GREAT ZIMBABWE UNIVERSITY

MUNHUMUTAPA SCHOOL OF COMMERCE

BERNARD CHIDZERO GRADUATE SCHOOL OF BUSINESS

EFFECT OF ARTIFICIAL INTELLIGENCE (AI) CHATBOTS ON CUSTOMER EXPERIENCE: A CASE OF THE ZIMBABWEAN TELECOMMUNICATIONS INDUSTRY

BY

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DECLARATION

It is hereby declared that this dissertation **titled "effects of artificial intelligence (AI) chatbots and customer experience: A case of Zimbabwean telecommunications industry"** was done by Brave Magomo and is based on his original work in the Department of Bernard Chidzero Graduate Business School, Munhumutapa School of Commerce, Great Zimbabwe University, Masvingo, Zimbabwe, under the supervision of Dr C Basera. The ideas, suggestions and views of other researchers were adopted, expressed and acknowledged.

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APPROVAL FORM

This is to certify that this dissertation entitled **"effect of artificial intelligence (AI) chatbots and customer experience: Case of Zimbabwean Telecommunications Industry"** has been written under my supervision and is hereby approved for submission for the Master of Business Administration in the Department of Bernard Chidzero Graduate Business School, Munhumutapa School of Commerce at Great Zimbabwe University in Masvingo, Zimbabwe.

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DEDICATION

To my late father Mr N Magomo, mother Ms Christine Musuwo, lovely wife Brenda T Mbonderi, brother Blessing, my daughter Kate and son Kyrie. You have always been my motivation and pillar of strength. Thank you for your unwavering support.

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ABSTRACT

This study sought to examine the effect of artificial intelligence (AI) chatbots on customer experience. The case of Zimbabwe telecommunications industry. The study also sought to determine the effect of personalization of AI chatbots on customer experience, the effect of perceived humanness of AI chatbots on customer experience, the effect of social presence of AI chatbots on customer experience, the effect of perceived ease of use of AI chatbot on customer experience and the effect of perceived usefulness of AI chatbot on customer experience. Although a number of previous studies were conducted in line with the relationship between artificial intelligence and customer experience, it appears that not much has been done in Zimbabwe except for the studies done by Shambira and Kasongo whose scopes were only limited to AI adoption in the banking and insurance sectors. The study adopted a positivist research philosophy to comprehend the effect of artificial intelligence chatbots on customer experience. The philosophy is based on the belief that there are observable facts and laws that can be discovered through empirical research. *Deductive paradigm* was used since it is the best fitting approach to the positivism philosophy adopted both are objective, and structured and do not allow subjectivism. The researcher then adopted a quantitative research method. Quantitative approach was useful in this study to measure and analyse the correlation among AI chatbot dimensions and customer experience. The researcher used a survey comprising of customers selected from the telecommunications industry who have used the chatbot. *A sample size of 350 respondents was used for this study and simple random sampling technique was adopted. 318 questionnaires were successfully completed and returned online. A cross-sectional descriptive research designs was used. Data analysis was done using descriptive statistics such as means and standard deviation. Inferential statistics such as Pearson correlation analysis were also used to determine the strength and nature of the relationship between independent and dependent variables. The results indicated artificial intelligent chatbots influences the customer experience. The results also indicated that personalization, perceived humanness, social presence, PEOU and perceived usefulness of AI chatbots influence customer experience in the Zimbabwean telecommunications industry. This study therefore concluded that personalization, perceived humanness, social presence, PEOU and perceived usefulness of AI chatbot have a significant effect on customer experience. In light of this, it was therefore recommended that companies in the Zimbabwean telecommunication industry those not yet using chatbots consider adopting AI chatbot technology to enhance their customer service.*

Key words: Artificial intelligence Chatbots, customer experience, personalization, perceived humanness, social presence, perceived ease of use and perceived usefulness.

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CHAPTER ONE

GENERAL INTRODUCTION

1.0 INTRODUCTION

This chapter presents an introduction to the study. The telecommunications industry in Zimbabwe has witnessed a significant transformation over the years, with the advancements in technology impacting the way businesses operate and customers perceive services. Among the most recent game-changers in customer service is the application of artificial intelligence (AI) chatbots. AI chatbots have been adopted by various businesses as an innovative means to engage their customers. However, little research was done to find how artificial intelligence chatbots affect the overall customer experience in the telecommunications industry in Zimbabwe. It is the focus of this study to examine the effects of artificial intelligence chatbots on customer experience in the telecommunications industry and provides insight into how businesses can integrate such technologies for optimal results. This chapter provides the research background, justification of the study, statement of the research problem, research objectives, conceptual framework, hypothesis statements, significance of the study, scope of the study, limitations, and organization of the study.

1.1 BACKGROUND TO THE STUDY

The fourth industrial revolution has greatly enhanced our lives, societies, and business operations. According to Schwab (2016), it is an era shaped by various technological innovations such *as "robotics, the Internet of Things, cloud computing, 3D printing, and artificial intelligence among other enhanced wireless technologies*." The continuous development of technology has revolutionized how organizations interact and connect with their customers. The concept of Artificial intelligence is not a fairly new subject, the marvel can be traced back to the 1950s and was used by Turing in explaining information and processes associated with the development of intelligent machines (Jeste *et al*., 2020). According to Schroer (2022), AI is a broad branch of technology concerned with the development of smart technologies that can-do tasks that generally require human intelligence. In the global world, various organizations have greatly appreciated the opportunities provided by artificial intelligence-enhanced technologies such as chatbots or virtual assistants to improve their customer service operations. The revolution of AI-based chatbots provides new ways for organizations can use to improve their customer services approach and in the end influence customer experience. AI chatbots have profound effects on customer experience. This is a synthesis of the technological world and the business marketing function.

Bouchra *et al*. (2022) defined chatbots as computer programs capable of replicating conversation style of human beings using speech or text and serving as customers' virtual support agents. Chatbots also referred to as interactive/conversational agents, smart bots, and digital assistants, are symbols of the "dehumanization of what is human and the humanization of technology." The AI-powered chatbots can be integrated with an organization's contact centre platforms such as the website, Facebook, Twitter, Instagram, WhatsApp, and other online platforms. Modern-day customers have also fully adopted the usage of the Internet in every aspect of their lives. Customers now demand exceptional and seamless customer services and support services. Exceptional customer service positively influences the customer experience. Entrepreneurs have identified the opportunity to develop AI technologies that are useful in enhancing customer services, marketing, manufacturing, and other respective departments. The State of Service, Salesforce Research conducted in March 2019 found that 64% of agents with AI chatbots can commit most of their time attending to complex issues against 50% of agents without AI chatbots (SPAR Solutions, 2023).

Mercedes-Benz, a German car manufacturer, fully integrated artificial intelligence into its processes. Fedele (2023) for instance highlighted that Mercedes Benz adopted AI in customer service operations and introduced a virtual assistant called "Mercedes me". Such innovation has enabled the company to enhance customer experience by interacting with customers, providing 24-hour support on a day daily basis, attending to a range of customer queries and bookings; and offering personalized service. Other international companies that have also integrated the use of AI chatbots to improve their customer experience are Apple and Microsoft. Apple introduced Siri which is considered one of the private digital and personal assistants, it is a built innovation that makes use of Apple's operating system to answer queries, control devices, and determine suggestions made by the Apple device user. Also, Microsoft has Cortana, Cortana is an AI-powered virtual assistant which enables an individual to save time through quick access to information, easy and quick connection to others, and efficiency in improving productivity (Microsoft.com, 2023). The chatbot when responding to queries and requests, uses both written and spoken natural language.

1.1.1 Implementation of AI chatbots in Zimbabwe

In Zimbabwe, several organizations in the banking sector and telecommunications have realized the impact of using AI chatbots in improving the efficiency of customer service operations and enhancing customer experience. The global trend characterized by increased usage of AI chatbots has also stimulated tech-savvy organizations in Zimbabwe to adopt the latest innovation.

The study focused on the telecommunications industry; this sector has the potential to improve customer experience by using AI Chatbots. The telecommunications industry in Zimbabwe has been rapidly evolving over the years due to many factors such as advances in technology, increased competition, and changing customer expectations. The industry has been adopting various technological solutions to enhance its service delivery, and one of the latest tools is the use of AI chatbots. This sector is very important to the economy, society, and customers as it enables a smooth flow of communication across the country. The majority of telecommunications customers are not happy and not satisfied with the service provided. Customers are always complaining that their service providers do not attend to their queries and requests on time and some do not operate 24-hour service hence leaving their customers frustrated and with a negative customer experience. As usual, Econet Zimbabwe being the market leader introduced “Yamurai and Thembie”, these are AI-based chatbots to engage with its customers, and attend to inquiries and requests. According to Mutingwende (2021), the chatbot system provides customers with instant support services for instance, PIN and PUK requests, airtime purchases, balance inquiries and related issues. Furthermore, Telone also introduced "Chommie" to improve its customer service. Dzoma (2021) opined that Chommie provides support to customers who need assistance with services like internet bundle recharge, voice calls, and billing inquiries.

AI chatbots provide a range of benefits and challenges that may also have a significant effect on customer experience. AI chatbots help with cost reduction, as they manage a significant number of requests from customers instantaneously, without additional staffing. They provide quick solutions, reducing customer service wait times and increasing customer satisfaction. Chatbots have restrictions and cannot be the best option for customer service alone. Customers may continue to require human support with more sophisticated issues or situations that demand empathy and emotional intelligence. As a result, an integrated approach that combines chatbots and human support personnel may give a superior customer experience. Despite that, some organizations have shown interest in using the latest technology to revolutionize their customer services other organizations seem to be hesitant and slow to take advantage of the innovation. Hence it is against this background that the researcher carried out this study. The study provided insights to all companies in the telecommunications industry to know the contribution that can be made by making use of AI chatbots to enhance customer experience.

1.2 JUSTIFICATION OF THE STUDY

In Zimbabwe, the adoption of AI chatbots by firms in the telecommunications industry is still very low despite a rise in popularity in developed countries. The application of AI chatbots in customer support operations has become popular due to their ability to provide instantaneous

responses to customer queries and attend to large volumes of queries concurrently while improving the overall customer experience. In Zimbabwe and to be specific the telecommunications industry, the adoption of AI chatbots in customer support operations is still a fairly new approach with only a few of the industry players having introduced the new technology in their customer service aspects. Furthermore, only a few AI research has been conducted in Zimbabwe. This shows the existence of a research gap ought to be addressed in order for the industry players and decision-makers to be aware of the effects of using AI chatbots as part of their customer service strategy to enhance customer experience. This study was motivated by the need to understand how artificial intelligence chatbots influence customer experience in the Zimbabwean telecommunication industry. It was the aim of the study to examine how AI chatbots may improve the customer experience, considering the factors that contribute to this improvement, and those that may adversely affect customer experience.

1.3 STATEMENT OF THE RESEARCH PROBLEM

According to the POTRAZ (2022)'s last quarter report, the subscriber base was at 14 562 242 customers and it was a great number, overwhelming for service providers. The Zimbabwean telecommunications industry is facing various challenges that affect customer experience, including poor network connections, slow internet speed, and limited customer service channels to report these issues. Despite these challenges, there is limited utilization of AI chatbots to address the existing challenges and improve customer experience. According to Zimtech Review (2019), companies in the telecommunications industry are struggling to provide seamless customer service to their customers, customers spend more time on hold waiting for customer care agents to answer their phone, and queries, and complaints take time to be attended to, some companies do not offer 24-hour support and there is no consistency in responses given by customer service support team. As a result, customers are frustrated and that feeling poses a negative effect on customer experience. In developed countries, various organizations have adopted AI chatbots to enhance their customer support functions. However, there is a gap in the Zimbabwean telecommunications industry in using AI chatbots to enhance customer experience for instance in Zimbabwe only two service providers have implemented AI chatbots to assist in customer support operations which are Econet Wireless Zimbabwe and Telone (Chronicles, 2021; Dzoma, 2021). Mutingwende (2021) cited that with the objective to improve its customer experience, Econet Zimbabwe introduced the AI chatbot "Yamurai" to deal with a surge in the number of customer queries and as a way to deal with customers during the COVID-19 pandemic. Also, Business Times (2021) cited that Telone launched its artificial intelligent chatbot with the name "Chommie" to support its contact service

centre and as a result customer issues were effectively resolved and others went down by as much as 80%.

This study sought to understand the effects posed by the use of AI chatbots on customer experience and in Zimbabwe there is little information and studies available concerning how the AI chatbots implemented in the telecommunications industry can help in enhancing customer service operations (Katsamba, 2018). Companies such as Netone, Telecel, Powertel, and Africom among other players have not yet adopted artificial intelligence chatbots to support their customer service and enhance customer experience except for Econet Wireless Zimbabwe and Telone. Zimtech Review (2019) highlighted a major problem that exists in customer service operations among telecommunications companies in Zimbabwe. It stated that telecommunications companies should come up with initiatives that improve customer responsiveness since millions of customers spend more time on hold waiting for a customer service agent to answer their calls and some will give up after no response which frustrates customers. Zimtech Review (2019) highlighted that Netone was on the top of the list when it comes to responsive customer service compared to other telecommunication companies which highlighted the state of "poor customer service" that exists in the local telecommunications industry (POTRAZ, 2020) and it is the role of this study to provide solutions that can be adopted by an organization to improve customer experience. Telecoms companies must come up with strategies that capacitate their customer service functions to handle customer issues quickly and such strategies include implementing AI chatbots in customer services. This study was of great value to telecommunications companies and policymakers in Zimbabwe since it provided insights that are useful in the development of efficient and effective chatbots with the aim to improve customer experience.

According to the extant literature, AI technology can improve customer experience and it is an obligation of marketing personnel to find out how such technological improvements influence consumer experiences (Schrotenboer, 2019). A framework was provided for organizations and scholars on how AI recommendation systems and conversational interfaces benefit organizations by enhancing customer experience throughout the customer journey. Studies have shown that the use of AI chatbots can enhance customer experience by providing personalized interactions, improving response time, and reducing wait time (Chen et al., 2020). Furthermore, AI chatbots can reduce the workload of customer service representatives and improve their productivity, leading to cost savings for the organization (Bughin & Hazan, 2018). Bowen and Morsan (2018) in their study titled *"Beware hospitality industry: the robots are coming. Worldwide Hospitality and Tourism Themes"* explained how the services sector may use artificial intelligence. AI technology is useful in gathering customer data, which is critical when organizations seek to provide personalized services to improve customer

experience. However, the literature also highlights challenges in the implementation of AI chatbots, such as a lack of trust and skepticism from customers, and technical difficulties (Vasquez et al., 2020). It was discovered essential to conduct this study to understand the effects of using AI chatbots in the Zimbabwean telecommunications industry on customer experience. The research problem, therefore, was to examine the effect of AI chatbots on customer experience in the Zimbabwean telecommunications industry.

1.4 RESEARCH OBJECTIVES

The main objective of this study was to examine the effect of AI chatbots on customer experience in the Zimbabwean telecommunications industry. The research objective was divided into the following sub-research objectives:

- To examine the effect of personalization of AI chatbots on customer experience
- To examine the effect of perceived humanness of AI chatbots on customer experience
- To examine the effect of social presence of AI chatbots on customer experience
- To examine the effect of perceived ease of use of AI chatbots on customer experience
- To examine the effect of perceived usefulness of AI chatbots on customer experience

1.5 CONCEPTUAL FRAMEWORK

Bryman (2012) defines a conceptual framework as a structured way of planning and organizing research that describes the concepts and assumptions that underpin a research effort. A conceptual framework's goal is to give a foundation for comprehending the study objectives and hypotheses, as well as to identify knowledge gaps that must be addressed (Ravitch & Riggan, 2016). Below is the adopted conceptual framework.

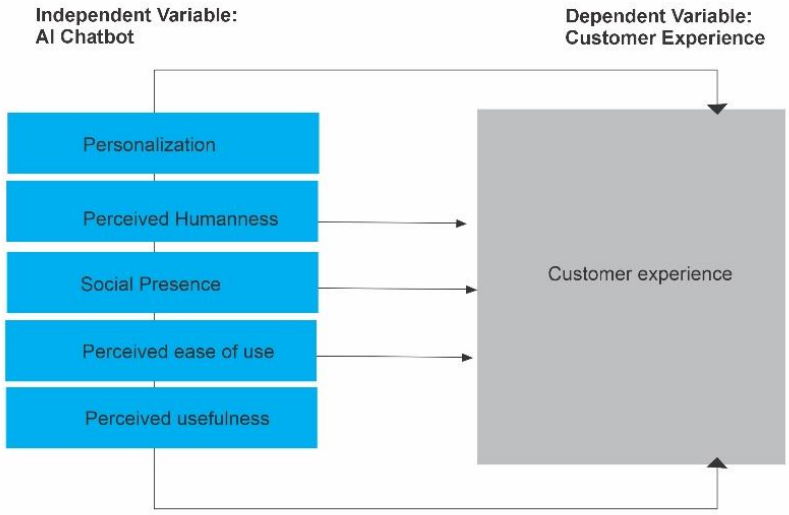


Figure 1.1 Conceptual framework

Source: Buhrke et al. (2020)

Saunders *et al*. (2012) define an independent variable as a variable which can be changed or manipulated to measure its influence on a dependent variable and in this study the independent variable is the AI Chatbot. This component can be varied to find its effect on customer experience. Whereas, a dependent variable was described as a variable which varies as a result of variations in other variables or results from the manipulation of another variable. Customer experience is the dependent variable. The study is focused on how the use of AI chatbots affects the customer experience in the telecommunications industry in Zimbabwe. Figure1.1 shows the AI chatbot as an independent variable and its related sub-variables namely personalization, perceived humanness, social presence, “perceived ease of use” and “perceived usefulness”. The dependent variable is shown as the customer experience. The arrows in Figure 1.1 illustrate the assumed relationship between AI chatbot features and customer experience.

1.5.1 Hypothesis statements

H_1: Personalization of AI chatbots has a statistical significant effect on customer experience

H_2: Perceived humanness of AI chatbots has a statistical significant effect on customer experience

H_3: Social presence of AI chatbots has a statistical significant effect on customer experience

H_4: Perceived ease of use of AI chatbots has a statistical significant effect on customer experience

H_5: Perceived usefulness of AI chatbots has a statistical significant effect on customer experience

1.6 SIGNIFICANCE OF THE STUDY

The significance of any research depends on its ability to address, solve, or shed light on prevailing issues that individuals, companies or systems encounters. This study, aimed to examine the effects of Artificial Intelligence chatbot on customer experience. The results of this study have far-reaching implications to the researcher, Great Zimbabwe University and telecommunications industry.

1.6.1 The researcher

To the researcher, the study was of great significance as it provided greater knowledge in the area of AI chatbot and customer experience. The ability of decision making for the researcher was also improved through the acquisition of presentation and analytical skills. The study was conducted as part of the Great Zimbabwe University's requirement for the award of a Masters of Business Administration.

1.6.2 To Great Zimbabwe University

The study contributed to the literature and the university's body of knowledge. This is of great importance to research academics since they can use the study as a guide for future and related studies. If found to be of great quality, the study will improve GZU's brand regionally and internationally.

