging for members across all age groups (Van der Goot & Pilgrim, 2020). The

Redbank Valley Church Association's membership is also diverse in terms of gender, ethnicity, and cultural background (U.S. Census Bureau, 2020). The AI-powered chatbot allowed for the distribution of educational materials and ministry training resources that are culturally sensitive and relevant, ensuring the experience is inclusive and respectful of the diverse backgrounds and needs of its users (Han & Lee, 2022).

Overall, the organizational demographics for an AI-powered chatbot that promotes online education for the Redbank Valley Church Association are diverse and inclusive, reflecting the organization's commitment to serving an interdenominational range of church members within the Redbank Valley community (Redbank Valley Church Association, 2022). The chatbot's personalized and interactive learning experience was customized to meet the needs and interests of each user, ensuring the program was accessible and engaging for church members across all ages, genders, and cultural backgrounds (Van der Goot & Pilgrim, 2020; Han & Lee, 2022).

Organizational Leadership and Collaborative Team

The following section focuses on the organizational leadership and collaborative team for the Redbank Valley Church Association in New Bethlehem, Pennsylvania as the collaborating organization involved in the praxis project.

Organizational Leadership

The Redbank Valley Church Association is led by a seven-member Board of Directors who govern, direct, and control the affairs of the organization, including policies, procedures, and overall operations (Redbank Valley Church Association, 2022). Redbank Valley Church Association (2022) also shares key leadership positions including a coordinator (president), co-coordinator (vice president), secretary, treasurer, publicity coordinator, and two additional

directors. The leadership structure and relationship between key positions includes the Board of Directors which does not consist of more than two representatives appointed by each member church where each member church may appoint two alternative representatives who have the authority to vote if the primary representative is unable to vote (Redbank Valley Church Association, 2022). Furthermore, Redbank Valley Church Association (2022) shares that each ministry of the Redbank Valley Church Association has one representative with a voice/vote, as well as the Board of Directors, may never have less than seven directors.

Collaborating Team

The collaborating team for the implementation of an AI-powered chatbot promoting online education and ministry training for the Redbank Valley Church Association was comprised of a committee established by the board of directors. The committee optimally included (a) the publicity coordinator who is a retired information technology manager and would contribute technical/marketing expertise, (b) the secretary who is a retired teacher/educator and would contribute education/academic expertise, as well as (c) one of the other directors (active or retired pastor) would contribute pastoral/ministry expertise; all of whom would possess the relevant expertise to ensure successful implementation. The collaborating team would likely also include the Redbank Valley Church Association's webmaster who will work with the publicity coordinator to ensure the successful installation of the AI-powered chatbot on their website.

The criteria used in selecting the strategic team members included (a) their relevant experience or expertise in technology, education, ministry, and marketing, (b) a strong understanding of the church association's target audience including the needs/preferences of new and existing members, (c) the time, availability, and willingness to collaborate and communicate

effectively, as well as included (d) a strong commitment to the church association's mission, vision, and objectives. Additional criteria used in selecting the strategic team members as it relates to the implementation of an AI-powered chatbot included (a) experience in leadership and project management, (b) strong data analysis skills, (c) familiarity with the church association's budget, and financial obligations, and (d) strategic planning and critical thinking skills to ensure long-term sustainability.

The role of collaborating team played a crucial role in the implementation of an AI-powered chatbot where they were responsible for tasks such as (a) identifying and defining the target audience, (b) developing specific content and programming that aligns with the church association's mission, vision, and objectives, (c) overseeing the technical implementation of the chatbot to ensure efficient and effective functionality, and (d) monitoring the chatbot's overall performance while analyzing data to identify areas that need adjusted or improved.

Lastly, the researcher interfaced with this team before, during, and after the implementation of the AI-powered chatbot through various communication channels such as phone, email, and reports at their monthly board meetings. The Redbank Valley Church Association added a line item on their agenda where the team would provide regular reports or updates on the progress of the project as well as receive constructive feedback and suggestions for improvement from various stakeholders. After implementation, the team continued to evaluate the chatbot's performance, particularly during its website and internet marketing report, while adjusting on an as-needed basis to ensure its long-term effectiveness.

Collaborating Coach

The collaborating coach who was committed to the success and guidance of an AI-powered chatbot promoting online education and ministry training within the Redbank Valley

Church Association, was their current publicity coordinator. Green (2021) shares the collaborating coach is a retired information technology manager who brings decades of experience in technology, education, and ministry to the role. With a background in managing technology in various school districts and churches, the collaborating coach is well-versed in implementing new technologies to improve educational and ministry-related outcomes (Green, 2021).

Serving as the Redbank Valley Church Association's current publicity coordinator for over a decade, the collaborating coach has a track record of commitment to promoting ministry-related programs and events (Green, 2021). Taking on this new role, the coach was responsible for promoting the use of the chatbot to the Redbank Valley Church Association members as well as the wider community. The collaboration coach role aligned with the role of publicity coordinator which included developing marketing materials, including flyers and social media posts that explained the benefits of the chatbot and how it can address the problem of attrition of church membership.

While the collaborating coach was responsible for promoting the chatbot in his publicity coordinator role, he also provided mentoring, guidance, and support to the collaborating team. The collaborating coach was also responsible for ensuring team members received proper training on how to use the chatbot as well as facilitating ongoing support. Furthermore, the collaborating coach played a crucial role in monitoring the ongoing success of the chatbot and making recommendations for improvement as necessary.

Lastly, the collaborating coach functioned as a liaison between the collaborating team, the board of directors, the researcher, as well as the general community. The collaborating coach was qualified and knowledgeable to answer questions while providing support to team members.

Finally, the collaborating coach worked beside the implementation team to provide routine updates to the group's leadership as well as the broader community on the success of the chatbot and how it addressed the problem of attrition in church membership.

Chapter One Summary

As congregations dwindle across the country and more people identify as religiously unaffiliated, churches are facing a membership attrition problem and struggling to sustain their organization (Lemos et al., 2019). Smith et al. (2021) have suggested one potential solution is to leverage artificial intelligence technology into online education programs to improve membership recruitment and retention efforts. However, due to the ever-changing nature of artificial intelligence platforms, there is a gap in the research and an opportunity to investigate the potential benefits and drawbacks of using artificial intelligence in online education, particularly in the context of organizational sustainability. Therefore, this study addressed the effectiveness of artificial intelligence in online education to mitigate the problem of church membership attrition and support organizational sustainability through recruitment and retention.

The first chapter provided an introduction, overview, and foundational framework for the praxis project. The first chapter additionally provided awareness of a problem that necessitated the project, established a brief literature framework on which the project will be substantiated, framed the project within the context of a specific organization, and introduced the collaborating organization where the project was implemented.

CHAPTER TWO: THE LITERATURE FRAMEWORK

Introduction

As congregations dwindle across the country and more people identify as religiously unaffiliated, churches are facing a membership attrition problem and struggling to sustain their organization (Lemos et al., 2019). Smith et al. (2021) have suggested one potential solution is to leverage artificial intelligence technology into online education programs to improve membership recruitment and retention efforts. The program leveraged the power of AI chatbot technology to promote an accessible and engaging online learning platform that supports education and ministry training, ultimately leading to increased recruitment, retention, and sustainability of church membership. However, due to the ever-changing nature of artificial intelligence platforms, there is a gap in the research and an opportunity to investigate the potential benefits and drawbacks of using artificial intelligence in online education, particularly in the context of organizational sustainability. Therefore, this study addressed the effectiveness of artificial intelligence in online education to mitigate the problem of church membership attrition and support organizational sustainability through recruitment and retention.

Chapter Two establishes a literary framework that serves as the groundwork for the succeeding parts of this research study. Chapter Two is comprised of three sections that focus on different frameworks including theological, theoretical, and thematic. For each of the three sections, existing literature, theories, and concepts are reviewed and merged with the framework to substantiate a deeper understanding of the research topic. Lastly, Chapter Two demonstrates the understanding and research conducted on relevant literature and theories.

Biblical and Theological Framework

The purpose of the Biblical and Theological Framework section is to establish a strong foundation rooted in a biblical worldview (Bredfeldt, 2023). Bredfeldt (2023) further shares that the Biblical and Theological Framework allows the researcher to demonstrate how their research study aligns with biblical imperatives, principles, and themes, ultimately resulting in a theological rationale. The Biblical and Theological Framework section introduces the research study's overarching theme and purpose as it relates to two sections titled Biblical Imperatives and Principles as well as Biblical and Theological Themes.

Biblical Imperatives and Principles

In the Biblical Imperative and Principles section, the researcher is expected to identify any biblical imperatives (commands) or principles that motivate their project while considering any specific commands or passages in scripture that align or support the goals of their program, process, or study (Bredfeldt, 2023). Furthermore, Bredfeldt (2023) shares the researcher can establish a firm rationale for their program, process, or study based on scriptural foundations by identifying and interpreting biblical imperatives or principles. The following biblical imperatives and principles motivate this research study, support scriptural commands the study sought to fulfill, as well as identify biblical mandates or passages that serve as a rationale or basis for leveraging the power of AI chatbot technology for promoting an accessible and engaging online learning platform that supports education and ministry training, leading to increased recruitment, retention, and sustainability of church membership.

The Great Commission

The book of Matthew shares the importance of fulfilling the Great Commission where Jesus instructed His disciples to go and make disciples of all nations, baptizing them and

teaching them to obey everything He had commanded (*English Standard Version Bible*, 2009, Matthew 28:19-20). Matthew 28:19-20 relates to this research study where leveraging AI chatbot technology can expand the reach of the churches' educational and ministerial efforts to a larger audience, thereby promoting the fulfillment of the Great Commission (Kuncoro et al., 2022). Kuncoro et al. (2022) further share that leveraging AI chatbot technology utilizes innovative means of communication to promote the fulfillment of the Great Commission while extending the reach of the church's educational and ministerial efforts. AI chatbot technology can enable churches to overcome geographical barriers, engage with individuals across different regions, as well as provide accessible resources for ministry training and discipleship (Morrison-Smith & Ruiz, 2020). Morrison-Smith and Ruiz (2020) further share that churches can effectively leverage digital platforms to mobilize and train a global network of disciples by embracing AI chatbot technology to actively fulfill The Great Commission.

Love and Serve Others

The book of Mathew shares that believers should love and serve others whereas Jesus taught that we should love our neighbors as ourselves (*English Standard Version Bible*, 2009, Matthew 22:39). Matthew 22:39 relates to this research study where educational resources can be provided through AI chatbot technology to foster an accessible and engaging online learning platform for individuals seeking to deepen their faith, equipping them for ministry and serving their neighbors (Fidan & Gencel, 2022). Fidan and Gencel (2022) further share that AI chatbot technology can equip individuals for ministry by providing educational resources and support for those seeking to strengthen their faith while serving their communities with greater effectiveness and efficiency. Churches can empower individuals to love and serve others through the transformative power of education and training through AI chatbot technology (Dewi et al.,

2022). Dewi et al. (2022) further share AI chatbot technology can empower believers beyond physical boundaries while extending their service and love to a broader range of individuals across various cultures.

Equip and Train

The book of Ephesians shares that believers should equip and train others whereas the Apostle Paul wrote about the importance of equipping and training believers for ministry (*English Standard Version Bible*, 2009, Ephesians 4:11-12). Ephesians 4:11-12 relates to this research study where churches can leverage AI chatbot technology to develop a dynamic and interactive learning environment that offers resources, training modules, and personalized guidance, empowering believers with the ministry skills to grow in their faith (Sharef et al., 2021). Sharef et al. (2021) further share that AI chatbot technology can enable individuals to grow in their faith and ministry skills by creating an interactive learning environment that offers training modules, resources, and personalized guidance, ultimately empowering them to make a significant impact in the world. AI chatbot technology can be leveraged to equip and train individuals to effectively serve their communities while ensuring the growth and sustainability of the church (Gonda & Chu, 2019). Gonda and Chu (2019) further share AI chatbot technology can foster continuous learning, enhance accessibility to educational resources, as well as equip individuals with the skills and knowledge necessary for effective leadership and ministry.

Use Technology for Good

The book of 1st Corinthians shares that believers should do all things for the glory of God which can be applied to using AI chatbot technology (*English Standard Version Bible*, 2009, 1st Corinthians 10:31). AI chatbot technology can be used to create an engaging and accessible online learning platform that churches can use to promote learning, discipleship, and spiritual

growth (Han & Lee, 2022). Han and Lee (2022) further share that AI chatbot technology can demonstrate the redemptive potential of technology while advancing God's Kingdom by creating an accessible and engaging online learning platform that supports learning, discipleship, and spiritual growth. Churches can harness the power of technology for good by using it as a tool for fulfilling God's purpose and mission for their lives while engaging believers in transformative educational experiences (Haristiani & Rifai, 2021). Haristiani and Rifai (2021) further share AI chatbot technology can allow churches to fulfill their mission of glorifying God while advancing His Kingdom by amplifying the reach and impact of the gospel through purposeful and innovative communications.

Contextualize and Adapt

The book of 1st Corinthians also shares the importance of adapting to different cultures and contextual situations to share the gospel effectively as emphasized by the Apostle Paul (*English Standard Version Bible*, 2009, 1st Corinthians 9:22). Churches can share the gospel more effectively by adapting to different cultures and contexts through leveraging AI chatbot technology (Gupta et al., 2019). Gupta et al. (2019) further share leveraging AI chatbot technology can make the learning experience more engaging and relevant by tailoring educational content and resources to the specific needs and learning styles of its users. Churches can meet individuals at their level by adapting and contextualizing the delivery of educational content through AI chatbot technology, thereby providing a personalized learning journey that aligns with their needs while fostering meaningful spiritual growth (Moraes-Neto & Fernandes, 2019). Moraes-Neto and Fernandes (2019) additionally share AI chatbot technology allows for customized content delivery, and adaptive learning approaches, as well as accounting for cultural

sensitivity, thereby empowering churches to effectively communicate the message of the gospel while reaching a wider range of believers in a meaningful and contextualized manner.

Collaboration and Community

The book of Hebrews encourages collaboration and community by teaching believers to gather with one another, encourage one another, and foster love and good deeds (*English Standard Version Bible*, 2009, Hebrews 10:24-25). AI chatbot technology can foster collaboration and community while also providing personalized learning experiences by creating spaces where learners can interact, share insights, and support one another's spiritual journeys (Følstad et al., 2021). Følstad et al. (2021) further share AI chatbot technology can foster a sense of belonging and connectedness with the virtual learning community by fostering collaboration and community building, creating spaces where learners can interact, share insights, and ultimately support one another throughout their spiritual journey. Churches can create a sense of belonging, encourage collaborative learning, as well as provide a support system that leverages AI chatbot technology to enhance the educational and spiritual experience of believers engaged and online learning (Plantak Vukovac et al., 2021). Plantak Vukovac et al. (2021) additionally share AI chatbot technology can foster mutual support, accountability, and encouragement through the formation of virtual communities that can enrich the educational experience while nurturing a sense of belonging in the larger body of Christ.

Overall, these biblical principles can guide the effect of the use of AI chatbot technology for creating an engaging and accessible online learning platform that promotes education and ministry training. Integrating these principles into the implementation and design of the platform can allow churches to increase recruitment, retention, and sustainability of church membership

by providing resources that support spiritual growth while equipping believers for ministry around the world.

Biblical and Theological Themes

The Biblical and theological Themes section expects the researcher to delve into broader biblical and theological themes relevant to their research problem to determine if their theological concept impacts the way they have designed their program, process, or study as well as how individuals are affected by it (Bredfeldt, 2023). Moreover, Bredfeldt (2023) explains that by examining biblical and theological themes, the researcher can demonstrate a deeper understanding of the theological implications of their work and how they intersect with the practical application of their program, process, or study.

Several biblical and theological themes that are relevant to the attrition of church membership, the effectiveness of leveraging artificial intelligence for online education, and the promotion of organizational sustainability through recruitment and retention, include Stewardship, Biblical Foundations, Image of God, and Core Values.

Stewardship Theme

The concept of stewardship is rooted in a biblical and theological understanding that emphasizes leadership as a responsibility bestowed by God (Etzel, 2022). Etzel (2022) further shares the concept of stewardship calls leaders to use their positions to advance God's purposes within their lives, the lives of those they lead, and the organization itself. The stewardship theme relates to the importance of nurturing church membership, responsibly leveraging AI technology, and promoting sustainability through the practices of religious organizations (Lee et al., 2022). Lee et al. (2022) further share that stewardship is a reminder to leaders and organizations of their

responsibility to use the gifts and resources provided to them for the benefit of serving others and to fulfill God's purposes.

The stewardship theme in the context of church membership attrition can allow leaders to foster a welcoming and nurturing environment, address member needs and concerns, as well as provide engaging opportunities for meaningful growth (Pressgrove et al., 2023). Pressgrove et al. (2023) additionally share leveraging AI chatbot technology to support online education can also be approached with stewardship by using it responsibly and ethically to improve learning experiences, accessibility, and meaningful engagement. From a biblical and theological perspective, promoting organizational sustainability through recruitment and retention can allow for the stewarding of talents and gifts which can strengthen believers' involvement and growth within the church, especially where the first book of Peter shares each person should use whatever gift they have received to serve others as faithful stewards of God's grace in its various forms (*English Standard Version Bible*, 2009, 1st Peter 4:10-11).

Biblical Foundations Theme

The Biblical Foundations theme for leadership and education highlighted tracing and analyzing key themes throughout scripture, evaluating current trends considering biblical and theological foundations, as well as developing a theology of leadership and education grounded from a biblical worldview perspective (Etzel, 2022; Cartwright, 2022). The Biblical Foundations theme can be applied to address attrition in church membership by exploring biblical principles that encourage community, discipleship, and spiritual growth whereas the biblical foundations of education can be applied to leveraging AI in education to guide the integration of technology while preserving a biblical understanding of value and truth (Chaves et al., 2022). Chaves et al.

(2022) further share that the Biblical Foundations theme supports the fundamental importance of leadership and education in the principles and teachings of scripture.

The Biblical Foundations theme in the context of leadership and education can allow leaders to address church membership attrition by supporting community, discipleship, and spiritual growth, all of which are crucial for membership retention (Bao et al., 2020). Bao et al. (2020) additionally explain that leveraging artificial intelligence for online education can guide the integration of technology in a way that aligns with biblical values while promoting a holistic understanding of truth, value, and the biblical foundations of education. From a biblical and theological perspective, the second book of Timothy teaches that all scripture is God-breathed and is useful for teaching, rebuking, correcting, and training in righteousness so that the servant of God may be equipped for every good work (*English Standard Version Bible*, 2009, 2 Timothy 3:16-17).

Image of God Theme

The theological concept or theme of the Image of God and its implications can be applied to leadership and education (Small, 2022). Small (2022) further shares that understanding the Image of God can allow for informed approaches to leadership, education, and retention that promote inclusive and respectful practices that ultimately honor the value of each person. The theme of the Image of God recognizes the inherent worth and dignity of all individuals as bearers of God's image while recognizing the nature of a sinful reality (Xie & Pentina, 2022). Xie and Pentina (2022) further share that addressing church membership attrition calls for inclusive and respectful practices that foster a sense of belonging and community while honoring the value of each person within the church.

The Image of God theme reminds believers to treat learners as individuals of worthwhile leveraging artificial intelligence for online education to ensure personalized and meaningful educational experiences (Spatola & Urbanska, 2019). Spatola and Urbanska (2019) further share promoting organizational sustainability through recruitment and retention recognizes individuals God-given worth and potential by affirming their value and unique contributions. From a biblical and theological perspective, the book of Genesis shares that God created mankind in His image, and in the image of God He created them, both male and female he created them (*English Standard Version Bible*, 2009, Genesis 1:27).

Core Values Theme

One should also consider the theme of core values for leadership and educational practices based on the belief that all persons are created in the image of God (Small, 2022). The core values theme emphasizes the importance of developing and aligning organizational values with theological principles where they can guide efforts to address church attrition, leverage AI for online education, and promote sustainable practices while ensuring a religious organization's strategies are consistent with its Christian worldview (Chen et al., 2020). Chen et al. (2020) further share the core values theme recognizes aligning organizational values with theological principles where all actions should be done in the name of the Lord.

The core values theme in the context of church membership attrition can guide efforts to create an engaging and inviting environment where members feel valued and connected (Chowdhury et al., 2023). Chowdhury et al. (2023) share core values that can ensure technological advancements are used in ways to promote a holistic understanding of education that aligns with Christian beliefs. From a biblical and theological perspective, the book of Colossians teaches whatever one does, whether, in word or deed, one should do it all in the name

of Lord Jesus, giving thanks to God the Father through Him (*English Standard Version Bible*, 2009, Colossians 3:17).

Theoretical Framework

The purpose of the theoretical framework section in Chapter Two of this study is to establish a strong conceptual foundation for the research study (Bredfeldt, 2023). Bredfeldt (2023) further shares that the theoretical framework section allows the researcher to draw upon knowledge acquired from several courses in their theological curriculum, all of which have contributed to the researcher's understanding of theoretical concepts in Christian leadership. The theoretical framework section begins with a summative paragraph where the researcher introduces the section and briefly highlights theories and concepts that support a theoretical foundation for their research study (Liberty University, 2023). Liberty University (2023) also mentions the theoretical framework section has two specific headings which include Leadership and Organizational Theory as well as Teaching, Learning, and Group Theory.

Leadership and Organizational Theory

Several theoretical themes that are relevant to the attrition of church membership, the effectiveness of leveraging artificial intelligence for online education, and the promotion of organizational sustainability through recruitment and retention include (a) Character and Ethics in Leadership and Education, (b) Leadership and Management Theory, and (c) Organizational Theory and Development.

Character and Ethics in Leadership and Education

Character and ethics in leadership and education support the servant leadership theme as it relates to leaders serving the needs of church members by addressing their concerns, and ultimately mitigating church attrition by creating a caring and supportive environment (Etzel,

2022). Etzel (2022) further shares the effects of ethical decision-making in leadership and management can reduce attrition by making decisions that align with the principles and values of the church, ultimately fostering loyalty and trust. Moreover, fostering a sense of inclusivity is supported by cultivating a culture of accountability and transparency within church leadership while promoting open dialogue and constructive feedback to support ethical decision-making (Sharma et al., 2019). Sharma et al. (2019) additionally share integrating ethical principles and teachings into church-supported educational programs can equip future leaders to ensure the continuity of servant leadership, make responsible choices, and sustain the growth of their church community.

The character and ethics in leadership and education theme relates to this study where leaders can address challenges and concerns that may contribute to attrition by applying ethics to education and leadership decisions as they relate to resolving disputes, addressing conflicts, as well as ensuring fair and equitable decision-making (Han et al., 2021; Neubert & Montañez, 2020). Han et al. (2021) and Neubert and Montañez (2020) further share that AI technologies can reduce bias in the decision-making process by identifying patterns and analyzing data objectively serving as a useful tool to promote fair and equitable decision-making among leadership while helping them make unbiased choices when addressing conflicts or disputes within the church. Further supporting character and ethics in leadership and education, AI tools can adapt to the individual needs of learners by providing intelligent tutoring systems (AlShehhi et al., 2020). AlShehhi et al. (2020) further share that these AI-powered intelligent tutoring systems can equip leaders and enhance the educational experience through real-time assessments, personalized feedback, and adaptive learning pathways to foster a supportive learning environment while addressing ethical challenges within the church community.

Leadership and Management Theory

The leadership and management theme highlights where leaders can develop effective strategies for managing both the administrative and spiritual needs of the church by understanding the similarities and differences between leadership, management, and administration, thereby impacting retention (Davis, 2022). Davis (2022) further shares that leaders can make informed decisions that align with the church's values and goals by integrating contemporary leadership and management theories with biblical principles, thereby reducing attrition while increasing member satisfaction. Furthermore, membership retention can be positively influenced by adopting innovative practices and management tools including digital project management platforms as well as data-driven decision-making processes that can assist leaders in optimizing resource allocation, streamlining administrative tasks, and enhancing a church's overall organizational efficiency (Kanat-Maymon et al., 2020; Zerfass et al., 2020). Kanat-Maymon et al. (2020) and Zerfass et al. (2020) further share that leaders who stay updated with emerging leadership and management trends while prioritizing ongoing professional development can continually incorporate new knowledge into their practices that address challenges, foster growth, and ultimately create a vibrant church community.