1.6.3 To the telecommunications industry

The study was of value to the telecommunication industry's stakeholders and policymakers. The study provided new knowledge and innovative ideas for enhancing customer service in the telecommunications industry in Zimbabwe. The study provided valuable insights into the factors that need to be considered when implementing AI chatbots in the industry, tailored to the Zimbabwean context. The study can be used by organizations and their management to

realize the importance of integrating AI chatbots in their contact centres and digitization strategies. AI chatbots provide quick responses, and relevant information and are always available around the clock; and free up customer service agents to perform other complex tasks. The study informs the development of policies and strategies that promote the adoption of AI chatbots to enhance the customer experience in the Zimbabwean telecommunication industry. Ultimately, this will contribute to the growth and sustainability of the telecommunications industry, as well as customer satisfaction and loyalty.

1.7 ASSUMPTIONS OF THE STUDY

Assumptions are the underlying beliefs that guide the research process, contribute to the development of research questions, and shape the interpretation of results (Saunders *et al*., 2012). Assumptions made were important in defining the scope and direction of this study and were examined and tested throughout the research process. The researcher adopted the following assumptions for the study based on the pre-existing knowledge of the research problem and previous studies:

- Respondents were conversant with the AI chatbot technology.
- The data gathered from the study was accurate, reliable and objective.
- The sample size truly represented the population of the study.
- Respondents provided honest and accurate feedback about their experience with AI chatbots.

1.8 DELIMITATION OF THE STUDY

Delimitation of the research study defines the boundaries observed in conducting research and determines the scope of research (Saunders *et al*., 2012). The researcher considered the following delimitations:

1.8.1 Geographical delimitation

The study was limited to the Zimbabwean telecommunications industry. Hence, results of this study are not generalizable to other countries or regions.

1.8.2 Industry delimitation

The study focused only on the telecommunications industry and not on other industries where AI chatbots were also used.

1.8.3 Chatbot delimitation

The study focused only on AI chatbots and their effects on customer experience. Other forms of AI or automation in the industry were not examined.

1.8.4 Customer delimitation

The study focused only on the effects of AI chatbots on customer experience and did not take into account the effects of AI chatbots on other stakeholders such as employees, shareholders, or regulators.

1.8.5 Time delimitation

The study' timeframe was focused on the year 2023. Historical analysis and projections for the future were not considered.

1.8.6 Data delimitation

The study relied on primary data gathered through surveys with customers and the study did not request access to sensitive or proprietary information.

1.9 LIMITATIONS OF THE STUDY

Limitations of the study refers to factors that affect the generalizability and accuracy of the results. In this study, the scholar acknowledged the limitations of the stud and recognized their potential effect on the results of the study. Despite these limitations, this study contributed to the existing knowledge and provided a valuable insight into the effects of Artificial Intelligence chatbot on customer experience in the telecommunications industry in Zimbabwe.

1.9.1 Language

The questionnaire was designed using the English language, which was only limited to English-speaking customers and did not represent a wider population. To address this limitation since English is a universal language, questionnaires were designed using simple, clear and non-jargon words.

1.9.2 Telecommunications industry

The study was only focused on the telecommunications industry thus limiting the generalization of the findings to other industries. To mitigate this, the study can also be conducted across various industries to evaluate the generalizability of findings.

1.9.3 Time frame

The research project's time was constrained because the researcher was employed full-time and so had little time to effectively carry out the research efficiently. The researcher had to resort to utilizing weekends and public holidays to make sure the study was completed on time.

1.9.4 Power and data connectivity

Due to severe power cuts across Zimbabwe, it affected internet connectivity and the researcher faced internet connection challenges when conducting the study. This also had the effect on time to conduct the study. The researcher had to make sure that more progress was done when electricity was available and data connectivity was up.

1.10 DEFINITION OF TERMS

1.10.1 Artificial Intelligence

It refers to “a system’s ability to interpret external data correctly, to learn from such data, and to use those learnings to achieve specific goals and tasks through flexible adaptation” (Kaplan & Haenlein, 2019: 17).

1.10.2 Chatbot

“Chatbot is an artificial structure or computer program created for interaction with humans through natural language as input and output” (Brennan, 2006).

1.10.3 Contact centre

A contact centre is an operational department of an organization that takes care of customer enquiries and is typically an element of the customer service role.

1.10.4 Customer experience (CE)

Mixon and Torode (2022) defined “CE- refers to the totality of a customer's perceptions and feelings as a result of encounters with a company's products and services”.

1.10.5 Customer service

Rodgers (2021) defined customer service as support provided to customers prior to, during, and following their acquisition of a good or service.

1.10.6 Machine learning

It is a subset of AI that enables programs on a computer to be effective at predicting outcomes without specifically instructing them to do so (Burns, 2018).

1.10.7 Natural language processing

“Natural language processing is part of artificial intelligence which enables computers to understand, interpret and manipulate human language” (Lutkevich, 2022).

1.11 ORGANISATION OF THE STUDY

1.11.1 Chapter one discussed the general introduction of the study. The author highlighted the background of the study, justification of the study, statement of the research problem, research objectives, conceptual framework, hypothesis statements, significance of the study, scope of the study, limitations and organization of the study.

1.11.2 Chapter two reviews the relevant literature surrounding artificial Intelligence chatbots and their influence on customer experience also provides an extensive background to the research. The chapter identifies the independent and dependent variables. The context of the study is discussed as well as the theoretical framework surrounding AI chatbots and customer experience. Further, the chapter explores empirical studies which were mostly conducted in developed countries.

1.11.2 Chapter three deliberates on the research methodology adopted by the researcher. It defines the adopted research philosophy, approach, method, strategy and research design. The chapter further discusses target population, sampling techniques, research instrument, procedures for data collection, data analysis and the ethical considerations observed during the pursuit of the study.

1.11.3 Chapter four details how results were presented, analyzed and discussed. The researcher used tables and charts to present collected research primary data. The data was collected through questionnaires. The researcher also adopted descriptive statistics to analyze and interpret collected data. Also, in this chapter, research results were also discussed in line with the research objectives and the provided literature.

1.11.4 Chapter five provides the summary of the study, conclusions on the major findings as well as the recommendations made thereof.

1.12 CHAPTER SUMMARY

The chapter discussed the general introduction and the study's background on the effect of Artificial intelligence chatbots on customer experience. The chapter discussed the justification of the study, the statement of the research problem, objectives of the research, the conceptual framework, the statement of hypothesis and significance of the study. The researcher further highlighted the study's delimitation and limitations. The researcher defined terms as used in the study and lastly, the researcher provided the organization of research study. The next chapter critically reviews literature on the effect of AI chatbots on customer experience.

CHAPTER TWO

LITERATURE REVIEW

2.0 INTRODUCTION

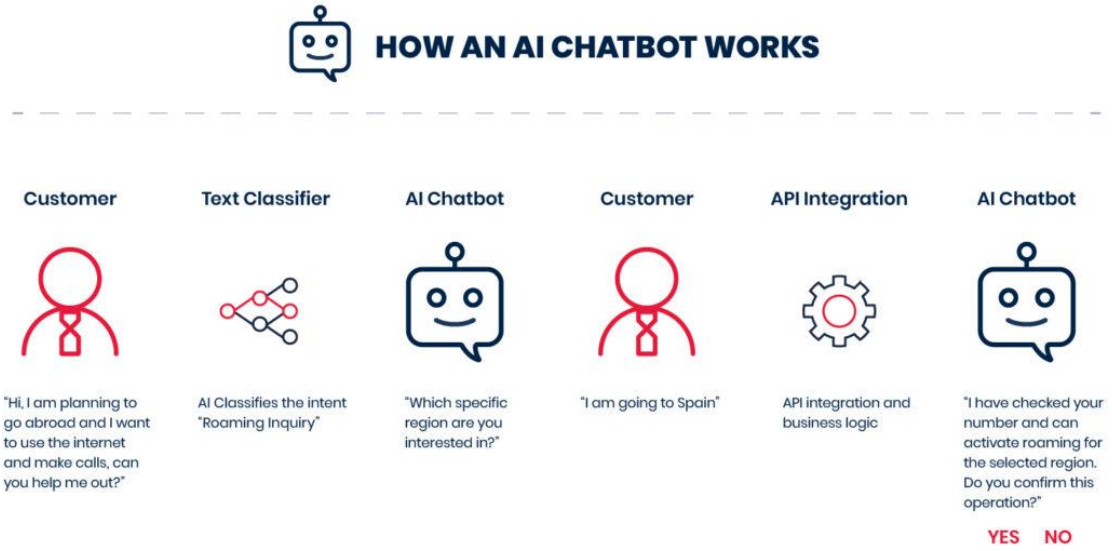
Chapter two provides a conceptual framework where the researcher highlights the independent variable and the related sub-variables. The chapter addresses a theoretical framework and critically analyzed available literature. Further, the researcher discusses the relationship that exists between the study variables, the role of the present study, empirical framework, and research gap identification.

2.1 ARTIFICIAL INTELLIGENT CHATBOT

Algorithms for machine learning and AI have made important contributions to the rapid development of chatbot technologies. Organizational marketing and customer service strategies have been revolutionized by the evolution of artificial intelligence chatbots and pose the opportunity to influence customer behaviour and related experiences as a result of the interactions (Davenport *et al*., 2020). An AI chatbot is a computer system or software powered by AI, natural language processing, and deep learning that understands client requests and automates responses, emulating human conversation (IBM, 2023). Chatbots are computer applications that connect with humans using chat interfaces such as messaging apps, online platforms, and applications for mobile devices. Chatbots can now replicate human-like interactions, give tailored responses, as well as enhance customer service through the use of AI. As a result, chatbots have become an indispensable component of the online experience environment.

Adamopoulou and Moussiades (2020) and Miliani *et al*. (2021) highlighted that chatbots can alternatively be referred to as chatterbots, interactive agents, or virtual assistants. The term AI chatbots in this study was used interchangeably with “virtual assistants” or “virtual agents.” AI chatbots are trained on large datasets to learn from patterns and conversations. They use natural language processing to understand and respond to user queries. These chatbots are capable of learning from user interactions, making them more accurate. AI chatbots can be used for various purposes, including customer service, sales, human resources, and technical support. In the field of customer service, chatbots can handle simple, repetitive inquiries, providing customers with quick answers to their questions. On the other hand, in marketing, chatbots can provide a conversational approach to sales by guiding customers through product selection and offering incentives to make a purchase. Figure 2.1 explains how the AI chatbot works in a customer service function, customers may inquire about the product or service to an AI chatbot in a similar way that they would ask to a human agent. Sadekov (2023)

highlighted that to determine the purpose of the query and conversation, the chatbot makes use of a text classifier. The next stage is to use the solution flow to create a string of further inquiries and responses that will help clarify the specific problem that the customer wishes to be addressed and how it ought to be solved. In addition, API communication with systems on the back end enables the chatbot to do the process for the customer rather than just sending an URL to self-service options. Duijst (2017) believed that a range of sectors can adopt chatbots for instance customer services, education, health, and e-commerce among other categories. Artificial intelligence chatbots can be integrated into an organization's websites and social media platforms such as Facebook, Instagram, Twitter, and WhatsApp among



others.

Figure 2.1 How AI chatbots work

Source: Sadekov (2023)

The sub-independent variables of AI Chatbots are personalization, perceived humanness, social presence, perceived ease of use and perceived usefulness.

2.1.1 Personalization

Personalization is the process of tailoring the experience to a customer's preferences. Wiacek and Zaboj (2022) highlighted that personalization is the process of ensuring that an individual customer receives relevant information, products and services customized to his or her specific needs. AI chatbots can personalize the customer experience through analysing, machine learning, and natural language processing. By analyzing customer data, such as purchase history, chat history, and preferences, chatbots can suggest personalized recommendations and seamlessly manage transactions. Other ways to achieve personalization with an AI chatbot are through sending chat invites, suggesting paths that a

customer can follow and also providing multiple languages (Wiacek & Zaboj, 2022). Personalization helps customers feel valued and recognized, which can enhance the customer experience.

2.1.2 Perceived humanness

AI chatbots can mimic human-like conversations using natural language processing. Seeger *et al.* (2018) posit that the human imitating behaviour of chatbots during interaction often results in them being perceived as anthropomorphic. Wirtz *et al.* (2018) cited that anthropomorphism is the way AI chatbots or intelligent machines display human-like features such as their visual appearance. Furthermore, chatbots can recognize slang and idiomatic expressions, provide empathy and emotional support, and remember previous conversations. According to Waytz *et al*. (2014), human-like chatbots are trusted more by customers compared to non-human chatbots. This human-like interaction enhances the perceived humanness of chatbots, which can increase customer satisfaction and trust.

2.1.3 Social presence

Biocca *et al*. (2003) highlighted the need to examine the social presence involved in the human–computer interaction since it can promote positive attitudes or behavioural responses. Artificial intelligence chatbots can provide a social presence by engaging with customers on online platforms such as social media sites. Social presence creates a sense of community and can enhance the customer experience by making customers feel connected to the brand. Social presence is the way intelligent machines or chatbots make individual customers feel others are psychologically present. AI chatbots associated with social presence perceived to high are regarded as sociable, warm and sensitive. Customers prefer chatbots that are socially present compared with those that are not.

2.1.4 Perceived ease of use (PEOU)

The extent to which a user feels that utilizing or engaging with an AI chatbot is simple and easy is referred to as “perceived ease of use”. Davis (1989: 320) highlighted that “perceived ease of use is the degree to which a person believes that using a particular system would be free of effort”. Features like the chatbot’s simplicity, clear instructions, and user-friendliness influence the PEOU. AI chatbots make life easier by automating operations and shortening response times. Customers are unlikely to remain on hold for a lengthy amount of time. Customers can get immediate and precise solutions to their questions using a chatbot, which improves the customer experience.

2.1.5 Perceived usefulness (PU)

This refers to the level to which a customer have faith in that interacting with an AI chatbot is beneficial and helps them achieve their goal or objective. Davis (1989) highlighted that "perceived usefulness is the extent to which an individual believes that using a particular technology would be beneficial". The perceived usefulness of a chatbot depends on factors such as the accuracy of responses, the relevance of the information provided, and the speed with which queries are resolved. It also refers to the extent to which the AI chatbot offers a solution that the user perceives as valuable.

2.2 CUSTOMER EXPERIENCE

Buttle and Maklan (2015) defined customer experience as the sum of all interactions and perceptions a customer has with a brand, including all touchpoints, products and services, and the context in which they are delivered. Customer experience is influenced by a wide range of factors, including interactions before purchase, interactions after purchase, brand reputation, and word-of-mouth recommendations from other customers. Chinn (2022) highlighted that customer experience is a combination of the perceptions, feelings and beliefs that customers develop during their interaction with the company's products and services. According to Bordeaux (2023), customer experience is the general feeling that customers make of the company and its products during the buyer's journey. In line with the definitions provided, customer experience dimensions are customers' perceptions, feelings, attitudes, responses and behaviours. Meyer and Schwager (2007) indicated that "customer experience includes every facet of a business's offering, including its promotional activities, attributes of products and services, ease of use, dependability and customer service".

Customer experience comprise cognitive experiences and affective experiences (Buttle & Maklan, 2015). Cognitive is made up of the mental processes such as perceptions, attention, and memories experienced by customers while engaging with a service or product. Similarly, American Psychological Association (2016) highlighted "*cognitive elements are higher mental processes, such as perception, memory, language, problem-solving, and abstract thinking."* Keiningham *et al.* (2017) posit that elements that make cognitive experience comprise speed of service, functionality and service availability. A positive customer experience can lead to improved cognitive outcomes such as enhanced brand recall, recognition and improved perception of the service. According to a study by Li *et al.* (2016), customers who had a positive experience with a particular brand were more likely to remember it and choose it again in the future. Affective outcomes, on the other hand, refer to the emotional responses that customers experience after engaging in a particular service or product. Chang (2022) highlighted that the goal of the emotional customer experience is to deliver a happy and

exciting customer journey. This entails delivering courteous, understanding, and dependable customer service. Positive customer experiences yield positive affective results such as gratification, joy, and loyalty, while negative experiences result in negative emotions such as frustration, anger, and disappointment. A study by Homburg *et al*. (2009) confirmed that customers who have positive affective outcomes are more likely to become loyal customers and share their positive experiences with others which results in positive word-of-mouth. This is supported by Kim and Hyun (2011) who found that "satisfied clients are more likely to endorse the brand to others". Additionally, it has been observed that customers are more likely to return and make further purchases if they are satisfied with their previous experience.

Mohd-Ramly and Omar (2017) believed that customer experience is an avenue for engaging customers with a service or good physically, psychologically, socially, and emotionally while improving the relationships between customers and the business. Customer experience's theoretical foundation is derived from various existing cues and touchpoints that a business may use to develop a complete experience that a customer can encounter (Payne *et al.,* 2008). Verhoef *et al.* (2009) identified four elements that influence customer experience and the elements are "*social environment, retail atmosphere, assortment, and the service interface*". There are various dimensions of customer experience and can also be determined by attributes of a particular product (Gentile *et al.,* 2007). Therefore, it can be concluded that customer experience is a multifaceted topic to analyse and measure. For this study, the researcher focused on cognitive and affective elements of customer experience as postulated by Buttle and Maklan (2015).

Customer experience is an emerging area of research that emphasizes the importance of interactions between customers and various touchpoints, including chatbots, in enhancing customer experiences. Interactions with chatbots have the potential to create positive or negative emotional experiences, which influence customers' perceptions of the brand and their overall satisfaction (Meyer & Schwager, 2007). Pine and Gilmore (1998) theorized the experience economy which focuses on the creation of memorable and engaging customer experiences that are intentionally designed to evoke emotions and foster a sense of personal meaning and connection. The evolution of artificial intelligence chatbots has brought new and unique opportunities for companies to cultivate innovative and efficient ways of engaging customers. The potential impact of AI chatbots on the experience economy warrants critical examination. AI chatbots have been widely adopted by businesses to streamline customer engagement and service delivery. By providing 24/7 support, personalized recommendations and quick responses to inquiries, chatbots offer a convenient and efficient way to enhance customer experience. However, questions have been raised about the extent to which chatbots can provide the emotional engagement and meaningful connections that Pine and

Gilmore argue are essential to creating value in the experience economy concept. Well-designed chatbots can create a positive and impactful experience that resonates with customers. Research has shown that chatbots that are conversational, empathetic and respectful can foster trust and credibility with customers, resulting in better retention and loyalty (Lee *et al.,* 2020). Moreover, chatbots offer the potential to personalize customer experiences by providing accurate and relevant responses based on the customers' past interactions. This can result in tailored and context-driven experiences that fulfil the expectations of the customer. While the concept of the experience economy in the context of chatbots is still emerging, the success of chatbots as a means to enhance customer experience will largely depend on their design and implementation. The AI chatbot features such as "*personalization, perceived humanness, social presence, perceived ease of use, and perceived usefulness*" can significantly impact customer experience.