The leadership and management theme relates to this study where examining team ministry and servant leadership in the context of biblical examples and principles can foster a sense of belonging, support teamwork, as well as nurture collaboration, ultimately supporting the fundamentals of church member retention (Chowdhury et al., 2023; Delanoy & Kasztelnik, 2020). Chowdhury et al. (2023) and Delanoy and Kasztelnik (2020) additionally share that team ministry and servant leadership within the church can be enhanced by leveraging AI-based

collaboration tools and platforms to facilitate and coordinate effective communication among team members while promoting a sense of shared purpose and belonging.

Furthermore, AI-powered analytics can assist leaders in identifying areas where collaboration and teamwork can be improved through individual contributions, communication patterns, as well as the analysis of team dynamics, ultimately fostering valuable insights and recommendations that contribute to membership retention (Cao et al., 2021; Li et al., 2021). Cao et al. (2021) and Li et al. (2021) additionally discuss that AI technologies can nurture collaboration among church management and personalize leadership efforts by analyzing individual strengths, interests, and preferences while encouraging active participation and meaningful engagement within the church community.

Organizational Theory and Development

The organizational theory and development theme identifies management practices from a biblical worldview as they relate to the organizational theory of empowering church leaders to develop organizational processes and structures that align with the church's values and mission, thereby reducing attrition while increasing member engagement (Van Engen, 2022). Van Engen (2022) additionally discusses how to evaluate educational ministries by applying organizational theory, principles, and practices to enhance the quality of training and education programs, thereby improving the recruitment and retention of church members seeking spiritual and personal growth. Furthermore, leveraging AI technologies can make a significant contribution to organizational theory and development where it can automate workflows, optimize administrative tasks, and improve communication channels while allowing church leaders to allocate more time to strategic planning and developing a nurturing environment for membership growth and retention (Jöhnk et al., 2020; Makarius et al., 2020). Jöhnk et al. (2020) and

Makarius et al. (2020) additionally share that AI-powered technologies can provide data-driven insights into the effectiveness of training programs and educational ministries by offering personalized recommendations for enhancing the quality of educational initiatives, tailoring instructional approaches to individual needs, as well as identifying additional areas of improvement, thereby attracting and retaining church members seeking personal and spiritual development opportunities.

The organizational theory and development theme is associated with key operations and the role of administrative relationships in managing a Christian institution, allowing leaders to establish effective processes and systems that support member retention, engagement, and satisfaction (Asatiani et al., 2021). Asatiani et al. (2021) further share that AI-powered technologies can reallocate valuable time and resources for leaders to focus on building meaningful relationships by playing a pivotal role in supporting the organizational leadership and operations of a Christian institution, thereby managing financial transactions, scheduling events, managing membership databases, as well as optimizing administrative tasks. Additionally, AI-driven analytics tools can evaluate data related to church member participation, feedback, and engagement, providing valuable insights to organizational leaders while also identifying trends, patterns, and areas of improvement connected to membership satisfaction (Haefner et al., 2021; Mikalef & Gupta, 2021). Haefner et al. (2021) and Mikalef and Gupta (2021) also discuss AI-powered chatbots and virtual assistants that can offer personalized recommendations, provide timely updates, and handle routine inquiries to provide instant support and information while supporting administrative engagement with members, thereby promoting an effective communication experience that fosters a sense of care and strengthens the connection between leaders and members within the organization.

Teaching, Learning, and Group Theory

Several theoretical themes that are relevant to the attrition of church membership, the effectiveness of leveraging artificial intelligence for online education, and the promotion of organizational sustainability through recruitment and retention include (a) Group and Team Dynamics: Theory and Practice in Leadership, (b) Teaching and Learning: Theory and Practice in Leadership, (c) Motivation and Engagement in Learning and Leadership, and (d) Cultural Competence and Inclusion in Education and Leadership.

Group and Team Dynamics: Theory and Practice in Leadership

The group and team dynamics theme in the context of theory and practice in leadership discusses group dynamics and developing a theological and biblical basis for group and team ministry to foster a sense of belonging among church members, thereby reducing member attrition (Temple, 2022). Temple (2022) further shares church leaders can involve members in the decision-making processes by establishing strategic planning within a team environment, thereby increasing a church member's sense of commitment and ownership while promoting retention. Additionally, AI-powered collaboration platforms can be leveraged to enhance group and team dynamics where these platforms can enable project management, document sharing, and seamless communication, as well as facilitate the effect of collaboration among church leadership (Lee et al., 2019; Seeber et al., 2020). Lee et al. (2019) and Seeber et al. (2020) further share that leveraging AI technologies in a team environment can create a collaborative and inclusive atmosphere encourage active participation, as well as foster a sense of belonging, thereby contributing to the reduction of membership attrition.

The group and team dynamics theme in the context of theory and practice in leadership relates to this study where leaders can proactively address challenges by forecasting changes and

developments in ministry while adapting to new technologies like artificial intelligence as well as creating effective strategies for online education, thereby retaining, and attracting members seeking accessible and innovative learning experiences (Webber et al., 2019). Webber et al. (2019) additionally share that AI-powered technologies can assist leaders in forecasting developments and changes in ministry by evaluating external factors, data trends, and membership behavior, thereby leveraging its predictive capabilities to anticipate shifts in member preferences and needs while enabling leadership to proactively adapt their strategies to attract and retain church membership. Furthermore, the integration of AI in online education can revolutionize a church's online learning experience where virtual learning environments provide intelligent feedback, interactive simulations, as well as personalized and adaptive content to enhance membership engagement while making education more accessible for individuals seeking spiritual development and growth (Larson & DeChurch, 2020; Xiaoyang et al., 2021). Larson and DeChurch (2020) and Xiaoyang et al. (2021) additionally share that AI-powered tools can support leadership by streamlining the educational process and providing real-time analytics on a learner's progress, optimizing course design, as well as developing effective strategies for online education through task automation, thereby empowering leaders to make data-driven decisions that can contribute the quality and effectiveness of an online education curriculum as it relates to membership recruitment and retention.

Teaching and Learning: Theory and Practice in Leadership

The teaching and learning theme in the context of theory and practice in leadership can allow church leaders to create educational programs that align with members' spiritual needs by identifying biblical principles of teaching and learning while ultimately increasing retention and engagement (Cartwright, 2023). Cartwright (2023) additionally discusses how leaders can

incorporate effective pedagogical approaches into online education by evaluating and analyzing

contemporary learning theories which can provide engaging and personalized learning

experiences, thereby retaining and attracting church members. The integration of AI in teaching

and learning can enhance adaptive learning systems to analyze individual progress, preferences,

and learning styles while delivering personalized experiences and content that cater to the needs

of each member, thereby improving the effectiveness and impact of educational programs within

the church while promoting retention and fostering a deeper sense of engagement (Brock & Von

Wangenheim, 2019; Garrett et al., 2020). Brock and Von Wangenheim (2019) and Garrett et al.

(2020) additionally discuss how AI can analyze learner data, measure learning outcomes,

identify areas of improvement, as well as suggest enhancements to instructional delivery and

design methods, thereby enabling leaders to continuously improve their educational offerings

while ensuring they align with contemporary learning theories to provide a meaningful

experience that attracts and retains church members seeking spiritual development and growth.

The teaching and learning theme in the context of theory and practice in leadership can

enhance instruction and utilize artificial intelligence for learning assessment by creating teaching

strategies and methodologies that improve the effectiveness and quality of online education,

thereby promoting long-term retention while increasing member satisfaction (Cox et al., 2019).

Cox et al. (2019) additionally discuss how AI can play a significant role in providing

personalized and automated feedback throughout the learning assessment process, thereby

analyzing the learners' responses, offering tailored recommendations for improvement, as well

as facilitating a more effective and efficient learning process. AI algorithms can also assist

leaders by identifying individual learning needs and knowledge gaps through the analysis of data

related to a learners' engagement and performance, generating insights that guide leaders

towards developing personalized learning paths, targeted interventions, as well as additional resources to address specific areas of improvement while ensuring members satisfaction and growth (Alshahrani et al., 2022; Ouyang & Jiao, 2021). Alshahrani et al. (2022) and Ouyang and Jiao (2021) further share that AI-powered chatbots or virtual tutors can answer questions, offer guidance, provide explanations, and foster a supportive and interactive learning environment that offers 24/7 support to promote member engagement and satisfaction throughout their academic journey.

Motivation and Engagement in Learning and Leadership

The theme of motivation and engagement in learning and leadership explores the factors that influence member engagement and motivation throughout the learning process and within the church community (Temple, 2022). Temple (2022) shares that studying motivational strategies and theories can empower leaders to develop leadership initiatives and educational programs that sustain and inspire members' commitment and enthusiasm. Moreover, leaders who understand the role of intrinsic and extrinsic motivation can improve their approaches while effectively meeting the diverse needs of church members (Crawford et al., 2023; Schiff et al., 2020). Crawford et al. (2023) and Schiff et al. (2020) additionally share that leaders who recognize individual motivations can create personalized leadership opportunities and learning experiences that align with members' values, interests, and aspirations, ultimately fostering a deeper sense of commitment and engagement.

The motivation and engagement theme in the context of learning and leadership can allow leaders to leverage AI in online education while enhancing member engagement and motivation through adaptive learning techniques, gamification elements, as well as personalized recommendations (Wijayati et al., 2022). Wijayati et al. (2022) further share that leaders can

promote organizational sustainability and membership retention by fostering a sense of empowerment through effective leadership practices as well as cultivating a sense of purpose and belonging that aligns with motivational theories. By providing interactive and adaptive learning experiences, church leaders can enhance engagement and motivation by leveraging AI technology (Lin et al., 2021; Ouyang et al., 2022). Lin et al. (2021) and Ouyang et al. (2022) further discuss that AI-powered systems can offer personalized challenges and rewards, provide targeted feedback, and analyze individual progress, thereby fostering an engaging and dynamic learning environment that sustains member interest and stimulates motivation throughout their academic journey within the church.

Cultural Competence and Inclusion in Education and Leadership

The cultural competence and inclusion in education and leadership theme focus on the leadership practices within the church that affect inclusivity in education and cultural competence where it emphasizes the appreciation and understanding of diverse cultural perspectives, beliefs, and backgrounds, thereby fostering a welcoming and inclusive environment for all participants (Cartwright, 2023). Cartwright (2023) further shares that leaders who can create educational programs and leadership initiatives should embrace cultural competence to resonate with the diverse experiences and needs of church members while promoting member satisfaction, belonging, and inclusivity. The integration of AI in educational programs can offer personalized learning experiences that contribute to cultural competence and inclusion while being considerate of individual preferences and cultural backgrounds (Eguchi et al., 2021; Karyotaki et al., 2022). Eguchi et al. (2021) and Karyotaki et al. (2022) further share that AI algorithms can promote a sense of engagement by analyzing learners' cultural data while adapting resources, examples, and content relevant to diverse members.

The cultural competence and inclusion theme in the context of education and leadership relates to artificial intelligence by providing leaders with the insights and resources needed to consider members' cultural values and backgrounds, develop culturally responsive approaches, as well as create personalized content that enhances retention, engagement, and organizational sustainability (Uunona & Goosen, 2023). Uunona and Goosen (2023) additionally share AI can assist leaders by leveraging data processing capabilities to identify specific cultural needs, trends, and patterns, as they relate to the cultural backgrounds and preferences of church members, thereby allowing them to tailor their initiatives and approaches. AI-powered recommendation systems can promote cultural inclusion and competence by suggesting culturally sensitive and relevant opportunities, events, and resources, that align with an individual's cultural background and interests, thereby enhancing membership engagement and fostering a sense of belonging and inclusivity within the church community (Buchanan et al., 2021; Chiu & Chai, 2020). Buchanan et al. (2021) and Chiu and Chai (2020) further discuss that AI can support leaders in better understanding cultural competence through continuous growth and learning by providing interactive experiences, online courses, and educational resources that develop the necessary skills to promote cultural sensitivity and inclusion while deepening their understanding of different cultures within their leadership practices and academic programs.

Thematic Framework

The purpose of the thematic framework section in chapter two of this research study is to establish the contemporary literature, identify key themes, contextualize the research, build on previous work, and form methodological choices as well as demonstrate the researcher's knowledge of the industry or topic (Bredfeldt, 2023). Furthermore, Bredfeldt (2023) shares the thematic framework also reviews relevant literature, highlights existing theories, and identifies

gaps in the research to justify its importance, substantiate the research, as well as showcase its relevance within a broader academic discipline, thereby serving as a foundation to inform the research design while demonstrating the researcher's depth of understanding as it relates to their topic. The thematic framework section begins with a summative paragraph where the researcher introduces the section and briefly highlights theories and concepts that support a thematic foundation for their research study from their cognate classes (Liberty University, 2023). Liberty University (2023) also mentions the thematic framework section has two specific headings which include Current Literature Themes as well as Relevant Models.

Current Literature Themes

The Current Literature section allows the researcher to provide an in-depth overview of the current literature as it informs the problem and potential solutions, especially in the context of organizations like the collaborating organization (Bredfeldt, 2023). Furthermore, Bredfeldt (2023) shares the current literature themes section will follow literature themes specific to the project and its context while including a discussion of how the review will inform the approach to solving the problem.

Several thematic themes that are relevant to the attrition of church membership, the effectiveness of leveraging artificial intelligence for online education, and the promotion of organizational sustainability through recruitment and retention include (a) Digital Ministry and Church Membership, (b) Theological and Biblical Perspectives, (c) Spiritual Formation and Growth, (d) Online Christian Community and Authenticity, (e) Technology and Digital Strategies.

Digital Ministry and Church Membership

The relationship between digital platforms, artificial intelligence, and church membership can provide insight into how technology can be leveraged to address the challenge associated with church attrition (Vinichenko et al., 2020). Furthermore, Vinichenko et al. (2020) share that the effectiveness of online engagement and community-building strategies can be studied to identify approaches facilitated by AI to foster a sense of belonging while enhancing church membership within virtual spaces. Research has shown that a digital church community can be made more accessible and responsive by using an AI-powered chatbot to provide information about church activities, prayer, and personalized support to individuals seeking spiritual guidance (Molina et al., 2023; Rainey et al., 2021). Furthermore, Molina et al. (2023) and Rainey et al. (2021) share churches can develop targeted interventions and retention strategies to identify patterns and trends related to attrition by capitalizing on AI algorithms to analyze large amounts of data from online interactions.

Churches can gain insights by leveraging AI-driven data analytics to examine engagement levels, interests, and member preferences, thereby allowing for the development of programming and tailored content that more closely aligns with their virtual congregation (Green et al., 2022). Moreover, Green et al. (2022) share church leaders and staff can free up valuable time and resources by leveraging AI to automate routine administrative tasks, thereby reducing the risk of attrition while fostering stronger member relationships. Online education and community initiatives can be improved by using AI-powered analysis to gauge sentiment and measure member satisfaction towards church programs while better meeting the needs and expectations of the church's virtual members (Gultom et al., 2022). Overall, Gultom et al. (2022) share church membership, AI, and digital platforms create a symbiotic relationship that can strategically leverage technology to offer opportunities that create a sustainable, engaging, and

inclusive digital church environment, thereby cultivating a sense of long-term membership retention and growth.

Theological and Biblical Perspectives

Biblical and theological perspectives and digital ministry can be examined in the context of church membership attrition to identify theological frameworks that can alleviate the common challenges faced by religious organizations (Nguyen et al., 2020). Nguyen et al. (2020) further share that integrating AI into online education can provide insights into the ethical implications of technological advancements while aligning these principles with a theological foundation. Biblical and theological perspectives can be enhanced with AI in digital ministry to develop ethical guidelines and principles that create opportunities to use technology to promote church membership while addressing attrition (Löffler et al., 2020; Phillips et al., 2019). For example, Löffler et al. (2020) and Phillips et al. (2019) share that a church can foster meaningful spiritual growth in a virtual learning environment by supporting informed discussions on maintaining human connection as it relates to theological reflection on the integration of AI in online education.

The development and implementation of AI-powered algorithms that consider theological implications can guide the development of systems that preserve human dignity, equity, and inclusivity within a virtual church environment (Mercer & Trothen, 2021). Furthermore, Mercer and Trothen (2021) share that a more responsible and informed approach to organizational sustainability and digital ministry can be developed by integrating AI into theological education, thereby equipping religious leaders with the necessary tools to navigate the complex relationship between technology and religion. Moreover, technology can serve as a tool for enhancing religious experiences rather than replacing them by using theological frameworks to evaluate the

impact of AI on spiritual development, community formation, and human agency within a Christian worldview (Sinibaldi et al., 2020). Overall, Sinibaldi et al. (2020) share biblical and theological principles that can be used to ground digital ministry practices by capitalizing on the transformative potential of AI while fostering a sense of purpose, connection, and belonging, thereby supporting a church's core values as it relates to the challenges of membership attrition.

Spiritual Formation and Growth

Technology can support church members' growth and retention by investigating how AI-powered platforms and tools can facilitate discipleship, mentorship, and spiritual formation in a digital environment (Luo et al., 2020; Wang et al., 2019). Luo et al. (2020) and Wang et al. (2019) additionally share that exploration of the spiritual formation and growth theme can address church attrition by providing adaptive spiritual development and personalized resources tailored to an individual's specific needs. Churches can offer Adaptive and personalized spiritual formation resources by integrating AI into virtual platforms to uniquely cater to the specific needs and areas of growth for individuals, thereby supporting engagement while reducing the risk of attrition (Bali et al., 2022). Bali et al. (2022) further share that digital discipleship experiences can also be personalized by the transformative power of AI recommendation systems which can analyze a user's behaviors and preferences to make insightful suggestions related to resources, readings, and spiritual practices.

The gap between physical and digital mentorship can also be further bridged by AI-powered chatbots which can serve as virtual mentors, providing prayer, support, and guidance to individuals seeking spiritual growth and development (Oktradiksa et al., 2021). Oktradiksa et al. (2021) also mention how churches can gain insights into various spiritual formation initiatives to allow for a more effective and continuously improving AI-driven data system that can better

meet the evolving needs of church members in a rapidly changing digital environment. AI can also encourage individuals to actively participate in their spiritual development by facilitating growth tracking and spiritual assessments, thereby providing tangible and measurable results (Oktradiksa et al., 2021; Suleimenov et al., 2019). Ultimately, Oktradiksa et al. (2021) and Suleimenov et al. (2019) share that spiritual formation and growth can leverage AI to foster deep spiritual connections within online education initiatives that can contribute to long-term membership retention, organizational sustainability, and the development of vibrant virtual communities.

Online Christian Community and Authenticity

Strategies to mitigate church attrition can be developed by studying the role of AI in cultivating a sense of community while fostering authentic online interactions as they relate to the debate surrounding physical presence and the ministry of the Holy Spirit (Liang et al., 2021). Liang et al. (2021) further discuss how the online Christian community and authenticity theme can strengthen relationships, support pastoral care, and facilitate meaningful connections supported by AI within virtual Christian communities. Online Christian communities can be enhanced by AI through sentiment analysis and natural language processing to foster an environment of transparency and trust by detecting and responding to genuine expressions of faith (Juhász et al., 2023; Priyadarshini & Cotton, 2019). Furthermore, Juhász et al. (2023) and Priyadarshini and Cotton (2019) share that virtual platforms can create a sense of fellowship and shared presence by capitalizing on AI to facilitate real-time engagement while enabling church members to participate in interactive Bible studies, prayer gatherings, and live worship services.

Church members can receive relevant and personalized content that resonates with their spiritual journey by leveraging AI-powered content creation services that can deliver materials

based on an individual's specific needs and preferences such as educational materials, sermons, and spiritual resources (Wu et al., 2021). Additionally, Wu et al. (2021) share online Christian communities can promote inclusivity and diversity by leveraging AI-driven algorithms to proactively foster respectful dialogue, ensure equitable representation, and address biases among members who share various perspectives and backgrounds. Christian communities can maintain their integrity and authenticity by utilizing AI chatbots to assist in the prevention of spreading harmful content or misinformation while promoting healthy conversations as well as assisting in the moderation of discussions (Zhu et al., 2022). Moreover, Zhu et al. (2022) share that Christian leaders can create a nurturing environment for members by leveraging AI to support the development and training of various leadership practices while analyzing data to gain insight and recommendations on member feedback and engagement. Online Christian communities can develop spaces that genuinely reflect the teachings and values of the faith community by harnessing the power of AI to foster spiritual growth and support an authentic sense of belonging (Almaiah et al., 2022; Khan et al., 2022).

Technology and Digital Strategies

Implications for organizational sustainability, retention, and recruitment can be examined in the context of digital strategies enhanced by AI to support worship, discipleship, counseling, and digital evangelism (Criado & Gil-Garcia, 2019). Criado and Gil-Garcia (2019) additionally share the technology and digital strategies theme can contribute to the effectiveness of educational programs while improving member retention rates by exploring how virtual assistants and AI-powered chatbots can enhance online education. Church staff and leaders allocate more resources and time to meaningful ministry activities by incorporating AI into digital strategies, thereby allowing churches to streamline administrative tasks by leveraging

intelligent automation (Mogaji et al., 2020; Su et al., 2023). Mogaji et al. (2020) and Su et al. (2023) also share churches can more effectively retain and reach a diverse audience by tailoring their digital strategies based on valuable insights into member needs, preferences, and engagement powered by AI data analytics.

Church members can be guided through various personal and spiritual challenges by receiving immediate responses through AI-driven chatbots that can be programmed to provide personalized support and counseling services (Borges et al., 2021). Borges et al. (2021) also share AI can be used to enhance virtual worship experiences by offering interactive and immersive elements that can enrich spiritual engagement for participants including worship music, dynamic visual presentations, and personalized scripture readings. The recruitment process can be enhanced by AI to ensure a better fit for long-term sustainability by identifying potential candidates for ministry roles while matching specific church needs with their characteristics and skills (Gunasekeran et al., 2021). Additionally, Gunasekeran et al. (2021) share that increased retention rates and enhanced member learning outcomes can be optimized through the delivery of AI-powered educational programs that leverage intelligent feedback systems, personalized assessments, and adaptive learning techniques. Overall, churches can effectively recruit new members, improve member retention, and foster organizational sustainability by integrating and embracing AI into their digital strategies (Sacks et al., 2020; Saura et al., 2021).

Relevant Models

The Relevant Models section allows the opportunity to present any existing models the researcher used to build their program, process, or product while sharing examples of similar solution-based praxis models currently employed in the field that can serve as a foundation or

pattern for the study (Bredfeldt, 2023). Moreover, Bredfeldt (2023) explains that the researcher should discuss how they plan to use the example models even if they are not specific to their problem to establish a framework for their project's design.

Affordance Model as it Relates to Research Fundamentals

The affordance theoretical model offers a relevant framework for understanding the research fundamentals associated with the impact of artificial intelligence in online education as it relates to recruitment, retention, and the sustainability of religious organizations (Fu et al., 2020). According to Fu et al. (2020), the affordance theoretical model can be understood as the potential interactions or actions that are presented to individuals by their technologies or environment. In the context of the research fundamentals of AI in online education, the affordance theoretical model has been used to suggest that AI-powered technologies can provide new possibilities and opportunities for recruitment, retention, and organizational sustainability (Khazatsky et al., 2021; Upadhyay et al., 2021). Moreover, Khazatsky et al. (2021) and Upadhyay et al. (2021) suggest specific challenges in the educational experience can be enhanced by creating unique affordances related to AI-powered features including virtual assistants, intelligent tutoring systems, and adaptive learning assessments.