2.2.1 AI-enabled customer experience

Customer interactions have been changing towards internet-based platforms and interfaces as a result of technological evolutions and a growing number of online services. Therefore, businesses are required to deliver superior online service and use the possibilities offered by AI chatbots to improve the online consumer experience. Gartner (2020) posit that artificial intelligence chatbot and their related technologies such as NLP and ML are crucial in collecting customer feedback and sentiments which might not be possible with customer service employees. This makes it possible for organisations to leverage artificial intelligence in enhancing customer experience (Newman, 2019). To improve customer experiences, organisations must effectively use AI-related technologies such as *"chatbots, machine learning and natural language processing"* to know their customers better by collecting data on their preferences and historical behaviour (Omale, 2019). AI-enabled customer experience has become an essential aspect of the contemporary business landscape. AI has transformed customer experience by enabling businesses to offer personalized interactions to customers. AI Chatbots are essential in assisting in the form of personalized recommendations and relevant information to customers who are present online either on websites or other messaging applications (Verhagen *et al.,* 2014; Araujo, 2018; De Cicco *et al.,* 2020;). Artificial intelligence chatbots are evolving as an essential component of customer service and are capable of handling complex queries, which improves the overall customer experience (Xu *et al.,* 2017). Furthermore, it has been argued that AI chatbots enable customers to enjoy an effortless online experience (Gnewuch *et al.,* 2018; Adam *et al.,* 2019; Moriuchi, 2020; Prentice *et al.,* 2020). AI has also enabled businesses to analyse customer data and generate insights that are used for improving the customer experience. AI-powered tools such as facial recognition, voice recognition, and sentiment analysis enable businesses to understand

customer preferences and emotions, which results in better personalization of customer interactions (He *et al.,* 2017).

AI chatbots can generate personalized recommendations based on customer preferences, which improves the customer experience (Chen *et al.,* 2017). AI chatbots also reduce waiting time, as chatbots provide instant responses to customer queries, which results in shorter response times. Despite its benefits, AI-enabled CX has limitations that businesses need to address. AI is incapable of replicating human interaction; therefore, some customers might not be satisfied with the level of interaction they receive from chatbots. In addition, AI is heavily reliant on data, which means that businesses need to ensure the data they collect is accurate and up-to-date. Furthermore, the algorithms used in AI need to be monitored to ensure they are not biased, which can result in negative customer experiences (Kumar *et al.,* 2018). Furthermore, AI will enable businesses to offer hyper-personalized experiences to customers, as AI will analyse data from multiple sources, including social media and browsing history, to generate personalized recommendations (Chen *et al.,* 2020).

2.2.2 Customer experience pyramid

Tšernov (2023) highlighted that the customer experience pyramid explains elements that define superior customer experience. The pyramid is made up of three different elements of equal importance and all define customer experience in its totality.

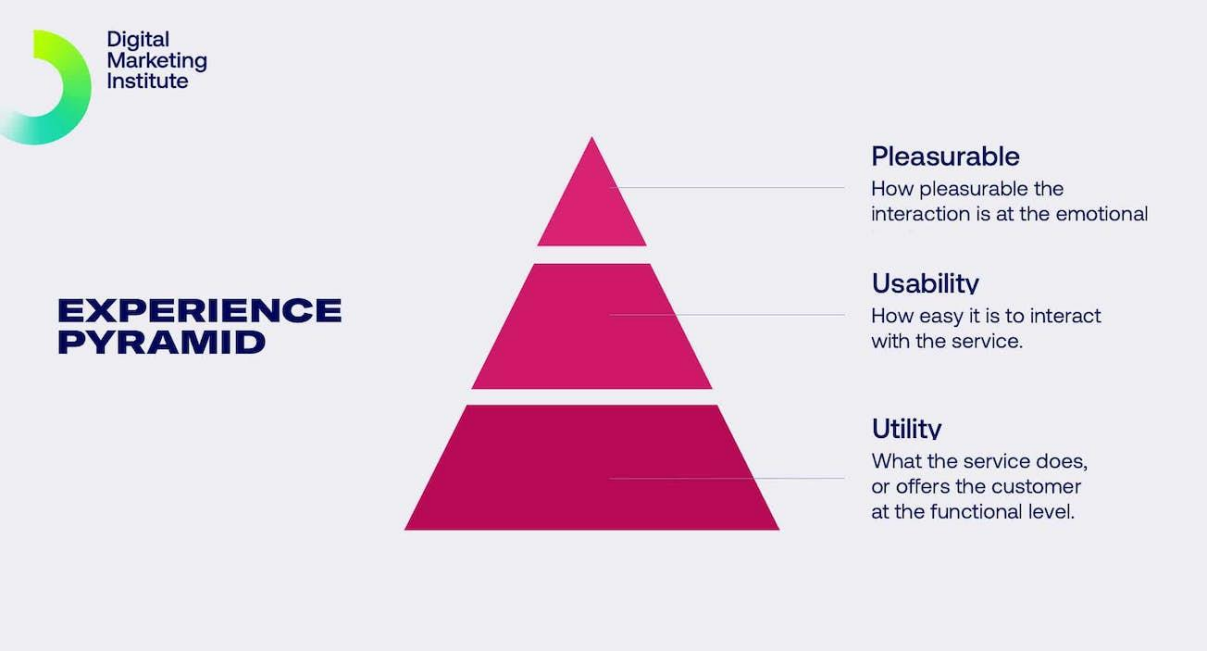


Figure 2.2 Customer experience pyramid

Source: Digital Marketing Institute (2020)

The customer experience pyramid model has been popularized in recent years as a framework for understanding how customers interact with brands at different levels of engagement. According to Digital Marketing Institute (2020), this model can be used to guide the development of customer experiences, especially in the context of new technologies like artificial intelligence chatbots. There is growing interest in the application of AI chatbots for customer service and engagement. The customer experience pyramid model can guide the development of AI chatbots by identifying the key elements that are important for customer engagement. At the bottom of the pyramid are utility elements, such as ease of use, reliability, and availability (Digital Marketing Institute, 2020). AI chatbots can help to automate these functions. At this step, the firm must meet the fundamental needs of effective customer service such as offering a timely, complete, and consistent service that creates value. At the midpoint of the pyramid there is usability step. The business takes a step ahead in this instance, seeking to minimize complexity by rendering its services easy to work with (Digital Marketing Institute, 2020). Digital Marketing Institute (2020) also highlighted that at the top level of the pyramid are pleasurable or experiential elements, such as surprise, delight, and creativity. After accomplishing the challenging tasks of the first two steps can the business proceed towards the third step, which is at the topmost point on the pyramid generating enjoyment and assessing how delightful client interactions are on an emotional level. These are important for building emotional connections with customers, and AI chatbots can help to create memorable experiences by using “natural language processing and machine learning” to understand customer preferences and needs.

2.3 THEORETICAL FRAMEWORK

The study on the effects of Artificial Intelligence chatbots on customer experience is anchored on four theories namely service-dominant logic, social cognition theory, social presence theory and technology acceptance model. These theories have been combined to identify and explain the dimensions of artificial intelligence chatbots in the current study. Service dominant logic was used to explain the personalization of the artificial intelligence chatbot, social cognition theory was used to explain the perceived humanness of the AI chatbot, social presence theory explained the AI chatbot’s social presence and technology acceptance model explained PEOU and PU.

2.3.1 Service-dominant logic (SDL)

Service-Dominant Logic is a theory based on the premise that all economies are service-based and that products are a means to deliver services (Vargo & Lusch, 2004). The concept of value creation is central to this theory, and it suggests that businesses must aim on the formation of customer experiences. The theory emphasizes the importance of the responsibility of the customer in the co-creation of the value proposition. Customers'

interactions with the firm or brand through chatbots should be a collaborative process, where customers' preferences, feedback, and emotions are taken into account. In the context of this study, SDL theory was used to conceptualize and explain the personalization construct of AI chatbots in creating customer experiences.

2.3.2 Social cognition theory

Nickerson (2023) is of the opinion that social cognition theory accentuates that people can learn within a social context. From this perspective, human beings can be influenced by and also influence their surroundings which makes them active agents. It describes how individuals form mental representations of the environment and events, interpret and internalize social cues, and use this information to guide their behaviours and emotions. One major application of social cognition theory to AI chatbots is in the area of anthropomorphism (perceived humanness), or the tendency for humans to associate human-like characteristics to non-human entities.

According to social cognition theory, humans use mental schemas, or sets of knowledge and expectations, to categorize and understand social stimuli. When interacting with AI chatbots, people may use schemas for human interactions to guide their perceptions and expectations of the chatbot's behaviour. For example, customers may expect chatbots to convey empathy, be responsive to their needs, and have a certain level of intelligence. Research has shown that the degree of anthropomorphism of AI chatbots can influence customers' satisfaction, trust, and interaction intentions. A study by Lee and Kim (2017) found that customers were more likely to have positive attitudes toward a chatbot that had human-like features and expressed emotions than one that had mechanical features and lacked affective cues. Another application of social cognition theory to AI chatbots is in the area of social influence, or how social context and norms shape people's behaviours and attitudes. Social cognition theory suggests that people rely on social comparisons and evaluations to determine appropriate behaviours, maintain positive self-concepts, and guide their decisions. When interacting with AI chatbots, customers may perceive social norms and express their behaviours based on how others have interacted with the chatbot. Social cognition theory provides a useful framework for understanding the effects of AI chatbots on customer experience, especially in the areas of perceived humanness and social influence. By considering how customers perceive and interpret AI chatbots based on their social schemas and norms, researchers and practitioners can design chatbots that meet customers' needs and expectations and enhance their overall satisfaction with the service.

2.3.3 Social presence theory

Social presence theory suggests that people feel more connected to others when they have a greater sense of being present in the communication medium. This theory was originally introduced by John Short, Ederyn Williams, and Bruce Christie in 1976. Short *et al.* (1976) defined social presence theory as *"the degree of salience of the other person in the interaction and the consequent salience of the interpersonal relationships*." Gunawardena (1995) further refined the definition of the theory as "*the degree to which a person is perceived as a 'real person' in mediated communication*." According to this theory, "communication channels such as face-to-face interactions provide a higher level of social presence, while those such as telephone and email provide a lower level of social presence". In the context of AI chatbots, social presence theory suggests that chatbots with a higher degree of social presence will lead to better interactions and experiences with customers. Social presence can be achieved through various means, such as using a human-like interface, providing personality traits, and having conversational abilities. AI chatbots are becoming increasingly sophisticated, and many are designed to emulate human-like interactions. With the application of "natural language processing and machine learning", AI chatbots can understand and respond to customer requests, answer questions, and provide personalized recommendations. Chatbot design with a higher degree of social presence can improve customer interactions and increase customer satisfaction. According to some studies, "chatbots with human-like interfaces have a higher level of social presence", which can lead to greater customer satisfaction (Whiting & Williams, 2013). Additionally, chatbots that are designed with personality traits and have conversational abilities can lead to better customer experiences (Nass & Moon, 2000). Furthermore, chatbots that display empathetic responses and provide personalized recommendations can also enhance the customer experience (Liang & Su, 2019). The application of social presence theory to the current study can aid in the design of chatbots that have a higher degree of social presence, thereby improving customer interactions and satisfaction. Businesses can leverage this theory to design chatbots that are more engaging and personalized, leading to better customer experiences and ultimately increased customer loyalty.

2.3.4 Technology acceptance model (TAM)

TAM coined by Davis (1989) provided the basis for the acceptance of technology in organizations. The model has been widely used to assess and understand how various information technologies are accepted, including chatbots. TAM is useful in understanding customer perceptions resulting from chatbot interactions. The model assumes that an individual's intent to accept or reject technology is influenced by two key variables; "perceived usefulness and perceived ease of use". "Perceived usefulness is the extent to which a person

assumes that using technology can improve his or her performance, while perceived ease of use refers to the degree of complexity involved in using technology (Davis, 1989)". TAM shows a process of three stages where the features of system design (external factor) stimulate cognitive responses (PU and PEOU) and directly influence affective responses "intention to use and actual usage of the technology" as highlighted in Figure 2.3 below (Marikyan & Papagiannidis, 2023).

TAM represents "*the behaviour, as the outcome predicted by perceived ease of use, perceived usefulness and behavioural intention*". Su and Li (2021) highlighted that "perceived ease of use and perceived usefulness" influence behavioural intention, which in turn influences the customer experience. According to some researchers, attitude is the reaction obtained utilizing experience hence PEOU and PU can influence customer attitudes (Chen, 2019; Mulyono *et al.,* 2020; Mooya & Phiri, 2021). According to this model, if customers perceive AI chatbots as useful, having the ability to provide prompt and accurate responses to queries, then they are more likely to accept them and have a better customer experience.

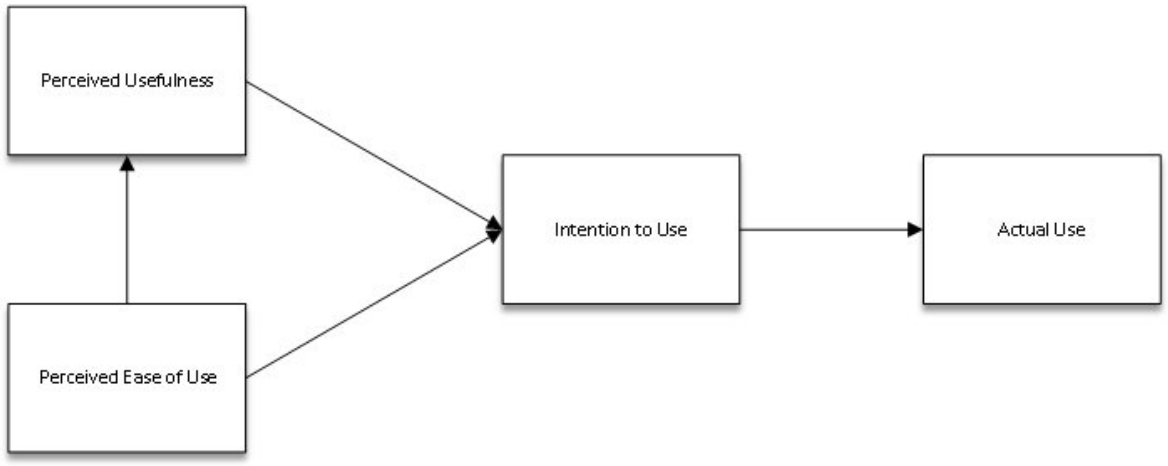


Figure 2.3 Technology acceptance model

Source: Davis (1989)

2.4 CONCEPTUAL FRAMEWORK

Bryman (2012) defines a conceptual framework as a structured way to planning and organizing research that describes the concepts and assumptions that underpin a research effort. A conceptual framework clarifies the research problem and the links between the variables investigated (Kaplan & Maxwell, 1994). A conceptual framework's goal is to give a foundation for comprehending the study objectives and hypotheses, as well as to identify knowledge gaps that must be addressed (Ravitch & Riggan, 2016). A conceptual framework,

according to Bell and Bryman (2003), is vital for capturing the complexity of research issues because it ensures a methodical approach to researching phenomena. Figure 2.4 below shows the conceptual framework for the study.

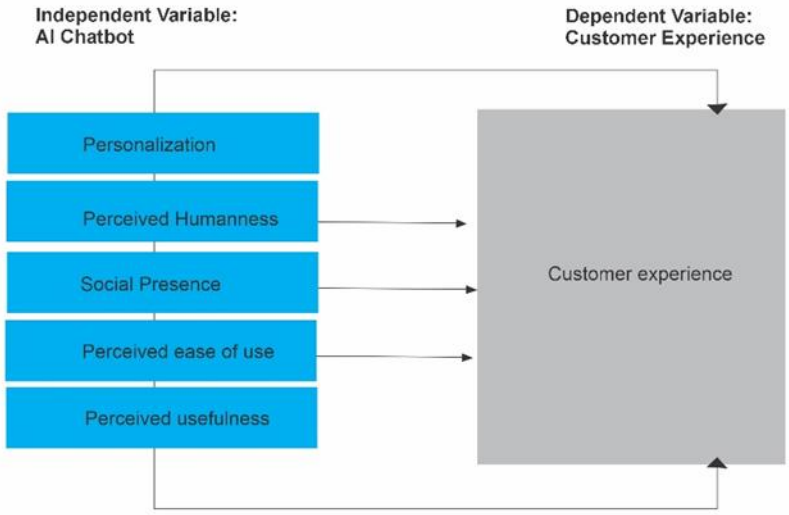


Figure 2.4 Conceptual framework

Source: Buhrke et al. (2020)

2.4.1 Personalization of AI chatbots and customer experience

Personalization is the act of tailoring an experience or communication to an individual's specific needs, preferences, and behaviours, using data, insights, and technology to deliver relevant and timely content or solutions (Gartner, 2017). Furthermore, McKinsey (2021) highlighted that personalization in the context of marketing refers to the tailoring of messages to suit a particular customer's preferences. Wiacek and Zabój (2023) described personalization as a practice which involves providing a tailored experience to every customer. According to Zanker *et al.* (2019), there are three scopes which are customer interface, the process of interaction and content that define personalization in digital-related services. Findlater and McGrenere (2010) explained customer interface personalization as the flexibility of the screen in terms of its layout. The process of interaction can be personalized and this can be realized when the AI technology can decide when to approach customers in the event that they go online (Zanker *et al.,* 2019). Content personalization is the tailoring of information

using a customer's profile and preferred products or services (Zanker *et al.,* 2019). In a Personalization Survey Report (2021), customers associated personalization with positive experiences which makes them feel valued and special (McKinsey, 2021). Zumstein and Hundertmark (2017) believed that AI chatbots make it possible for customers to communicate with businesses whenever and wherever they want through personalized communications. AI chatbots can make use of personalized content to enhance customer satisfaction which significantly affects customer experience (Smit, 2023).

The personalization of AI chatbots is facilitated by the use of machine learning to examine customers' data (both historical and current), understand their interests and preferences, and tailor their experience accordingly. Personalization of artificial intelligence chatbots is pivotal for the organization to enhance customer experience. Rajkhowa and Das (2020) cited that personalization had a significant effect on customer experience and it resulted in 80.7% of the variance in customer experience. Knidiri (2021) posit that the cognitive and affectionate elements of customer experience are positively influenced by the personalization of the chatbot. Online experiences of customers are enhanced as a result of customer data collected by artificial intelligence chatbots. For instance, the chatbot can recall the name of the customer and his or her location; and such information can be used to aid in personalizing the interaction.

Evergage (2018) cited that customer experience is positively influenced by personalized information and product/service recommendations, however, generic information may have a negative impact on customer experience. In some studies, it has been found that customers feel frustrated and alienated when interacting with chatbots that were created with too much automation and too little personalization (Hartmann, 2018). In such cases, customers may perceive the chatbot as an inferior substitute for human interaction that does not offer the emotional connection, liveliness, and rich interactions that humans do. Poorly designed chatbots can lead to negative experiences that diminish customers' perception of the company, its brand, and its value. On the other hand, some research has highlighted problems that can be associated with the personalization of AI chatbots. Research conducted by Abdar and Al-Ebraheemy (2020) discovered that when processes and procedures involved are not transparent, it can result in discrimination and biases which negatively affect customer experience. In addition, Wu *et al.* (2021) discovered that "*excessive personalization could result in privacy concerns and mistrust, and that consumers preferred a moderate level of personalization that respected their privacy and autonomy*".