The affordance theoretical model has further been related to the fundamentals of recruitment where affordances in online education have been streamlined through AI to enhance the recruitment process by automatically matching candidates with learning opportunities or suitable positions within the organization, analyzing their competencies and skills, as well as automating the assessment process for candidate profiles (Dehnert & Mongeau, 2022; Kent et al., 2021). Furthermore, Dehnert and Mongeau (2022) and Kent et al. (2021) discuss the affordance theoretical model that has been related to recruitment in the context that AI can analyze an

individual's learning needs and specific preferences to develop personalized recruitment strategies.

The affordance theoretical model has also been related to the fundamentals of retention where the learning experience has enhanced specific challenges addressed by AI-driven interventions as they relate to providing personalized interventions and support to learners (Cetindamar Kozanoglu & Abedin, 2020). Moreover, Cetindamar Kozanoglu and Abedin (2020) share that AI has ultimately increased retention rates and learner engagement by analyzing learners' data and specifically offering timely feedback, suggesting tailored resources, as well as identifying areas of improvement.

In the context of organizational sustainability, the affordance theoretical model undergirds the study's research fundamentals where AI automation can facilitate data-driven decision-making, optimize resource allocation, as well as streamline administrative tasks, ultimately contributing to the sustainability of religious organizations (Guo et al., 2021). Additionally, Guo et al. (2021) explain AI technologies have provided insights into member learning trends and behaviors, facilitate efficient resource allocation for online education, as well as streamline course management. Overall, AI-powered data analysis has provided useful information for organizational leaders to make informed decisions, allocate resources effectively, and adapt their educational strategies to support long-term organizational sustainability (Crosby et al., 2019; Upadhyay et al., 2022).

Overall, the affordance theoretical model offers a relevant framework that has assisted organizations in understanding how AI can be utilized in online education to achieve recruitment, retention, and sustainability objectives (Henlein et al., 2023). Henlein et al. (2023) explain religious organizations can use the affordance theoretical model to identify specific

affordances of AI technologies to strategically leverage them to enhance their educational programs, improve member engagement, as well as strengthen the long-term viability of their organizations in the digital age.

Theoretical Model of Planned Behavior

The theoretical model of planned behavior has also offered insights into how online education is impacted by artificial intelligence for the recruitment, retention, and sustainability of religious organizations (Sohn & Kwon, 2020). According to Sohn and Kwon (2020), the theoretical model of planned behavior suggests that human behavior is influenced by attitudes, subjective norms, as well as perceived behavioral control, whereby each of these factors can be applied to religious organizations' use of artificial intelligence in online education.

Concerning attitudes, the theoretical model of planned behavior has been used to explain how individuals' attitudes are influenced by AI in the context of online education within religious organizations (Chatterjee & Bhattacharjee, 2020). According to Chatterjee and Bhattacharjee (2020), AI has enhanced the effectiveness and perceived value of online education by providing interactive and personalized learning experiences, thereby leading to potential recruits and existing members with more positive attitudes. Additionally, virtual assistants and adaptive learning platforms can leverage AI power tools to create a more meaningful and engaging educational experience (Akata et al., 2020; Cao et al., 2021).

As it applies to subjective norms, the theoretical model of planned behavior has also been used to support the acceptance and adoption of social norms and significant others as they apply to online education and religious organizations (Akour et al., 2021). Additionally, Akour et al. (2021) share participants have connected with peers and instructors to share experiences as well as seek guidance in an online education platform using AI-powered community-building and

social interaction resources. Moreover, AI can support social norms and positive interactions by fostering a sense of belonging, strengthening retention, as well as encouraging participation within the religious community (Chen et al., 2020; Dubey et al., 2020).

The theoretical model of planned behavior has also been applied to perceived behavioral control where an individual's perceived control over participating in online education can be enhanced by artificial intelligence (Pan et al., 2023). According to Pan et al. (2023), AI has made the learning process more convenient, accessible, and flexible by leveraging intelligent learning systems to adapt resources and content to an individual's learning preferences and styles. Moreover, AI has promoted sustained retention and engagement by encouraging an individual to actively participate in online education, thereby increasing their confidence through self-paced learning opportunities and personalized support (Abubakar et al., 2019; Hwang & Chien, 2022).

Overall, the theoretical model of planned behavior has been used to suggest that leveraging AI in online education can enhance recruitment, retention, and sustainability by influencing individuals' perceived attitudes, social norms, and perceived behavioral control within a religious organization (Chou et al., 2022; Gursoy et al., 2019). Furthermore, AI-powered technologies have capitalized on an individual's preferences and need to provide personalized learning experiences, foster social connections, as well as create a positive learning environment (Zawacki-Richter et al., 2019). Lastly, Zawacki-Richter et al. (2019) share that religious organizations can strategically incorporate AI into their online education offerings, thereby attracting and retaining more members while ensuring the long-term sustainability of their educational programs.

Process Virtualization Model

The process virtualization model also has offered useful insights into how online education can be enhanced by artificial intelligence to support the recruitment, retention, and sustainability of religious organizations (Li et al., 2022). According to Li et al. (2022), the process virtualization model in the context of online education suggests that through virtualization, AI has been used to transform traditional processes into virtual and digital equivalents as it relates to recruitment, retention, and sustainability.

The process virtualization model as it applies to recruitment has been used to explain how the virtualization of the recruitment process can be facilitated by AI to support religious organizations' online education initiatives (Borangiu et al., 2019). According to Borangiu et al. (2019), religious organizations have streamlined onboarding procedures, matching processes, as well as candidate assessment by leveraging AI-powered automated systems and algorithms. Moreover, potential candidates for educational roles within religious organizations have been more efficiently identified through virtual assessments and interviews allowing for a broader reach and improved recruitment process (Gill et al., 2019; Groshev et al., 2021).

The process virtualization model as it applies to retention has been used to enhance the retention efforts of religious organizations in online education through AI-driven virtualization (Ahuja et al., 2023). Specifically, Ahuja et al. (2023) share support and feedback, personalized recommendations, as well as an individual's learning needs have been adapted through an intelligent learning system. Virtual chatbots and assistants have addressed concerns and questions in real time while additionally offering continuous assistance (Zhang et al., 2020). Overall, membership retention can be improved by virtualizing the support process to enhance the overall learning experience, build relationships, as well as foster engagement (Kaur et al., 2019; Gámez Díaz et al., 2020).

Lastly, the process virtualization model in the context of sustainability has been used to emphasize the virtualization and digitization processes of religious organizations to promote sustainability (Ma & Cui, 2020). Ma & Cui (2020) share that AI can be used to provide data-driven insights for decision-making, optimize resource allocation, as well as automate administrative tasks. Religious organizations can enhance the long-term sustainability, cost-effectiveness, and scalability of their online education initiatives by digitizing educational materials for use in AI-powered learning platforms (Agrawal et al., 2020; Alarabiat et al., 2021).

Overall, the process virtualization model underscores how online education and religious organizations have used AI to transform their recruitment, retention, and sustainability processes (Gryaznova et al., 2019). Gryaznova et al. (2019) discuss how AI-driven technologies can enhance effectiveness, engagement, and efficiency, by virtualizing the education delivery and support processes. The process virtualization model highlights the importance of leveraging AI to ensure the longevity of religious organizations' online education initiatives by virtualizing education ecosystems that can be used to attract, retain, and support sustainable growth (Ackom et al., 2022; Feng et al., 2023).

Chapter Two Summary

The purpose of the Biblical and Theological Framework section was to establish a strong foundation rooted in a biblical worldview (Bredfeldt, 2023). Bredfeldt (2023) further shares that the Biblical and Theological Framework allows the researcher to demonstrate how their research study aligns with biblical imperatives, principles, and themes, ultimately resulting in a theological rationale. The Biblical and Theological Framework section introduced the research study's overarching theme and purpose as it relates to two sections titled Biblical Imperatives and Principles as well as Biblical and Theological Themes.

Chapter Two established a literary framework that serves as the groundwork for the succeeding parts of this research study. Chapter two was comprised of three sections that focused on different frameworks including theological, theoretical, and thematic. For each of the three sections, existing literature, theories, and concepts were reviewed and merged with the framework to substantiate a deeper understanding of the research topic. Lastly, chapter two demonstrated the understanding and research conducted on relevant literature and theories.

CHAPTER THREE: THE STRATEGIC PLAN

Introduction

Chapter Three establishes the strategic plan which defines the reality of an organization while creating a vision that aligns with a series of actions to journey from the present to the desired future (Bredfeldt, 2023). Bredfeldt (2023) further shares that chapter three discusses the strategic plan's specific components and carefully considers the intersection between planning and leadership as it relates to the collaborating organization. Throughout the chapter, four fundamental questions of strategic planning shape the strategic plan and provide a roadmap for success, including: (a) where are we now, (b) where do we want to be, (c) how will we get there, and (d) how are we doing? Lastly, Chapter Three demonstrates the thoughtfulness and intentionality in addressing the problem at hand while proposing effective solutions.

Praxis Problem Summary

As congregations dwindle across the country and more people identify as religiously unaffiliated, churches are facing a membership attrition problem and struggling to sustain their organization (Lemos et al., 2019). Smith et al. (2021) have suggested one potential solution is to leverage artificial intelligence technology into online education programs to improve membership recruitment and retention efforts. The program leveraged the power of AI chatbot technology to promote an accessible and engaging online learning platform that supports education and ministry training, ultimately leading to increased recruitment, retention, and sustainability of church membership. However, due to the ever-changing nature of artificial intelligence platforms, there is a gap in the research and an opportunity to investigate the potential benefits and drawbacks of using artificial intelligence in online education, particularly in the context of organizational sustainability. Therefore, this study addressed the effectiveness

of artificial intelligence in online education to mitigate the problem of church membership

attrition and support organizational sustainability through recruitment and retention.

Vision Statement

The vision is to leverage the power of AI chatbot technology to promote an accessible

and engaging online learning platform that supports education and ministry training, ultimately

leading to increased recruitment, retention, and sustainability of church membership.

Purpose Statement

The purpose of this AI-powered chatbot program is to test and apply the affordance

theory, the theory of planned behavior, and the process virtualization theory as a means of

improving recruitment, retention, and organizational sustainability in addressing the problem of

church membership attrition for the Redbank Valley Church Association in New Bethlehem, PA.

Objectives

Several objectives to be attained through the implementation of an AI-powered chatbot

program to support online education and ministry training include the following:

1. Develop an AI-powered chatbot that can model user behavior and support a personalized learning experience based on the individual's specific needs and interests.

2. Promote an accessible and user-friendly online learning management system that simplifies complex information and provides helpful learning resources such as links to tutorials, enrollment/contact information, and answers to frequently asked questions.

3. Use the chatbot's AI capabilities to track user progress while offering helpful feedback and recommendations to explore further ministry training opportunities.

4. Foster the development of a recruitment/retention strategy that leverages the chatbot's capabilities to engage members while providing them with relevant and timely information about ministry training resources supported by the Redbank Valley Church Association.

5. Leverage user data in the decision-making process to evaluate the effectiveness of the chatbot in improving recruitment, retention, and organizational sustainability for churches within the Redbank Valley Church Association.

Outputs

The immediate deliverables from the implementation of an AI-powered chatbot to support online education and ministry training include the following outputs. First, the development of a chatbot to promote an online learning platform can provide immediate access to educational resources and training materials for existing church members while also simplifying complex information and personalize the learning experience to cater to the specific needs and interests of the individual user (Ouyang & Jiao, 2021). Secondly, an AI-powered chatbot can track user progress and offer helpful feedback and recommendations for additional ministry training opportunities to support immediate improvements in the recruitment and retention of member participation in church programs and activities (Johnson et al., 2021). Thirdly, fostering the development of a recruitment/retention strategy that leverages the Chatbot's AI capabilities can potentially result in immediate growth when attracting new members where users are provided with timely and relevant information about the Redbank Valley Church Association programs and activities (Seo et al., 2021). Lastly, leveraging user data in the decision-making process can provide immediate insights into the effectiveness of the chatbot's capabilities to improve recruitment, retention, and organizational sustainability while identifying areas for improvement to better serve the needs of the church community (De Vreede et al., 2021). Overall, the immediate deliverables from the implementation of an AI-powered chatbot to support online education and ministry training provided immediate benefits for the Redbank Valley Church Association when addressing the problem of church membership attrition and improving recruitment, retention, and overall organizational sustainability.

Outcomes

The changes or transformations that resulted from the implementation of an AI-powered chatbot to support online education and ministry training for the Redbank Valley Church Association led to several long-term benefits.

One of the most prominent changes that occurred was the transformation of how churches engage with their members and community. Leveraging the chatbot's AI capabilities can offer a personalized and interactive learning experience that caters to the specific needs and interests of new and existing members (Ouyang & Jiao, 2021). Ouyang and Jiao (2021) also share that this personalized learning environment can lead to a more informed and engaged membership that is empowered with the tools to better support ministry programs, events, and activities.

Additionally, fostering the development of an improved recruitment/retention strategy led to a more diversified church membership where the chatbot interacted with potential members and provided them with timely and relevant information about church activities to attract individuals who may have previously felt disconnected or excluded from the church community (Seo et al., 2021). Seo et al. (2021) further discuss how this improvement in diversity can potentially lead to a more inclusive and diverse membership that better depicts the local community of believers.

From a long-term perspective, the AI-powered chatbot also led to improvements in overall organizational sustainability by providing better access to educational resources and ministry training (De Vreede et al., 2021). De Vreede et al. (2021) further share that improvements in accessibility and engagement cultivated a culture of continuous learning and

spiritual development, leading to church members who are better equipped to lead and support ministry events, programs, and activities.

Overall, the changes or transformations that resulted from the implementation of an AI-powered chatbot to support online education and ministry training for the Redbank Valley Church Association led to significant changes and long-term benefits, specifically when addressing the problem of church membership attrition by improving recruitment, retention, and organizational sustainability. An AI-powered chatbot can transform the way a church interacts with its community to foster a more inclusive and better-informed membership that is empowered with the knowledge, values, and skills essential to glorifying God, fulfilling the Great Commission, and supporting long-term ministry events, programs, and activities.

Essential Terms

The terms and definitions section informs readers of any terminology in the purpose statement, vision statement, objectives, or that is anticipated in the strategic plan that needs to be defined for readers to comprehend the research study.

1. *Artificial Intelligence*: AI, otherwise known as artificial intelligence, is the simulation of human intelligence through machines, enabling them to make decisions, understand natural language, as well as learn by performing tasks that typically require human intelligence (Hwang & Chien, 2022).

2. *Chatbot*: a chatbot is otherwise known as an AI application or computer program that can interact with users by simulating human conversation through speech or text interactions, often using machine learning algorithms and natural language processing to respond to and understand user requests or questions (Adamopoulou & Moussiades, 2020).

3. *Church Attrition*: the process of church attrition refers to members disengaging or leaving from a particular aggregation or religious denomination, often due to changing priorities, conflicts, dissatisfaction, or personal beliefs (Fowler et al., 2020).

4. *Online Education*: also known as distance learning or e-learning, online education leverages the Internet and digital technologies to facilitate learning remotely as well

as deliver educational content outside of a traditional classroom environment (Singh & Thurman, 2019).

5. *Organizational Sustainability*: the sustainability of organizations involves practices and strategies that enable an organization to adapt to changing circumstances over a long-term period, fulfill its mission, as well as maintain its daily operations by encompassing adaptability, social impact, environmental responsibility, as well as financial stability (Isensee et al., 2020).

6. *Recruitment*: the process of recruitment involves selecting and attracting individuals to fill vacant positions within an organization, while within the context of a religious organization or church membership, it involves the efforts to engage and attract new members through various efforts (Pessach et al., 2020).

7. *Retention*: the process of retention refers to an organization's ability to keep its employees, customers, and existing members over time, and within the context of a religious organization or church membership, it involves strategies to maintain active involvement, satisfaction, and member engagement (Stein et al., 2020).

Operational Plan

This operational plan enabled the Redbank Valley Church Association to improve recruitment and retention efforts as well as achieve long-term organizational sustainability by addressing the problem of church membership attrition. The researcher effectively leveraged AI chatbot technology by incorporating the following elements into an operational plan to promote an engaging and accessible online learning platform that supports ministry and education training. Specifically, this operational plan is organized into nine specific sections, which include (a) people, (b) place, (c) process, (d) time, (e) treasure, (f) things, (g) message, (h) means, and (i) monitor, all of which are detailed into the specific steps the researcher along with the Redbank Valley Church Association will take to operationalize this project.

People

The first group of people that were included in this research study were religious organizations. Religious organizations include churches within an interdenominational church

association located in the western Pennsylvania region included in this study. These religious organizations are specifically located within the geographic region referred to as the New Bethlehem area and Redbank Valley community.

The second group of people that were included in this research study were leaders. Leaders are the decision-makers and organizational managers for religious organizations, otherwise known as the board of directors. The board of directors directly influences decision-making related to recruitment and retention efforts that affect religious organizations within this study.

The third group of people that were included in this research study were members. Members include people who identify with a body of believers associated with the religious organizations included in this study. Members include both current members as well as potential candidates influenced by the AI-powered chatbot as it relates to recruitment and retention efforts of the religious organizations within this study.

Place

The second step in the operational plan involves establishing an appropriate online infrastructure to host the AI-powered chatbot and link to the online learning platform. Specifically, the Redbank Valley Church Association currently maintains a website, RVChurchAssocation.org where the AI-powered chatbot is hosted and accessible to the public. The researcher in partnership with the Redbank Valley Church Association's website design firm is aware the platform can be easily accessed across different devices while considering various Internet connectivity options, thereby considering the importance of accessibility. The researcher along with the Redbank Valley Church Association's website design firm has also considered the

flexibility and scalability of the AI-powered chatbot to accommodate future technological needs and growth.

The online learning platform is hosted at ChristianLeadersInstitute.org which provides free online courses that can be accessed anytime, anywhere, and completely at a student's own pace, thereby providing flexibility to study the bible and engage in ministry training best suited to their specific spiritual needs (Reyenga, 2023). The AI-powered chatbot bridged the gap between the Redbank Valley Church Association's need for ministry training while promoting an interdenominational curriculum to empower believers with the knowledge, values, and skills essential to glorifying God, fulfilling The Great Commission, and becoming leaders for Christ. By establishing an appropriate online infrastructure and place to host the AI-powered chatbot, the Redbank Valley Church Association enhanced the usability and accessibility of the program by providing an adaptable and user-friendly online environment.

Process

The third step in the operational plan considers the overall relationship between research framework elements and the necessary steps within the total scope of the research process. These specific steps can be found in the appendix which references *Figure 2* to the research framework diagram which indicates the association between elements and the framework while also including the flow of information, actions, and ideas that lead to the research project's eventual outcome.

Define Strategy and Concepts

The first step in the research process included a brief background of the religious organization otherwise known as the Redbank Valley Church Association. The strategies and concepts were explained, the research problem was presented and justified as well as the

methodology was discussed. Furthermore, any limitations and key assumptions associated with the scope of research were also determined and evaluated.

Review of Current Literature

The second step in the research process offered a literature review relating to the theories that support membership recruitment and retention efforts. The literature review included current research within the scope of the last five years as it relates to church membership attrition, thereby unveiling a gap in the research related to the effect of the use of artificial intelligence by religious organizations. Moreover, the literature review was used to develop a hypothesis that supports the research questions presented in the first step.

Research Approach & Chatbot Implementation

The third step in the research process presented the methodology which included the research approach and method while also considering the implementation of the AI-powered chatbot. The data collection processes also included an interview, questionnaire, and survey.

Methodology of Survey

The fourth step in the research process described the procedures associated with the questionnaire and interview data collection methods. The questionnaire interview design and pretest were explained followed by the justification of the Redbank Valley Church Association's participation in both studies. The research study constructs will be defined while the techniques for data analysis will also be discussed. The questionnaire and interview limitations were also explained while considering any ethical factors.

Survey Response Analysis

The fifth step in the research process will report on the responses from a data analysis of the questionnaire and interview. A demographic and denominational profile of the respondents

was shared following the analysis of the questionnaire and interview data. The triangulated data associated with the AI-powered chatbot's impact on member recruitment and retention was highlighted along with any behaviors or actions that reduce or contribute to church attrition. Moreover, the hypothesis associated with the first two research questions was summarized along with the results.

Experimental Case Study Design

The sixth step in the research process described the procedures associated with the field experiment survey. The field experiment survey was discussed including the specific elements of subjects, design, protocol, and a compilation of the results. The research study constructs were defined along with a detailed explanation of the data analysis methods. Moreover, the survey methodology limitations as well as any ethical factors relating to the AI-powered chatbot's impact on organizational sustainability were further evaluated.

Filed Experiment Report Analysis

The seventh step in the research process included the total number of assessments as well as a report on any findings from the field experiment survey results. The total number of current church members was summated in the context of any association between the AI-powered chatbot and the motives of members as they relate to retention. Tests of a statistical nature were shared to determine the use of the AI-powered chatbot, user habits, as well as user expectations as they relate to a religious organization's education and online training resources. The AI-powered chatbot's impact on organizational sustainability as it relates to a member's desire to join and remain in a religious organization was further evaluated in support of the third research question. Moreover, questionnaire and interview data were cross-analyzed with the field experiment data collected from the survey.

Interpretation and Discussion of Results

The eighth step in the research process included interpreting and discussing the findings from the interview, questionnaire, and survey as they relate to the three research questions. A discussion was also included evaluating the outcome of the hypothesis test as it relates to the AI-powered chatbot's impact on membership recruitment and retention along with any behaviors or actions that reduce or contribute to church membership attrition. The eighth step also provided meaning and context to the case study by sharing a qualitative analysis of the questionnaire and interview responses while providing a comparative analysis of the results with related studies. The study revealed critical success factors that were relevant to religious organizations in western Pennsylvania. Questionnaire and interview results were also cross-analyzed with the field experiment survey results.

Implications and Conclusions

In the ninth step in the research process, the researcher shared any conclusions from the research problem as well as summarized the study by explaining how it contributed to the broader research body of knowledge. The research study's implications as they relate to theory, practice, and policy were explained. Any limitations associated with the research methods were shared along with recommendations for future research were discussed.

Time

The fourth step in the operational plan involved establishing a timeline or specific schedule to ensure effective project management. The researcher working with the Redbank Valley Association's website design firm confirmed the AI-powered chatbot would be completed within three to four weeks, leveraging several members of their web development and Internet marketing team (Redbank Valley Church Association, 2023). Specifically, the schedule included

the development of the AI chatbot (one week), content creation (one week), testing of the platform (one week), as well as the eventual launch (one week). Several of the steps in the development phase happened simultaneously and did not have to happen sequentially, thereby allowing for additional time to conduct an assessment analysis to determine anticipated outcomes and indicators of success.

The researcher worked with the Redbank Valley Church Association's collaborating committee and website design firm to solidify the timeline and schedule; however, the entirety of the research project was completed within one month. Specific deadlines and milestones for deliverables and key tasks ensured the project progressed in a timely fashion while staying on track. The Redbank Valley Church Association along with the researcher can ensure the timely and successful completion of each stage of the program by establishing a structured timeline that keeps the researcher accountable and focused.

Treasure

The fifth step in the operational plan took into consideration the necessary financial resources to ensure the AI-powered chatbot program's success. Fortunately, the Redbank Valley Church Association's website design firm generously offered to cover the budgeted two thousand dollars in expenditures associated with the research project including the development of the chatbot, content creation, implementation, marketing/promotion, as well as ongoing maintenance (Redbank Valley Church Association, 2023). Furthermore, the researcher as well as the Redbank Valley Church Association did not have to outlay any funding to complete this research project successfully as the contracted website design firm voluntarily donated all time, labor, and any incidentals to see the research project to fruition and continue to sustain it into the foreseeable future.

Moreover, the Redbank Valley Church Association's contracted website design firm served as the primary sponsor of the project and was held accountable to the two-thousand-dollar budget while utilizing their resources to efficiently support the AI chatbot program's success. Additionally, the Redbank Valley Church Association's finance committee worked alongside their contracted website design firm and the researcher to have any necessary meetings to discuss the financial status, approve expenditures within the two-thousand-dollar budget, as well as make informed decisions regarding any financial allocations. Any unexpected deviations or expenditures were promptly communicated and addressed to the relevant stakeholders while being completely funded by the contracted website design firm (Redbank Valley Church Association, 2023). With the website design firm's support, the AI chatbot initiative can maintain longevity and financial prudence while ensuring the sustainability and accessibility of the program. By fostering open communication among all stakeholders while establishing a robust accountability framework, the necessary financial resources to ensure the success of the AI-powered chatbot program were diligently managed to ensure the program remains successful and sustainable without placing any additional financial burden on the researcher or the Redbank Valley Church Association.

Things

The sixth step in the operational plan involved determining the necessary equipment and physical resources essential for the project's implementation. Fortunately, the Redbank Valley Church Association's website design firm voluntarily donated all the required hardware, software licenses, online infrastructure, multimedia production, as well as content creation (Redbank Valley Church Association, 2023). The researcher worked with the Redbank Valley Church Association's collaborating committee and website design firm to determine any

additional equipment and physical resources essential for the project's development and implementation. Thankfully, all the necessary tools, equipment, and resources already exist, were voluntarily provided, and were readily accessible for utilization.

Additionally, the researcher evaluated existing resources within the Redbank Valley Church Association that may be leveraged for the optimization of available assets. The church association already has an existing website where the AI-powered chatbot was implemented to promote the online ministry training program. Moreover, the researcher already has an existing relationship with the online learning curriculum provided by the Christian Leaders Institute. This resource-conscious approach enabled the researcher along with the Redbank Valley Church Association to make the most of their resources while ensuring a cost-effective and efficient implementation.

Message

The seventh step in the operational plan considered the message conveyed to the target audience as a crucial step for effective communication. The researcher defined the AI-powered chatbot program's vision, purpose, and objectives. The researcher ensured the content produced by the AI-powered chatbot was relevant, informative, and engaging while aligning with the church association's ministry and educational training goals. Moreover, the unique benefits and features of the program were effectively communicated through a robust messaging strategy to existing church members and potential recruits, thereby fostering participation and enthusiasm.

The researcher worked with the Redbank Valley Church Association's collaborating committee and website design firm to develop the necessary promotional and training materials. The Redbank Valley Church Association also employs a publicity coordinator as well as their website design firm, which also has an Internet-marketing department, developed promotional

materials. By delivering a compelling message, the Redbank Valley Church Association can engage and inspire its audience, fostering a strong sense of purpose and connection within the church community.

Means

The eighth step in the operational plan determines suitable methods and means for the delivery of content to the learner. The researcher in partnership with the Christian Leaders Institute leveraged the most effective approach to engage learners through live webinars, discussion forums, multimedia presentations, and AI-chatbot interactions. Linking to a user-friendly learning management system that supports the Redbank Valley Church Association's desired methods and means further enhanced the learning experience. This research project's AI chatbot bridged the gap between the Redbank Valley Association's website as well as the Christian Leaders Institute online learning platform website, thereby fulfilling the need for online ministry training while improving recruitment and retention efforts to reduce church attrition.

The researcher worked with the Redbank Valley Church Association's collaborating committee and website design firm to develop the necessary methods and means for content delivery. The researcher in partnership with the Christian Leaders Institute ensured seamless interaction and support for the learners by establishing user support, notifications, announcements, and any additional communication channels. By providing a user-friendly and diverse means of engagement, the Redbank Valley Church Association catered to different preferences and learning styles, thereby creating an interactive and dynamic learning environment.

Monitor

The ninth step in the operational plan considered the monitoring of the AI-powered chatbot program for effectiveness, success, and continuous improvement. The researcher in partnership with the Christian Leaders Institute leveraged key performance indicators by tracking learning outcomes, completion rates, satisfaction, as well as engagement. The researcher worked with the Redbank Valley Church Association's collaborating committee and website design firm to offer monthly reports that identified key performance indicators and tracking assessments.

Furthermore, the researcher collected and analyzed user data that provided valuable insight to better serve the needs of the church community by adjusting their strategies, making data-driven decisions, as well as enhancing their ministry programs. The ongoing evaluation and monitoring process ensured the AI-powered chatbot program continuously improved recruitment, retention, and overall organizational sustainability. By leveraging data-driven insights, the Redbank Valley Church Association refined its program to promote ongoing growth and sustainability, as well as meet the evolving needs of its learners.

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Assessment Plan

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This research study used both quantitative and qualitative analysis through the process of coding and the development of themes to evaluate how data was organized and assessed. The researcher took specific actions to assess the data and provide a structured approach for evaluating the impact of artificial intelligence in online education as it relates to the recruitment, retention, and sustainability of religious organizations.

Quantitative Assessments

By considering various quantitative assessments, the researcher gained a comprehensive understanding of how AI chatbot technology impacted the promotion of an engaging and

accessible online learning platform. The following quantitative assessment was supported by the data collection tools included in the appendix to provide valuable insights into the platform's effectiveness when considering the increase in recruitment, improvement of retention rates, as well as enhancement of the overall sustainability of church membership.

Quantitative Methods

The quantitative method that was employed in the third study's triangulation included a survey of the current church member population. The purpose of this research study was to evaluate any association between the influence of an AI-powered chatbot supporting online education and the motives of members as they relate to retention efforts. The process virtualization model as it applies to recruitment has been used to explain how the virtualization of the recruitment process can be facilitated by AI to support religious organizations' online education initiatives (Borangiu et al., 2019). The data collected from the survey included the use of artificial intelligence, habits, and expectations as they relate to a religious organization's online education and training resources. The process virtualization model as it applies to retention has been used to enhance the retention efforts of religious organizations in online education through AI-driven virtualization (Ahuja et al., 2023). Moreover, the process virtualization model in the context of sustainability has been used to emphasize the virtualization and digitization processes of religious organizations to promote sustainability (Ma & Cui, 2020). The process virtualization model is relevant to this research study where it explained an AI-powered chatbot's effectiveness on the decision-making process of an individual. The third study's objective was to evaluate how a religious organization can keep members once they have begun participating in the organization.

Qualitative Assessments

By considering various qualitative assessments, the researcher gained a comprehensive understanding of how AI chatbot technology impacts the promotion of an engaging and accessible online learning platform. The following qualitative assessments are supported by the data collection tools included in the appendix to provide valuable insights into the platform's effectiveness when considering the increase in recruitment, improvement of retention rates, as well as enhancement of the overall sustainability of church membership.

Qualitative Methods

The first and the second study employed an interview and questionnaire for triangulation purposes. The qualitative research questions included in this research study aligned with the interview and questionnaire. Data collected from the interview was triangulated with demographics, policies, and an evaluation of how decreased membership enrollment can lead to reduced organizational performance (Moser & Nel, 2019). The objective of the first study was to determine how much online education and ministry training is being provided to support membership recruitment and retention efforts. Specifically, the first study triangulated interview data based on creating unique affordances related to AI-powered features including virtual assistants, intelligent tutoring systems, and adaptive learning assessments (Khazatsky et al., 2021; Upadhyay et al., 2021). Moreover, Khazatsky et al. (2021) and Upadhyay et al. (2021) suggest specific challenges in the educational experience can be enhanced by creating unique affordances related to AI-powered features including virtual assistants, intelligent tutoring systems, and adaptive learning assessments. The affordance theoretical model was relevant to the triangulation of the research problem where it offered a relevant framework for understanding the research fundamentals associated with the impact of artificial intelligence in online education

as it relates to recruitment, retention, and the sustainability of religious organizations (Fu et al.,

2020). The results stemming from the first study's triangulation helped to explain factors

influencing the decision to become a member or to not become a member, as they relate to the

context of this research study.

The second study utilized a questionnaire with the general population of individuals who

are not members of a religious organization. The questionnaire qualitatively triangulated

common themes related to membership recruitment. The second study specifically leveraged the

theoretical model of planned behavior to evaluate what factors influenced an individual's

decision to become a member when engaging with the religious organization's AI-powered

chatbot. Individuals were presented with questions associated with perceived attitudes, social

norms, and perceived behavioral control when considering the decision to become a member.

According to Pan et al. (2023), AI has made the learning process more convenient, accessible,

and flexible by leveraging intelligent learning systems to adapt resources and content to an

individual's learning preferences and styles. Furthermore, AI-powered technologies have

capitalized on an individual's preferences and need to provide personalized learning experiences,

foster social connections, as well as create a positive learning environment (Zawacki-Richter et

al., 2019). The theoretical model of planned behavior is relevant to this research study because it

considers an individual's perceived attitude and subsequent behavior when deciding to become a

member. The second study's objective is to improve religious organizations' strategies for more

effectively recruiting members.

Summary of Assessment Plan

In summary, this research study used both quantitative and qualitative analysis through

the process of coding and the development of themes to evaluate how data was organized and

assessed. The researcher took specific actions to assess the data and provided a structured approach for evaluating the potential impact of artificial intelligence in online education as it relates to the recruitment, retention, and sustainability of religious organizations.

Summary and Significance

In summary, the power of AI chatbot technology was leveraged to promote an engaging and accessible online learning platform for the Redbank Valley Church Association while holding significant potential for addressing the challenges of recruitment, retention, and sustainability of church membership. By implementing AI chatbot technology, the Redbank Valley Church Association created a personalized learning experience that catered to the specific interests and needs of individuals enhancing participation and engagement in ministry training and education programs. The accessibility and convenience of an online platform attracted a broader audience including those who may have felt excluded or disconnected from traditional church environments. Furthermore, the AI chatbot's ability to provide timely information, offer personalized recommendations, and track user progress fostered membership retention and growth.

This research project's significance lies in its ability to strengthen and revitalize the Redbank Valley Church Association by meeting the ever-evolving needs of potential recruits and existing church members. By adopting AI chatbot technology, the Redbank Valley Church Association created a dynamic and inclusive learning environment that embraced technology while maintaining the teachings and core values of the church. This project aligns with the vision of cultivating an informed, engaged, and empowered church membership that actively supports ministry activities and programs.

This research proposal actively sought to address the problem of church membership attrition by leveraging AI chatbot technology as a tool for learning, connection, and growth. The AI-powered chatbot program has the transformative potential to improve the way the church interacts with its community, fostering a sense of belonging, while facilitating a personalized learning experience. Through qualitative and quantitative assessments, the Redbank Valley Church Association continuously monitored the effectiveness of the AI chatbot program making data-driven adjustments to ensure its sustainability and long-term success.

Approving this research project was crucial for the Redbank Valley Church Association to thrive in the digital age, adapt to changing demographics, and create a sustainable and vibrant community of believers. By leveraging AI chatbot technology and embracing technology, the Redbank Valley Church Association attracted new members, expanded its reach, and provided valuable ministry training and education resources. Ultimately, this research project was essential for the retention, growth, and sustainability of church membership, offering an innovative solution to address the challenges of church membership attrition faced by the Redbank Valley Church Association.

CHAPTER FOUR: IMPLEMENTATION AND ASSESSMENT

Introduction

Chapter Four provides a comprehensive examination of the project from planning to execution by assigning the alignment of intended outcomes with actual results (Bredfeldt, 2023). Bredfeldt (2023) further shares that through meticulous reflection and analysis, the fourth chapter explores the critical factors that contributed to the project's success as well as opportunities for improvement enriching the research with practical insight and scholarly rigor. Throughout the chapter, several fundamental questions of the outcomes assessment are discussed, including: (a) is there congruency between what was proposed versus what happened, or is it incongruent, (b) why did it succeed, what did the researcher do well, and what can researchers replicate in the future, and (c) what did not do well, what did not work, or what did not quite reach the goal that had been set? Lastly, Chapter Four offers a detailed exploration of the implementation process and ultimately its impact on the intended outcomes.

Praxis Project Summary

The following summary of the research project reports on the implementation of an AI-powered chatbot program as well as assesses evidence of its level of effectiveness or potentially ineffectiveness for promoting an accessible and engaging online learning platform to support education and ministry training while ultimately measuring its impact on recruitment, retention, and sustainability of church membership.

Vision Statement

The vision is to leverage the power of AI chatbot technology to promote an accessible and engaging online learning platform that supports education and ministry training, ultimately leading to increased recruitment, retention, and sustainability of church membership.

Purpose Statement

The purpose of this AI-powered chatbot program was to test and apply the affordance theory, the theory of planned behavior, and the process virtualization theory as a means of improving recruitment, retention, and organizational sustainability in addressing the problem of church membership attrition for the Redbank Valley Church Association in New Bethlehem, PA.

Objectives

Several objectives that were attained through the implementation of an AI-powered chatbot program to support online education and ministry training include the following:

- Develop an AI-powered chatbot that can model user behavior and support a personalized learning experience based on the individual's specific needs and interests.

- Promote an accessible and user-friendly online learning management system that simplifies complex information and provides helpful learning resources such as links to tutorials, enrollment/contact information, and answers to frequently asked questions.

- Use the chatbot's AI capabilities to track user progress while offering helpful feedback and recommendations to explore further ministry training opportunities.

- Foster the development of a recruitment/retention strategy that leverages the chatbot's capabilities to engage members while providing them with relevant and timely information about ministry training resources supported by the Redbank Valley Church Association.

- Leverage user data in the decision-making process to evaluate the effectiveness of the chatbot in improving recruitment, retention, and organizational sustainability for churches within the Redbank Valley Church Association.

Intended Outputs

Several intended outputs and deliverables to be obtained through the implementation of an AI-powered chatbot program to support online education and ministry training include the following:

- Development of an AI-powered chatbot with the deliverable of a fully functional AI-powered chatbot and an output of improved access to training and educational resources

promoting an online learning platform while catering to an individual's specific needs.

- User progress tracking and feedback with a deliverable of a feedback mechanism and tracking system with an output of tracking user progress, suggesting additional ministry training opportunities, as well as offering feedback to improve recruitment and retention of church members.

- Recruitment and retention strategy with a deliverable of a frequently asked questions document leveraging the chatbot's AI capabilities and an output of growth in attracting new members through relevant and timely information about the Redbank Valley Church Association events, activities, and programs.

- Data-driven decision-making with the deliverable of insightful reports and data analytics as well as an output of insight into the AI-powered chatbot's effectiveness with identifying areas of improvement for better serving church members' needs as they relate to recruitment, retention, and organizational sustainability.

The intended outputs and deliverables indicate the tangible benefits of implementing an AI-powered chatbot for supporting online education and ministry training to address church membership attrition while promoting recruitment, retention, and organizational sustainability.

Intended Outcomes

Several intended outcomes and transformational changes that were obtained through the implementation of an AI-powered chatbot program to support online education and ministry training include the following:

1. The intended changes or transformations that will result from the implementation of an AI-powered chatbot to support online education and ministry training can potentially lead to improved engagement with members and the community by offering personalized and interactive learning experiences that cater to the specific needs and interests of new and existing members.

2. This project seeks to attract individuals who may have previously felt disconnected or excluded from the church community by providing them with timely and relevant information about church activities through the development of an improved recruitment/retention strategy, ultimately leading to a more diversified church membership.

3. The long-term intended outcome of the implementation of an AI-powered chatbot can also improve overall organizational sustainability by providing improved access to ministry training and educational resources while fostering a culture of spiritual

development and continuous learning among church members.

4. The intended transformation and changes were designed to address church membership attrition by supporting ministry events, programs, and activities while empowering the church members and the community with the knowledge, values, and skills necessary to glorify God and fulfill the Great Commission.

The intended outcomes and transformational changes can foster a more inclusive and better-informed membership through the implementation of an AI-powered chatbot for supporting online education and ministry training to address church membership attrition while promoting recruitment, retention, and organizational sustainability.

Praxis Project Assessment

The following project assessment uses the Congruency-Contingency Model to review the intended results versus actual results from the implementation of an AI-powered chatbot for supporting online education and ministry training to address church membership attrition while promoting recruitment, retention, and organizational sustainability. The congruency-contingency model, instituted by Dr. Robert Stake, assesses programs based on three key components including antecedents, transactions, and outcomes (Stake, 1967). Antecedents involve cultural and historical factors influencing the program with consideration to curriculum, policies, participants, beliefs, technology, as well as contextual elements (Bredfeldt, 2023). Bredfeldt (2023) additionally shares transactional elements associated with the relationships and interactions during the educational experience which can include leaders, teachers, participants, as well as the curriculum.

Furthermore, the following assessment uses the congruency-contingency model for structural purposes while supported by formative and summative data for assessment evidence. It is essential to collect both formative and summative data to properly assess the success of the AI-powered chatbot for online education and ministry training. Formative data is used to inform

ongoing improvements while being collected during the development and implementation phases (Kettner, 2017). Comparatively, Kettner (2017) also shares summative data used to evaluate the project's overall success and is collected at the end or final stage of completion. The formative and summative data in this research project was primarily collected through three interrelated studies and triangulated by a group of research questions as outlined in the data collection table included in Appendix A.

Assessment of Project Antecedents

The assessment of project antecedents compares the intended antecedents of the project to what the researcher expected before the project began to the actual antecedents the researcher encountered when the project launched.

The Need

This section discusses the accuracy of the forecasted need for addressing the attrition of church membership and the effectiveness of leveraging artificial intelligence to support online education while promoting organizational sustainability through recruitment and retention. The accuracy of the forecasted need is supported by an analysis of the intended results versus the actual results of the AI-powered chatbot while supported by formative and summative data for assessment evidence. The need for addressing church membership attrition while leveraging artificial intelligence to support online education appears to have been accurately forecasted and congruent in several key areas, including relevant data, previous studies, and organizational concerns.

Relevant Data. The actual antecedents from this research project as they relate to accurately forecasting the need, support a changing demographic and specifically an aging population where most participants from all three studies indicated they were 55+ years of age or

older whereas less than 20% across all three studies indicated they were 18-34 years of age (Appendix B, Study 1). Furthermore, looking at societal shifts, participants from the first study, which included an interview of organizational leaders indicated they learned about the Redbank Valley Church Association primarily from digital media whereas 54% of participants from the second study and 41% of participants from the third study indicated they use the internet multiple times per day to learn something new (Appendix B, Study 1).

Another societal shift and more incongruent aspect included in the first study was the move from traditional classroom-based training to online education powered by AI. Respondents overwhelmingly preferred traditional classroom-based training rather than online education with one respondent expressing "Some of the older among us already feel like turning on their computer is like going to work and many like personal interaction that is face-to-face. You know it's a Boomer weakness, eh" (Appendix B, Study 1).

Previous Studies. The actual antecedents from this research project as they relate to accurately forecasting the need for the AI-powered chatbot's recommendation system, were split across all three studies, indicating incongruency for membership recruitment and retention when personalizing content and providing guidance tailored to the user's specific needs. Respondents from the first study, which included interviews with church association leaders indicated they perceived a less effective impact of artificial intelligence in online education as it relates to membership recruitment and retention where one participant expressed "I don't think it would make any difference" (Appendix B, Study 1). Similarly, 60% of respondents from the third study, which included a survey of current members, also indicated they perceived artificial intelligence and the AI-powered chatbot to be less effective in online education for training members (Appendix B, Study 3). However, 65% of respondents from the second study, which

included a questionnaire of non-members from outside the church association, indicated they believed artificial intelligence and the AI-powered chatbot would be more effective for training members (Appendix B, Study 2). There was a noticeable incongruency between the intended antecedents versus the actual antecedents as they applied to forecasting the need with previous studies.

Organizational Concerns. The actual antecedents from the research project as they apply to accurately forecasting the need for organizational concerns were measured across the first study of interviews with organizational leaders, the second study of a questionnaire with non-members as well and the third study which included a survey of members currently enrolled in the church association. The first study with organizational leaders indicated the church association does not have a formal plan for recruitment or retention as well and they do not offer any form of educational or ministry training resources to their members (Appendix B, Study 1). Specifically, the third respondent for the first study indicated "Basically, we do not have a planned method of recruiting or training our membership – it is mostly voluntary" (Appendix B, Study 1). Similarly, the third study which included a survey of currently enrolled members indicated that 77% perceived the lack of volunteers as an organizational concern that would remain unaffected if the members had the opportunity to receive online training (Appendix B, Study 3). However, the second study's questionnaire of non-members outside the church association had a 100% response rate in favor that the lack of volunteers as an organization concern could be resolved and members would participate more frequently if they had the opportunity to receive online training (Appendix B, Study 2).

Overall, from a congruency-contingency perspective, the relevant data, previous studies, and organizational concerns support the accuracy of the forecasted need as it relates to

addressing the attrition of church membership and the effectiveness of leveraging artificial intelligence to support online education while promoting organizational sustainability through recruitment and retention. The congruency of the forecasted need was further supported by an analysis of the intended results versus the actual results of the AI-powered chatbot while supported by formative and summative data for assessment evidence.

The Participants

This section discusses the participants expected in the program in comparison to the actual participants as it relates to addressing the attrition of church membership and the effectiveness of leveraging artificial intelligence to support online education while promoting organizational sustainability through recruitment and retention. The congruency-contingency of the expected versus actual participants is supported by an analysis of the intended results versus the actual results of the AI-powered chatbot while supported by formative and summative data for assessment evidence.

When considering the participants expected in the program, the intended antecedents were based on the projection that data would be obtained from a baseline sample of 15 to 30 participants supporting a sample size large enough to sufficiently describe the phenomenon of interest while appropriately addressing the research questions (Schoemann et al., 2017). Schoemann et al. (2017) also share the determination of effective sample size should be underscored by the estimated response rate as well as the nature of the data analysis until saturation reaches the point of diminishing return and data becomes repetitive.

The actual participants in the program were organized into three different, but interrelated studies including five participants for the first study of research fundamentals which used an interview with organizational leaders for data collection while employing a qualitative narrative

with the affordance model for data analysis (Appendix B, Study 1). The second study of recruitment included twenty-eight respondents and used a questionnaire of non-members outside the organization to collect data while employing a qualitative narrative with the model of planned behavior for data analysis (Appendix B, Study 2). The third study of retention included twenty-two respondents and used a survey of members currently enrolled in the organization to collect data while employing a quantitative narrative with the process virtualization model for data analysis (Appendix B, Study 3). The first study had fewer respondents than expected and the second and third studies had more than expected; however, all three sample sizes sufficiently described the phenomenon of interest while appropriately addressing the research questions allowing saturation to reach the point of diminishing return, and the data to become repetitive. The formative and summative data as it relates to the interview, questionnaire, and survey respondents can be reviewed in Appendix B.

From a congruency-contingency perspective, the participants from the first study were more incongruent than what the researcher expected, but it did not adversely impact the results, whereas the second and third studies were also incongruent, but in the opposite direction, again, not adversely impacting the validity of the research results.

Overall, this section discussed the participants expected in the program in comparison to the actual participants as it related to addressing the attrition of church membership and the effectiveness of leveraging artificial intelligence to support online education while promoting organizational sustainability through recruitment and retention. The congruency-contingency of expected versus actual participants was supported by an analysis of the intended results versus the actual results of the AI-powered chatbot while supported by formative and summative data for assessment evidence.

The Context

This section discusses the context expected in the program in comparison to the actual context as it relates to addressing the attrition of church membership and the effectiveness of leveraging artificial intelligence to support online education while promoting organizational sustainability through recruitment and retention. The congruency-contingency of the expected versus actual context is supported by an analysis of the intended results versus the actual results of the AI-powered chatbot while supported by formative and summative data for assessment evidence.

When accounting for the context expected in the program, the intended antecedents included three interrelated studies as outlined in the original data collection plan, which included interviews with organizational leaders, a questionnaire with non-members, as well as a survey with current members of the Redbank Valley Church Association. The first study intended to perform face-to-face interviews with organizational leaders that were to be conducted in an audio-recorded quiet room at the researcher's office.

The actual implementation or antecedent for the first study with face-to-face interviews was changed to an online interview process due to scheduling conflicts with organizational leaders. Specifically, the Qualtrics platform offered the functionality to digitize the interview process while providing useful insight (Qualtrics Experience Management, 2023). Qualtrics Experience Management (2023) also allowed the context of the online interviews to be more convenient for organizational leaders as well as more efficiently recording/collecting feedback. The summative data concerning the online interviews can be found in Appendix B.