2.4.2 Perceived humanness of AI chatbots and customer experience

Perceived humanness refers to the extent to which a machine or computer program is perceived to be human-like. Anthropomorphism is a term used to describe perceived humanness. It is the degree to which an object is described in human terms or given human-like characteristics. Hadi (2019) posit that several organizations have assigned human-like features such as names, avatars (character) or voices among other features to chatbots. For example, figure 2.5 shows that Econet Zimbabwe assigned its chatbot the name “Yamurai” and an avatar of a female character. An avatar is a digital persona or graphical illustration of a chatbot intended to convey humanity to the user-chatbot interaction. The use of anthropomorphism in chatbots has an impact on customers' perception of chatbots' humanness and CX. With the advancement of AI technology, chatbots have evolved to be more human-like with features such as language processing and cognitive abilities. Customer experience has been improved by the nature of chatbot and their ability to interact with people. Having access to core social cues can affect customer satisfaction, happiness, and intention to buy, according to research conducted on virtual agents in marketing (Köhler *et al.,* 2011). Cho and Kim (2018) found that the perceived humanness of chatbots positively affected customer satisfaction and loyalty. The study revealed that when customers perceived chatbots as humans, they were more likely to trust them and perceive better service quality, resulting in higher satisfaction. Another study by Liu *et al.* (2019) examined the impact of perceived humanness on the customer's intention to continue using chatbots. The study found that the higher the perceived humanness, the more likely customers were to continue using the chatbot. The study also highlighted the significance of attributes such as language fluency, responsiveness, and emotional intelligence in increasing the perceived humanness of chatbots.

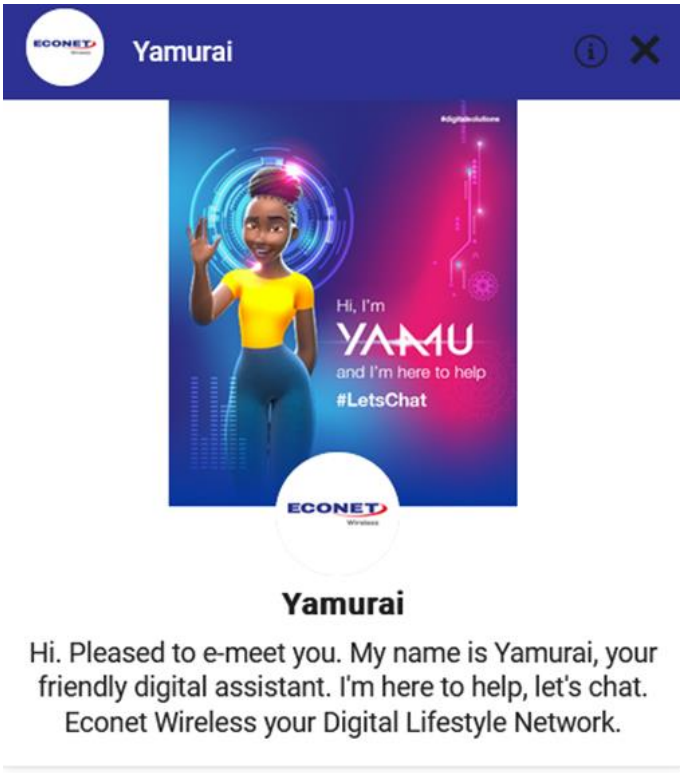


Figure 2.5 Perceived humanness of AI chatbot

Source Econet *Wireless Zimbabwe www.econet.co.zw (2023)*

Another study by Gao *et al. (*2017) examined the impact of anthropomorphic design features on customer experience. The study found that customizing the chatbots' appearance and language improved their perceived anthropomorphic attributes, leading to higher levels of trust and satisfaction. Studies have shown that when chatbots are perceived as human-like, they lead to higher satisfaction, loyalty, trust, and engagement. However, the level of perceived humanness in AI chatbots is debatable and may impact customer experience differently. Wu *et al.* (2020) highlighted that perceived humanness did not significantly affect customer satisfaction while perceived humanness improved the quality of the interaction between customers and chatbots, it had no significant effect on satisfaction. Rhonda (2019) further argued that studies have shown that the adoption of human-like chatbots can cause negative experiences for instance when there are serious issues from customers, human-like chatbots can frustrate customers more since their performance is carefully analyzed compared to non-human-like chatbots. Organizations to produce desirable CX, they must also consider the above-mentioned aspects.

2.4.3 Social presence of AI chatbots and customer experience

Perceived social presence is defined as the “degree to which an individual perceive another entity as being present and responsive during interaction” (Lee & Nass, 2003). Kreijins *et al.*

(2021) assert that social presence determines the flow of interaction between entities and their related outcomes. Social presence theory further support that the degree of perceived social presence in an interaction can affect communication processes and outcomes. The theory suggests that individuals tend to interact more favourably with entities that are perceived to be more socially present. AI chatbots have been shown to improve customer experience in terms of speed and accuracy of service, among other benefits (Huang & Rust, 2018). The use of emotions and avatars comprises different forms of social cues that have human–computer have been found to significantly develop AI chatbot's social presence during human–computer interaction (Bührke *et al*., 2020). Social presence has been identified as a key element that affect human interactions. The extent to which individuals perceive social presence in a given interaction is thought to be motivated by various aspects such as characteristics of the medium of the interaction. The increasing use of artificial intelligence chatbots in customer service has led to debates on the effects of the perceived social presence of the AI chatbot on customer experience.

Studies have shown that the perceived social presence of AI chatbots can impact customer experience. Sundar *et al*. (2017) conducted a study on the effects of humanoid versus non-humanoid chatbots on perceived social presence and found that human-like chatbots were perceived to be more socially present than non-humanoid chatbots. The study further revealed that the perceived social presence of the chatbot positively affected attitudes toward the chatbot and the company behind it. Similarly, a study by Van Doorn *et al.* (2018) on the impact of chatbot personality on customer experience found that chatbots with more human-like personalities were perceived to be more socially present and were more effective in engaging customers. The study found that the perceived social presence of the chatbot positively influenced customer satisfaction. Studies have shown that chatbots with more human-like personalities are perceived to be more socially present and are more effective in engaging customers. Moreover, the perceived social presence of the chatbot positively influences customer satisfaction. However, the effects of the perceived social presence of AI chatbots on customer experience may be influenced by other factors, such as response time. Figure 2.6 below shows the social presence features of the two different AI chatbots that is the bot is present and shows a human-like conversational style (Hadi, 2019).

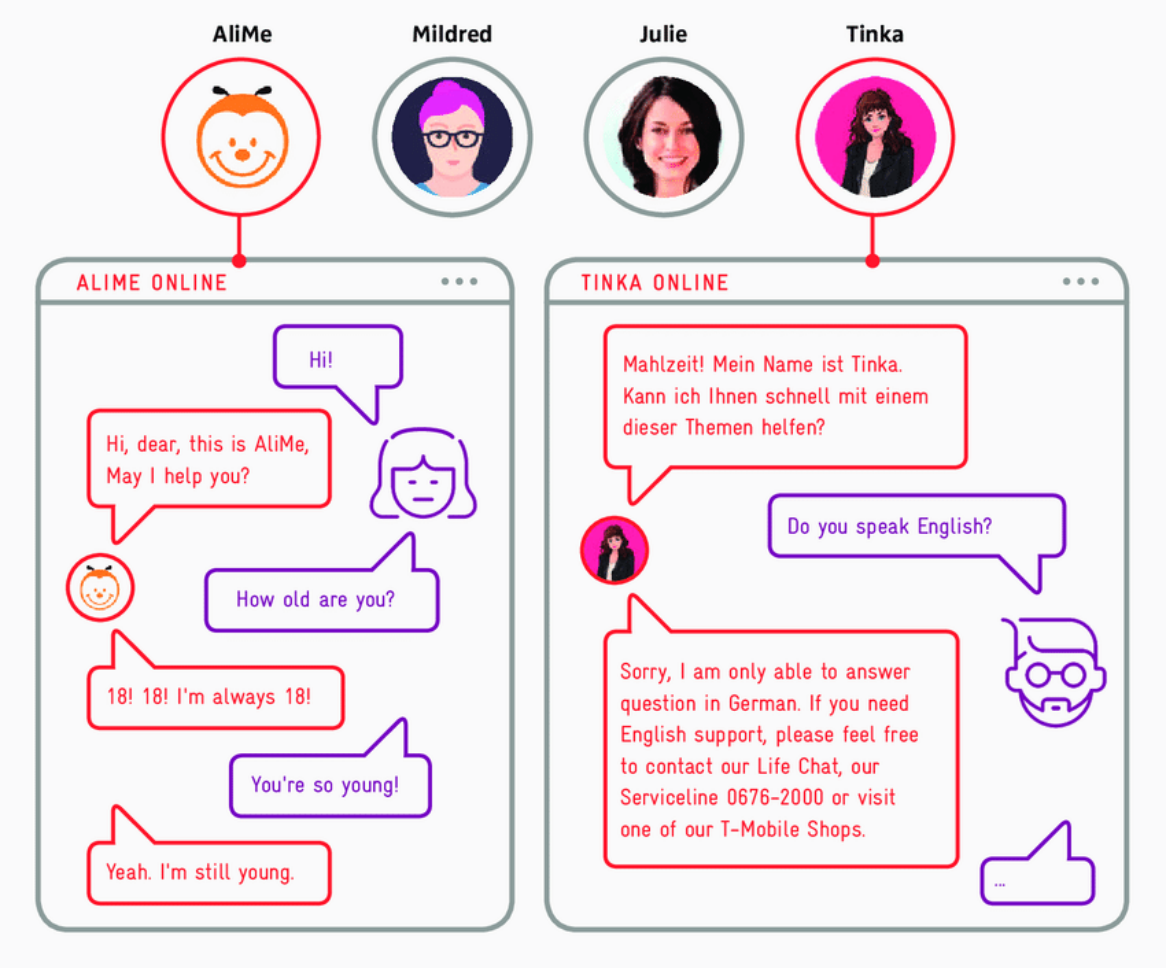


Figure 2.6 Natural conversations with a human-like chatbot

Source: Hadi (2019)

2.4.4 Perceived ease of use (PEOU) of AI chatbots and customer experience

The effectiveness of artificial intelligence chatbots relies on its "perceived ease of use" by customers. PEOU of AI chatbots enhances customer satisfaction by simplifying the process of information search and resolving complaints in less time. Wang *et al.* (2020) found that "the perceived ease of use of AI chatbots positively influenced customer experience with the chatbot service in healthcare". Perceived ease of use builds trust and enhances customer loyalty by creating positive perceptions of their interaction with the AI chatbot. A study by Zhou *et al.* (2021) in the tourism industry found that perceived ease of use positively influenced trust in AI chatbots. "Perceived ease of use can improve customer engagement by making the interaction with AI chatbots more engaging and enjoyable", Kang and Kim (2021) found that perceived ease of use of AI chatbots positively influenced customer engagement in the retail industry. Furthermore, the perceived ease of use of AI chatbots can reduce customer effort by minimizing the time and effort required to interact with the chatbot. Goswami *et al.* (2020) highlighted that the perceived ease of use of artificial intelligence chatbots minimizes customer

effort. Therefore, organizations can leverage the perceived ease of use of chatbots to enhance customer experience.

2.4.5 Perceived usefulness of AI chatbots and customer experience

The perceived usefulness of chatbots refers to the user's perception of how much value they derive from using them. According to Venkatesh *et al.* (2003), perceived usefulness is an essential element of TAM. A high level of perceived usefulness is associated with increased user satisfaction and technology adoption. Thus, the perceived usefulness of a chatbot could significantly impact a customer's experience. Studies show that when customers perceive a chatbot as useful, it leads to a more positive customer experience. Researchers found that users deem chatbots as useful when they can accomplish complex tasks by using them, and the bots offer quick responses (Bursztyn *et al.,* 2019). This finding aligns with the idea that chatbots should have the ability to understand, interpret and respond to users' needs accurately. Liat (2018) supports this idea, stating that chatbots that can provide quick solutions to customer queries are considered helpful and enhance the overall customer experience. Additionally, Cheng *et al*. (2019) report that chatbots that offer personalized recommendations lead to higher perceived usefulness and customer satisfaction. Thus, customer experience is positively impacted when chatbots provide relevant information that aligns with user needs.

While perceived usefulness has a positive correlation with customer experience, it may also have a negative impact if customers perceive a chatbot as less than useful. Chua *et al.* (2020) mentioned that customers perceive a chatbot as less than useful when it is unable to understand their queries, making them feel frustrated and dissatisfied. This phenomenon highlights the importance of ensuring that chatbots have the capabilities of improved NLP and ML. When customers perceive a chatbot as useful, it leads to a more positive customer experience. Chatbots that offer quick responses, personalized recommendations, and can perform complex tasks are deemed helpful and enhance the overall customer experience. On the other hand, if customers perceive a chatbot as less than useful, it negatively impacts their experience. Therefore, companies must ensure chatbots are well-equipped to understand, interpret, and respond to user needs accurately and timely.

2.5 EMPIRICAL LITERATURE REVIEW

In the past, many studies have been conducted and associated with artificial intelligence chatbots and customer experience. These studies have shown varying impacts of AI chatbots on customer experience and related elements. Sidlauskiene *et al.* (2023) examined AI chatbots and how they influence customer perceptions. The research method used two online experiments with sample sizes of 180 and 237. The findings of the study were that anthropomorphism (perceived humanness) and personalization had a significant effect on

customer perceptions. The research findings also highlighted that anthropomorphism positively influences the willingness of customers to accept a product's high price. According to this research, these findings are useful for future studies on AI chatbots where personalization and recommendations are similar to the existing study. Preceding studies recommend that anthropomorphic features should be incorporated when designing chatbots (Derrick *et al.,* 2011; Elkins *et al.,* 2012). Knidiri (2021) investigated "the impact of AI on customer experience." The study was conducted in Morocco, an experimental research design was employed and comprised of two groups with sample sizes of 77 and 143 each respectively using live chatbot conversations. Findings from the first group showed no impact on customer experience. Findings from the second group showed that there was no significant effect resulting from the type of avatar and style of the chatbot's conversation. However, in agreement with past research conducted, perceived personalization, perceived humanness and social support had a significant effect on customer experience. Similarly, Quintino (2019) investigated chatbot features and their impact on customer experience. The study concentrated on the Portuguese telecoms business. A sample size of 232 people and a survey was adopted. The questionnaires were disseminated online, and the study's main research findings were that there was a significant impact on perceived ease of use on customer experience, as well as a significant impact on perceived usefulness on customer experience. Furthermore, Danckwerts *et al.* (2020) examined the customer experience of chatbots in hedonic digital services in German. The findings of the research indicated that perceived humanness and perceived personalization of the chatbot positively affect customer experience, comprising a cognitive experiential state and an affective experiential state.

Chen and Le (2020) surveyed the role of artificial intelligence chatbots and their impact on online customer experience and satisfaction in electronic retailing in Taiwan. A quantitative research design was used, a sample size of 425 and questionnaires were distributed online. The findings of the study indicated that using chatbot had a significant influence on customer experience extrinsic values and the other hand chatbot responsiveness significantly influenced customer experience intrinsic values. It was also discovered that there is a positive association between online customer experience and customer satisfaction. Similarly, Chen and Wang (2019) found that AI chatbots positively affect customer satisfaction and trust. The study also showed that AI chatbots improved customer engagement in personalizing customer experiences. However, the study also found that customers still preferred human support for complex or emotional queries. Nguyen *et al.* (2020) showed that AI chatbots could improve customer experience by reducing wait times, handling repetitive queries, and providing 24/7 support. However, the researchers found that AI chatbots lack personalization and empathy, which could negatively impact customer experience.

Similarly, a study by Hassanein and Head (2017) showed that AI chatbots could improve customer experience by providing faster responses, enhancing customer engagement, and reducing customer frustration. The study also found that AI chatbots positively impacted customer loyalty, with customers more likely to revisit and recommend the service to others. In contrast, a study by Tussyadiah and Wang (2018) showed that AI chatbots could negatively impact customer experience if they are impersonal or fail to understand customer needs. The study also found that customers preferred human support for high-touch service encounters, such as travel bookings or restaurant reservations. Bührke *et al.* (2020) conducted a similar study on the perception of chatbots with errors in typing. The research was an experiment conducted online using a sample size of 228 respondents in German. The findings were that chatbots that possess social cues such as name enables customers to have a perception that there is human-like interaction, which enhances customer experience.

Rose *et al.* (2019) investigated customer experience and AI chatbots within the context of retail banking. It was argued that personalized customer experience using AI chatbots has the potential to enhance customer satisfaction. The study reveals that the automation of customer interactions with chatbots does not diminish the human element of communication, thus resulting in higher levels of customer satisfaction. This study provides insights into how AI chatbots can be effectively incorporated into retail banking to provide a more efficient and personalized experience to customers. Furthermore, Rose *et al.* (2019) suggest that the success of AI chatbots in providing a positive customer experience is dependent on the design, implementation, and integration of the technology. They suggest that the chatbot interface for users needs to be simple and human-friendly, with a strong natural language processing engine capable of swiftly and accurately recognizing and responding to customer inquiries. Additionally, the chatbot should be integrated with other customer service channels to ensure seamless communication with customers. Therefore, the study provided valuable information to organizations on the effective design and implementation of AI chatbots for improving the customer experience.

Bleier (2020) studied the impact of AI chatbots on customer satisfaction in online shopping. The study highlighted that the integration of AI chatbots into the online shopping experience improves customer satisfaction by providing a more personalized experience. The study also suggested that AI chatbots can enhance customer loyalty by improving the speed and efficiency of customer service interactions compared to traditional customer service channels. Thus, AI chatbot technology can save time for customers while improving the level of customer experience. Moreover, Bleier (2020) shows that the use of AI chatbots in customer service can help organizations reduce costs for providing customer service. The cost savings arise from the reduction of employee workload and the volume of customer service requests.

Consequently, this study sets out an argument for the adoption of AI chatbots to enhance the customer experience and reduce costs for organizations.

Moyo *et al.* (2022) explored the challenges that were experienced in the adoption of artificial intelligence and machine learning in Zimbabwe's insurance market. Using 20 insurance firms, a pragmatic research approach and a census were used. To collect data, adopted research instruments were interviews and questionnaires. The research findings highlighted that the adoption of artificial intelligence in the Zimbabwean insurance sector is affected by resource shortages, no AI expertise and expensive required AI hardware. The study recommended that to make sure AI is adopted effectively, there must be efficient resource allocation, employees must be trained, there must be a culture change and adapt to technological changes. The study was instrumental in contributing to AI knowledge and a baseline for future AI studies however it did not address the effect of AI chatbots on customer experience.