From a congruency-contingency perspective, the researcher's plans remained largely congruent with the actual context encountered during the project, yet still subject to necessary

adjustments. Moving from face-to-face interviews to online interviews demonstrated the adaptability in addressing scheduling conflicts while ensuring alignment between the intended and actual outcomes of the data collection methods. This contextual evaluation underscores the importance of flexibility in research methodologies along with the efficiency of leveraging technology to facilitate the research implementation process.

In summary, this section discussed the context expected in the program in comparison to the actual context as it relates to addressing the attrition of church membership and the effectiveness of leveraging artificial intelligence to support online education while promoting organizational sustainability through recruitment and retention. The congruency-contingency of expected versus actual context was supported by an analysis of the intended results versus the actual results of the AI-powered chatbot while supported by formative and summative data for assessment evidence.

Resources

This section discusses the resources expected in the program in comparison to the actual resources as it relates to addressing the attrition of church membership and the effectiveness of leveraging artificial intelligence to support online education while promoting organizational sustainability through recruitment and retention. The congruency-contingency of expected versus actual resources is supported by an analysis of the intended results versus the actual results of the AI-powered chatbot while supported by formative and summative data for assessment evidence.

Budget Allocation. When evaluating the forecasted budget for the project, the intended antecedents included a $2000 budget for various project components including development, content creation, implementation, marketing, as well as maintenance (Appendix C, Budget Allocation Audit). During the planning process, the Redbank Valley Church Association's

website design firm generously offered to cover the entire budget as part of their social responsibility to give back to the community while supporting innovative technology (Appendix C, Budget Allocation Audit).

The actual budget allocation or actual antecedent realized expenditures are just under $2000 covering all software ($550), labor ($1200), as well as marketing and advertising ($200) efforts (Appendix C, Budget Allocation Audit). As planned, the Redbank Valley Church Association's website design firm covered the budget in its entirety. The planned versus actual budget allocations were supported by formative and summative data as outlined in Appendix C.

From a congruency/contingency perspective, the alignment between the intended budget and the actual financial allocation indicates effective communication/collaboration between the researcher and the church association's website design firm. The responsible use of funds as well as the web design firm's generosity supported the research project's financial sustainability without any additional monetary burdens on the researcher or the Redbank Valley Church Association.

Technology Platform. When evaluating the technological resources for the project, the intended antecedents included developing an AI-powered chatbot using OpenAI's ChatGPT platform for the underlying programming or chatbot's brain (Appendix C, Chatbot Functionality Testing). Furthermore, the researcher along with the church association's website development team determined installing the chatbot on the church association's website would be the best place for implementation (Appendix C, Chatbot Functionality Testing).

The actual technological resources or actual antecedents resulted in successfully implementing the AI-powered chatbot on the Redbank Valley Church Association's website (Appendix C, Chatbot Functionality Assessment). However, the researcher along with the

website development team pivoted from using OpenAI's ChatGPT platform to using Google Bard's AI platform instead for the chatbot's brain. The research team pivoted to Google Bard's AI as the platform offered free access to the Internet allowing the chatbot's brain to utilize a much larger and more updated pool of information (Appendix C, Chatbot Functionality Assessment). Furthermore, the researcher and church association's website team researched that Google Bard's AI platform retrieves answers more efficiently than ChatGPT which has a known history of delays and network errors (Ahmed et al., 2023; Alston, 2023).

From a congruency/contingency perspective, the decision to pivot from ChatGPT to Bard's AI was driven by considerations of functionality, speed, and access to information which showcases the importance of adaptability in technological resources. The decision to pivot programming platforms aligned with the research project's objective of creating an efficient and effective AI-powered chatbot.

In summary, this section discussed the resources expected in the program in comparison to the actual resources as it related to addressing the attrition of church membership and the effectiveness of leveraging artificial intelligence to support online education while promoting organizational sustainability through recruitment and retention. The congruency-contingency of expected versus actual resources was supported by an analysis of the intended results versus the actual results of the AI-powered chatbot while supported by formative and summative data for assessment evidence.

Assessment of Project Processes (Transactions)

This section compares the planned transactions to occur as part of the research project versus the actual transactions as they relate to the attrition of church membership and the effectiveness of leveraging artificial intelligence to support online education while promoting

organizational sustainability through recruitment and retention. The assessment of congruency-contingency for project processes or transactions is supported by an analysis of the intended results versus the actual results of the AI-powered chatbot while supported by formative and summative data for assessment evidence. The assessment of transactions for addressing church membership attrition while leveraging artificial intelligence to support online education can be found in several key areas, including (a) the development of a personalized AI-powered chatbot, (b) the promotion of accessible and user-friendly learning management system, (c) utilization of chatbot's AI for user progress tracking and feedback, (d) development of recruitment/retention strategy with chatbot engagement, and (e) leveraging user data for organizational decision-making and evaluation.

Intended vs. Actual Transactions

Chatbot Development. The first intended transaction included developing an AI-powered chatbot that could model user behavior and support a personalized learning experience based on an individual's specific needs and interests. The actual transaction of chatbot development did effectively implement an AI-powered chatbot that was capable of modeling user behavior while supporting a personalized learning experience centered on the users' needs and interests (Appendix C, Chatbot Functionality Assessment). The assessment of congruency-contingency for chatbot development aligns with the intended transaction versus the actual transaction of the AI-powered chatbot while supported by formative and summative data for assessment evidence (Appendix C, Chatbot Functionality Assessment).

User-Friendly Learning. The second intended transaction included promoting an accessible and user-friendly online learning management system that simplified complex information and provided helpful learning resources such as links to tutorials, enrollment/contact

information, as well as answers to frequently asked questions (Appendix C, User

Feedback/Progress). The actual transaction of user-friendly learning did effectively promote an

accessible and user-friendly online learning management system that made more complex

information simple to understand while sharing helpful resources including links, contact

information, and answers to commonly asked questions (Appendix C, User Feedback/Progress).

The assessment of congruency-contingency for user-friendly learning aligns with the intended

transaction versus the actual transaction of the AI-powered chatbot while supported by formative

and summative data for assessment evidence (Appendix C, User Feedback/Progress).

AI Progress Tracking. The third intended transaction included using the chatbot's AI

capabilities to track user progress while offering helpful feedback and recommendations to

explore further ministry training opportunities (Appendix C, Progress Tracking System

Evaluation). The actual transaction of AI progress tracking effectively offered insight, feedback,

and recommendations for exploring additional ministry training opportunities as well as

improving recruitment and retention efforts (Appendix C, Decision-Making Impact). The

assessment of congruency-contingency for AI progress tracking aligns with the intended

transaction versus the actual transaction of the AI-powered chatbot while supported by formative

and summative data for assessment evidence (Appendix C, Decision-Making Impact).

Engagement Strategy. The fourth intended transaction included fostering the

development of a recruitment/retention strategy that leveraged the chatbot's capabilities to

engage members while providing them with relevant and timely information about ministry

training resources supported by the Redbank Valley Church Association (Appendix C,

Recruitment/Retention Assessment). The actual transaction of an engagement strategy was

developed based on the chatbot's capabilities to engage members while providing them with

immediate and relevant information about ministry training resources and opportunities (Appendix C, Recruitment/Retention Outcomes). The assessment of congruency-contingency for an engagement strategy aligns with the intended transaction versus the actual transaction of the AI-powered chatbot while supported by formative and summative data for assessment evidence (Appendix C, Recruitment/Retention Outcomes).

Data-Driven Evaluation. The fifth intended transaction included leveraging user data in the decision-making process to evaluate the effectiveness of the chatbot in improving recruitment, retention, and organizational sustainability for churches within the Redbank Valley Church Association (Appendix C, Recruitment/Retention Assessment). The actual transaction of a data-driven evaluation was completed based on user data to influence the decision-making process and evaluate the chatbot's effectiveness in improving recruitment retention and organizational sustainability (Appendix C, Recruitment/Retention Outcomes). The assessment of congruency-contingency for the data-driven evaluation aligns with the intended transaction versus the actual transaction of the AI-powered chatbot while supported by formative and summative data for assessment evidence (Appendix C, Recruitment/Retention Outcomes).

In summary, this section compared the planned transactions to occur as part of the research project versus the actual transactions as they relate to the attrition of church membership and the effectiveness of leveraging artificial intelligence to support online education while promoting organizational sustainability through recruitment and retention. The assessment of congruency-contingency for project processes or transactions was supported by an analysis of the intended results versus the actual results of the AI-powered chatbot while supported by formative and summative data for assessment evidence. The assessment of transactions for addressing church membership attrition while leveraging artificial intelligence to support online education

was found effective in several key areas, including (a) the development of a personalized AI-powered chatbot, (b) the promotion of an accessible and user-friendly learning management system, (c) utilization of chatbot's AI for user progress tracking and feedback, (d) development of recruitment/retention strategy with chatbot engagement, and (e) leveraging user data for organizational decision-making and evaluation.

Assessment of Outputs and Outcomes

This section identifies the results from, and the consequences of the project, for the people most directly affected by the AI-powered chatbot. Additionally, this section also compares the planned outputs and outcomes to occur as part of the research project versus the actual outputs and outcomes as they relate to the attrition of church membership and the effectiveness of leveraging artificial intelligence to support online education while promoting organizational sustainability through recruitment and retention. The assessment of congruency-contingency for the project outputs and outcomes is supported by an analysis of the intended results versus the actual results of the AI-powered chatbot while supported by formative and summative data for assessment evidence.

Actual Outputs

Functional System. The first actual output included a functional AI-powered chatbot that resulted in improved access to training and educational resources while promoting an online learning platform that catered to an individual's specific needs. The actual output of a functional AI-powered chatbot system resulted in knowledge gains for members and non-members of the Redbank Valley Church Association as well as attitude shifts for church association leaders (Appendix C, Chatbot Functionality Assessment). The assessment of congruency-contingency for a functional AI-powered chatbot system aligns with the intended output of the research

project while supported by formative and summative data for assessment evidence (Appendix C, Chatbot Functionality Assessment).

Feedback Mechanism. The second actual output included a feedback mechanism that resulted in tracking user progress, suggesting additional ministry training opportunities, as well as offering feedback to improve recruitment and retention of church members. The actual output of a feedback mechanism resulted in knowledge gains for members, non-members, and organizational leaders of the Redbank Valley Church Association (Appendix C, User Feedback/Progress). The assessment of congruency-contingency for a feedback mechanism aligns with the intended output of the research project while supported by formative and summative data for assessment evidence (Appendix C, User Feedback/Progress).

FAQ Document. The third actual output included a frequently asked questions document that resulted in the development of a web page as part of a recruitment/retention strategy that was used as training data for the AI-powered chatbot to attract new members through relevant and timely information about the Redbank Valley Church Association events, activities, and programs. The actual output of a frequently asked questions document resulted in knowledge gains for members and non-members of the Redbank Valley Church Association (Appendix C, Recruitment/Retention Outcomes). The assessment of congruency-contingency for a frequently asked questions document as part of a recruitment/retention strategy aligns with the intended output of the research project while supported by formative and summative data for assessment evidence (Appendix C, Recruitment/Retention Outcomes).

Analytical Insights. The fourth actual output included an analytical insights report which used information from the AI-powered chatbot to identify areas of improvement for better serving church members' needs as they relate to recruitment, retention, and organizational

sustainability. The actual output of an analytical insights report resulted in knowledge gains for the organizational leaders of the Redbank Valley Church Association (Appendix C, Decision-Making Impact). The assessment of congruency-contingency for the analytical insights report aligns with the intended output of the research project while supported by formative and summative data for assessment evidence (Appendix C, Decision-Making Impact).

Actual Outcomes

Engagement Improvement. The first actual outcome includes an improvement in engagement with members of the community by offering a personalized and interactive learning experience that caters to the specific needs and interests of new and existing members as supported by the AI-powered chatbot's capacity to promote online education and ministry training. The actual outcome of improved engagement led to a positive impact on membership recruitment, retention, and organizational sustainability (Appendix C, Intended Outcomes Assessment). The assessment of congruency-contingency for improved engagement aligns with the intended output of the research project while supported by formative and summative data for assessment evidence (Appendix C, Intended Outcomes Assessment).

Community Inclusivity. The second actual outcome includes community inclusivity where the AI-powered chatbot sought to attract individuals who may have previously felt disconnected or excluded from the church community by providing them with timely and relevant information about church activities through the development of an improved recruitment/retention strategy, ultimately leading to a more diversified church membership. The actual outcome of community inclusivity led to a positive impact on membership recruitment, retention, and organizational sustainability (Appendix C, Transformational Changes). The assessment of congruency-contingency for community inclusivity aligns with the intended output

of the research project while supported by formative and summative data for assessment

evidence (Appendix C, Transformational Changes).

Sustainability Enhancement. The third actual outcome includes an enhancement in

sustainability where the AI-powered chatbot improved access to ministry training and

educational resources while fostering a culture of spiritual development and continuous learning

among church members. The actual outcome of community inclusivity led to a positive impact

on membership recruitment, retention, and organizational sustainability (Appendix C,

Transformational Changes). The assessment of congruency-contingency for an enhancement in

sustainability aligns with the intended output of the research project while supported by

formative and summative data for assessment evidence (Appendix C, Transformational

Changes).

Membership Empowerment. The fourth actual outcome includes membership

empowerment where the AI-powered chatbot addressed church membership attrition by

supporting ministry events, programs, and activities while empowering the church members in

the community with the knowledge, values, and skills necessary to glorify God and fulfill the

Great Commission. The actual outcome of membership empowerment led to a positive impact on

membership recruitment, retention, and organizational sustainability (Appendix C,

Transformational Changes). The assessment of congruency-contingency for membership

empowerment aligns with the intended output of the research project while supported by

formative and summative data for assessment evidence (Appendix C, Transformational

Changes).

If this program were continued and the outcomes continued to improve, one would expect

the results to be positive. There may have been some causal results due to the project outcomes,

but none of which could be supported by measurable data or evidence. The researcher is not aware of any measurable data or evidence from this specific research project of what would have happened to the target sample group compared to what would have happened without the program; however, one could use secondary research data from similarly structured organizations to argue that recruitment and retention might have remained stagnate or adversely affected (Appendix C, Intended Outcomes Assessment).

Summary of Results

The research results addressed (a) the praxis problem being studied, (b) the purpose of the research, and (c) the research questions, by extending the understanding of the reasoning behind church membership attrition in religious organizations and the impact it has on recruitment, retention, and ultimately organizational sustainability. The research results sought to determine the driving factors of church membership attrition in religious organizations by leveraging AI chatbot technology as a means of improving data-driven decision-making for recruitment, retention, and organizational sustainability. The research results addressed the larger problem of church membership attrition in religious organizations through a multi-theory cross-analysis of artificial intelligence and its impact on organizational sustainability within a religious organization in western Pennsylvania. Key conclusions drawn from the research results included (a) religious organizations perceive the role of artificial intelligence to have a positive impact when reducing church membership attrition; (b) religious organizations can more effectively leverage artificial intelligence to recruit and retain members by improving membership engagement; and (c) artificial intelligence can impact organizational sustainability as it relates to members' desire to join and remain within a religious organization by improving access to ministry training and educational resources.

CHAPTER FIVE: CONCLUSIONS, IMPLICATIONS, AND APPLICATIONS

Introduction

Chapter Five explores the value and potential benefit of the project by answering the "So what?" question following the implementation of the project (Bredfeldt, 2023). Bredfeldt (2023) further shares the fifth chapter focuses on crafting conclusions, exploring implications, as well as outlining practical applications derived from the project for future research. Lastly, Chapter Five focuses on the results and the significance of those results for leadership and ministry practice.

Findings, Impacts, Conclusions

This section describes the findings discovered from the implementation of the AI-powered chatbot program aimed at promoting an accessible and engaging online learning platform for education and ministry training for the Redbank Valley Church Association. Additionally, this section will review the results (actual output and outcomes) as compared to the intended outputs and outcomes. Furthermore, the impact of the AI-powered chatbot on the participants as well as the Redbank Valley Church Association will be discussed as a result of implementing the project. Specifically, several questions will be addressed including (a) how did the project contribute to solving, at least in some measure, the praxis problem presented in Chapter One, (b) what conclusions were reached, and what next steps are needed to reach the preferred future originally envisioned, and (c) how might that vision need to be modified based on what is now known from this project? Lastly, this research project has yielded several significant findings, providing valuable insight into the impact of the AI-powered chatbot on recruitment, retention, and sustainability of church membership.

Findings, Impacts, Conclusions of Actual Outputs

This section reviews the results (actual output and outcomes) as compared to the intended outputs and outcomes. Additionally, this section discusses the impact of the implementation of the AI-powered chatbot program aimed at promoting an accessible and engaging online learning platform for education and ministry training for the Redbank Valley Church Association.

Actual Outputs

Functional System. The finding discovered from the actual output of a functional system included a functional AI-powered chatbot which improved access to training and educational resources while catering to individuals' specific needs. The impact of this actual output resulted in knowledge gains for members and non-members of the Redbank Valley Church Association as well as attitude shifts for organizational leaders (Appendix C, Chatbot Functionality Assessment). The impact of the results from the actual output of a functional system aligned with the intended output of a functional AI-powered chatbot system as supported by the congruency-contingency assessment of formative and summative data (Appendix C, Chatbot Functionality Assessment). The impact on participants of a functional AI-powered chatbot significantly improved access to training and educational resources where members and non-members experienced knowledge gains, and church association leadership shared a shift in attitudes towards an improved ability to tailor to individuals' specific needs (Appendix C, Chatbot Functionality Assessment). The impact on the church association was positive where the overall effectiveness of providing education and ministry training fostered a more informed and engaged church community (Appendix C, Chatbot Functionality Assessment).

Feedback Mechanism. The finding discovered from the actual output of a feedback mechanism included an AI-powered chatbot that could track user progress while suggesting

ministry training opportunities and providing helpful feedback. The impact of this actual output resulted in knowledge gains for members, non-members, and organizational leaders of the Redbank Valley Church Association (Appendix C, User Feedback/Progress). The impact of the results from the actual output of a feedback mechanism aligned with the intended output of an AI-powered chatbot capable of sharing feedback as supported by the congruency-contingency assessment evidence (Appendix C, User Feedback/Progress). The impact on participants of a feedback mechanism allowed the system to track participants' progress, suggesting training opportunities while providing helpful feedback to members, non-members, and organizational leaders, ultimately leading to knowledge gains as well as improved engagement (Appendix C, User Feedback/Progress). The impact on the church association was positive where the organization benefited from enhanced recruitment and retention strategies based on user feedback which fostered a more responsive and personalized approach (Appendix C, User Feedback/Progress).

FAQ Document. The finding discovered from the actual output of a frequently asked questions document included the development of a web page as part of a recruitment/retention strategy to attract new members through relevant and timely information about the Redbank Valley Church Association events, activities, and programs (Appendix C, Recruitment/Retention Outcomes). The impact of this actual output resulted in knowledge gains for members and non-members of the Redbank Valley Church Association (Appendix C, Recruitment/Retention Outcomes). The impact of the results from the actual output of an FAQ document aligned with the intended output of a recruitment/retention strategy through the development of a web page as supported by the congruency-contingency assessment of formative and summative data (Appendix C, Recruitment/Retention Outcomes). The impact on participants of an FAQ

document positively impacted members and non-members by providing timely and relevant information, ultimately resulting in knowledge gains, and contributing to a more informed church community (Appendix C, Recruitment/Retention Outcomes). The impact on the church association was valuable as a tool for recruitment and retention which aligned with the intended output and contributed to the association's goal of addressing church attrition (Appendix C, Recruitment/Retention Outcomes).

Analytical Insights. The findings discovered from the actual output of an analytical insights report included strategies for improving recruitment, retention, and sustainability (Appendix C, Decision-Making Impact). The impact of this actual output resulted in knowledge gains for organizational leaders of the Redbank Valley Church Association (Appendix C, Decision-Making Impact). The impact of the results from the actual output of an analytical insights report aligned with the intended output of an insights report supported by assessment evidence (Appendix C, Decision-Making Impact). The impact on participants of an analytical insights report influenced organizational leaders by using AI-powered chatbot data to identify areas of improvement, ultimately contributing to knowledge gains among leaders while enhancing organizational decision-making as it relates to recruitment, retention, and sustainability (Appendix C, Decision-Making Impact). The impact on the church association was positive where data-driven decision-making was strengthened to support organizational sustainability while aligning with the intended output (Appendix C, Decision-Making Impact).

Actual Outcomes

Engagement Improvement. The findings discovered from the actual outcome of an engagement improvement included improved engagement through personalized and interactive learning experiences (Appendix C, Intended Outcomes Assessment). The impact of this actual

outcome resulted in an improvement in membership recruitment, retention, and organizational sustainability (Appendix C, Intended Outcomes Assessment). The impact of the results from the actual outcome of an engagement improvement aligned with the intended output of an improved engagement strategy as supported by the congruency-contingency assessment evidence (Appendix C, Intended Outcomes Assessment). The impact on participants of an engagement improvement led to more personalized and interactive learning by providing a more tailored learning experience which ultimately led to a positive impact on membership recruitment, retention, and organizational sustainability (Appendix C, Intended Outcomes Assessment). The impact on the church association was positive where they experienced increased membership engagement contributing to a more vibrant Christian community of worship and service to God's Kingdom (Appendix C, Intended Outcomes Assessment).

Community Inclusivity. The finding discovered from the actual outcome of community inclusivity includes a more cohesive community of believers through targeted information dissemination (Appendix C, Transformational Changes). The impact of this actual outcome Resulted in a positive influence on recruitment, retention, and organizational sustainability (Appendix C, Transformational Changes). The impact of the results from the actual outcome of community inclusivity aligned with the intended output of an AI-powered chatbot which sought to attract individuals who may have previously felt disconnected or excluded from the church community by providing them with timely and relevant information as supported by the assessment evidence (Appendix C, Transformational Changes). The impact on participants of community inclusivity led to an enhanced community who may have previously felt disconnected by providing timely dissemination of information to attract a more diversified membership, positively impacting recruitment, retention, and sustainability (Appendix C,

Transformational Changes). The impact on the church association was positive where they achieved their goal of creating a more inclusive community while addressing declining enrollment (Appendix C, Transformational Changes).

  Sustainability Enhancement. The finding discovered from the actual outcome of a sustainability enhancement included improved access to resources that fostered continuous learning (Appendix C, Transformational Changes). The impact of this actual outcome resulted in positively influencing participants on membership recruitment, retention, and organizational sustainability (Appendix C, Transformational Changes). The impact of the results from the actual outcome of enhanced sustainability aligned with the intended output of an improved sustainability enhancement as supported by the congruency-contingency assessment evidence (Appendix C, Transformational Changes). The impact on participants of a sustainability enhancement led to improved access to resources which positively affected participants by fostering continuous learning and ultimately led to a positive impact on membership recruitment, retention, and organizational sustainability (Appendix C, Transformational Changes). The impact on the church association was positive where they experienced enhanced sustainability by promoting continuous learning (Appendix C, Transformational Changes).

  Membership Empowerment. The finding discovered from the actual outcome of membership empowerment included church members educated with the knowledge, values, and skills, essential to glorify God and fulfill The Great Commission (Appendix C, Transformational Changes). The impact of this actual outcome resulted in an improvement in membership recruitment, retention, and organizational sustainability (Appendix C, Transformational Changes). The impact of the results from the actual outcome of membership empowerment aligned with the intended output of an improved membership empowerment strategy supported

by the congruency-contingency assessment evidence (Appendix C, Transformational Changes). The impact on participants of membership empowerment positively influenced members by addressing church membership attrition by enhancing members with knowledge, values, and skills that contributed to a positive impact on recruitment, retention, and sustainability (Appendix C, Transformational Changes). The impact on the church association was positive where they successfully addressed membership attrition by empowering their members and ultimately contributed to a thriving community of believers (Appendix C, Transformational Changes).

Conclusions and Next Steps

The conclusions that were reached ultimately include a positive impact of AI-powered chatbot technology when mitigating church membership attrition, improving recruitment and retention efforts, as well as enhancing overall organizational sustainability. The next steps to reach the preferred future originally envisioned include encouraging the Redbank Valley Church Association to continue leveraging AI technology to support the development and growth of innovative strategies.

Vision Modification

The project's vision of leveraging AI chatbot technology to promote an accessible and engaging online learning platform as it relates to recruitment, retention, and sustainability was successfully achieved. However, the Redbank Valley Church Association must remain relevant by continuously adapting to emerging trends and technologies to achieve its preferred future. Routine evaluations and continuous updates to the AI-powered chatbot will be essential to sustaining its positive impact on recruitment, retention, and organizational sustainability.

Implications for Organizations and Leaders

Beyond the immediate organizational setting, there are several implications that organizational leaders will want to consider based on the outcomes of the research program and as experienced by the researcher which include adoption of innovative technologies, data-driven decision-making, as well as member-centric approaches.

Implications for Organizational Leaders

The first implication includes the adoption of innovative technologies which can be ascertained by the AI-powered chatbot's success in improving recruitment, retention, and sustainability to suggest that organizational leaders can more effectively engage members and address challenges by adopting innovative technology (Appendix C, Recruitment/Retention Outcomes). The adoption of innovative technologies has implications for organizational leadership where it suggests leaders need to stay updated on emerging tools and invest in ongoing technology training to support organizational practices (Appendix C, Recruitment/Retention Outcomes).

The second implication includes data-driven decision-making which can be ascertained by the analytical insights report to suggest that data-driven decision-making can be valuable when addressing organizational challenges (Appendix C, Decision-Making Impact). Organizational leaders can foster more informed decision-making by leveraging the value of analytical insights (Appendix C, Decision-Making Impact). The adoption of data-driven decision-making also has implications for organizational leadership where it suggests that organizational leaders could participate in data literacy training programs to improve their ability to make strategic decisions (Appendix C, Decision-Making Impact).

The third implication includes member-centric approaches which can be ascertained by the positive impact on membership engagement which suggests that organizational leadership should consider adopting member-centric approaches to better understand individual needs and preferences as they relate to community building (Appendix C, Transformational Changes). The adoption of member-centric approaches also has implications for organizational leadership where it suggests leadership training programs could include learning modules on community engagement and empathetic leadership (Appendix C, Transformational Changes).

Shaping Education and Leadership Practice

Beyond the immediate educational setting, there are several implications that educational leaders will want to consider based on the outcomes of the research program and as experienced by the researcher, which include the integration of AI in education, feedback mechanisms for continuous improvement, as well as strategic use of FAQs for recruitment/retention.

The integration of AI in education can shape educational practices where integrating AI technologies supports knowledge gains and improved engagement by creating personalized and interactive learning experiences (Appendix C, Intended Outcomes Assessment). Moreover, the integration of AI in leadership practices can foster a culture of technological innovation and continuous learning through the adoption of AI tools in educational environments (Appendix C, Intended Outcomes Assessment).

Feedback mechanisms can shape educational practices where feedback loops can serve as a means of continuous improvement to enhance the learning experience (Appendix C, User Feedback/Progress). Moreover, the integration of feedback mechanisms for continuous improvement in leadership practices can refine initiatives and strategies to promote a feedback culture within the organization (Appendix C, User Feedback/Progress).

The strategic use of FAQs for recruitment/retention can shape educational practices where strategic resources such as developing a frequently asked questions document can be used for information dissemination to support recruitment and retention (Appendix C, Recruitment/Retention Assessment). Moreover, the strategic use of FAQs for recruitment/ retention in leadership practices can ensure timely and relevant information is readily available as part of a recruitment and retention strategy (Appendix C, Recruitment/Retention Assessment).

Reinforcement, Addition, or Challenge to Existing Literature

Beyond the immediate leadership and educational settings, there are several implications that researchers will want to consider based on the outcomes of the research program and as experienced by the researcher, which include reinforcement, addition, and a challenge to existing literature. Additionally, a special section addressing the objections to the use of AI, and how this study addresses those objections, is included as an extension of the challenges to existing literature and cultural perceptions.

Concerning reinforcement, the results of the study reinforced existing literature and confirmed building community and maintaining engagement are significant factors when it comes to reducing church membership attrition while ensuring inclusivity and sustainability (Appendix C, Intended Outcomes Assessment). In terms of addition, the results of the study add to existing literature where it supports the integration of AI technologies as a strategy for knowledge enhancement which demonstrates the potential of technology-driven solutions as a means of solving complex problems like church membership attrition (Appendix C, Transformational Changes). When considering challenges, the results of the study challenged existing literature that might be doubtful of the positive impact that AI can have on religious

organizations by sharing empirical evidence that AI can reduce church attrition and support

organizational sustainability (Appendix C, Transformational Changes).

Objections to the Use of AI

Practitioners may face objections to the use of artificial intelligence in ministry due to

concerns that revolve around the perceived impersonal nature of technology in a deeply human

context whereas this research study provided insights to address those objections.

The first objection to the use of artificial intelligence includes its potential for

undermining the deeply human aspects of ministry as it is often perceived as being impersonal

and detached (Stark & Hoey, 2021). This objection was addressed in the research study where

the AI-powered chatbot was developed with a user-centered approach to enhance personalization

by implementing features like a feedback mechanism, personalized communication strategies, as

well as continuous user engagement, thereby making the technology feel more personable and

responsive to the user's needs (Appendix C, User Feedback/Progress).

The second objection to the use of artificial intelligence includes resistance to

technological change where individuals may be resistant to incorporating AI in traditionally

human-centric practices, such as ministry, due to concerns about disrupting interpersonal

dynamics and established norms (Li et al., 2023). This objection was addressed in the research

study where practitioners can leverage the research data to demonstrate how AI complements

human efforts by underscoring the importance of change management strategies as well as

effective communication as it relates to the supportive role of AI in ministry (Appendix C,

Transformational Changes).

The third objection to the use of artificial intelligence includes ethical considerations and

the data privacy aspects of implementing AI in ministry, as this domain is deeply rooted in trust

and ethical practices (Lobera et al., 2020). This objection was addressed in the research study where the researcher advocated for ethical considerations and data transparency, encouraging practitioners to establish clear guidelines for the use of AI, ensuring data privacy, and promoting transparent communication about the limitations of the technology, thereby fostering trust among participants and the church community (Appendix C, User Feedback/Progress).

The fourth objection to the use of artificial intelligence includes the fear or perception that AI will replace human roles and diminish the significance of personal interaction in ministry (Li & Huang, 2020). This objection was addressed in the research study which it highlighted the collaborative nature of AI by emphasizing its role as a tool that complements human capabilities by enhancing, not replacing human efforts, allowing for more personalized and efficient engagement (Appendix C, Intended Outcomes Assessment).

The fifth objection to the use of artificial intelligence includes concerns regarding inclusivity that certain segments of the community may feel excluded or left out (Xia et al., 2022). This objection was addressed in the research study which it emphasized the importance of inclusivity through AI by highlighting the AI-powered chatbot's ability to reach a broader community by disseminating timely and relevant information to a diverse audience, thereby demonstrating how technology can foster inclusivity (Appendix C, Transformational Changes).

Overall, the research results provide implications for organizational leaders that shape educational and leadership practices by highlighting the importance of innovative technologies, data-driven decision-making, as well as member-centric strategies (Appendix C, Intended Outcomes Assessment). Furthermore, the research results additionally reinforce, add to, and challenge existing literature and objections by strengthening the positive impact of artificial

intelligence as a solution to address the problem of church membership attrition (Appendix C, Transformational Changes).

<div style="text-align:center">Applications for Organizations and Leaders</div>

Organizations and leaders can apply the findings of this research by (a) adopting AI technologies for engagement, (b) implementing ongoing training programs, (c) developing personalized communication strategies, (d) expanding online education and training initiatives, (e) incorporating data-driven decision-making, as well as (f) strengthening FAQ documents for recruitment.

Recommendations for Organizational Leaders

The first recommendation for organizational leaders includes adopting AI technologies to enhance membership engagement like the AI-powered chatbot's ability to use data-driven insights to personalize learning experiences and tailor interactions (Appendix C, Intended Outcomes Assessment). This recommendation is rooted in evidence and data where the project's participants experienced improved engagement, knowledge gains, and changed attitudes, solidifying the positive impact of the AI-powered chatbot's influence on engagement (Appendix C, Intended Outcomes Assessment).

The second recommendation for organizational leaders includes implementing ongoing training programs to enhance their technological proficiency while ensuring effective utilization of AI-related resources (Appendix C, Transformational Changes). This recommendation is rooted in evidence and data where the results of the research were linked to leaders' ability to interpret and take action upon the insights from the AI-powered chatbot, emphasizing the importance of continuous learning (Appendix C, Recruitment/Retention Outcomes).

The third recommendation for organizational leaders includes developing personalized communication strategies for recruitment and retention by leveraging the feedback mechanism to implement targeted messaging based on a user's personal preferences (Appendix C, User Feedback/Progress). This recommendation is rooted in evidence and data where the AI-powered chatbot's feedback mechanism had a positive impact on engagement and knowledge gains to support the fundamentals of personalized communication strategies (Appendix C, User Feedback/Progress).

The fourth recommendation for organizational leaders includes expanding online education and training initiatives where the AI-powered chatbot was able to improve accessibility and provide a tailored learning experience for online education and ministry training (Appendix C, User Feedback/Progress). This recommendation is rooted in evidence and data where the AI-powered chatbot was able to improve access to resources while fostering continuous learning to support a platform for expanding online initiatives (Appendix C, User Feedback/Progress).

The fifth recommendation for organizational leaders includes incorporating data-driven decision-making by routinely evaluating AI-generated insights to improve strategic decisions as they relate to recruitment, retention, and organizational sustainability (Appendix C, Decision-Making Impact). This recommendation is rooted in evidence and data where the AI-powered chatbot's analytical insights report identified areas of improvement when demonstrating the value of data-driven decision-making (Appendix C, Decision-Making Impact).

The sixth recommendation for organizational leaders includes strengthening FAQ documents for recruitment strategies while ensuring timely and relevant information is readily available by continuously updating them based on user feedback (Appendix C,

Recruitment/Retention Outcomes). This recommendation is rooted in evidence and data where the AI-powered chatbot leveraged an FAQ document to support knowledge gains as well as become a valuable tool for recruitment (Appendix C, Recruitment/Retention Outcomes).

Organizational, Programmatic, or Leadership Changes

The first organizational, programmatic, or leadership change includes creating a technology team or committee dedicated to researching and assessing emerging technologies while making recommendations for effective implementation (Appendix C, Intended Outcomes Assessment). This organizational, programmatic, or leadership change is rooted in evidence and data where the AI-powered chatbot underscored the need for a proactive approach to innovative technology (Appendix C, Transformational Changes).

The second organizational, programmatic, or leadership change includes integrating AI into strategic planning where AI-generated insights can ensure alignment with members' needs and expectations while supporting organizational goals (Appendix C, Decision-Making Impact). This organizational, programmatic, or leadership change is rooted in evidence and data where the AI-powered chatbot's analytical insights report provided a basis for supporting organizational effectiveness and integrating AI into strategic planning (Appendix C, Decision-Making Impact).

The third organizational, programmatic, or leadership change includes promoting a feedback-driven culture that actively seeks and values feedback through the incorporation of a feedback mechanism in training programs, regular feedback sessions as well as through various organizational processes (Appendix C, User Feedback/Progress). This organizational, programmatic, or leadership change is rooted in evidence and data where the AI-powered chatbot's feedback mechanism had a positive impact on engagement and improved organizational knowledge gains (Appendix C, User Feedback/Progress).

The fourth organizational, programmatic, or leadership change includes establishing continuous learning platforms that include knowledge-sharing sessions, workshops, and online courses to ensure leaders stay informed about the latest technological advancements (Appendix C, Transformational Changes). This organizational, programmatic, or leadership change is rooted in evidence and data where the AI-powered chatbot's success was closely related to organizational leaders' ability to adapt and leverage AI resources effectively (Appendix C, Transformational Changes).

Enhancing Ministry, Organization, Leadership, or Management Effectiveness

The first recommendation for enhancing ministry, organization, leadership, or management effectiveness includes facilitating member-centric approaches by leveraging AI to understand individual preferences and needs to strengthen community bonds while enhancing ministry effectiveness (Appendix C, Transformational Changes). This recommendation for enhancing ministry, organization, leadership, or management effectiveness is rooted in evidence and data where the AI-powered chatbot had a positive impact on inclusivity and engagement while reinforcing the importance of member-centric strategies (Appendix C, Transformational Changes).

The second recommendation for enhancing ministry, organization, leadership, or management effectiveness includes utilizing AI for proactive problem-solving to assist leaders with anticipating challenges and addressing them in real time based on insights from an AI-powered chatbot or other technological innovations (Appendix C, Decision-Making Impact). This recommendation for enhancing ministry, organization, leadership, or management effectiveness is rooted in evidence and data where the AI-powered chatbot identified areas of

improvement while demonstrating the potential for proactive problem-solving (Appendix C, Decision-Making Impact).

The third recommendation for enhancing ministry, organization, leadership, or management effectiveness includes promoting diversity and inclusivity by using AI-powered technology to assist in tailoring content and personalizing communications to diverse audiences while fostering a more inclusive community (Appendix C, Transformational Changes). This recommendation for enhancing ministry, organization, leadership, or management effectiveness is rooted in evidence and data where the AI-powered chatbot enhanced community inclusivity by providing evidence of its potential to promote diversity (Appendix C, Transformational Changes).

The fourth recommendation for enhancing ministry, organization, leadership, or management effectiveness includes regularly assessing and updating FAQ documents to ensure these documents address the evolving needs and concerns of existing members and potential recruits (Appendix C, Recruitment/Retention Outcomes). This recommendation for enhancing ministry, organization, leadership, or management effectiveness is rooted in evidence and data where the AI-powered chatbot leveraged an FAQ document to support a positive impact on knowledge gains and recruitment strategies (Appendix C, Recruitment/Retention Outcomes).

In summary, the results of the AI-powered chatbot project suggest several useful recommendations and practical applications for organizational leaders in ministry and education. These recommendations are rooted in evidence and data derived from the AI-powered chatbot's outcomes while encouraging the need for proactively adopting technology, and continuous learning, as well as supporting member-centric strategies to enhance ministry, organizational, leadership, and management effectiveness.

Advice to Future Research Practitioners

Future research practitioners should consider the following advice when implementing a similar study, including considerations for future practice, aspects needing further investigation, insights gained, as well as replication and recommended changes.

Considerations for Future Practice

The first consideration that future research practitioners should consider includes prioritizing a user-centered design that routinely seeks users' feedback during the development and implementation of the AI-powered chatbot to ensure it aligns with the evolving needs and preferences of the target audience. The second consideration that future research practitioners should consider includes establishing clear guidelines for the ethical use of AI while addressing bias, transparency, and data privacy to ensure the technology is implemented responsibly. The third consideration that future research practitioners should consider includes continuous monitoring and evaluation of the AI-powered chatbot program effectiveness while regularly assessing organizational goals, user satisfaction, and engagement metrics. The fourth consideration that future research practitioners should consider includes designing the AI-powered chatbot to be scalable and adaptable so it can be easily modified to address new opportunities or challenges while meeting organizational needs. The fifth consideration that future research practitioners should consider includes integrating with existing systems to ensure compatibility with other tools and technologies for a seamless workflow that can enhance the overall efficiency and effectiveness of the AI-powered chatbot.

Insights Gained from Research

The first insight gained that future research practitioners should consider includes technology as an enabler for addressing complex organizational challenges while enhancing

decision-making, inclusivity, and engagement. The second insight gained that future research practitioners should consider includes data-driven decision-making which plays a crucial role in strategic planning as well as identifying areas for improvement. The third insight gained that future research practitioners should consider includes adopting member-centric approaches that can improve overall engagement by customizing interactions based on an individual's preferences and needs.

Obstacles to Avoid

The first obstacle that future research practitioners should consider includes overlooking ethical considerations including data privacy and bias which can damage the organization's reputation and lead to unintended consequences. The second obstacle to avoid that future research practitioners should consider includes failing to involve users in the design and implementation process as well as failing to evaluate feedback mechanisms to ensure the system meets their needs and satisfaction. The third obstacle to avoid that future research practitioners should consider includes addressing resistance to change where effective communication and training programs can overcome resistance to technological change while addressing concerns and fostering a positive attitude towards innovation.

Replication and Recommended Changes

The first recommendation that future research practitioners should consider when replicating a similar project includes duplicating the study across diverse religious organizations within different contexts to improve the AI-powered chatbot's effectiveness while assessing the generalizability of findings. The second recommendation that future research practitioners should consider when replicating a similar project includes incorporating comparative studies to establish casual relationships with similar organizations that have not implemented AI-powered

chatbots to provide a better understanding of the AI-powered technology. The third recommendation that future research practitioners should consider when replicating a similar project includes implementing iterative development methods that regularly assess user feedback to ensure the technology aligns with evolving organizational needs. The fourth recommendation that future research practitioners should consider when replicating a similar project includes prioritizing change management strategies to maximize acceptance and effectiveness when the introduction of AI technology may necessitate a cultural shift within the organization. The fifth recommendation that future research practitioners should consider when replicating a similar project includes developing a system of routine evaluations to take into consideration a thorough comprehension of the long-term effects of the AI-powered chatbot over an extended period.

Overall, future research practitioners can gain insight by prioritizing the importance of user-centered design, ethical transparency, as well as routine assessment and evaluation. Additionally, practitioners may wish to consider long-term impact, casual relationships, and user perceptions which could lead to an improved understanding of the impact of an AI-powered chatbot. Obstacles to avoid include resistance to change as well as overlooking ethical considerations, while replicating the study should focus on a diverse context with a focus on change management and iterative development.

Project Summation

This dissertation explored the applicability of AI chatbot technology in the context of a church environment where it was used to promote an accessible and engaging online learning platform for education and ministry training. The project's primary objective included developing an AI-powered chatbot to increase recruitment, improve retention, as well as support organizational sustainability as it relates to church membership.

The outcomes of the research project were substantiated by the successful implementation of a fully functional chatbot powered by artificial intelligence to provide interactive content, personalized learning experiences, as well as continuous engagement to address the problem of church membership attrition for the Redbank Valley Church Association in New Bethlehem, PA. The AI-powered chatbot featured key components such as a personalized feedback mechanism, FAQ document for recruitment and retention as well as an insightful analytics report. The program contributed to knowledge gains, improved engagement, and a positive impact on recruitment, retention, and organizational sustainability.

Ultimately, the significance of this research study research contributed to religious studies and educational technology by providing insight for religious organizations seeking to understand the challenges and benefits of innovative technologies, ministry training, enhancing educational programs, as well as supporting church sustainability in the digital era.

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APPENDICES

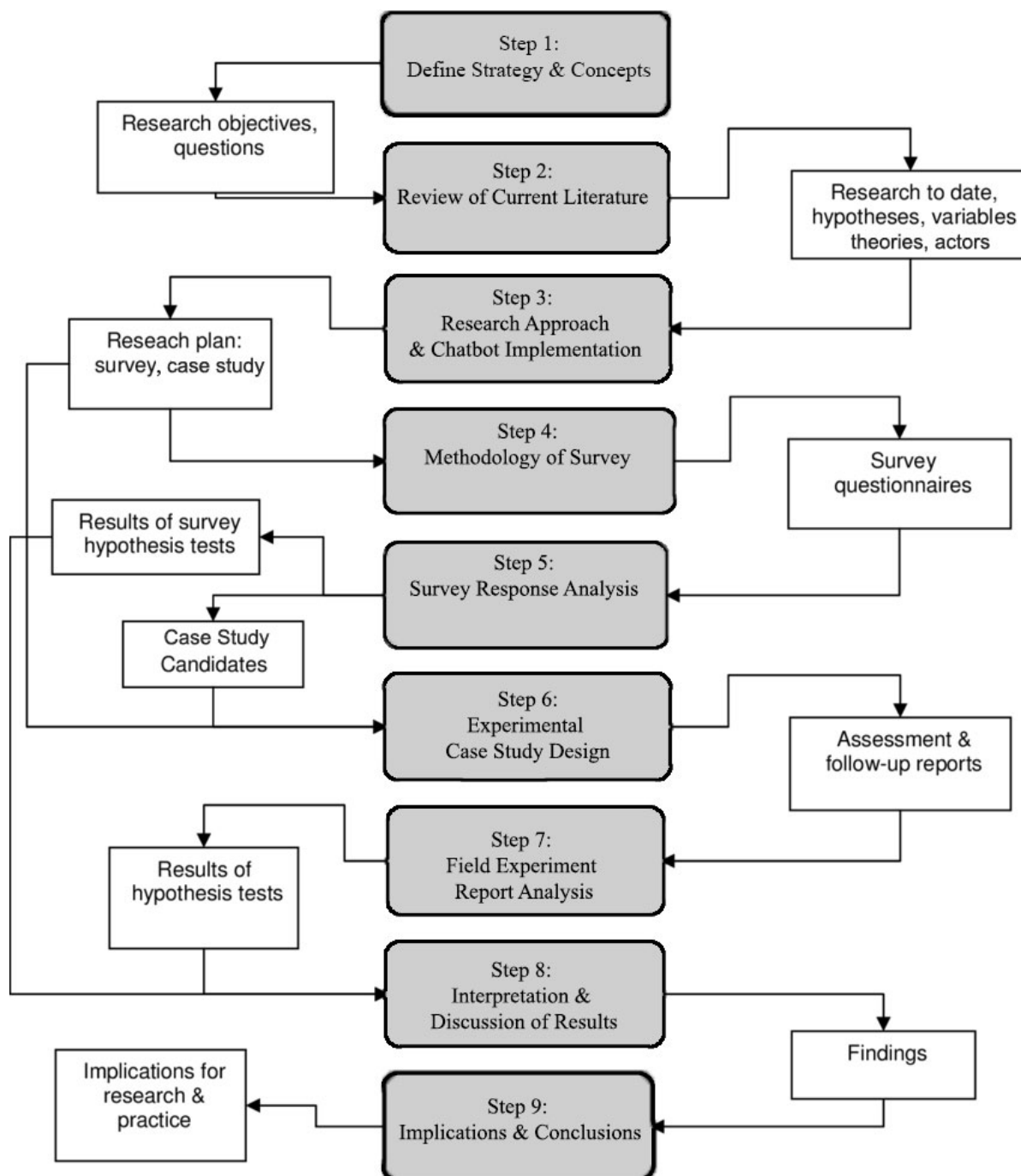## Appendix A. Data Collection

Research Processes Framework

Figure 1
Concepts, Theories, Actors, and Constructs

Table 1 - *Data Collection Table*

Studies	Measures	Data Objective(s) w/ Research Questions	Data Sources	Data Collection	Timeline	Data Analysis
Study 1	**Research Fundamentals**	**RQ2:** How do religious organizations perceive the role of artificial intelligence in online education as it relates to membership attrition? **RQ1:** How can religious organizations effectively use artificial intelligence in online education to recruit and retain members? **RQ3:** How does artificial intelligence in online education impact organizational sustainability as it relates to members' desire to join and remain within a religious organization?	Religious Organization	Interview with/ organizational leaders	1 week	Qualitative Narrative w/ Affordance Model
Study 2	**Recruitment**	**RQ1a:** How does artificial intelligence in online education impact member recruitment in religious organizations? **RQ3a:** How does artificial intelligence in online education impact organizational sustainability as it relates to a member's desire to join a religious organization?	Non-members	Questionnaire w/ non-members outside of the organization	1 week	Qualitative Narrative w/ Model of Planned Behavior
Study 3	**Retention**	**RQ1b:** How does artificial intelligence in online education impact member retention in religious organizations? **RQ3b:** How does artificial intelligence in online education impact organizational sustainability as it relates to a member's desire to remain in a religious organization? **RQ2a:** What actions or behaviors related to artificial intelligence in online education contribute to member attrition? **RQ2b:** What actions or behaviors related to artificial intelligence in online education reduce membership attrition?	Members	Survey w/ members currently enrolled in the organization	1 week	Quantitative w/ Process Virtualization Model

Appendix B: Study Instruments

Semi-structured Interview Guide for studying research fundamentals of leaders in Study 1

1. Approximately how old are you?

RQ1: How do religious organizations perceive the role of artificial intelligence in online education as it relates to membership attrition?