Shambira (2020) examined the adoption of artificial intelligence focusing on the banking sector in Zimbabwe. The survey method was used to gather primary data and a sample of 120 participants from the employees of 10 banks. According to the study customer satisfaction and cost minimisation were identified as factors for adopting artificial intelligence. Further, the study revealed that 16% of the banks in the survey used artificial intelligence to improve interactions and customer experience using AI chatbots. The study recommended that artificial intelligence should be adopted to improve human-computer interaction and customer experience. Kasongo (2019) examined the “impact of AI adoption focusing on the performance of processing claims from health insurance in Harare, Zimbabwe. A survey research method was adopted to collect data using a structured questionnaire. A sample size of 150 was used and there was a response rate of 72%. The findings of the study highlighted that the health insurance sector is aware of the effects of artificial intelligence technology on the performance of processing claims. The findings suggested the need for an organisational strategy with AI initiatives. The study recommended the government establish policies that motivate companies to adopt AI technologies. Company management was also recommended to develop policies that empower employees with the necessary skills and knowledge of artificial intelligence.

2.6 RESEARCH GAP

According to the current literature analysis, there exist contradicting research findings on the influence of AI chatbots on customer experience. A study by Knidiri (2021) indicated that “no influence of AI was observed on the customer experience in the two study groups analyzed, but agreed with a prior study by Quintino (2019) which indicated PEU and PU have a positive impact on customer experience. The majority of the studies conducted on artificial intelligence

and customer experience were conducted in developed countries such as German, Taiwan, and Portugal and none were conducted in developing countries, especially in the African context. Studies conducted were only focused on "*perceived ease of use, perceived usefulness and perceived humanness*" dimensions of AI chatbots hence the current study focused on five dimensions which are "personalization, perceived humanness, social presence, perceived ease of use and perceived usefulness" and their effect on customer experience particularly in the context of the Zimbabwean Telecommunications industry. AI-related research studies in Zimbabwe have only investigated the adoption of AI in the banking sector (Shambira, 2020), the adoption of AI in the insurance sector (Moyo *et al.,* 2022), and no study has been carried out in the telecommunications industry to determine the effects of AI chatbots on customer experience. Also, studies conducted in Zimbabwe focussed on AI in general and not specific AI technologies such as AI chatbots (Shambira, 2020 and Moyo *et al*.,2022). The empirical framework showed research gaps that existed from the international and the local context. Therefore, this study attempted to fill the existing research gaps.

2.7 CHAPTER SUMMARY

This chapter reviewed literature on the prior contribution of other authors, scholars and academics on the effect of artificial intelligence chatbots on customer experience. The conceptual, contextual and theoretical framework was reviewed. Further, the empirical evidence related to the research problem was reviewed and the research gap was identified. The subsequent chapter dwells on the research methodology the researcher adopted in carrying out this study.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 INTRODUCTION

Chapter three presents the research methodology espoused by the researcher in the present study. The researcher highlights the adopted research philosophy, research approach, method, research strategy and design. The chapter further describes the study population, sample size and the sampling method adopted in this research. Research instruments used for data collection, form of collected data for the study and research ethics are also highlighted in this chapter. Furthermore, the researcher also discussed data presentation and analysis plan adopted.

3.1 RESEARCH PHILOSOPHY

Research philosophy comprises of the principles, assumptions and set of beliefs, that directs the researcher in developing the research approach and the methodology to be adopted. Research philosophy to be adopted they the researcher can be determined by the type of knowledge being investigated under the study (May, 2011). Having a thorough knowledge of the research philosophy adopted is critical in explaining the assumptions of the study as well as determining the research strategy or design being used. Saunders *et al*. (2016) highlighted that there are four research philosophies which are pragmatism, positivism, interpretivism and realism. For this study, a positivist approach was used by the researcher to comprehend the effect of artificial intelligence chatbots on customer experience. Positivism research philosophy is based on the belief that there are observable facts and laws that can be discovered through empirical research (Saunders *et al*., 2016). Positivists argue that “scientific knowledge is based on verifiable data, and the goal of research is to uncover the truth about the world by collecting and analysing objective data” (Guba & Lincoln, 1994). In this study, the researcher following positivism relied on the scientific method to test hypotheses and produce objective knowledge. The research was conducted using a systematic approach to collect data, develop theories, and testing them through scientific methods. The researcher was independent, objective and value-free in the analysis to ensure that objective knowledge was obtained. Positivism is commonly used in natural sciences, but it can also be applied in social sciences where the aim is to uncover objective laws and relationships (Saunders *et al.,* 2016). The primary focus is on using a highly structured technique to aid replication, with the end result being law-like generalizations comparable to those developed by both physical and naturalistic researchers. This philosophy is often critiqued for being too narrow and excluding subjective experiences, emotions, and values that are important in human behaviour (Guba &

Lincoln, 1994). Nonetheless, the positivist approach remains valuable as it aims to produce valid and reliable knowledge that is useful for decision-making and policy development. While some critics argue that it is too narrow and excludes subjective experiences, positivism remains a valid approach in producing objective knowledge.

3.2 RESEARCH APPROACH

Saunders *et al.* (2019) classified research approaches into three major categories; deductive, inductive, and abductive approaches as highlighted by the research onion. A deductive approach is used when the study begins with theory, which is commonly created from reading of academic literature, and a research strategy is established to test the hypothesis. In contrast, if the study begins with data collection to investigate a phenomenon and subsequently generates or builds theory, the approach employed is inductive. In this approach, the researcher starts by collecting data first, then analyzing and interpreting it, forming a new theory or model based on the data. The researcher uses this new theory to develop further research questions and hypotheses. Inductive approach is most often associated with qualitative research methods. An abductive approach is used when data is collected to investigate a problem, discover themes, as well as clarify patterns in order to produce a new or change a current theory, which is then tested. In this approach, the researcher starts by asking a question or exploring a phenomenon that has not yet been explained. The research then combines the deductive and inductive approaches by developing a hypothesis, collecting data, and then testing the hypothesis to provide a possible explanation. For the purpose of this research, deductive approach was adopted.

3.2.1 Deductive research

In this study, deductive research was used since it is the best fitting approach to the positivism philosophy adopted both are objective, and structured and do not allow subjectivism. Deductive research is more of a scientific nature of the research. This approach is distinguished by the formation of theory and hypothesis, which are then rigorously tested through an ongoing series of propositions. In this study, the researcher started by developing a research hypothesis from the available literature surrounding the effects of artificial intelligence chatbots on customer experience and then collected the data and conducted hypothesis testing. Figure 3.1 below shows the process of conducting deductive research, the researcher uses available theory to develop hypotheses at the beginning of the study, then adopt appropriate methods of research, collects data through observations and conducts hypothesis testing either to accept or reject the hypothesis (Dudovskiy, 2022). Accordingly, *"it is the dominating approach to research in the field of natural science, where rules serve as the foundation for explanation, allow for the prediction of events, forecast their recurrence, and hence allow for their control"* (Saunders *et al*., 2015).

The researcher adopted the deductive approach other than induction or abduction because of its benefits such as the researcher being able to provide an explanation of the underlying relationships between the study variables. Further, the approach makes it possible to quantitatively measure the study variables and easy to generalize findings of the research findings.

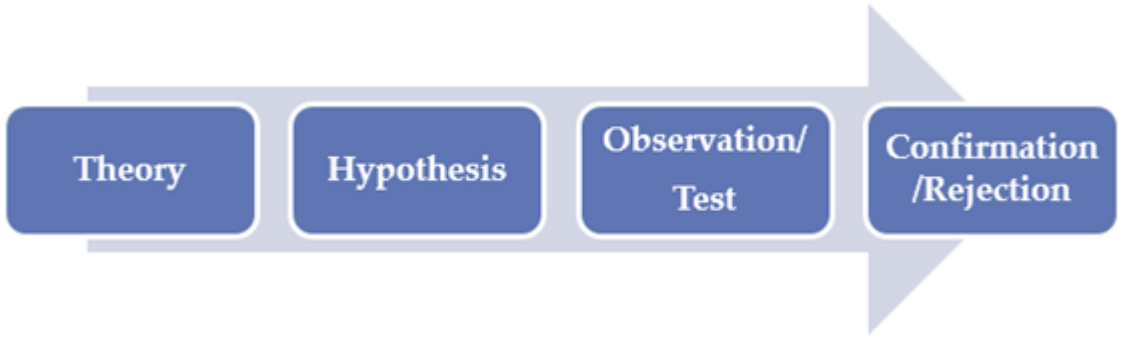


Figure 3.1 Deductive research approach

Source: Dudovskiy (2022)

3.3 RESEARCH METHOD

Mehta (2023) highlighted that it is the "methodical and scientific process used for gathering, analysing, and interpreting data in order to answer research questions and test hypotheses is referred to as research methodology". Saunders et al. (2019) described research methodology choices as "quantitative research, qualitative research or a mixed approach, depending on the nature of the research topic, the available resources, and the study's objectives the researcher can choose the best fitting method". Figure 3.2 shows the commonly adopted research methods. According to Saunders *et al*. (2019), the quantitative research method refers to any data-gathering tool for example a questionnaire or procedure for analyzing the data which creates or employs numerical data for instance statistics or graphs. There are two options available under quantitative for the researcher to adopt that is mono method and the multi method. Qualitative research method is any data collection process for example interview or a data analysis approach that makes or employs data that is not numerical. There are also two options for this research method namely mono method and multi-method qualitative. Another commonly used methodological choice is the mixed method research. Saunders *et al*. (2019) posit that mixed research is a subset of research using multiple methods that combines both qualitative and quantitative data collecting and analysis approaches in a single research endeavour. Mixed research is founded on the theoretical foundations that govern

data gathering and analysis, as well as the integration of qualitative as well as quantitative data collecting and analysis approaches (Molina-Azorin et al. 2017).

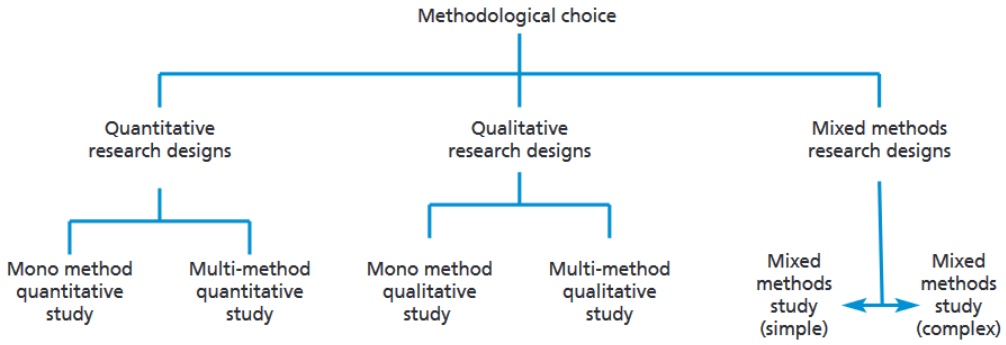


Figure 3.2 Methodological choice

Source: Saunders et al. (2019)

3.3.1 Quantitative research

Quantitative research entails gathering numerical data to address a particular topic. Quantitative research is a research methodology that involves the use of statistical, mathematical, or numerical data to draw conclusions. Quantitative studies are useful in investigating problems that can be measured and are able to be expressed numerically. The researcher adopted a quantitative approach since this method is predetermined together with its objectives, research sample, and questions to be asked. From the deduction perspective to ensure replication of the study, the research must adopt a highly structured research methodology (Gill & Johnson, 2010). Saunders *et al*. (2016) posit that there is an association between positivism, the deduction approach and the quantitative methodology. Hence the researcher opted for a quantitative approach. This is a systematic research approach and can be used with surveys and experiments. This approach was used by the researcher to measure and analyse the correlation among AI chatbot dimensions: “personalization, perceived humanness, social presence, perceived ease of use and perceived usefulness” and customer experience.

Quantitative research was adopted compared to qualitative and mixed approaches because of the associated benefits such as the method making use of a reliable measurement which therefore improves precision, provides causal statements through controlled experiments and uses statistical techniques for data analysis. Hence it makes the interpretation of data less complex. Furthermore, there were no possibilities for the researcher to influence the data collected, it was reproducible and cost-effective.

3.4 RESEARCH STRATEGY

Research strategy refers to the systematic approach that a researcher adopts to collect and analyse data to address a research question or hypothesis. Maholtra (2017) defines research strategy as "the overall plan of how the researcher will go about providing the answers to the research questions or hypotheses". The decision on which research strategy to use depends on the type of research question and the data required to answer it. In this study, the research strategy adopted was the survey.

3.4.1 Survey

The survey is a research strategy that includes collection of data from a sample of participants through the administration of a standardized questionnaire or interview schedule. A survey is “a way of collecting information from a sample of respondents by asking appropriate questions with the goal of comprehending the characteristics of the study population” (Qualtrics, 2023). The researcher administered a survey to a group of customers selected from the telecommunications industry who have used the chatbot. A survey is a means of collecting data across a selected group of respondents by asking questions that are pertinent with the goal of gaining insight into populations in general. There are various forms of surveys such as face-to-face, telephone, mail and online. Since a single cross-sectional design was adopted, it made it easier to adopt an online survey. The online survey is the collection of data from the sample using internet media such as sending questions through emails, social media and websites. To reach as many respondents as possible, the link with questions was sent using social media sites and emails. From the conducted survey, the researcher was able to gather information and insights that are of benefit to all research stakeholders such as the management of companies in the telecommunications industry, government and academia.

Online surveys were a quick and inexpensive technique to obtain information from a big sample size. A significant number of participants could be predicted given the extensive use of chatbots in customer support. Second, online surveys protected participants' anonymity. Many people felt more comfortable sharing their opinions since they were not required to identify themselves. As a result, more honest and accurate responses, particularly when sensitive topics such as customer experience are being explored. Finally, an online survey in this study resulted in an easy data analysis process. Responses were instantly recorded and analyzed, without any need for manual data entry. This speeded up the analysis process and enable research findings to be presented in a timely manner.

3.5 RESEARCH DESIGN

Research design is the “framework for the collection and analysis of data to answer research questions and meet research objectives providing reasoned justification for the choice of data

sources, collection methods and analysis techniques" (Saunders *et al*., 2016). It is defined as the plan adopted to carry out a study, research design clarifies the research approach and research strategy/method useful for data collection and analysis with the objective of hypothesis testing or answering research questions (Singh, 2023). There are two categories of research design which are exploratory and conclusive research (Maholtra, 2010). A conclusive research design can be used to examine relationships and hypothesis testing. Maholtra (2010) highlighted that conclusive research design can either be in the form of descriptive or causal research. To support positivism philosophy, deductive method and for the purpose of this study, descriptive research design was used by the researcher.

3.5.1 Descriptive research design

The researcher used descriptive design to support the quantitative research methodology, deduction approach and the positivist philosophy adopted in order to produce an objective, value-free, generalizable and replicability of study. It is a research design that aims at describing and summarizing the characteristics of a particular phenomenon without any manipulation or control of variables (Maholtra, 2021). Descriptive research is conducted when there is a need to report the exact representation of people or other variables under study. According to Saunders et al. (2018), descriptive studies can be conducted using different methods such as surveys, interviews, observations, or case studies. In descriptive studies, researchers collect data through passive observation or direct questioning and then analyze the data to extract meaningful and relevant insights (Maholtra, 2021). The analysis involves statistical techniques such as *"measures of central tendency and dispersion, frequency distributions, and cross-tabulations"* (Saunders *et al*., 2018).

3.5.1.1 Cross-sectional design

Maholtra (2010) highlighted that there are "two categories of descriptive designs as cross-sectional design and longitudinal design". Further, Saunders *et al*. (2019) also categorized descriptive research designs into three types which are cross-sectional, longitudinal, and case studies. In this study, the researcher adopted a cross-sectional design. Cross-sectional designs involve collecting data at a single point in time from a sample of participants. Maholtra (2010) cited that there are two categories of cross-sectional designs which are single and multiple cross-sectional designs. A single cross-sectional design was used and the sample was drawn using customers from the telecommunications industry and the survey was conducted only once during the year of 2023. A descriptive research design provides an accurate description of a particular phenomenon, population, or situation (Saunders *et al.,* 2018). Descriptive studies are beneficial when the researcher is interested in gaining an in-depth understanding of a particular situation (Maholtra, 2021). In addition, the results of the

descriptive study help in identifying patterns or trends within a given sample, which can then inform the development of future research studies. In the context of the current study, descriptive design was useful in describing the effects and significance of the relationship between AI chatbots and customer experience.

3.6 POPULATION

Thacker (2019) defines the target population as "the total set of people with specified attributes that are of interest to the researcher." It also refers to the large group of people being studied by researchers. According to Thomas (2023), the target population is a “complete group of individuals, events, or objects that share specific characteristics and are of particular interest to the researcher” and is denoted by “N”. Cresswell (2014) defines the target population as "the entire group of individuals or objects that share similar characteristics and for whom the research is intended." The population of interest for this study was all Zimbabwean telecommunications company customers who engaged with an AI chatbot. According to POTRAZ (2022)’s last quarter report, the subscriber base was 14 562 242 customers.

3.7 SAMPLE AND SAMPLE SIZE

Maholtra (2010) describes a sample as "a subset of the target population chosen for a specific study." A sample is a fewer number of people or things that represent the greater population. The sample should be chosen in such a way that it is representative of the target population and can offer accurate data. The number of persons or objects chosen from the universe to comprise a sample, represented by (n), is the sample size. The total number of people or things included in the sample is referred to as sample size (Saunders *et al*., 2019). The sample size must be large enough to ensure that the data acquired appropriately represent the population being studied, but not so huge that the data proves unmanageable. To find the sample size, the researcher used a sample size calculator from Qualtrics using a confidence interval of 95% and margin error of 5% hence the sample size (n) of 385 was used.

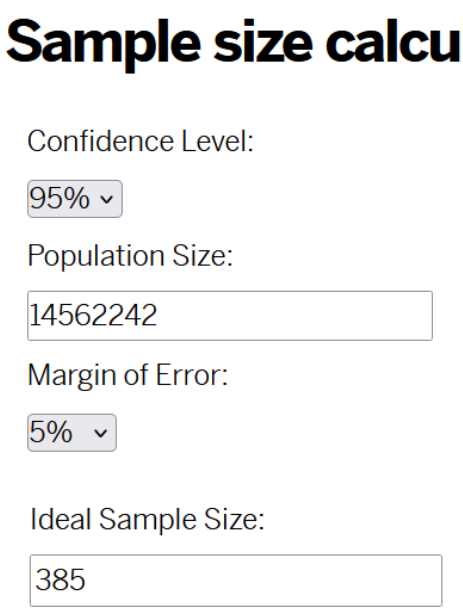


Figure 3.3 Sample size calculator

Source: Qualtrics sample size calculator (2023)

3.7.1 Sampling method

Sampling is an approach that involves selecting a small number of units from the universe for representation of the population at large (Gurumurth, 2019). It is also the procedure by which a subset of persons or things are chosen by the researcher from an entire community (Churchill & laccobucci, 2002). The research included a chosen few people, and conclusions were drawn for the entire population. In light of the limitations of resources like money, time, and having access to the complete population, sampling is optimal in research. There are two distinct kinds of sampling techniques namely “probability sampling and non-probable sampling” (Saunders et al., 2019). The probability sampling method was employed in this study. The probability sampling technique ensures that each object has a known probability or chance of being selected from the population. There are different ways of probability sampling, and for the sake of this study, simple random sampling was utilized to generate a sample.