2. How long have you served as a board member here?

3. Do you serve in any other religious organizations?

4. Where have you served before (if at all)?

5. What made you decide to serve? Why are you serving?

6. What made you decide to become a board member?

7. Did you know any other board members before you joined?

8. How often do you serve in your board member position?

9. What type of activities do you participate in?

RQ2: How can religious organizations effectively use artificial intelligence in online education to recruit and retain members?

10. How do members learn about ways to get involved?

11. Do you talk with people about becoming a member here?

12. How does this organization educate or train its members?

13. Can you think of other ways this organization can educate or train members?

14. Does the organization offer educational or ministry training resources?

15. How frequently do they engage in religious education or ministry training?

16. On average, how much time does the organization spend on training or education?

17. If the organization offered online training rather than traditional in-classroom education for members, would that be ok?

RQ3: How does artificial intelligence in online education impact organizational sustainability as it relates to members' desire to join and remain within a religious organization?

18. Do you think members who had the opportunity to receive online training would participate more, less, or about the same?

19. If people knew their friends received online training with the organization, do you think they would eventually join as well?

20. Do you think artificial intelligence in online education would be more (or less) effective for training members?

Questionnaire for studying recruitment of non-members in Study 2

1. Approximately how old are you?

    a. 18-34   b. 35-54   c. 55-74

2. Have you ever received training or education with a religious organization?

    a. Yes   b. No

3. Why are you currently not participating in this organization?

    a. Lack of free time   b. Lack of flexibility   c. Lack of info   d. Never asked

==RQ1a: How does artificial intelligence in online education impact member recruitment in religious organizations?==

4. How familiar are you with this organization?

    a. Very familiar b. Familiar   c. neutral   d. unfamiliar   e. very unfamiliar

5. Do you know any other members associated with this organization?

    a. Yes   b. No

6. How does this organization educate or train its members?

    a. Digital Platforms   b. Job Shadowing   c. TV/Radio   d. Print Publications

7. Has anyone ever talked to you about becoming a member here?

    a. Yes   b. No

8. How do you prefer to learn about educational resources or training opportunities?

    a. Digital Platforms   b. Job Shadowing   c. TV/Radio   d. Print Publications

9. Can you think of other ways this organization can educate or train its members?

    a. Digital Platforms   b. Job Shadowing   c. TV/Radio   d. Print Publications

10. Have you ever engaged in online training or formal education via the Internet?

    a. Yes   b. No

11. How frequently do you use the Internet to learn something?

a. Multiple Times Daily b. Once Daily c. Few times weekly   d. Hardly ever

RQ3a: How does artificial intelligence in online education impact organizational sustainability as it relates to a member's desire to join a religious organization?

12. If the organization offered online training rather than traditional in-classroom education for members, would that be ok?

   a. Yes   b. No

13. Do you think members who had the opportunity to receive online training would participate more frequently?

   a. Yes   b. No

14. If people knew their friends received online training with the organization, do you think they would eventually join as well?

   a. Yes   b. No

15. Do you think artificial intelligence in online education would be more (or less) effective for training members?

   a. More effective   c. Less effective

Survey for studying retention of members in Study 3

1. Approximately how old are you?

    a. 18-34   b. 35-54   c. 55-74

==**RQ1b: How does artificial intelligence in online education impact member retention in**==

==**religious organizations?**==

2. How long have you been a member here?

    a. Less than a year   b. 1-2 years   c. 3-4 years   d. 5+ years

3. Do you serve any other religious organization(s)?

    a. Yes   b. No

4. How familiar are you with this organization?

    a. Very familiar b. Familiar   c. neutral   d. unfamiliar   e. very unfamiliar

5. Do you know any other members associated with this organization?

    a. Yes   b. No

6. How does this organization educate or train its members?

    a. Digital Platforms   b. Job Shadowing   c. TV/Radio   d. Print Publications

==**RQ3b: How does artificial intelligence in online education impact organizational**==

==**sustainability as it relates to a member's desire to remain in a religious organization?**==

7. Has anyone ever talked to you about becoming a member here?

    a. Yes   b. No

8. How do you prefer to learn about educational resources or training opportunities?

    a. Digital Platforms   b. Job Shadowing   c. TV/Radio   d. Print Publications

9. Can you think of other ways this organization can educate or train its members?

    a. Digital Platforms   b. Job Shadowing   c. TV/Radio   d. Print Publications

10. Have you ever engaged in online training or formal education via the Internet?

    a. Yes   b. No

11. How frequently do you use the Internet to learn something?

    a. Multiple times daily   b. daily   c. few times weekly   d. hardly every

<mark>RQ2a: What actions or behaviors related to artificial intelligence in online education contribute to member attrition?</mark>

<mark>RQ2b: What actions or behaviors related to artificial intelligence in online education reduce member attrition?</mark>

12. If the organization offered online training rather than traditional in-classroom education for members, would that be ok?

    a. Yes   b. No

13. Would you participate more, less or about the same?

    a. More   b. Less   c. About the same

14. If people knew their friends received online training with the organization, do you think they would eventually join as well?

    a. Yes   b. No

15. Do you think artificial intelligence in online education would be more (or less) effective for training members?

    a. More effective   c. Less effective

Appendix C. Formative/Summative Data Evaluation

Formative Data

1. **User feedback during development:**
   a. Feedback was solicited from potential users during the development phase to ensure the chatbot appropriately met their ministry-related needs and training expectations.
   b. Usability testing was also conducted during the development phase to identify any user interface or experience issues.

2. **Chatbot Functionality Testing:**
   a. The AI-powered chatbot's ability to model user behavior was assessed to ensure a personalized learning experience.
   b. The chatbot's capability to offer accurate and relevant training resources while simplifying complex information has also been tested.

3. **Progress Tracking System Evaluation:**
   a. The AI-powered chatbot's ability to track user progress and provide real-time feedback has also been evaluated for effectiveness.
   b. Areas were identified where the tracking system could be improved while offering more accurate insight to the end-user.

4. **Recruitment/Retention Assessment:**
   a. The effectiveness of a recruitment/retention strategy had also been assessed from an engagement perspective through the usage of the chatbot.
   b. Feedback and statistics were collected related to recruiting new church members while retaining existing members.

5. **Decision-Making Process:**
   a. The assessment of how user data was being used to influence the decision-making process had also been evaluated.
   b. Parsing the integration of user data into useful reports and insightful analytics for organizational decision-making was essential for ongoing assessment.

Summative Data

1. **Chatbot Functionality Assessment:**
   a. An evaluation of the chatbot's functionality and its overall impact on improving accessibility to educational and training resources.

2. **User Feedback/Progress:**
   a. The survey, questionnaire, and interviews analyzed data on user progress and feedback to determine how effective the chatbot was in promoting ministry training and engagement.

3. **Recruitment/Retention Outcomes:**
   a. An assessment of growth and attracting new church members as well as retaining existing ones was measured to determine the success of the recruitment/retention strategy.

4. **Decision-Making Impact:**
   a. MaxQDA allowed for the examination of insightful reports and data analytics to better understand the impact of the chatbot's effectiveness with data-driven decision-making.

5. **Intended Outcomes Assessment:**
   a. This evaluation includes an assessment of the intended outcomes including improved engagement, church membership diversification, improved organizational sustainability, as well as an overall evaluation of church membership attrition.

6. **Transformational Changes:**
   a. An analysis of the intended transformational changes that have impacted the church association and greater community including better-educated membership, inclusivity, as well as a renewed cultural loyalty towards spiritual development and lifelong learning.

FEEDBACK & USABILITY
(Formative Data Evaluation)

Feedback was solicited from potential users during the development phase to ensure the chatbot appropriately met their ministry-related needs and training expectations.

- RESPONDENT 1: *"Conversation with AI (chatbot) needs to be simpler. It's taking too many steps to get to an answer."*

- RESPONDENT 2: *"The Chatbot should be aware of the latest information for our events, activities, etc. I tried to look up our next community event and it didn't know the correct information."*

- RESPONDENT 3: *"The chatbot needs to be more helpful, directing people to commonly asked questions and answers. This would help us (Redbank Valley Church Association) immensely since we don't have someone always answering the phone."*

Usability testing was also conducted during the development phase to identify any user interface or experience issues.

- DEV. TEAM: We need to provide more training to Chatbot and feed the database with existing website information to make the process simpler and faster for it to get to an answer.

- DEV. TEAM: Pull information from the church association events calendar and social media feeds to train the chatbot on the latest events, activities, etc. Research possible RSS feed integration.

- DEV. TEAM: Develop frequently asked questions and answers document as part of recruitment/retention strategy. Add FAQ to the website and feed the data to the Chatbot so it can properly address commonly asked questions.

CHATBOT FUNCTIONALITY TESTING
(Formative Data Evaluation)

The AI-powered chatbot's ability to model user behavior was assessed to ensure a personalized learning experience.

- **BEHAVIORAL INTERACTION:** The chatbot systematically analyzed users' patterns of interaction which included the length of time spent on various topics, the frequency of engagement, as well as various types of inquiries. The chatbot was able to leverage functionality where it tailored its responses based on data from user preferences and behaviors. Furthermore, it algorithmically associated resources with user's questions and inquiries.

- **ADAPTIVE LEARNING:** As users engaged with the chatbot, it was able to track their responses and areas of interest by employing adaptive learning algorithms to assess their behavior in real-time. This specific approach was dynamically personalized to each user's specific needs ensuring they received content that aligned with their learning preferences as well as their current level of knowledge.

- **FEEDBACK INTEGRATION:** The chatbot was able to leverage sediment analysis on user responses as well as dynamically consider explicit feedback prompts to integrate users' feedback in real-time to better understand their individual preferences, learning styles, as well as adapt its model to the user's behavior.

The chatbot's capability to offer accurate and relevant training resources while simplifying complex information has also been tested.

- DEV. TEAM: we need to ensure the chatbot features an algorithm that can track user's behavior and personalize its response based on that data. It needs to do this dynamically or in real-time. OpenAI's ChatGPT offers a platform to meet these needs.

- DEV. TEAM: the chatbot needs training specific to ministry training and educational resources so that it can properly promote, and guide users based on their specific needs. We need to pull data specifically from the online curriculum. Placing the Chatbot on the RVCA's website would be the most appropriate place to reach the target audience.

- DEV. TEAM: real-time feedback is mission-critical. As the user engages with the chatbot, it needs to dynamically adapt its responses to adjust to the user's behavior and preferences based upon the feedback it's being provided. This also needs to be done dynamically and in real time.

PROGRESS TRACKING SYSTEM EVALUATION
(Formative Data Evaluation)

The AI-powered chatbot's ability to track user progress and provide real-time feedback has also been evaluated for effectiveness.

- REAL-TIME PERFORMANCE TRACKING: the AI-powered chatbot can effectively track users' progress during interaction by providing immediate feedback with correct and incorrect answers to frequently asked questions. During evaluation, it was discovered the tracking system could provide more detailed insight to better guide the end user. Better direction and more detailed feedback fostered a clearer understanding and more targeted learning experience.

- LEARNING PATH IMPROVEMENTS: the chatbot can dynamically adjust the learning path based on a user's personalized content. This feature proved to be effective, however, an opportunity to incorporate adaptive feedback prompts by proactively asking users about their learning preferences could offer quicker feedback ensuring a more accurate reflection of the users' progress.

- USER-REQUESTED INTEGRATION: several users requested more information on specific topics and the chatbot was able to track these interactions; however, this evaluation identified providing more context-aware feedback to the end user. The system could offer supplementary information or suggest additional related topics based on user information that would provide users with an enhanced learning experience.

Areas were identified where the tracking system could be improved while offering more accurate insight to the end-user.

- DEV. TEAM: We need to provide more training to Chatbot and feed the database with existing website information to make the process simpler and faster for it to get to an answer.

- DEV. TEAM: Pull information from the church association events calendar and social media feeds to train the chatbot on the latest events, activities, etc. Research possible RSS feed integration.

- DEV. TEAM: Develop frequently asked questions and answers document as part of recruitment/retention strategy. Add FAQ to the website and feed the data to the Chatbot so it can properly address commonly asked questions.

RECRUITMENT/RETENTION ASSESSMENT
(Formative Data Evaluation)

The effectiveness of a recruitment/retention strategy has also been assessed from an engagement perspective through the usage of the chatbot.

Figure 1: Insight reports need to be improved but have potential for evaluating the recruitment and retention strategy.
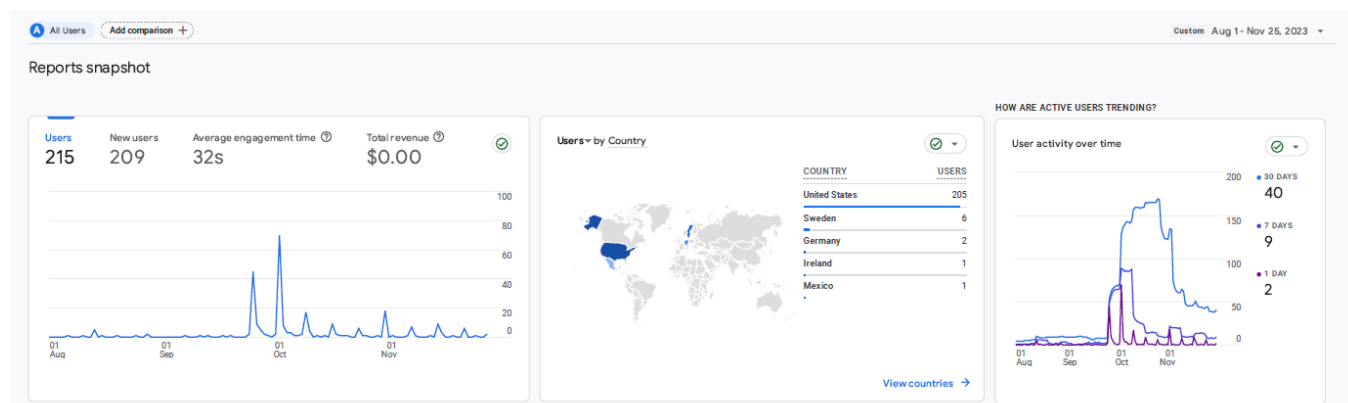

Figure 1

Figure 2: Includes frequently asked questions and answers from the Christian Leaders Institute online learning platform. Integration of these questions and answers into the AI-powered chatbot has proven to provide an enhanced learning experience addressing users' needs more quickly for where they can receive ministry training and educational resources.
https://www.christianleadersinstitute.org/frequently-asked-questions/

- What is Christian Leaders Institute (CLI)?
- Is CLI's training really free?
- What kind of programs does CLI offer?
- Are CLI's programs accredited?
- Can I take CLI courses online?
- Do I need any prior educational background to enroll?
- Who can benefit from CLI's offerings?
- How do I enroll in CLI's programs?
- Are CLI's instructors qualified?
- Can CLI's training be used for ordination or ministry credentials?
- Can I donate to CLI to support its mission?
- How can I get in touch with CLI's support team?
- What kind of support does CLI provide to students?
- What denomination is CLI associated with?

Figure 2

RECRUITMENT/RETENTION STRATEGY:

- Leverage an AI-powered chatbot to provide a personalized outreach initiative to offer timely information about church events and programs while engaging what's current and potential members.

- Utilize frequently asked questions to create an informative online presence through targeted communication, addressing individual specific interests and needs to support retention.

- Take advantage of the chatbot's analytics to investigate sources of engagement as well as determine opportunities for improvement and better attracting/retaining members.

DECISION-MAKING PROCESS
(Formative Data Evaluation)

An assessment of how user data was being used to influence the decision-making process had also been evaluated. Parsing the integration of user data into useful reports and insightful analytics for organizational decision-making was essential for ongoing assessment.

- MaxQDA, Google Analytics, Qualtrics Reports, Chatbot Report, Church Online Metrics, and Social Media Insights – all used for the decision-making process.

- DEV. TEAM: We need to use MaxQDA as well as Google Analytics from the Church Association website to provide further insight. We can tie chatbot engagement to website stats. Insight reports can help organizational leadership for churches, and ultimately church associations.

- DEV. TEAM: The researcher mentioned the use of Church metrics from the 'Church Online' platform. Already integrated into the target church's website – New Bethlehem First Fellowship Church. We can leverage insight from stat reports and referrals from chatbots.

- DEV. TEAM: The Chatbot can provide insight into where users stopped engaging, and insight into ways to improve the direction, speed, and accuracy of the chatbot's platform. This insight can help organizational leaders determine the best budget allocation.

CHATBOT FUNCTIONALITY ASSESSMENT
(Summative Data Evaluation)

The researcher evaluated the chatbot's functionality and its overall impact on improving accessibility to educational and training resources.

- **BEHAVIORAL INTERACTION:** The chatbot was able to leverage functionality where it tailored its responses based on data from user preferences and behaviors. Furthermore, it algorithmically associated resources with user's questions and inquiries. For example, one user routinely asked for information on a specific theological topic and the chatbot prioritized delivering content as it related to that topic.

- **ADAPTIVE LEARNING:** As users engaged with the chatbot, it was able to track their responses and areas of interest by employing adaptive learning algorithms to assess their behavior in real-time. As the chatbot assessed the conversation, it was able to dynamically adjust how it directed and guided the user towards ministry training and educational resources that were best tailored to their level of proficiency while offering additional support.

- **FEEDBACK INTEGRATION:** The chatbot was able to leverage sediment analysis on user responses as well as dynamically consider explicit feedback prompts to integrate users' feedback in real-time to better understand their individual preferences, learning styles, as well as adapt its model to the user's behavior. As an example, one user routinely expressed an interest in video materials over written content, so the chatbot was able to automatically adjust its delivery methods to provide a more personalized learning experience based on the user's feedback. This dynamic process of adaptation and assessment ultimately contributed to a more effective and personalized experience for each user.

The chatbot's capability to offer accurate and relevant training resources while simplifying complex information has also been tested.

- DEV. TEAM: OpenAI's ChatGPT platform charges a premium subscription fee to access the Internet, thus limiting its data pool to training data from before 2022. The team switched to Google Bard as the competing platform which offers training data as well as access to the Internet free of charge, thus vastly improving the speed and accuracy of the chatbot.

- DEV. TEAM: Integration into the Redbank Valley Church Association website was successful and garnered a successful target audience. Chatbot was trained on FAQs from the Christian Leaders Institute website as well as FAQs from the Redbank Valley Church Association.

- DEV. TEAM: Chatbot was programmed to respond in real-time with Google Bard's platform. It was able to tailor its responses to the user's specific needs by asking questions and pulling the user's information/feedback dynamically and in real time.

USER FEEDBACK/PROGRESS
(Summative Data Evaluation)

The survey, questionnaire, and interviews analyzed data on user progress and feedback to determine how effective the chatbot was in promoting ministry training and engagement.

Feedback was solicited from users after the launch of the chatbot to ensure the chatbot appropriately met their ministry-related needs and training expectations.

- RESPONDENT 1: *"Chatbot seems to be pretty quick in answering my questions. It was almost instantaneous for most questions I asked of it."*

- RESPONDENT 2: *"I was able to ask the chatbot about our next upcoming event, and it responded correctly while also directing me to the calendar page on our website for more details."*

- RESPONDENT 3: *"The chatbot was able to answer basic questions about how to contact the church association as well as our mission. When it wasn't sure of an answer, it directed me to contact the Church Association."*

Usability testing was also conducted after the publication of the chatbot to identify any user interface or experience issues.

- DEV. TEAM: We were able to successfully provide more training to Chatbot and feed the database with existing website information to make the process simpler and faster for it to get to an answer.

- DEV. TEAM: We pulled information from the church association events calendar and social media feeds to train the chatbot on the latest events, activities, etc. We also researched possible RSS feed integration but could not successfully integrate the RSS.

- DEV. TEAM: The researcher developed a frequently asked questions and answers document as part of the recruitment/retention strategy. We added FAQ to the website and fed the data to the Chatbot so it could properly address commonly asked questions.

RECRUITMENT/RETENTION OUTCOMES
(Summative Data Evaluation)

An assessment of growth and attracting new church members as well as retaining existing ones was measured to determine the success of the recruitment/retention strategy.

RECRUITMENT/RETENTION STRATEGY:

- Successfully leveraged AI-powered chatbot to provide a personalized outreach initiative to offer timely information about church events and programs while engaging current and potential members.
- Utilized frequently asked questions to create an informative online presence through targeted communication, addressing individuals' specific interests and needs to support retention.
- Leveraged chatbot's analytics to investigate sources of engagement as well as determine opportunities for improvement for better attracting and retaining members.