3.7.1.1 Simple random sampling

Simple random sampling is a basic method of sampling that involves selecting a group of participants from a larger population in a way that each individual has an alike probability of being chosen. According to Maholtra (2010), “simple random sampling is a process of selecting a sample of *n* objects in such a way that every possible sample of *n* objects has an equal chance of being selected" (p. 348). Saunders et al. (2018: 265) explain that simple random sampling "is the most straightforward, basic form of probability sampling where each

subject has an equal chance of being selected". This method of sampling is useful when the population is homogenous and the required size of the sample is large. In this study, simple random sampling was used to select a group of customers in the telecommunications industry to participate in the study. Firstly the researcher identified and listed the target population as the telecommunications customers that have used the chatbot, the sample size (n) was determined as 385 participants, numbers were assigned to every member of the population (N) since our N = 14562242, number were consecutively assigned from 1 to 14562242 and on the last stage the researcher used a computer program to randomly select 385 participants. This method of sampling ensured that the sample is representative of the population and helps to reduce bias in the study.

3.8 RESEARCH INSTRUMENT

Research instruments are tools that researchers use to collect data and information for a study or research project. According to Cresswell (2014), research instruments are instruments used to measure the variables in a study or research project. Maholtra (2010) defined research instruments as instruments used to collect data or information from the research subjects. Saunders *et al*. (2019) further stated that research instruments include questionnaires, interviews, and observations, among others. The researcher for this study used a questionnaire for data collection.

3.8.1 Questionnaire

A questionnaire is a “research instrument used to collect data from an individual and the instrument is administered to individual respondents” (Cresswell, 2014). A structured questionnaire refers to a document made up of questions that are standardized, closed-ended, and probed in an exact manner with a determined order and responses (Cleave, 2023). To collect data, the researcher used google forms to develop an online survey and the survey questionnaire. The tool is free and useful when conducting professional research. It was easy and fast to share the survey link using an email or share the link using social media platforms such as WhatsApp, Twitter, Facebook and Instagram. A structured questionnaire was used by the researcher. The researcher was guided by research questions and research design to select a structured questionnaire which also supports the quantitative approach. The survey questionnaire was designed to collect data on the effects of artificial intelligence chatbots on customer experience in the telecommunications industry. The questionnaire addressed the following research constructs: “AI chatbot’s personalization, perceived humanness, social presence, perceived ease of use, and perceived usefulness”. The research instrument also measured customer experience. In addition, surveys and questionnaires can be used to determine which aspects of the chatbot need to be improved and which aspects are

satisfactory to customers. The survey and questionnaire data can be analyzed using statistical software (Cresswell, 2014).

The use of structured questionnaires in this study was justified because they allowed the researcher to gather information from a large sample size in a controlled and organized manner, providing comparable and consistent data for quantitative analysis (Bryman, 2016). Furthermore, structured questionnaires were customized to suit the research problem, and complex questions can be broken down into simpler ones for easy comprehension by the respondents. In the context of AI chatbots, the use of structured questionnaires can facilitate the collection of detailed information on diverse customer experiences with the technology and their opinions on the features, limitations, and benefits of the chatbot (Miguel *et al*., 2020). The data obtained from the structured questionnaire could be analysed statistically and used to draw valid conclusions on the research problem. Quantitative analysis using descriptive statistics and inferential techniques such as correlation and regression analysis could be used to test hypotheses and identify trends and patterns in the data (Bryman, 2016).

3.8.2 Measurement items and scales

The questionnaire for the survey was comprised of three sections. Section A of the questionnaire was designed to find demographic data of the respondents. The second section, which is section B was designed to measure the dimensions of artificial intelligence chatbot using 5-point Likert scale-type questions. Section C, which is the third section was designed to measure the dependent variable (customer experience) and also 5-point Likert scale-type questions were used. Table 3.1 below shows how and where the questionnaire was adopted, a number of questions adopted and the measurement scale.

Table 3.1 Research constructs adoption

Research construct: AI Chatbot	**Number of questions**	**Measurement scale**	**Source**
Personalization	3	Likert scale	Danckwerts *et al*. (2019)
Perceived humanness	3	Likert scale	Bührke *et al*. (2020)
Social presence	3	Likert scale	Quintino (2021)
Perceived ease of use	4	Likert scale	Lancu & Lancu (2021)
Perceived usefulness	4	Likert scale	Lancu & Lancu (2021) Quintino (2021)
Customer experience	**Number of questions**	**Measurement scale**	**Source**
Cognitive	3	Likert scale	Bleier *et al*. (2019)

Affective	3	Likert scale	Rose *et al*. (2012)

Source: Researcher (2023)

Validity is an important aspect to consider when using structured questionnaires in research. A questionnaire must measure what it claims to measure to produce valid results. According to Krosnick and Presser (2010), the validity of a questionnaire can be evaluated using four types of evidence which are content validity, criterion validity, construct validity, and face validity. Content validity examines the extent to which the questionnaire covers all aspects of the topic being studied. Criterion validity examines the correlation between the results obtained from the questionnaire and external criteria. Construct validity examines the extent to which the questionnaire measures the theoretical construct that it was designed to measure. Finally, face validity examines the degree of what the questionnaire measure and what it purports to measure. In this study, the structured questionnaire produced valid results. The questionnaire had excellent content validity, criterion validity, and construct validity. Reliability is another important aspect to consider when using structured questionnaires in research. A questionnaire must produce consistent results to ensure reliability. Babbie and Mouton (2015) highlighted that the reliability of a questionnaire can be evaluated using two types of evidence: test-retest reliability and internal consistency reliability. Test-retest reliability examines the consistency of the results obtained from the questionnaire over time. Internal consistency reliability examines the consistency of the results obtained from different sections or items of the questionnaire. In this study, the researcher employed internal consistency test (Cronbach's alpha) for reliability test.

3.9 DATA COLLECTION PROCEDURES

For the purpose to achieve the research objectives, and produce accurate and valid results, primary and secondary data were collected in this study. An online survey was conducted and a questionnaire was distributed in the month of August 2023. After the design of the questionnaire, the researcher created the Google Form. Google Forms is a free tool that allows users to create and share online surveys. After creating the Google Form, the link to the form was embedded using an email and WhatsApp message and it was sent to the targeted participants. Research participants were able to respond to the questionnaire on their own. A survey duration was set for 10 days and this helped the researcher in controlling the number of responses and also in ensuring that people responded on time. Google Forms automatically collected the primary data and displayed it in an Excel sheet, charts and graphs.

3.10 DATA ANALYSIS PLAN

The plan for data analysis had several steps that helped the researcher in examining, understanding, and interpreting the collected data. The researcher began by entering and organizing the data in SPSS. Variables were created, codes assigned and data was verified for accuracy and completeness. The researcher proceeded by generating descriptive statistics to get an overview of the data. Descriptive statistics provide information about central tendency (mean, median, mode), dispersion (standard deviation, range), and distribution (skewness, kurtosis). In this study, the mean and standard deviation were used. Hypothesis testing was conducted, this involved the researcher performing statistical tests such as correlation analysis to examine the relationships or differences between the AI chatbot's variables and customer experience. The results were interpreted considering their significance based on the chosen alpha level. Graphical representations were also adopted to visualize the data using graphs and charts to enhance understanding and communicate research findings. SPSS was used since it provides various options for creating frequency tables, bar graphs, pie charts, and histograms among others. Finally, results were analysed, considering statistical significance. Interpretations were also done based on the research questions, hypotheses, and relevant literature.

3.11 ETHICAL CONSIDERATIONS

During the study, several ethical issues were addressed to ensure that the participants were treated fairly and their information was protected. The researcher discussed the following ethical issues and the measures taken to address them.

3.11.1 Informed consent: One of the ethical issues addressed during data collection was informed consent. Before participating in the study, participants were familiar about the research objective, procedures and benefits. They were also well-versed that their participation was voluntary and that they could withdraw at any time without consequence.

3.11.2 Privacy and confidentiality: Another ethical issue addressed during data collection was privacy and confidentiality. The researcher ensured that participants' information was kept confidential and that their identities were protected. The study participants were not required to provide their names to ensure their privacy. The researchers also explained to participants that their information would only be used for research purposes and would not be shared with any third party.

3.11.3 Minimizing harm: The issue of minimizing harm to participants during data collection was also addressed. The researcher ensured that participants were not asked to provide sensitive or potentially harmful information. They posed only non-invasive questions that did

not cause any discomfort or privacy violation. The researcher also limited the number of questions asked to prevent any participant from feeling overwhelmed.

3.11.4 Fairness and respect: The issue of fairness and respect for participants was addressed by ensuring that all participants were treated equitably. The researcher made sure that the participants felt that they were valued regardless of any demographic characteristics such as age, race or gender. The researcher also ensured that all participants were given the same opportunity to participate in the study.

3.12 CHAPTER SUMMARY

In summary, the researcher adopted a positivist research philosophy, a quantitative research approach and a descriptive research design. The population of the study was identified as all the customers in the telecommunications industry that have interacted with the artificial intelligence chatbot and a sample size of 385 participants was selected using a simple random sampling technique. A survey using a structured questionnaire was used for data collection. The chapter also highlighted the ethical considerations of the study, measures of validity and a plan for data analysis and presentation adopted in this study. The next chapter is premised on data presentation, analysis as well as linking the current result with findings from extant literature.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND DISCUSSION OF FINDINGS

4.0 INTRODUCTION

In the previous chapter, the researcher highlighted the research methodology adopted in this research. The present chapter aims to make a presentation, analysis and discussion of the data collected. The researcher used the Statistical Package for the Social Sciences (SPSS) version 27 for data analysis and excel. Presentation of data is guided by the order of the questionnaire. Response rate and data on demographics shall be presented at the beginning of the chapter, followed by questionnaire reliability test, data presentation and at the end summary of the chapter is given.

4.1 RESPONSE RATE

The study had a sample size of 350 respondents chosen from the Zimbabwean telecommunications industry customers that have interacted with the artificial intelligence chatbot. 350 questionnaires were distributed online, 318 questionnaires were responded to and only 32 were not responded to. According to this data, response rate was 91% and 9% did not respond.

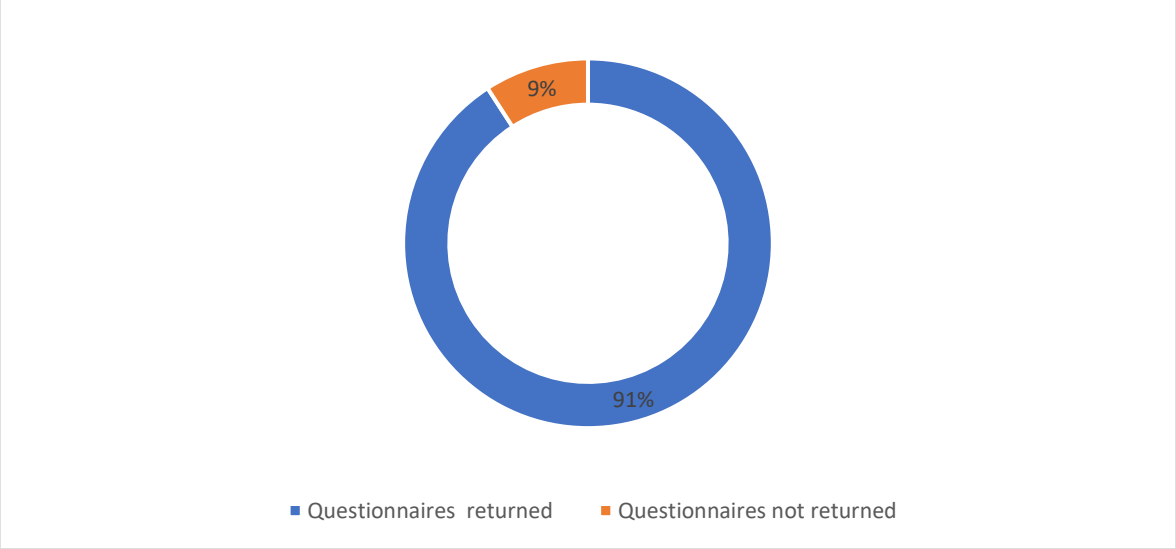


Figure 4.1 Response rate

Source Primary data (2023)

4.2 RELIABILITY OF THE QUESTIONNAIRE

The researcher used Cronbach's alpha to test the questionnaire's internal reliability as highlighted in section 3.8.2. As illustrated on Table 4.1 below, the questionnaire's Cronbach Alpha as tested is ranging from 0.655 to 0.939, with an average index of 0.834.

Table 4.1 Questionnaire's internal reliability

Questionnaire Section	Research variable	No. of Items	Cronbach Alpha Value	Comment
B	Personalization of AI chatbots.	3	0.863	Very reliable
B	Perceived humanness of AI chatbots.	3	0.700	Reliable
B	Social presence of AI chatbots.	3	0.939	Very reliable
B	Perceived ease of use of AI chatbot	4	0.929	Very reliable
B	Perceived usefulness of AI chatbots	4	0.655	Reliable enough
C	Customer experience	6	0.921	Very reliable
Average		23	0.834	Very reliable

Source: Primary data (2023)

4.3 DEMOGRAPHICS OF THE RESPONDENTS

The researcher designed the questionnaire with different sections and section A was concerned with the research participant's demographic information. Demographic aspects in this research included gender and the age group as highlighted below.

4.3.1 Gender distribution

The research questionnaire began by asking the participants their gender. The objective of this question was to determine the gender that uses most of the AI chatbots in the Zimbabwean telecommunications industry. Below is an illustration of gender distribution as shown by Figure 4.2.

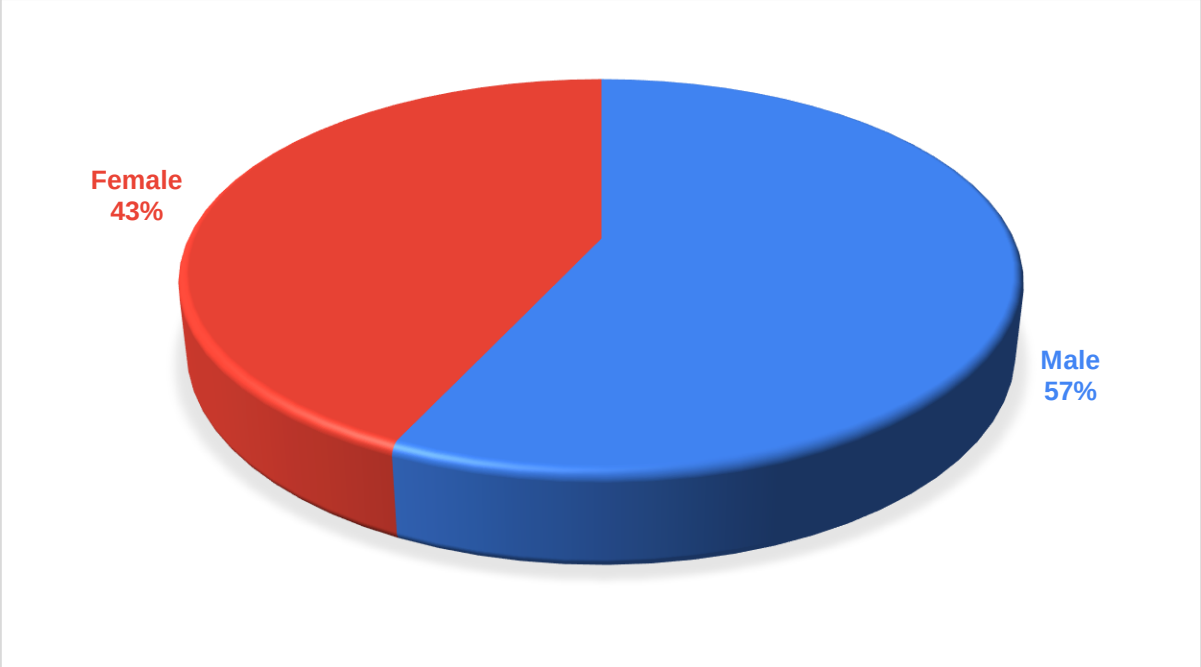


Figure 4.2 Gender distribution

Source: Primary data (2023)

Figure 4.2 above highlights that the majority of the respondents in this study were male with 57% distribution and females had 43%. This implies that males dominate the customers in the telecommunications industry that have used the AI chatbot.

4.3.2 Age group distribution

The chart below shows the distribution of respondents according to their age groups. Majority of the respondents (281) are between the age group of 18 and less than 40 years of age, 36 respondents are in the age group between 40 and less than 60 years of age while only 1 respondent was 60 years and above. Figure 4.2 below illustrates the distribution of respondents in relation to their age groups.

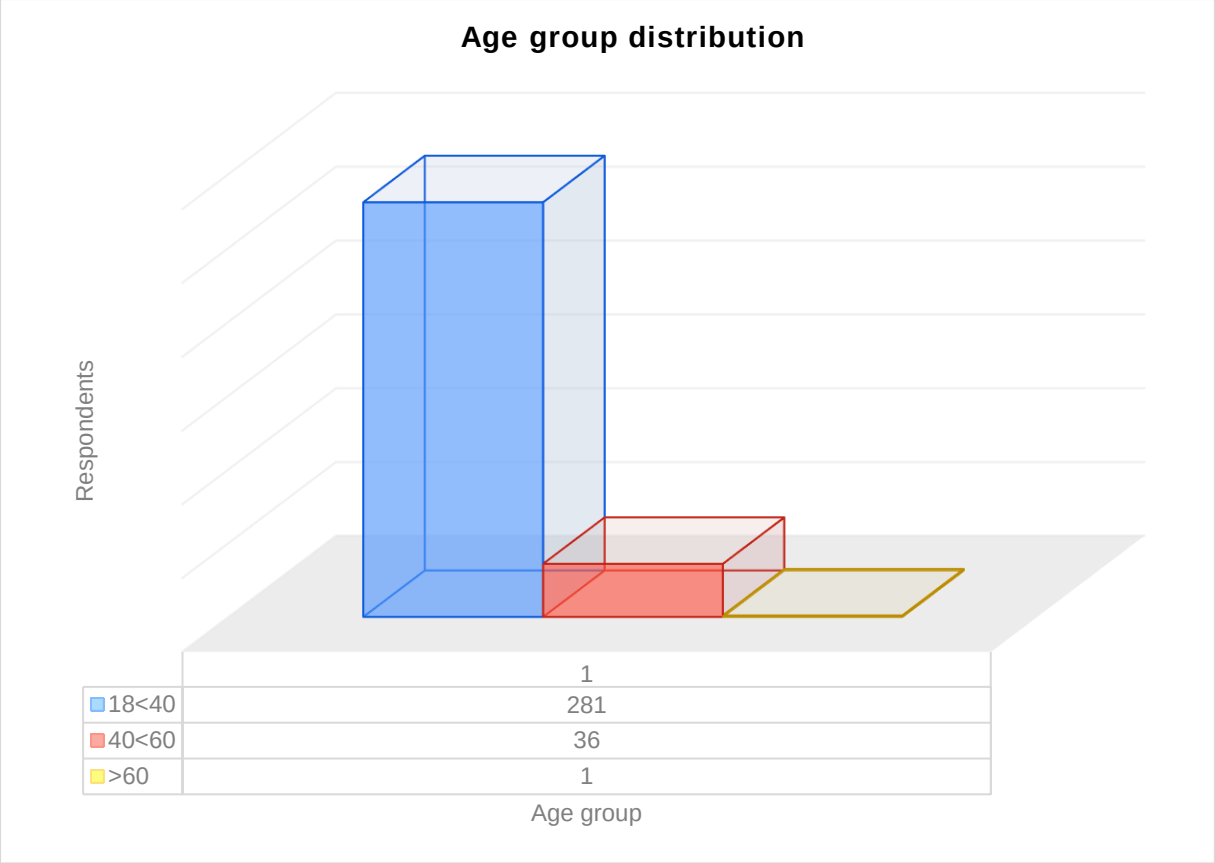


Figure 4.3 Age group distribution

Source: Primary data (2023)

According to the research findings shown by Figure 4.3, the findings suggests that the majority of the respondents who have interacted with the AI chatbot in the Zimbabwean telecommunications industry fell within the age group of 18 to less than 40 years of age.

4.4 DESCRIPTIVE STATISTICS

The researcher presented the descriptive statistics using the order of the research objectives as highlighted in the first chapter. Hayes (2023) cited that "descriptive statistics refers to brief coefficients that summarize a given data set". The researcher used the mean and standard deviation to analyse the collected data.

4.4.1 Personalization of AI chatbots and customer experience

In this section, the researcher presents data related to the first research objective which sought *to examine the effect of personalization of AI chatbots on customer experience.* Table 4.2 below shows the descriptive statistics that is the mean and standard deviation of each item used to measure the effect of personalization of AI chatbots on customer experience. SPSS version 27 was used to calculate the mean and standard deviation.

Table 4.2 Measuring personalization of AI chatbot

		N	Mean	Standard deviation
P1	The chatbot can provide me with relevant product /service recommendations.	318	3.61	1.28
P2	The chatbot can provide me with product recommendations tailored to my preferences.	318	2.99	1.26
P3	The chatbot can provide me with personalized product recommendations.	318	3.00	1.32
	Overall Average		**3.20**	**1.29**

Source: Primary data (2023)

Table 4.2 above highlights the responses given to the assertion that "the chatbot provides me with relevant product/service recommendations". The research findings show a mean response of 3.61 which indicates that on average, respondents showed a slightly positive tendency towards agreeing with the statement but falls within the range of neither disagree nor agree to somewhat agree. The standard deviation of 1.28 shows that there is some variability in how the respondents answered the question. The research finding implies that some respondents have a more negative experience with the personalization of AI chatbot and does not recommend relevant products or services. When the respondents were asked to indicate their agreement level with the statement "the chatbot can provide me with product recommendation tailored to my preferences", a mean response of 2.99 indicated that on average respondents seemed to have neutral opinions which means they neither disagree nor agree with the statement being evaluated. A standard deviation of 1.26 shows that responses are somewhat spread out. This implies that there is a fair amount of variability in the responses and all the research participants do not feel the same way. The last statement "the chatbot can provide me with personalized product recommendations" sought to find the respondents' agreement level with the statement. A mean score of 3.00 indicated that on average respondents neither disagree nor agree with the statement and are in a neutral position. A standard deviation of 1.32 indicated high variability in terms of the responses given.

The overall average mean of 3.20 shows that on average respondents have a low positive tendency towards agreeing to the statements used to measure the first objective. The overall standard deviation of 1.29 shows variability in responses given in all three questions. This implies that the personalization of AI chatbots has a slight effect on customer experience.

These findings seem to validate what previous researchers also found. For example, Rajkhowa and Das (2020) noted that personalization had a significant effect on customer experience and it resulted in 80.7% of the variance in customer experience. Also on the same note Knidiri (2021) found that customer experience is positively influenced by the personalization of the chatbot.

4.4.2 Perceived humanness of AI chatbots and customer experience

In this section, the researcher shows Table 4.3 below with data related to the second research objective which sought to examine the effect of perceived humanness of AI chatbots on customer experience. The table also indicates the mean and standard deviation as descriptive statistics used to measure the effect of perceived humanness of AI chatbots on customer experience with N representing a sample size of 318 respondents.

Table 4.3 Measuring perceived humanness of AI chatbot

		N	Mean	Standard deviation
PH1	The chatbot seemed to be human-like.	318	3.08	1.10
PH2	The chatbot seemed to be well-competent.	318	3.39	0.88
PH3	The chatbot seemed to be well-committed to my questions.	318	3.29	0.99
	Overall		**3.25**	**0.99**

Source: Primary data (2023)

Table 4.3 shows responses to the assertion that “the chatbot seemed to be human-like” with a mean score of 3.08 which means that on average the majority of the respondents showed a weak positive tendency towards agreeing with the statement. A standard deviation of 1.10 indicates that there was some variability in the responses given by the research participants some could have strongly agreed and others disagreed with the statement. Respondents were also required to respond to the assertion that “the chatbot seemed to be well-competent”, there was a mean score of 3.39 which shows that respondents had a slight positive tendency towards agreeing to the statement being evaluated. A standard deviation of 0.88 indicated there was moderate variability in terms of responses given.

The overall mean score of 3.25 and standard deviation of 0.99 indicate that on average, respondents showed a low tendency towards agreement level and there was variability in their responses. The findings suggest that there is a positive correlation between perceived humanness and customer experience. These findings validate and also critic the findings of

other scholars. For instance, Liu *et al*. (2019) posit that perceived humanness have an impact on customer experience. On the other hand, Wu *et al.* (2020) highlighted that perceived humanness did not significantly affect customer experience. Rhonda (2019) found out that the adoption of human-like chatbots can cause negative experiences for instance when there are serious issues from customers, human-like chatbots can frustrate customers more since their performance is carefully analyzed compared to non-human-like chatbots.

4.4.3 Social presence of AI chatbots and customer experience

Table 4.4 below indicates descriptive data related to the third research objective which sought to examine the effect of social presence of AI chatbots on customer experience. Mean and standard deviation were used to measure the responses on level of agreement of the mentioned statements relating social presence.

Table 4.4 Measuring social presence of AI chatbots

		N	Mean	Standard deviation
SP1	The chatbot has a sense of human contact.	318	3.08	1.06
SP2	The chatbot has a sense of human warmth.	318	2.78	1.07
SP3	The chatbot has a sense of human sensitivity	318	2.69	1.09
	Overall		**2.85**	**1.07**

Source: Primary data (2023)

Table 4.4 shows the responses to the assertion that “the chatbot has a sense of human contact”, the mean score of 3.08, indicates that respondents were somewhat neutral on the statement. The standard deviation of 1.06 suggests that there was a moderate degree of variability in the responses, with some participants providing high ratings while others gave low ratings. For the statement "the chatbot has a sense of human warmth," the mean score was 2.78, which indicates that, on average, respondents disagreed with this statement. The standard deviation of 1.07 suggests that participants disagreed to different degrees, with some strongly disagreeing and others only slightly disagreeing. The mean of 2.69 indicates that, on average the respondents slightly disagree with the statement that the “chatbot has a sense of sensitivity. The standard deviation of 1.09 suggests that the responses were widely spread, with some respondents strongly disagreeing and others mildly agreeing. These findings imply a low positive relationship and that the chatbot may need to improve to exhibit more human like sensitivity as it currently lacks this quality according to the majority of the respondents.

Overall mean score 2.85 on shows that on average respondents did not perceive the chatbot as particularly warm or having a strong sense of human contact and human sensitivity. It may be necessary to make changes to the design or functionality of the chatbot to increase its perceived human-like qualities. These findings seem to invalidate the findings from other scholars. For example, Sundar *et al*. (2017) cited that perceived social presence of the chatbot positively affect customer attitudes. Similarly, Van Doorn et al. (2018) cited that social presence positively impact customer experience and is effective in engaging customers.

4.4.4 Perceived ease of use and customer experience

In this section, the researcher provided research findings that have been used to evaluate the fourth research objective “To examine the effect of perceived ease of use of AI chatbots on customer experience”. Four statements were used to measure this objective, the researcher used the mean and standard deviation to interpret the responses provided as shown in Table 4.5 below.

Table 4.5 Measuring perceived ease of use (PEOU) of AI chatbots

		N	Mean	Standard deviation
PEOU1	Learning to use the chatbot was easy for me.	318	3.87	1.08
PEOU2	I find it easy to use to use the chatbot.	318	3.78	1.02
PEOU3	Interaction with the chatbot does not require much of my mental effort.		3.65	1.21
PEOU4	I think using a chatbot is easy	318	3.74	1.08
	Overall		**3.76**	**1.10**

Source: Primary data (2023)

Table 4.5 shows the responses to the statement “Learning to use the chatbot was easy for me", the mean score was 3.87 indicating that the respondents found it relatively easy to learn how to use the chatbot. The standard deviation of 1.08 suggests that there was some variability in responses, with some respondents finding it very easy while others found it somewhat difficult. On the statement "I find it easy to use the chatbot", the mean score for this statement was 3.78, indicating that, on average, respondents agreed and found it somewhat easy to use the chatbot. The standard deviation of 1.02 suggests that there was slightly less variability in responses compared to the first statement, but still some differences in perceptions of the ease of use. "Interaction with the chatbot does not require much of my

mental effort", participants gave an average rating of 3.65, indicating that they generally agreed that interacting with the chatbot did not require significant mental effort. The higher standard deviation of 1.21 suggests that there was more variability in responses, with some participants feeling that it required more mental effort than others. "I think using the chatbot is easy", the mean rating for this statement is 3.74, suggesting that participants, on average, found using the chatbot to be relatively easy. The standard deviation of 1.08 indicates that there was some variability in responses, similar to the first statement.

Overall mean score of 3.76 and standard deviation of 1.10 indicate that on average respondents agreed to the statements and there was variability in responses provided. Participants generally perceived using the chatbot as relatively easy, with variations in their responses across the different statements. These findings suggest that there is positive correlation between PEOU and customer experience. The majority of respondents had a positive impression of the chatbot's ease of use, although some individuals may have found it more challenging or required more mental effort to interact with it. These research findings confirm findings from other previous researchers. For example, Wang *et al.* (2020) found that the perceived ease of use of AI chatbots positively influenced customer experience with the chatbot service in healthcare. Furthermore, Zhou *et al.* (2021) also discovered that perceived ease of use positively influenced trust in AI chatbots which is a component of customer experience.

4.4.5 The effect of perceived usefulness of AI chatbots on customer experience

This section highlights responses related to the fifth objective of the research “To examine the effect of perceived usefulness of AI chatbots on customer experience”. Table 4.6 below shows the responses to four questions used to evaluate the perceived usefulness of AI chatbots and the mean and standard deviation were used to interpret the responses.

Table 4.6 Measuring perceived usefulness of AI chatbots

		N	Mean	Standard deviation
PU1	The information I obtained from the chatbot is useful.	318	3.78	1.07
PU2	I think the information obtained from the chatbot is helpful.	318	3.87	1.00
PU3	Using a chatbot helps me to accomplish tasks more quickly	318	3.69	0.96
PU4	I felt frustrated while using the chatbot	318	2.88	1.30

Overall	**3.55**	**1.08**

Source: Primary data (2023)

Table 4.6 above provides responses to the statement "The information I obtained from the chatbot is useful", the mean score of 3.78 indicated that on average respondents agreed with the statement and a standard deviation of 1.07 shows variability. Respondents were somewhat divided in their opinions regarding the usefulness of the information they received from the chatbot. On the statement that "I think the information obtained from the chatbot is helpful" there was a higher mean score of 3.87 which showed that respondents had a strong tendency towards agreeing with the statement and respondents generally found the information to be helpful. A standard deviation of 1.00, suggests that there was some variability in the responses provided. Furthermore, on the assertion that "Using a chatbot helps me to accomplish tasks more quickly", there was a mean score of 3.69 which showed that respondents showed a positive tendency toward agreeing with the statement and implies that respondents saw some benefit to using a chatbot to complete tasks. A standard deviation of 0.96 shows a less variability in the way respondents answered. The last statement of this section "I felt frustrated while using the chatbot" had a lower mean score of 2.88 which indicates that on average respondents disagreed with the statement and a larger standard deviation of 1.30, suggesting that there was more variation in respondents' levels of frustration while using the chatbot.

Overall mean score of 3.55 and a standard deviation of 1.08 shows that on average respondents showed a strong tendency towards agreeing with the four statements evaluated, the findings are that respondents perceive AI chatbot as useful though there were some variations in responses provided. These findings are in agreement with the findings of other scholars, for example Liat (2018) cited that chatbots provide quick solutions to customer queries are considered helpful and enhance the overall customer experience.

4.4.6 Measuring customer experience

This section provides that data that measure customer experience as dependent variable. The researcher used the mean and standard deviation to evaluate six statements related to customer experience as highlighted in Table 4.7 below.

Table 4.7 Measuring customer experience

		N	Mean	Standard deviation
CE1	The information obtained from the chatbot is useful.	318	3.82	0.92
CE2	I learned a lot from using the chatbot.	318	3.78	0.94
CE3	The information obtained from the chatbot brings interesting ideas to mind.	318	3.69	0.91
CE4	Using the chatbot makes me feel good.	318	3.56	0.83
CE5	Using the chatbot makes me feel optimistic.	318	3.65	0.92
CE6	Using the chatbot makes me feel enthusiastic.	318	3.43	1.18
	Overall		**3.66**	**0.95**

Source: Primary data (2023)

Table 4.7 shows responses to the statement "The information obtained from the chatbot is useful", a mean score of 3.82 and a standard deviation of 0.92, shows that on average the respondents agreed to the statement indicating that respondents generally found the information to be useful and responses were somewhat varied. On the statement that "I learned a lot from using the chatbot" a mean score of 3.78 and a standard deviation of 0.94 was recorded indicating that on average respondents agreed to the statement and the responses around the mean were somewhat varied. Suggesting that respondents felt they were able to gain knowledge from the chatbot. On the third statement that "The information obtained from the chatbot brings interesting ideas to mind", a mean score of 3.69 and a standard deviation of 0.91 was recorded showing that on average the majority of respondents agreed to the statement, indicating that respondents were stimulated by the information received from the chatbot. The fourth question "Using the chatbot makes me feel good" had a mean score of 3.56 and a standard deviation of 0.83 showing that on average the majority of the respondents agreed to the statement and there was less variability in the responses provided. The findings suggest that respondents had a generally positive emotional response to using the chatbot. The fifth statement "Using the chatbot makes me feel optimistic" had a slightly higher mean score of 3.65 and a standard deviation of 0.92 indicating that on average the majority of the respondents agreed to the statement and variability in responses given. The last statement "using the chatbot makes me feel enthusiastic" had a lower mean score of

3.43 and a larger standard deviation of 1.18, indicating that on average respondents agreed to the statement and had a more varied level of enthusiasm towards using the chatbot.

Overall mean score of 3.66 and a standard deviation of 0.95 shows that on average respondents agreed to the statements being evaluated and there was variability in the responses provide. The findings suggest customer experience is influenced by AI chatbots.

4.5 INFERENTIAL STATISTICS

The researcher adopted the Pearson correlation analysis to evaluate the nature and strength of the association between research variables. Pearson correlation enabled the researcher to conduct hypothesis testing. The correlation was significant at 0.01 and the significance was two-tailed.

4.5.1 Pearson correlation

In the previous section, the researcher used descriptive statistics to describe the research findings. The study sought to investigate the effect of AI chatbots on customer experience. It was crucial to conduct inferential statistics to determine the association between independent and dependent research constructs. Below, the researcher presents a Pearson correlation analysis of the research variables.

4.5.1.1 Personalization of AI chatbot and customer experience

Table 4.8 Correlation between personalization of AI chatbot and customer experience.

Pearson correlation			
		Personalization	**Customer experience**
Personalization	Pearson Correlation	1	.491**
	Sig. (2-tailed)		.000
	N	**318**	**318**
Customer experience	Pearson Correlation	.491**	1
	Sig. (2-tailed)	.000	
	N	**318**	**318**

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

Source: Primary data (2023)

H_1: Personalization of AI chatbots has a statistical significant effect on customer experience. Table 4.8 displays the Pearson correlation which was used to find the effect of personalization of AI chatbots on customer experience. Results indicate a strong positive correlation between personalization of AI chatbots and customer experience where r = 0.491, p = 0.00 and correlation is significant at 0.01. Hence p < 0.01shows that personalization of AI chatbots has a statistical significant effect on customer experience. Therefore, the null hypothesis is rejected and conclude that personalization of AI chatbots has a statistical significant effect on customer experience. This is in agreement with the findings of Danckwerts *et al*. (2020) where their research concluded that perceived personalization of the chatbot positively affect customer experience.

4.5.1.2 Perceived humanness and customer experience

Table 4.9 Correlation between perceived humanness and customer experience

		Pearson correlation	
		Perceived Humanness	**Customer experience**
Perceived humanness	Pearson Correlation	1	.518**
	Sig. (2-tailed)		.000
	N	**318**	**318**
Customer experience	Pearson Correlation	.518**	1
	Sig. (2-tailed)	.000	
	N	**318**	**318**

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

Source Primary data (2023)

H_2: Perceived humanness of AI chatbots has a statistical significant effect on customer experience. The researcher conducted Pearson correlation coefficient analysis to find the correlation between perceived humanness and customer experience. Table 4.9 shows a positive strong correlation (r = 0.518 and p = 0.000). Correlation is significant at 0.01, p<0.01

shows that the correlation is statistically significant. Hence the null hypothesis is rejected and it is concluded that perceived humanness of AI chatbots has a statistical significant effect on customer experience, an improvement on the factors that determine perceived humanness improves customer experience. This confirms the findings of Danckwerts *et al*. (2020) where their research indicated that perceived humanness and perceived personalization of the chatbot positively affect customer experience.

4.5.1.3 Social presence and customer experience

Table 4.10 Correlation between social presence and customer experience

		Pearson correlation	
		Social presence	**Customer experience**
Social presence	Pearson Correlation	1	.519**
	Sig. (2-tailed)		.000
	N	**318**	**318**
Customer experience	Pearson Correlation	.519**	1
	Sig. (2-tailed)	.000	
	N	**318**	**318**

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

Source: Primary data (2023)

H_3: Social presence of AI chatbots has a statistical significant effect on customer experience. Table 4.10 shows the Pearson correlation which was used to determine the effect of social presence of AI chatbots on customer experience. The findings where r = 0.519 and p = 0.000 indicate a strong positive correlation between the social presence of AI chatbots and customer experience. Correlation is significant at 0.01 and p < 0.01 means that social presence of AI chatbots has a statistical significant effect on customer experience. Enhancing factors that determine the social presence of AI chatbots improves customer experience. Therefore, we reject the null hypothesis and conclude that social presence of AI chatbots has a statistical

significant effect on customer experience. This is congruence with the findings of Sundar *et al*. (2017) were it was concluded that conducted that the effects of humanoid versus non-humanoid chatbots on perceived social presence and found that human-like chatbots were perceived to be more socially present than non-humanoid chatbots and influences customer experience.