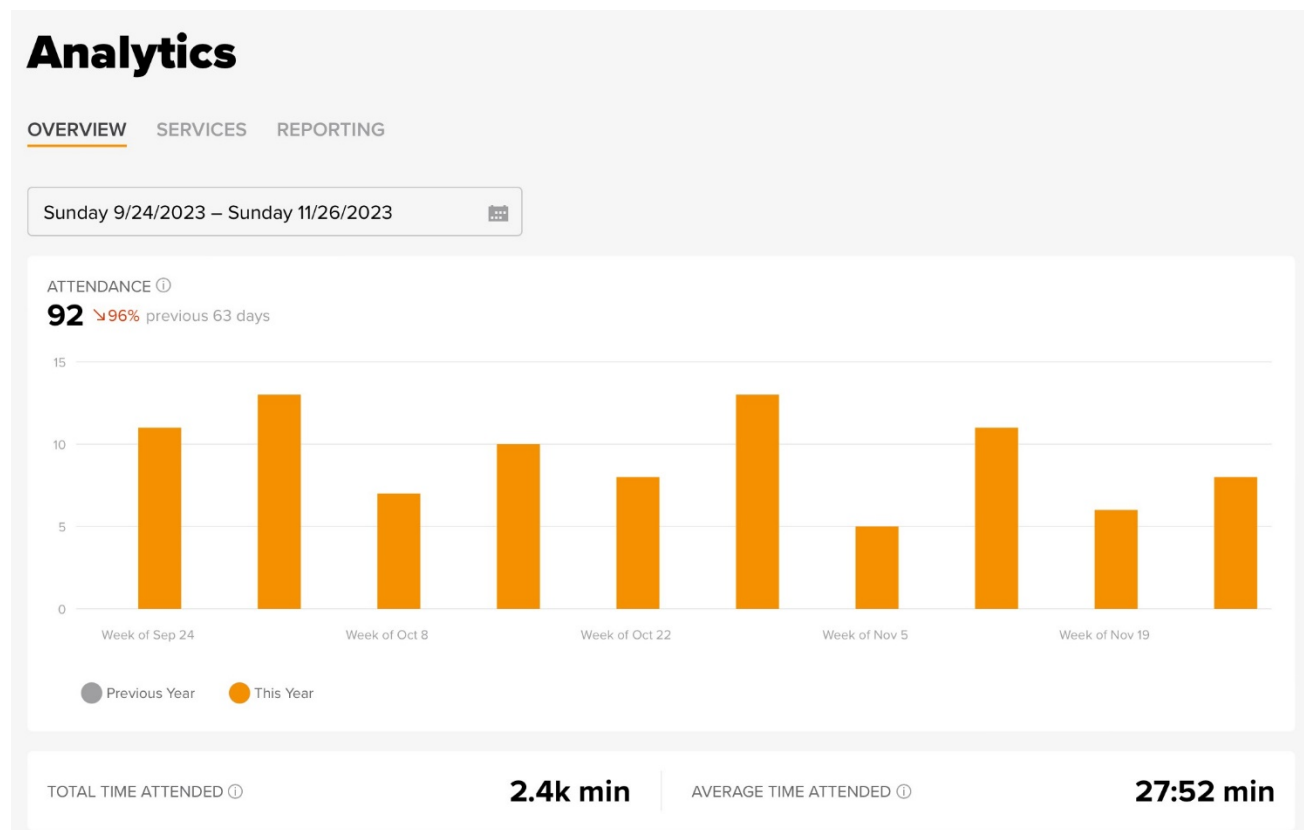Figure 1: Weekly attendance statistical report as a side-by-side comparison from 2022 vs. 2023

Figure 1

Figure 2: Weekly attendance statistics over time from before and after Chatbot implementation
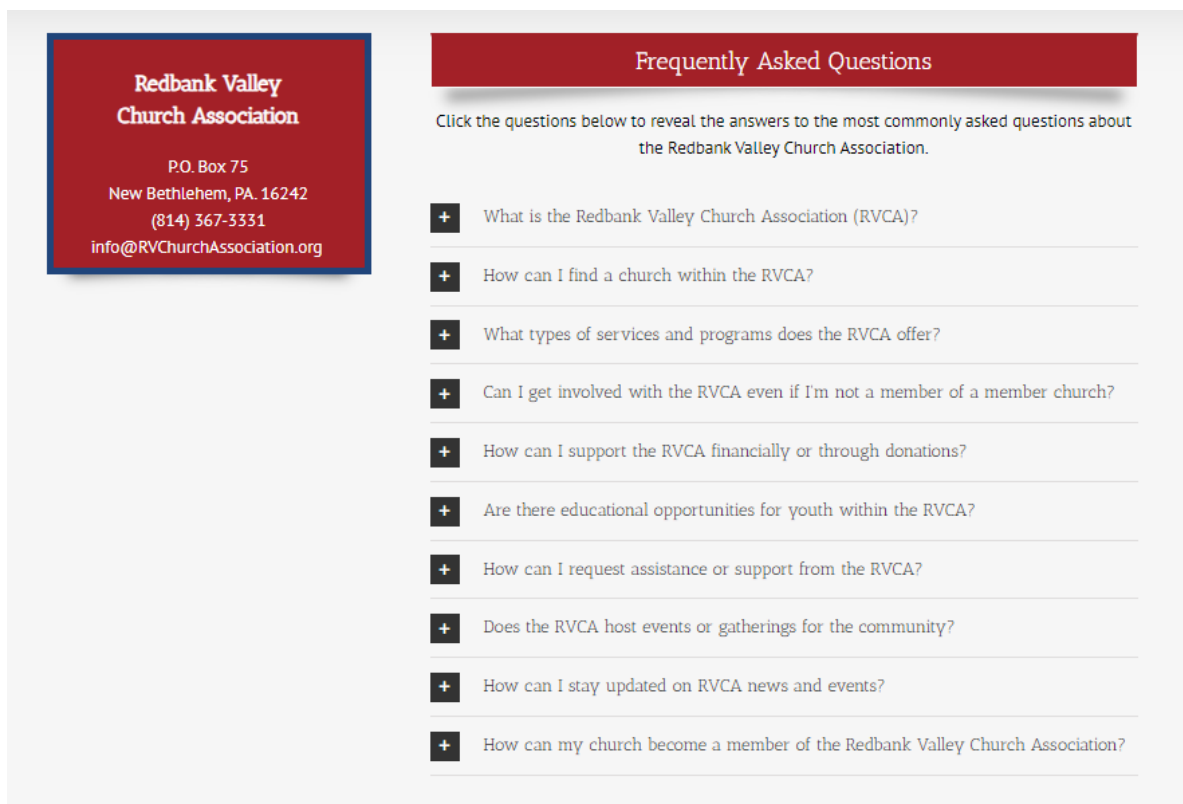
Year to date Report

Total Attendance	
Totals	514

First UMC	
	Sep 03, 2023
Sun 11:00 AM	37
Totals	37
	Sep 10, 2023
Sun 11:00 AM	49
Totals	49
	Sep 24, 2023
Sun 11:00 AM	45
Totals	45
	Oct 01, 2023
Sun 11:00 AM	47
Totals	47
	Oct 08, 2023
Sun 11:00 AM	50
Totals	50
	Oct 15, 2023
Sun 11:00 AM	52
Totals	52
	Oct 22, 2023
Sun 11:00 AM	54
Totals	54
	Oct 29, 2023
Sun 11:00 AM	40
Totals	40
	Nov 05, 2023
Sun 11:00 AM	40
Totals	40
	Nov 12, 2023
Sun 11:00 AM	43
Totals	43
	Nov 19, 2023
Sun 11:00 AM	57
Totals	57
Church	

Figure 2

- Frequently Asked Questions & Answers Document was integrated into the AI-powered chatbot as well as placed on the Church Association website: https://www.rvchurchassociation.org/faq/

Figure 3

DECISION-MAKING IMPACT
(Summative Data Evaluation)

MaxQDA along with the Church Association's website analytics allowed for the examination of insightful reports and data analytics to better understand the impact of the chatbot's effectiveness with data-driven decision-making.

Figure 1: Shows analytics and insights report for one of the churches in the Redbank Valley Church Association that was evaluated for recruitment, retention, and sustainability. Valuable insights from the website and chatbot can be factored into organizational leadership's decision-making.

Insights: Where are users coming from? How are they learning about our church? What channels are they coming from before walking into our church? Where are they physically located? Levels of engagement over time determine where to best allocate the budget to recruit and retain more members.
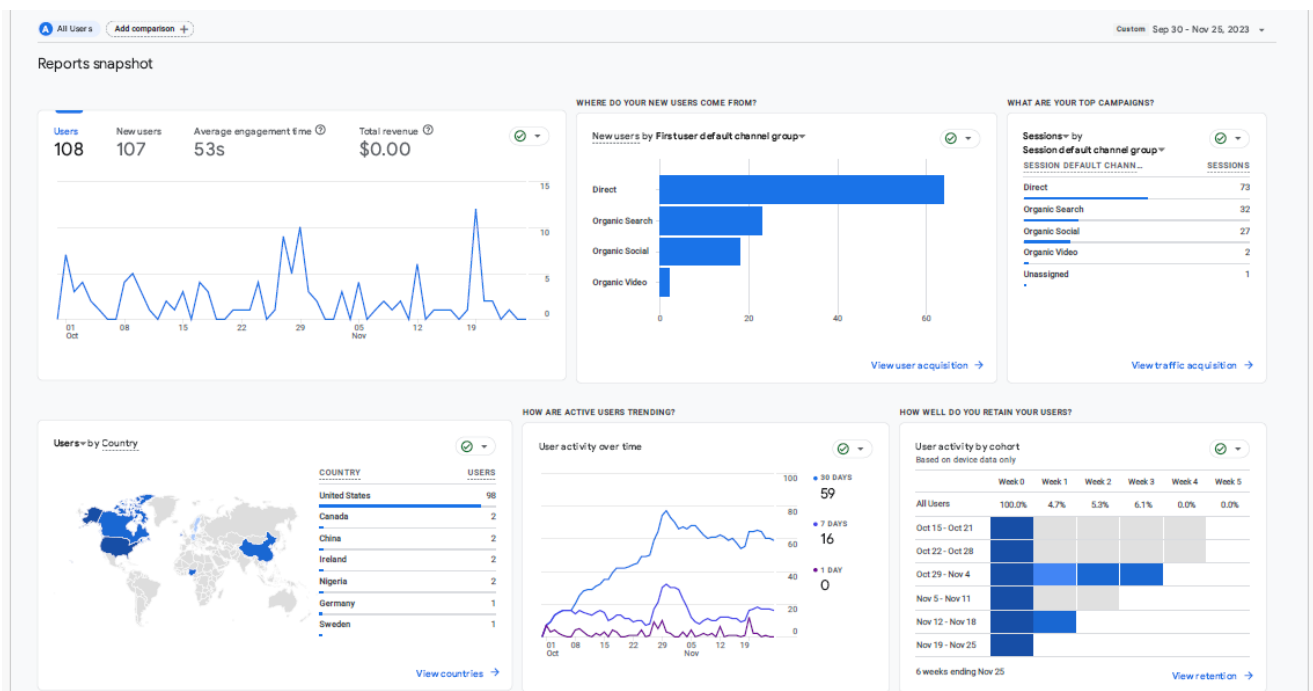
Figure 3

INTENDED OUTCOMES ASSESSMENT
(Summative Data Evaluation)

An assessment of the intended outcomes including improved engagement, church membership diversification, improved organizational sustainability, as well as an overall evaluation of church membership attrition.

The last several questions of the interviews, questionnaire, and survey were designed to measure actual outcomes of engagement improvement, community inclusivity, sustainability enhancement, as well as membership empowerment.

Engagement Assessment:

Figure 4: From the questionnaire of current members, 100% of users answered Yes, when asked if they would participate more frequently if they had the opportunity to receive online training.
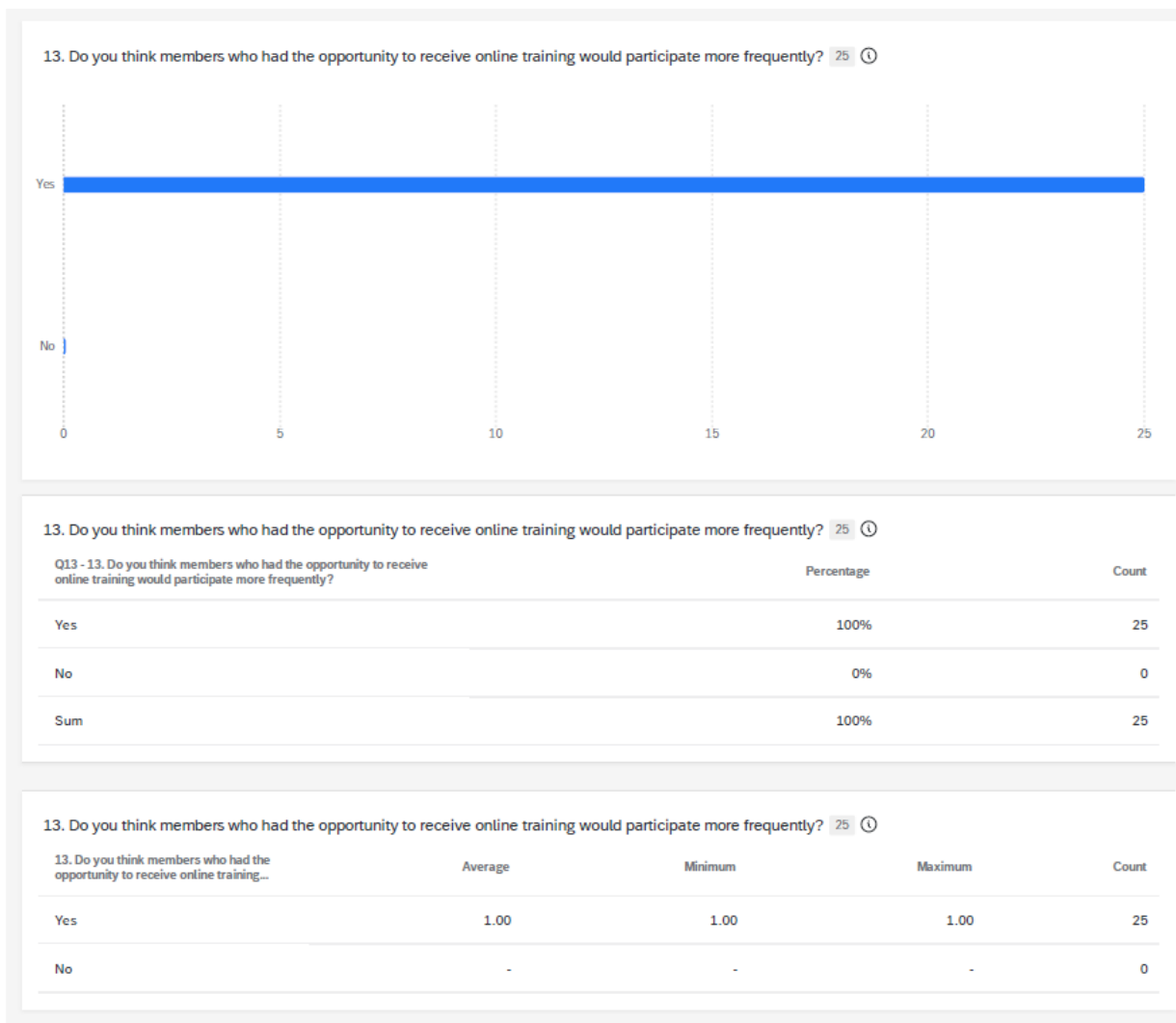
Figure 4

Figure 5: From the survey of nonmembers, 71% of respondents reported they thought members would participate about the same if they were to receive online training.

13. Do you think members who had the opportunity to receive online training would participate more, less, or about the same? 21 ⓘ

Q13 - 13. Do you think members who had the opportunity to receive online training would participate more, less, or about the same?	Percentage	Count
More	14%	3
Less	14%	3
About the same	71%	15
Sum	100%	21

13. Do you think members who had the opportunity to receive online training would participate more, less, or about the same? 21 ⓘ

13. Do you think members who had the opportunity to receive online training...	Average	Minimum	Maximum	Count
More	1.00	1.00	1.00	3
Less	2.00	2.00	2.00	3
About the same	3.00	3.00	3.00	15

Figure 5

TRANSFORMATIONAL CHANGES
(Summative Data Evaluation)

An analysis of the intended transformational changes that have impacted the church association and greater community including better-educated membership, inclusivity, as well as a renewed cultural loyalty towards spiritual development and lifelong learning.

COMMUNITY INCLUSIVITY:

Figure 6: 63% of respondents from the survey of nonmembers answered 'yes' to the question if people knew their friends received online training with the Redbank Valley Church Association, do you think they would eventually join as well?
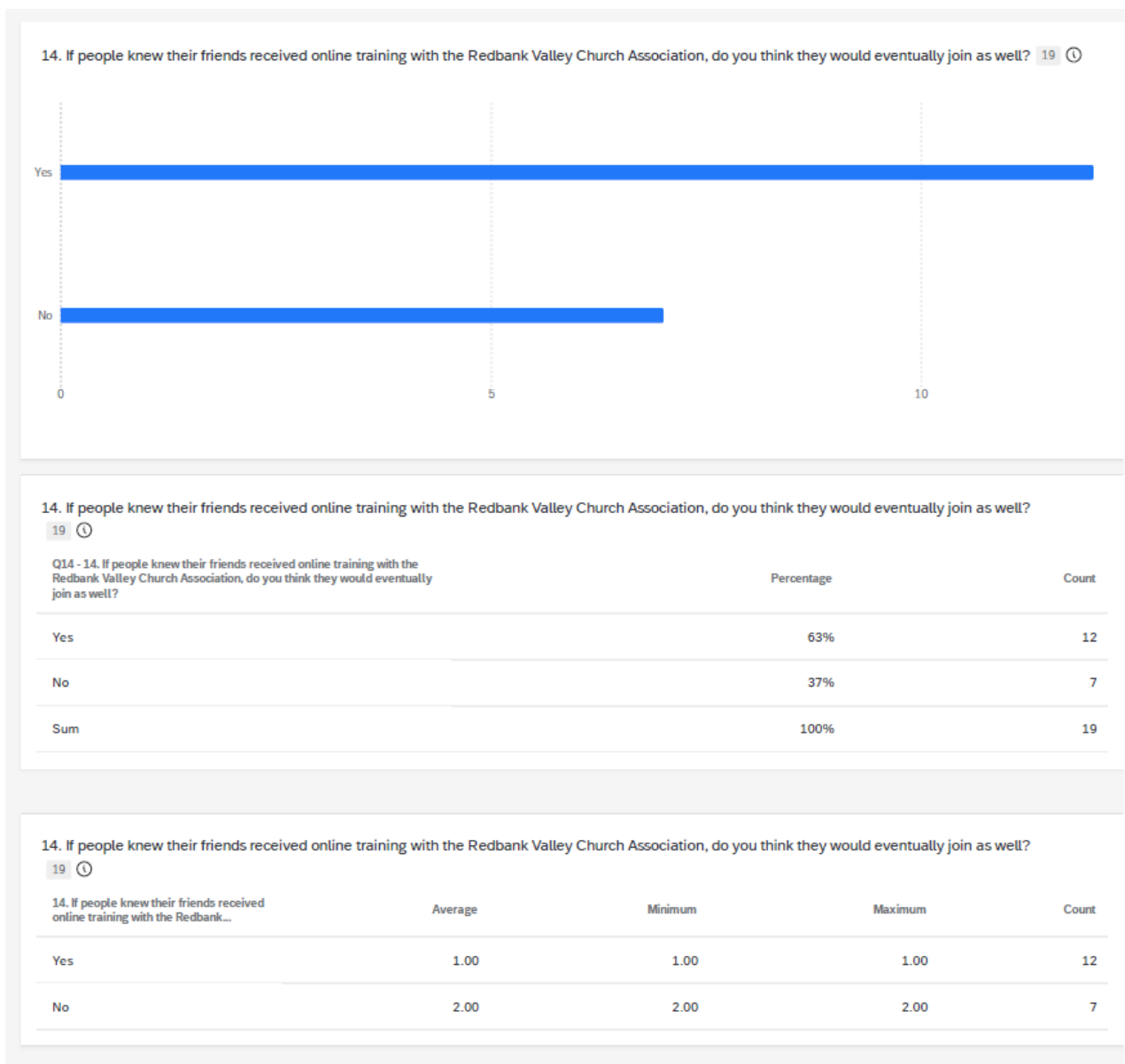
Figure 6

Figure 7: 85% of respondents from the questionnaire of current members answered 'yes' when asked the question if people knew their friends received online training with the Redbank valley church association, do you think they would eventually join as well?

14. If people knew their friends received online training with the Redbank Valley Church Association, do you think they would eventually join as well? 26

Q14 - 14. If people knew their friends received online training with the Redbank Valley Church Association, do you think they would eventually join as well?	Percentage	Count
Yes	85%	22
No	15%	4
Sum	100%	26

14. If people knew their friends received online training with the Redbank Valley Church Association, do you think they would eventually join as well? 26

14. If people knew their friends received online training with the Redbank…	Average	Minimum	Maximum	Count
Yes	1.00	1.00	1.00	22
No	2.00	2.00	2.00	4

Figure 7

MEMBERSHIP EMPOWERMENT:

Figure 8: 65% of respondents from the questionnaire of current members indicated they thought that artificial intelligence and online education would be more effective for training members.

15. Do you think artificial intelligence (technology) in online education would be more (or less) effective for training members? 26 ⓘ
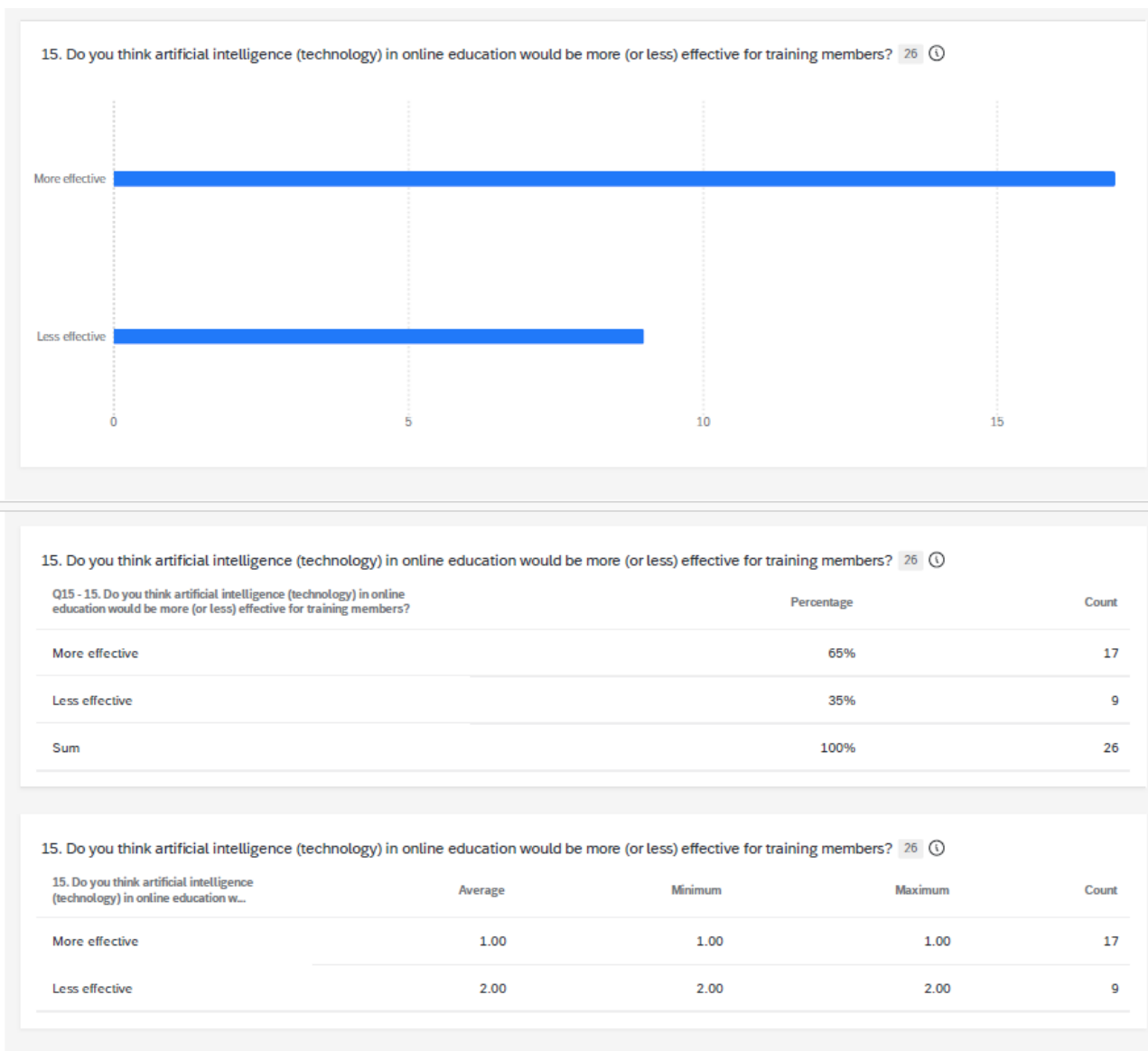

15. Do you think artificial intelligence (technology) in online education would be more (or less) effective for training members? 26 ⓘ

Q15 - 15. Do you think artificial intelligence (technology) in online education would be more (or less) effective for training members?	Percentage	Count
More effective	65%	17
Less effective	35%	9
Sum	100%	26

15. Do you think artificial intelligence (technology) in online education would be more (or less) effective for training members? 26 ⓘ

15. Do you think artificial intelligence (technology) in online education w...	Average	Minimum	Maximum	Count
More effective	1.00	1.00	1.00	17
Less effective	2.00	2.00	2.00	9

Figure 8

BUDGET ALLOCATION AUDIT
(Formative/Summative Data Evaluation)

FORMATIVE: A projected budget for the AI-powered chatbot project was expected as follows:

- $2000 Total Sum for the entire budget including development, content creation, implementation, marketing, as well as maintenance.
    - Software / WordPress Integration Plugin @ $600
    - Labor hours from Website Design firm @ $600*2 for two (2) developers = $1200
    - Marketing and Promotion: social media, Flyer, News/Media Outlet @ $200

- The Redbank Valley Church Association Website Design firm made an offer to cover the entirety of all parts and labor as part of social responsibility and support of the local church community.
- All parts and labor to be donated by the website design firm, bringing projected expenditures to zero investment.

SUMMATIVE: The actual budget for the AI-powered chatbot project occurred as follows:

- $1950 Total Sum for the entire budget including development, content creation, implementation, marketing, as well as maintenance.
    - Software / WordPress Integration Plugin @ $550
    - Labor hours from Website Design firm @ $600*2 for two (2) developers = $1200
    - Marketing and Promotion: social media, Flyer, News/Media Outlet @ $200

- The software came in slightly less than projected due to an unexpected discount offered at the time of purchase.
- Redbank Valley Church Association Website Design team covered the entirety of all parts and labor as part of social responsibility and support of the local church community.
- All parts and labor were donated by the website design firm, bringing projected expenditures to zero investment.
- In-kind donation from a website design firm. Invoices/Receipts are available upon request.