4.5.1.4 Perceived ease of use and customer experience

Table 4.11 Correlation between perceived ease of use and customer experience

		Pearson correlation	
		PEOU	**CE**
PEOU	Pearson Correlation	1	.814**
	Sig. (2-tailed)		.000
	N	**318**	**318**
CE	Pearson Correlation	.814**	1
	Sig. (2-tailed)	.000	
	N	**318**	**318**

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

PEOU: Perceived ease of use | CE: Customer experience

Source: Primary data (2023)

H_4: Perceived ease of use of AI chatbots has a statistical significant effect on customer experience. Table 4.11 above shows the Pearson correlation coefficient conducted by the researcher to determine the effect of perceived ease of use of AI chatbots on customer experience. The results indicate a very strong positive correlation between PEOU and CE shown by r = 0.814. Correlation is significant at 0.01, P= 0.000 hence p<0.01 means the correlation has statistical significance. Therefore, we reject the null hypothesis and conclude that the perceived ease of use of AI chatbots has a statistical significant effect on customer experience. When customers believe that it is simple and easy to use an AI chatbot, their customer experience is enhanced. The research findings validate the finding by Quintino

(2019) were it was concluded that there was a significant impact on perceived ease of use on customer experience.

4.5.1.5 Perceived usefulness and customer experience

Table 4.12 Correlation between perceived usefulness and customer experience

		Pearson correlation	
		PU	**CE**
PU	Pearson Correlation	1	.749**
	Sig. (2-tailed)		.000
	N	**318**	**318**
CE	Pearson Correlation	.749**	1
	Sig. (2-tailed)	.000	
	N	**318**	**318**

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

PU: Perceived usefulness | CE: Customer experience

Source Primary data (2023)

H_5: Perceived usefulness of AI chatbots has a statistical significant effect on customer experience. In this section, Table 4.12 shows the Pearson correlation coefficient which was used to determine the effect of perceived usefulness of AI chatbots on customer experience. The results, r = 0.749 indicate a very strong positive correlation between perceived usefulness and customer experience. Correlation is significant at 0.01, P= 0.000 therefore p<0.01 means the correlation has statistical significance. We, therefore, reject the null hypothesis and conclude that perceived usefulness of AI chatbots has a statistical significant effect on customer experience. When customers believe that the AI chatbot is useful it improves their customer experience. The research findings validate the findings by Quintino (2019) where it was concluded that there was a significant impact on a significant impact on perceived usefulness on customer experience.

4.5.1.6 Summary of hypothesis test

Table 4.13 Summary of hypothesis test

Hypothesis No.	Hypothesis statement	P -value	Decision
H_1:	Personalization of AI chatbots has a statistical significant effect on customer experience.	0.000	Supported
H_2:	Perceived humanness of AI chatbots has a statistical significant effect on customer experience.	0.000	Supported
H_3:	Social presence of AI chatbots has a statistical significant effect on customer experience.	0.000	Supported
H_4:	Perceived ease of use of AI chatbots has a statistical significant effect on customer experience.	0.000	Supported
H_5:	Perceived usefulness of AI chatbots has a statistical significant effect on customer experience	0.000	Supported

Source Primary data (2023)

Table 4.13 summarizes hypothesis testing conducted for the study and its shows that all hypotheses had p value of 0.000 which was less than 0.01 and hence were supported.

4.6 CHAPTER SUMMARY

The above chapter highlights the research findings in accordance with each research objective. The response rate was provided at the beginning of the chapter and its reliability findings. The researcher proceeded by showing the respondents' demographic data. Data was presented, analyzed and discussed while linking it with the findings of the related and past literature. Additionally, inferential statistics in the form of Pearson correlation analysis was conducted for hypothesis testing. The chapter concluded with the summary of hypothesis testing and chapter summary. The subsequent chapter covers research summary, its conclusions and recommendations.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.0 INTRODUCTION

The aim of this study was to find the effect of AI chatbots on customer experience in the Zimbabwean telecommunications industry. The previous chapter highlighted data presentation, analysis and discussion on findings of the study. In this chapter, the researcher's focus shall be to highlight key research findings and inferred conclusions. Recommendations of the study are also highlighted and lastly the chapter presents potential areas where future studies can be conducted.

5.1 SUMMARY

The purpose of the study was to examine the effect of artificial intelligence (AI) chatbots on customer experience. The case of Zimbabwe telecommunications industry. The study also sought to determine the effect of "personalization of AI chatbots on customer experience, the effect of perceived humanness of AI chatbots on customer experience, the effect of social presence of AI chatbots on customer experience, the effect of perceived ease of use of AI chatbot on customer experience and the effect of perceived usefulness of AI chatbot on customer experience". In chapter two, lliterature was reviewed covering theoretical, conceptual, gap analysis and empirical review. In chapter three, research methodology was discussed, the study adopted a positivism approach. The study also adopted the deductive approach, a deductive approach is used when the study begins with theory, which is commonly created from reading of academic literature, and a research strategy is established to test the hypothesis. Descriptive research design was used in this study. A survey was used together with a closed ended questionnaire to collect data. A simple random sampling technique was used to select a sample size of 350 customers was selected from Telecommunication industry. Data was collected from the participants and a response rate of 91% was recorded. Data analysis was done using descriptive statistics (means and standard deviation). Inferential statistics such as Pearson correlation analysis were also used to determine the strength and nature of the relationship between independent and dependent variables. The research findings indicated artificial intelligent chatbots influences the customer experience. The results also indicated that personalization, perceived humanness, social presence, PEOU and perceived usefulness of AI chatbots influence customer experience in the Zimbabwean telecommunications industry. The study also highlighted that "personalization of AI chatbots on customer experience, the effect of perceived humanness of AI chatbots on customer experience, the effect of social presence of AI chatbots on customer

experience, the effect of perceived ease of use of AI chatbot on customer experience and the effect of perceived usefulness of AI chatbot has a statistical significant effect on customer experience". The next section discusses the conclusions made by the researcher.

5.2 CONCLUSIONS

The research provides below the research conclusions which were made based on formulated research objectives.

5.2.1 To examine the effect of personalization of AI chatbots on customer experience

The aim of the first objective was to examine the effect of personalization of AI chatbots on customer experience. The findings from the study shows that personalization of AI chatbots in the Zimbabwean telecommunications industry is an important factor that improves customer experience. Personalization of AI chatbots positively affects customer experience when customers get product or service recommendations tailored to their preferences. Therefore, it is concluded that personalization of AI chatbot has a significant effect on customer experience. Accordingly, the researcher addressed the first research objective satisfactorily.

5.2.2 To examine the effect of perceived humanness of AI chatbots on customer experience

With the second objective, the research sought to examine the effect of perceived humanness of AI chatbots on customer experience. According to the findings of the research, perceived humanness of AI chatbots influences customer experience in the Zimbabwean telecommunications industry. The researcher concluded that perceived humanness has a significant positive influence on customer experience. Hence making chatbot more human-like enhances customer experience. Therefore, the researcher addressed the second objective of the study fittingly.

5.2.3 To examine the effect of social presence of AI chatbots on customer experience

The third objective aimed to examine the effect of social presence of AI chatbots on customer experience. Research findings indicate that social presence of AI chatbots is an important factor that enhances customer experience. In the Zimbabwean telecommunications industry, social presence of AI chatbots has positive effect on customer experience that is when customers perceive the chatbot to be socially present. Consequently, the researcher concluded that social presence of AI chatbot has a significant effect on customer experience. The researcher attended to the third research objective acceptably.

5.2.4 To examine the effect of perceived ease of use of AI chatbots on customer experience

The aim of the fourth objective was to examine the effect of perceived ease of use of AI chatbots on customer experience. The research findings indicated that PEOU is an important factor that influences customer experience in the Zimbabwean telecommunications industry. The researcher concluded that PEOU has a positive significant effect on customer experience. Therefore, the researcher adequately addressed the fourth objective of the study.

5.2.5 To examine the effect of perceived usefulness of AI chatbots on customer experience

The aim of the fifth research objective was to examine the effect of perceived usefulness of AI chatbots on customer experience. According to research findings perceived usefulness influences customer experience in the Zimbabwean telecommunications industry. Majority of the respondents agreed that this dimension influence their experiences. The researcher concluded that perceived usefulness has a positive significant effect on customer experience. Thus, the researcher sufficiently addressed the fifth objective of the study.

5.3 RECOMMENDATIONS

The researcher made the following recommendations which emanated from research findings and research conclusions conversed above:

- Implement AI chatbots, it is recommended that companies in the Zimbabwean telecommunication industry those not yet using chatbots to consider adopting AI chatbot technology to enhance their customer service. These chatbots can handle customer queries and issues effectively, reducing the need for human intervention and improving response times.
- On personalization, it is recommended that telecommunications companies in Zimbabwe to invest and improve in designing AI chatbot that are able to learn customer behaviours and predict customer preferences since it enhances customer experiences. This can be done based on three scopes identified by Zanker et al. (2019) which are customer interface, the process of interaction and content that shapes personalization in digital-related services.
- On perceived humanness and social presence, companies in the telecommunications industry need to improve language fluency, responsiveness (speed and accuracy) and emotional intelligence in order to improve human – like qualities of the AI chatbot. Human like features that provides human warmth and sensitivity must be integrated

into the system so that customers will not compare human customer service agents and AI chatbots.

- Continuous learning and improvement, the researcher recommends that telecommunication companies should regularly analyse customer interactions with AI chatbots to identify areas for improvement. This can be done by collecting feedback, monitoring chat transcripts, and utilizing analytics tools. Continuous learning and adaptation would help enhance the chatbot's performance and accuracy over time.
- Human escalation option, while chatbots can handle a significant portion of customer inquiries, it is recommended to provide customers with a seamless option for human escalation when necessary. This ensures that complex or sensitive issues can be resolved effectively by human agents, maintaining customer satisfaction.
- Training and upskilling, It is recommended that both companies and the government to invest in training programs to upskill employees in the telecommunication industry. This would enable them to work alongside AI chatbots effectively, ensuring a smooth transition and maximizing the overall customer experience.
- Promote AI chatbots usage, telecommunication companies in Zimbabwe that have adopted the use of AI chatbots must aggressively promote the use of AI chatbots since these technologies can get better the more, they interact with customers. This will also improve its learning capabilities and will improve personalization aspects after learning customer behavioural patterns.
- Intelligent language processing, it recommended that AI chatbots should be equipped with strong natural language processing capabilities to understand and respond accurately to customer issues. Telecommunications companies should ensure the chatbots are capable of comprehending local Zimbabwean languages and dialects to cater to a diverse customer base.
- Seamless integration with existing systems, the researcher recommends that telecommunication companies should focus on integrating AI chatbot technology with their existing customer relationship management systems and databases. This would enable the chatbots to access customer profiles and history, allowing for more personalized interactions and smoother transitions between different customer service channels.
- Government support and regulation, it is recommended that the Zimbabwean government provide support to the telecommunications sector in the form of research and development, providing incentives, and creating policies and regulations to ensure ethical and responsible use of AI technology in customer service.

5.4 FUTURE STUDIES

The researcher conducted a quantitative research, other research methods and designs such as qualitative or mixed approaches can also be used in future to gain a comprehensive view and generalizability on the same research topic. There is a real need to probe customers more on their experience with AI chatbots which can be best supported by a qualitative study. Other scholars need to conduct the same or related studies considering other industries in order to understand the effect of AI chatbots on customer experience for other industries such as the banking sector, insurance sector and manufacturing sector.

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SURVEY QUESTIONNAIRE

Introduction

My name is Brave Magomo, and I am a Master of Business Administration student at Great Zimbabwe University. To fulfil the requirements of my studies, I am carrying out a research project with the topic “The effects of artificial intelligence chatbot on customer experience.” A case of the Zimbabwean telecommunications industry. I would greatly appreciate it if you were to take the time to respond to the following survey. Please keep in mind that you are not required to write your name, do not feel compelled to participate, every single response will be handled strictly confidential and is intended solely for academia.

Brief description of an AI chatbot

An artificial intelligence chatbot is a computer program that simulates human interaction or chat. It is also referred to as the virtual or online agent and conversational agent. It supports customer service operations and can be used by customers to enquire about products/services, present an enquiry or complaint, and make balance or airtime inquiries among other functions.

SECTION A: DEMOGRAPHICS

Instruction: Please select the appropriate box to indicate your response.

Gender	Male		Female	

Age group	18- < 40 years		40- < 60 years		>than 60 years	

SECTION B: Artificial Intelligence Chatbot

Key: 1- Strongly disagree, 2- Disagree, 3- Neither disagree nor agree, 4- Agree and 5- Strongly agree. *(Please select the appropriate box to indicate your response)*

	Personalization	**1**	**2**	**3**	**4**	**5**
P1	The chatbot can provide me with relevant product /service recommendations.					
P2	The chatbot can provide me with product recommendations tailored to my preferences.					
P3	The chatbot can provide me with personalized product recommendations.					
PH	**Perceived humanness**	**1**	**2**	**3**	**4**	**5**
PH1	The chatbot seemed to be human-like.					
PH2	The chatbot seemed to be well-competent.					
PH3	The chatbot seemed to be well-committed to my questions.					
SP	**Social presence**	**1**	**2**	**3**	**4**	**5**
SP1	The chatbot has a sense of human contact.					
SP2	The chatbot has a sense of human warmth.					
SP3	The chatbot has a sense of human sensitivity					
PEOU	**Perceived ease of use**	**1**	**2**	**3**	**4**	**5**
PEOU1	Learning to use the chatbot was easy for me.					
PEOU2	I find it easy to use to use the chatbot.					
PEOU3	Interaction with the chatbot does not require much of my mental effort.					
PEOU4	I think using chatbot is easy					
PU	**Perceived usefulness**	**1**	**2**	**3**	**4**	**5**

PU1	The information I obtained from the chatbot is useful.					
PU2	I think the information obtained from the chatbot is helpful.					
PU3	Using chatbot helps enable me to accomplish tasks more quickly					
PU4	I felt frustrated while using the chatbot					

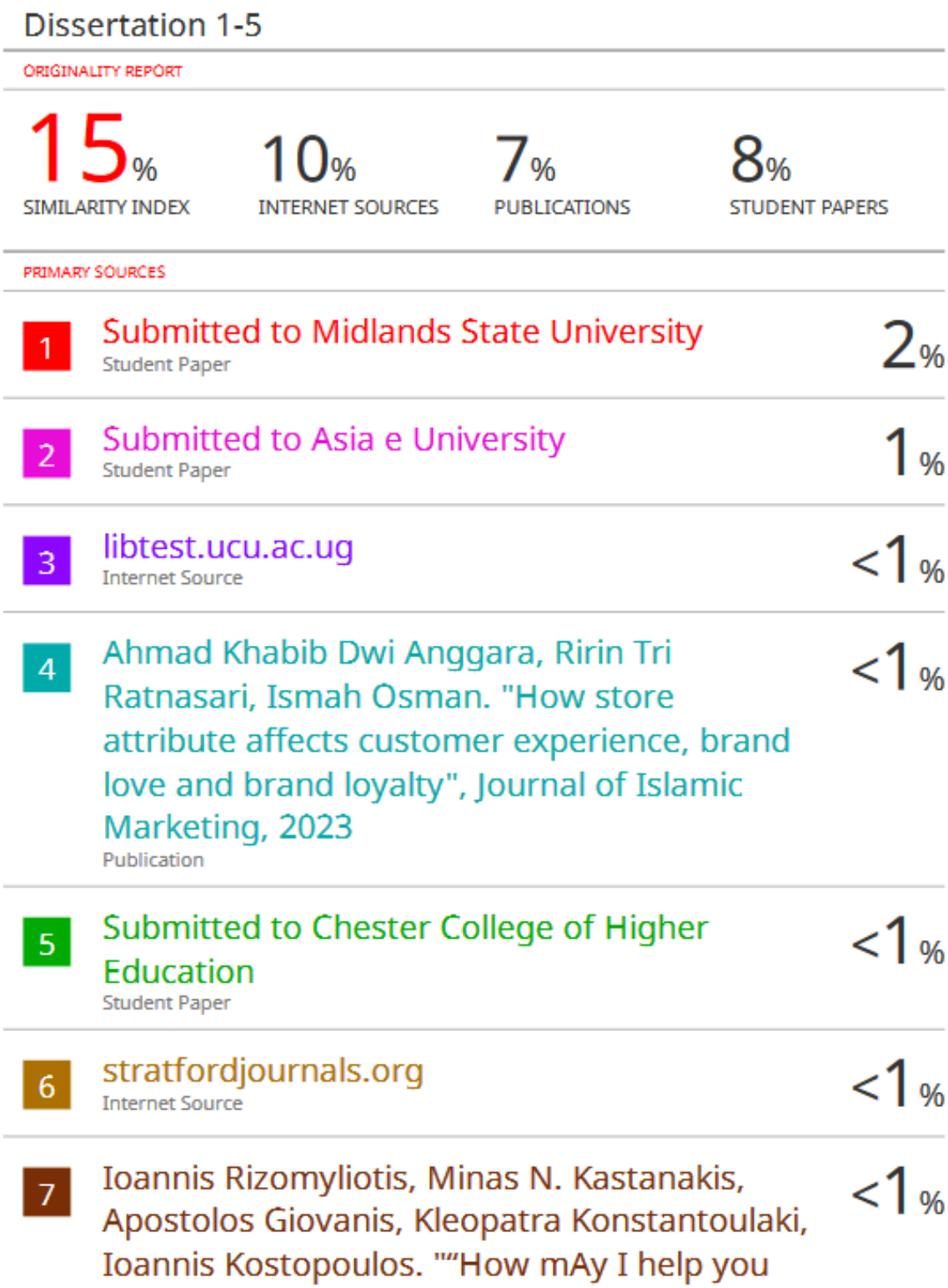
SECTION C: CUSTOMER EXPERIENCE

Key: 1- Strongly disagree, 2- Disagree, 3- Neither disagree nor agree, 4- Agree and 5- Strongly agree. *(Please select the appropriate box to indicate your response)*

CE	**Customer experience**	**1**	**2**	**3**	**4**	**5**
CE1	The information obtained from the chatbot is useful.					
CE2	I learned a lot from using the chatbot.					
CE3	The information obtained from the chatbot brings interesting ideas to mind.					
CE4	Using the chatbot makes me feel good.					
CE5	Using the chatbot makes me feel optimistic.					
CE6	Using the chatbot makes me feel enthusiastic.					

End of survey and thank you for your time.

SIMILARILITY INDEX REPORT



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